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NATIONAL PHYSICAL DEMANDS INFORMATION SERIES

Number 1

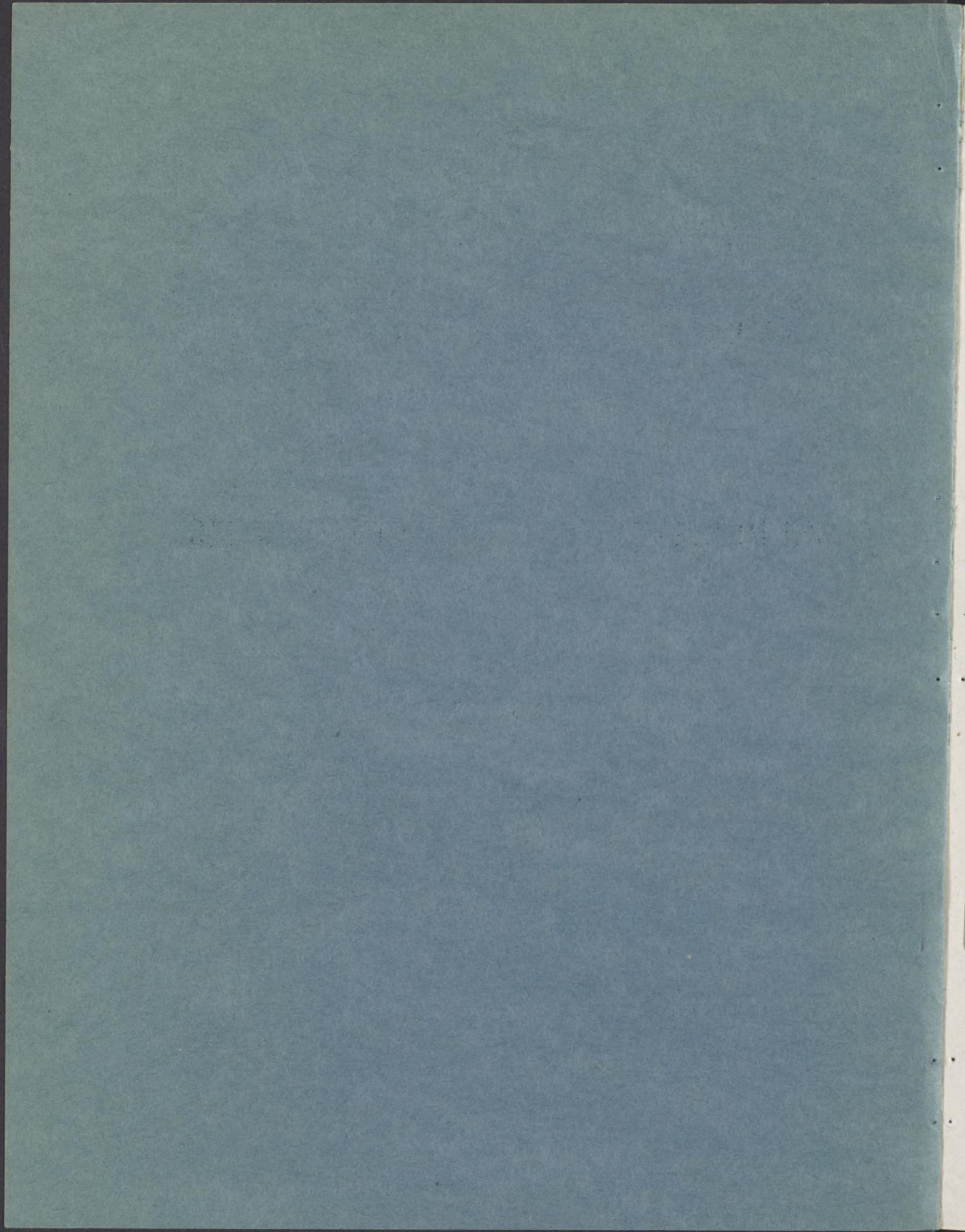
APPRENTICEABLE OCCUPATIONS

WAR MANPOWER COMMISSION
BUREAU OF MANPOWER UTILIZATION

DIVISION OF OCCUPATIONAL ANALYSIS
WASHINGTON, D. C.

May 1945

UNITED STATES GOVERNMENT PRINTING OFFICE



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ACKNOWLEDGMENTS

The descriptions of physical demands contained in this volume were obtained largely from physical demands forms prepared by field staff members of the War Manpower Commission. The conversion of apprenticeship titles to Dictionary titles and the job definitions were prepared by the Job Classification Unit. Special recognition is given to Rudolph G. Berkhouse and his staff for the planning and preparation of this material and to Beatrice J. Dvorak under whose general direction the work was done. Grateful acknowledgment is made to John R. Newland and others of the Apprentice-Training Service for providing information about the entire subject of apprenticeships and about apprenticeable occupations in general. Appreciation is also expressed to all others whose contributions made this volume possible.

CARL A. HEINZ, *Chief,*
Division of Occupational Analysis.

PREFACE

Because of the serious depletion of the skilled trades caused by lack of attention to apprenticeship training during the decade prior to the war, and because of the war itself, the next few years promise to offer unusual opportunities to young men seeking careers as skilled craftsmen.

Industry—labor and management alike—is willing, even eager, to offer training and employment to injured veterans. Because of this very willingness, special care must be given to the selection of apprentices, for no service is done a veteran if he is placed in a trade he has no desire to learn, or which he is unable to perform.

Modern industry demands as much from its journeymen machinists, patternmakers, carpenters and other skilled workers as it does from its engineers and scientists. The capacity to acquire a real skill is not present in every applicant. It must be identified and analyzed. The physical ability to perform the work of a skilled occupation is obviously necessary to success in that occupation. It too must be carefully identified.

By no means all workers engaged in learning to perform jobs in industry are apprentices. True apprenticeship is reserved for the all-round skilled trades. The definition of apprenticeship adopted by the Apprentice-Training Service on the advice of its national policy-making industry committee, the Federal Committee on Apprenticeship, includes the following basic standards:

1. An apprenticeable occupation is considered one which requires 4,000 or more hours to learn.
2. A schedule of the work processes to be learned on the job.
3. A progressively increasing scale of wages for the apprentice that should average not less than 50 percent of the journeymen's rate over the period of apprenticeship.
4. Provision for related classroom instruction (144 hours per year of such instruction is normally considered necessary).
5. The terms and conditions of the employment and training of each apprentice to be stated in a written agreement and registered with the State Apprenticeship Council or the Federal Committee on Apprenticeship.
6. Review of local apprenticeship by a State Apprenticeship Council or the Federal Committee on Apprenticeship.
7. Apprenticeship should be jointly established by the employer and the employee.
8. Adequate supervision and the keeping of records should be required for all apprenticeship programs.

It is readily discernible that apprenticeship is not to be confused with training for limited skill, but is intended for the real trades.

There are between thirty and thirty-five thousand business and industrial establishments of all types in the nation having or participating in apprenticeship programs registered

with State councils or the Federal Committee on Apprenticeship. There are, in addition, many establishments having good apprenticeship programs which for one reason or another are not registered.

Placement in apprenticeship is usually made through one of the following avenues:

1. The plant personnel office.
2. The joint Apprenticeship Committee. (Building trades use this device for placement to some extent.)
3. The union business agent (who is sometimes agent for the Joint Apprenticeship Committee).

The best source of information on apprenticeship programs is usually the nearest Apprentice-Training Service office. These offices make no placements, of course, but can supply information to placement agencies.

Public employment-service offices can offer an important and useful service to the applicant, to industry, and to the skilled trades in particular by establishing contact and developing working relations with Apprentice-Training Service personnel and persons responsible for operating apprenticeship programs.

WILLIAM F. PATTERSON, *Director,*
Apprentice-Training Service,
Bureau of Training,
War Manpower Commission.

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INTRODUCTION

The proper placement of workers in jobs necessitates that basic information about the requirements of those jobs be obtained, and that the applicant's abilities to meet those requirements be evaluated. In a placement situation where the physical capacities of applicants are limited or where the physical demands of jobs are excessive, particular emphasis must be placed on obtaining information about the *physical* capacities of the applicants and the *physical* requirements of the jobs. Physical demands analysis, which is one phase of job analysis, is the method used to obtain information about the physical requirements of jobs. Information about the physical capacities of workers is obtained through the use of the physical capacities appraisal in which the results of the physical examination are translated into the same terminology used in the physical demands analysis. With this information available the physical capacities of persons may be effectively matched with the physical requirements of jobs.

The purpose of this publication is to provide physical demands information which is typical of apprenticeable occupations. It is intended primarily for the use of counselors, employment interviewers, apprenticeship supervisors, apprenticeship committees, and any others who are concerned with the employment of workers in this category. It is recommended that the user of this National Physical Demands Information be thoroughly familiar with the principles and practices of preparing and matching physical demands and capacities information as described in the manual of PHYSICAL DEMANDS ANALYSIS AND PHYSICAL CAPACITIES APPRAISAL,* War Manpower Commission, 1945.

The occupations included in this volume are those in which persons are generally found to be serving formal apprenticeships according to the records of the Apprentice-Training Service of the War Manpower Commission. The list is not final since new apprenticeable occupations are constantly developing.

Each description of physical demands contained in this volume is a composite of physical demands forms prepared on several jobs. The information is presented in essentially the same way as the information in the regular physical demands form ES-130, except that provision has been made for entering, in the "Details" section, the pertinent time and intensity factors that vary from plant to plant. Since each description of physical demands is a generalization based on several physical demands analysis forms and therefore includes the physical activities and working conditions that usually exist on jobs, *it is important to make a check on the specific job in the plant before using this information in making a placement on that job.* When additional physical activities and working conditions or any other variations are found to be present they should also be entered on this form. Accordingly, ample space for making these entries has been provided at the bottom of each physical demands form. When this has been done, the information on the form may then be used in the placement process in the same manner that an original physical demands form for that job would be used.

The job definitions included in the body of the physical demands forms are contained in the DICTIONARY OF OCCUPATIONAL TITLES.* Certain editorial modifications have been made to these job definitions to delete those data which are not pertinent to this release.

A summary of the physical activities and working conditions of all jobs in the volume is included on pages 108 to 111. It is not intended that the information in the summary be

* This publication may be obtained from the Superintendent of Documents, Government Printing Office. Instructions for obtaining it are found on p. 114.

used in lieu of the detailed forms since the summary does not list time and intensity factors which are necessary for placement purposes. However, it may be used for quick reference when it is necessary to compare one occupation or group of occupations with another for some specific purpose. For example, a person whose interests and aptitudes indicate that he might advantageously seek an apprenticeship among the several occupations in the field of woodworking or carpentry is limited in his ability to climb. The physical demands summary under the column headed "climbing" indicates that there are several apprenticeable occupations in this field in which it would not be necessary for the applicant to climb. Among them are Cabinetmaker I and Patternmaker, Wood and other woodworking jobs that are performed in the shop. This indication of suitability must of course be checked by referring to the physical demands form for the job under consideration.

Definitions of the physical activities and working conditions may be found on pages 112 and 113. The placement officer or counselor should be thoroughly familiar with each definition before using the physical demands information.

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APPRENTICEABLE OCCUPATIONS

Dictionary Title MODEL MAKER IV* Occupational Code 0-44.71

Apprenticeship Title Model Maker

Industry Professional and Kindred

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Alternately walks, stands, and sits during job performance. Using both hands and arms, reaches for, grasps, and lifts lumber, metal, plaster of paris, or clay weighing up to _____ pounds and carries them _____ feet to workbench. Manipulates knives, lathes, drills, chisels, and sanders to shape parts _____ hours. Stoops, turns, and using fingers of both hands, assembles parts with glue, nails, dowels and wire, clamping them with a vise _____ hours. Reads blueprints and sketches and observes all assembling operations. Fingers gages, pencils and gravers _____ hours to sketch, mark, and measure designs on stock. Also handles engraver's tools, hand saw, files, cutting shears, hammers, punches, and soldering iron _____ hours when working on metal models of jewelry, etc. Inspects models with fingers of either hand for rough surfaces or defects. Employs depth perception in constructing models.

DETAILS OF WORKING CONDITIONS: Works around others inside an adequately lighted and ventilated room. Subject to noise, vibration, dust and dirt from machines.

DETAILS OF HAZARDS: Possibility of cuts to arms and hands from use of sharp-edged tools and material.

***JOB DEFINITION:** Constructs models to a desired size, using clay, plaster, plaster of paris, or other substance depending on the various industries for which the model is constructed, such as ship and boat building or automobile manufacturing.

APPRENTICEABLE OCCUPATIONS

Dictionary Title DRAFTSMAN* Occupational Code 0-48.

Apprenticeship Title Draftsman

Industry Professional and Kindred

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: May sit or stand during entire working day. Occasionally walks _____ feet about drawing board and drafting room. Intermittently stoops, turns, and extends either or both arms and hands to dexterously handle and finger sweeps, dividers, T-squares, pens, pencils, straightedges, triangles, beams, and small compasses to draft and lay out plans. Uses eyesight to check all drafting operations and to read estimates. Discusses changes in design and receives instructions from Chief Draftsman or Engineer.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated drafting room.

DETAILS OF HAZARDS: None.

*JOB DEFINITION: Prepares clear, complete, and accurate working plans and detail drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions; makes final sketch of the proposed drawing, checking dimension of parts, materials to be used, the relation of one part to another, and the relation of the various parts to the whole structure; makes any adjustments or changes necessary or desired; inks in all lines and letters on pencil drawings; exercises manual skill in the manipulation of triangle, T-square, and other drafting tools; lays tissue sheet on drawing and traces drawing in ink on tissue paper; makes charts for representation of statistical data; makes finished designs from sketches; utilizes knowledge of various machines, engineering practices, mathematics, building materials, and other physical sciences to complete the drawings.

APPRENTICEABLE OCCUPATIONS

Dictionary Title TOOL DESIGNER* Occupational Code 0-48.41

Apprenticeship Title Designer, Tool

Industry Professional and Kindred

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours and sits _____ hours stooping over a drawing board. Using both hands, reaches forward to grasp, handle and finger compass, dividers, triangles, templates, bevel protractor, straight-edge, and various pencils to draw plans and letter specifications for tools _____ hours. Observes machine in operation for which tool is being designed. Reads order request, specifications, and blueprints of similar type tools. Discusses work with others. Walks _____ feet between shop and drafting room.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated room. Exposed to loud noises from many machine operations and to dust and dirt when in machine shop.

DETAILS OF HAZARDS: None.

*JOB DEFINITION: Designs special tools and fixtures, such as boring bars and milling-machine tools; may do drafting. Frequently is a MACHINIST II, using types of machines for which he is designing tools.

APPRENTICEABLE OCCUPATIONS

Dictionary Title DIE DESIGNER* Occupational Code 0-48.42

Apprenticeship Title Designer, Die

Industry Machine Shop

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Sits or stands _____ hours bending over a waist-level drafting board. Walks approximately _____ feet to and from points in plant to observe and check machine operations. Handles and fingers pencils, compass, stapling machine, dividers, triangles, steel tape, and templates, using both hands during job process _____ hours. Reads specifications and blueprints. Discusses work with others.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated room. Exposed to noise from machine operations, dust and dirt when observing machine operations in plant.

DETAILS OF HAZARDS: None.

*JOB DEFINITION: Makes drawings of dies necessary to form a complete stamping, forging, or other part; decides on the number of sets of dies (each set representing a stage of development of the part to be made) necessary to change the metal blank into the finished piece, basing his decisions on a blueprint of the finished part and on his knowledge of dies, machines, their possibilities and limitations; uses drafting tools to make scale drawings of each set of dies; compares blueprints with wooden patterns of dies to determine if corrections, changes, or improvements should be made in patterns.

APPRENTICEABLE OCCUPATIONS

Dictionary Title DENTAL TECHNICIAN* Occupational Code 0-50.06

Apprenticeship Title Dental Technician

Industry Business Services

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands or sits at workbench during major portion of working day. Occasionally stoops and, extending either or both arms, reaches for, grasps, and lifts materials and equipment weighing up to _____ pounds. Constantly handles and fingers plates to push them against rotating discs and burrs _____ hours when shaping and filing them to specifications. Fingers levers or keys to lock plates into flasks and chucks. Dexterously manipulates spatula or putty knife, brushes, packing tools and trimming knives _____ hours during job process. Fingers a pencil to write reports. Reads work instructions and observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated room. Exposed to vibration of dental lathe.

DETAILS OF HAZARDS: Possibility of cuts to hands or fingers from sharp-edged tools and of burns from hot wax and rubber or from contact with Bunsen burner.

***JOB DEFINITION:** Prepares metal, vulcanite (hard rubber), or other composition plates from wax impressions taken by DENTIST; constructs metal clamps, inlays, and bridgework, according to specifications; develops X-ray pictures and keeps records.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CHEF III* Occupational Code 2-26.31
COOK V** 2-26.32

Apprenticeship Title Chef or Cook

Industry Hotel and Restaurant

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input checked="" type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stoops, turns, crouches, stands, sits, and walks about kitchen during job process. Using either or both arms and hands, reaches for, grasps and lifts food and utensils weighing up to _____ pounds, and carries them _____ feet to worktable or ovens _____ hours. Handles and fingers knives, ladles, can openers, measuring cups or spoons, meats and vegetables _____ hours to prepare and cook food. Pushes and pulls pans _____ hours to position them on stove or in oven. Fingers pencil to write orders and menus. Discusses planning of menu. Observes all operations and inspects food.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated kitchen. Exposed to heat from stoves and ovens, moisture from steam arising from steam-table and food being cooked, and odors from cooking.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from sharp knives and of burns from hot ovens and kettles.

JOB DEFINITIONS: *Estimates consumption, plans menus, and orders foodstuffs; supervises and usually assists the several cooks to prepare meats, soups, sauces, vegetables, and other foods. May decide size of food portions; may portion orders and cut meats. Works in a small establishment not employing a number of skilled specialists. In large establishments, the worker's duties are typically limited to supervising cooks and buying food.

**Prepares, seasons, and cooks, by any method, meats, soups, desserts, vegetables, sauces, and gravies; works in an establishment having only a few kitchen employees.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BARBER II* Occupational Code 2-32.01

Apprenticeship Title Barber

Industry Personal Service

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands at barber chair during major part of working day. Walks few steps between shelf, sink and barber chair during job process. Stoops, turns, and, extending either or both hands, reaches for, grasps, and dexterously handles and fingers combs, scissors, razors, hand and electric clippers, shaving brush, and electric massager to perform barber's duties. Pushes and pulls on lever of chair to adjust it to proper level. Uses fingers of both hands to massage face or shampoo head of customer. Handles neck strips, towels, and cloth to cover patron. Strops razor by holding strap with one hand, rapidly pushing and pulling razor, held in other hand, against it. Fingers pencil, change slips, and change. Observes all operations. Orally discusses services with customer.

DETAILS OF WORKING CONDITIONS: Works with others inside with adequate light and ventilation. Subject to some vibration when using electric massager.

DETAILS OF HAZARDS: Possibility of cuts to hands or fingers from sharp scissors or razors, of burns from using singeing tapers, and of contracting communicable diseases from clients.

***JOB DEFINITION:** Cuts hair according to instructions of patron, or according to original style, shaping neck line with comb and scissors or clippers; usually shaves patron's neck; shampoos, dries, and recombs hair, applying tonic on request; gives scalp treatments to cure dandruff or check falling hair; serves male patrons by shaving beard, trimming beards and mustaches, and giving facial massages; performs other personal services incidental to barbering, such as removing superfluous hair from eyebrows, nostrils, and ears, removing ingrown hairs from face and neck, and applying soothing lotion for tired or burning eyes.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BEAUTY OPERATOR* Occupational Code 2-32.15

Apprenticeship Title Cosmetician

Industry Personal Service

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Turning	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Standing	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands and walks around customer's chair and around shop _____ hours. Turns in all directions, stoops slightly and extends both arms to handle scissors, brushes, clippers, applicators, and lotion bottles during job performance. Uses fingers of both hands to massage scalp and facial muscles. Manipulating a comb with one hand and using the fingers of the other hand, waves and curls hair. Sits at table and handles manicuring implements to shape and polish fingernails. Occasionally pushes and pulls on permanent wave machine and hair dryer to position them for use. Feels customer's hair with fingers of either hand to determine the texture and condition. Discusses work with customer. Uses color vision when dyeing hair and when blending make-up.

DETAILS OF WORKING CONDITIONS: Works with others inside well lighted and ventilated shop.

DETAILS OF HAZARDS: Possibility of minor burns from dryers and permanent wave machines, and of contracting communicable diseases from clients.

***JOB DEFINITION:** Renders any one or all of the services usually available to patrons of a beauty parlor: cuts hair according to patron's instructions or according to original style; combs and waves patron's hair, occasionally suggesting or creating new and varied coiffures to meet individual needs; tints or dyes hair; gives hair and scalp treatments in accordance with standardized methods; applies various lotions, creams and packs to patron's face to clean or treat skin, remove wrinkles, and to apply cosmetics; frequently cleans, shapes, and polishes patron's nails.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BAKER I* Occupational Code 4-01.100

Apprenticeship Title Baker

Industry Bakery Products

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Intermittently stands, stoops, turns, and walks within a maximum radius of ___ feet during major portion of working day. Frequently stoops and extends both arms and hands to grasp and lift baking pans and ingredients weighing up to ___ pounds and to carry them (maximum distance of ___ feet). Uses either hand to push and pull handwheels or levers ___ hours on hand-operated mixing and kneading machines, and uses both arms and hands ___ hours to manually mix and knead dough. Uses both arms and hands to push or pull trays and pans in and out of oven. Reads thermometer and timepiece.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop in which the temperature is often high. The atmosphere is always laden with flour particles.

DETAILS OF HAZARDS: Possibility of burns from hot oven and pans, of prostration from excessive heat, and of injury from mixing, wrapping and slicing machines.

***JOB DEFINITION:** Produces finished baked goods, such as bread, cake, cookies, pastry, and pies, from raw material: measures and mixes ingredients; forms dough, prepares fillings, and decorates with icings; regulates ovens and bakes products in them. May be a term loosely used to designate an all around worker or one of a number of specialized workers depending on size and type of establishment.

APPRENTICEABLE OCCUPATIONS

Dictionary Title LOOM FIXER* Occupational Code 4-16.010

Apprenticeship Title Loom Fixer

Industry Textile

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input checked="" type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands and walks around job site during entire working day. Climbs ___ feet on scaffolds and ladders, maintaining body balance while working there ___ hours. Using either or both arms and hands, reaches for, grasps, and lifts tools and spare parts weighing up to ___ pounds and carries them ___ feet to loom needing repair. Pushes hand truck weighing up to ___ pounds to transport heavy bulky parts. Handles and fingers harnesses, wires, needles, pattern cards, warp spools, wrenches, jacks, and screwdrivers ___ hours to repair and adjust looms. Pushes and pulls on parts to align them. Occasionally crawls, crouches, or kneels to reach parts needing repair. Observes all job operations and inspects parts.

DETAILS OF WORKING CONDITIONS: Works with others inside hot, humid, dusty and noisy but adequately lighted and ventilated shop. Frequently works in cramped and awkward positions.

DETAILS OF HAZARDS: Possibility of injury to hands and fingers from gears and other mechanical parts of looms.

*JOB DEFINITION: Keeps looms in good working condition and puts in new warp beams whenever old ones are exhausted; inspects looms periodically and makes repairs such as putting in new harness straps and replacing worn-out shuttles as necessary; puts in new warp beams by removing empty beam, setting full beam of warp in brackets; setting harness, reed, and drop wires into position, and tying warp ends onto cloth beam.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CUSTOM TAILOR* Occupational Code 4-26.101

Apprenticeship Title Dressmaker (Custom)

Industry Garment; Retail Trade

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Sits at worktable and sewing machine during major portion of work day. Walks short distances around room and stands at ironing board for short periods. Uses fingers of either hand to grasp threaded needle and push and pull it through material ___ hours. Handles knife, shears, and razor blade ___ hours to cut material and rip seams. Uses both hands and fingers to grasp material and push and pull it under needle of sewing machine. Depresses foot pedal with either foot ___ hours to operate machine. Grasps and lifts ___ pound flatiron and presses material by drawing iron over it with a push and pull movement. Visually follows patterns and observes all job operations. Discusses alterations or fittings with customers. Must have color vision to match materials and threads.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated room.

DETAILS OF HAZARDS: Possibility of cuts to fingers or hands from sharp-edged knife or shears and of burns from hot flatiron.

***JOB DEFINITION:** A TAILOR I who cuts paper patterns according to measurements of individual customers, and, using patterns as a guide, cuts cloth and sews it together to make made-to-order (custom) garments; usually measures customer for garment, suggesting suitable styles or patterns, and fits finished garment on customer.

APPRENTICEABLE OCCUPATIONS

Dictionary Title TAILOR I* Occupational Code 4-26.101

Apprenticeship Title Tailor

Industry Garment; Retail Trade

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours, stoops, turns, and uses both hands to push and pull on material to position it on worktable preparatory to cutting it. Fingers chalk to mark cutting and sewing lines on material, and pins to secure assembled pieces of material together ___ hours. Walks up to ___ feet about work area. Holds material with one hand, and dexterously pushes and pulls a threaded needle held in the fingers of the other hand through material to sew it ___ hours. Sits at sewing machine to guide material with one hand and to push it under needle of sewing machine with other hand ___ hours. Handles scissors, knives, measuring rule, and electric pressing irons during job process. Stands, stoops, kneels, crouches, turns, and uses both hands ___ hours to adjust and fit assembled garment to customer. Discusses fitting and construction of garments with customers. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works with others inside well lighted and ventilated room. Exposed to vibration from sewing machine.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from use of knives and scissors, of pricking fingers with needles and pins, and of burns to hands from use of pressing iron.

***JOB DEFINITION:** Makes tailored garments, such as suits, topcoats, overcoats, and dress clothes, completely, or performs the more difficult hand and machine sewing tasks in their construction and supervises other workers who perform such tasks as may be delegated to them; measures customer for size and records measurements for use in preparing patterns and making garments; designs garments or copies design from fashion plates; makes individual pattern to customer's measurements; marks out lines on material and cuts material to pattern; assembles garment parts by hand sewing, padding coat front, lapels, and collars to give them shape, and basting the garment parts together; fits the basted garment on customer and marks sections requiring alterations; sews garment parts together on sewing machine and finishes garment; may press garment.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CABINETMAKER I* Occupational Code 4-32.100

Apprenticeship Title Cabinetmaker

Industry Woodworking

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours at workbench. Walks up to _____ feet about woodworking machines and shop during job process. Using both hands, reaches for, grasps, and lifts wooden parts weighing up to _____ pounds to position them on workbench or in machines. Stoops, turns, and uses both hands to push parts against blades of electric saw and shaping machines. Handles planes, wood files, hand saws, chisels, hammers, brace and bit, and scrapers during assembling operations. Assembles cut sections with nails, screws and bolts; sandpapers surfaces of articles, using both hands. Fingers steel rules, micrometer, and woodworking gages, working to tolerance of 1/4" to 1/32". Pushes and pulls electric switches to operate various woodworking machines. Observes all operations and reads blueprint or work specifications.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and adequately ventilated shop. Exposed to dust, dirt, noise, and vibration from woodworking machines, and to odors of glue, varnish, stain, and shellac.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from use of sharp-edged tools and woodworking machines.

***JOB DEFINITION:** Performs the hand carpentry necessary to cut, shape, and assemble prepared parts of high-grade articles of furniture, such as store fixtures, office equipment, and home furniture: studies drawing of article to be made; lays out outline or dimensions of part on paper or stock lumber specified; operates such woodworking machines as band saw, jointer, mortiser, tenoner, molder, gainer, and variety machine to cut and shape parts from stock, or may obtain parts already prepared by other workers; trims component parts of joints to make them fit together snugly, with hand tools, such as plane, chisel, or wood file; bores holes for the insertion of screws or dowels, by hand or machine; daubs glue on joints with brush; fits parts together tightly until glue is dry; drives nails, dowels, or screws through joints to reinforce them; glues and fits subassemblies and other parts together in clamps to form completed unit; finishes surfaces and joints of article with sandpaper and hand scrapers. May install such hardware as hinges, catches, or drawer pulls. May work on either a production line or on special orders.

APPRENTICEABLE OCCUPATIONS

Dictionary Title MILLMAN* Occupational Code 4-33.914

Apprenticeship Title Millman

Industry Woodworking

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours intermittently turning and stooping while operating various woodworking machines. Using both hands, reaches for, grasps, lifts, and carries materials weighing up to ___ pounds as far as ___ feet to position them in machines. Pushes lumber through saw to cut it. With both hands, holds tools against grinding wheel to sharpen them. Fingers electric switches and levers to stop and start machines and set screws to adjust saws. Handles hammers, saws, files, levels, planes, brace and bits, chisels, wrenches, squares, and a steel rule during job performance. Pushes or pulls a hand truck weighing up to ___ pounds to transport heavy material. Reads blueprints and selects proper type and size of wood for job.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop. Exposed to vibrations, dust, dirt, and noise of many machine operations.

DETAILS OF HAZARDS: Possibility of cuts to arms, hands, or fingers from use of various machines and sharp-edged tools.

***JOB DEFINITION:** Fabricates various lumber products, such as sashes, window and doorframes, doors, dressed lumber, and furniture parts, using hand tools and woodworking machines, usually including molders, planers, shapers, and hand or powered saws.

APPRENTICEABLE OCCUPATIONS

Dictionary Title AUTOMOBILE UPHOLSTERER* Occupational Code 4-35.610
FURNITURE REPAIRMAN I** 4-35.710
UPHOLSTERER II*** 4-35.720

Apprenticeship Title Upholsterer and Trimmer

Industry Any Industry

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	28.
<input checked="" type="checkbox"/> 14. Lifting	29.
<input checked="" type="checkbox"/> 15. Carrying	30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours at worktable. Frequently stoops, turns, kneels, and crouches during job process. Uses both arms and hands to reach for, grasp, and lift furniture and parts weighing up to ___ pounds to position them on or remove them from workstand. Lifts padding, springs, and covering to fit and position them on frames, reaching in all directions with both hands. Pulls on material and cords to stretch them tightly in place. Fingers a needle to sew burlap over springs. Handles a hammer, knife, and scissors during job performance. Observes all operations. Uses color vision in matching material and trimming.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated factory room. Exposed to noise from many machine operations and to dust and dirt from padding and stuffing.

DETAILS OF HAZARDS: Possibility of cuts from sharp springs, knife or shears.

JOB DEFINITIONS: *Repairs or replaces the upholstery and fabric tops of automobiles and trucks, following written or verbal orders: (1) when replacing or repairing upholstery: removes old upholstery by withdrawing tacks and binding material; measures new padding and covering materials, and cuts them to size with knife or shears, avoiding waste and making sure that patterns match; rebuilds springs and padding by resetting and retying springs and rearranging padding; sews covering material together on sewing machine; tacks new cover in place, stretching and pulling it to fit snugly over padding; may sew patches

over small holes in upholstery, and sew tears by hand; (2) when repairing or making new tops: measures part to be recovered; cuts covering material to size; stretches covering over roof and tacks it in place; replaces gutters and molding; trims off protruding portions of roof covering.

**Repairs and rebuilds upholstered furniture and box mattresses: removes covering from seat, arm backs, and sides of piece to be repaired, or, in case of a box mattress, removes ticking, using tack puller or chisel and mallet to pull tacks; similarly removes covering or under side of springs; examines padding, sitting on it to determine whether it needs replacing or needs to be added to; removes padding and burlap coverings, thus exposing springs; removes broken or bent springs by untying or cutting the cords which secure them in place and cutting the stitching which holds them to the webbing; rips off webbing if necessary; replaces or repairs damaged springs; measures and cuts new outside covering material, and tacks and sews it to wooden frame; tacks or sews in place upholstery tape and other ornamental additions. May glue and otherwise repair broken or damaged wooden parts of furniture, and may refinish wooden surfaces.

***Installs, arranges, and secures springs, padding, and covering material, such as cloth or leather, to frames of overstuffed chairs, davenport, and stationary seats: fits and secures in place springs, cotton, rubber composition, or other cushioning materials to form a smooth, rounded pad; cuts and tacks in place binding materials, such as canvas, burlap, or muslin; either draws assembled cover over binding and tacks cover tightly to frame, or aligns and stretches covering material over cushions and framework, wetting the leather as necessary, and sews, cements, or tacks it in place; cuts away excess materials; tacks or glues covering over back and trims along seams.

APPRENTICEABLE OCCUPATIONS

Dictionary Title TREATING ENGINEER* Occupational Code 4-39.423

Apprenticeship Title Engineer, Wood Treating

Industry Wood Preserving

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing
<input type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input checked="" type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and walks ___ feet around pump room to perform job process. Using either or both hands, reaches above and below shoulder height to turn a series of valves regulating steam, air pressure, and pumps; and to push and pull switches ___ hours. Constantly observes dials. Sits ___ hours at desk fingering a pencil to record amount of creosote used in treating process, temperature of creosote, and time consumed in the process. Receives oral reports from other workers.

DETAILS OF WORKING CONDITIONS: Works alone outside and inside humid and adequately lighted pump room. Exposed to heat, steam, creosote fumes, dirt, oil, and noise from many pumps in operation.

DETAILS OF HAZARDS: Possibility of burns from hot creosote or steam pipes, and of injury from falling on slippery floors.

*JOB DEFINITION: Operates a creosoting cylinder to impregnate railroad ties, paving blocks, bridge timbers, and other wood with creosote to protect the wood from decay: (1) when small amount of creosote impregnation per cubic foot of wood is specified: turns steam into heating coils of storage tank and treating cylinder to heat creosote to proper temperature; applies air pressure to wood in cylinder and opens valves to force preservative into wood in cylinder; releases pressure and pumps creosote back into storage tank; calculates amount of impregnation of wood; returns normal air pressure to cylinder when wood is properly treated; (2) when higher impregnation is specified: places high vacuum on loaded cylinder; flows heated creosote into vacuum and proceeds as in (1). May heat unseasoned wood with steam before treating. May treat wood with salt solution instead of creosote.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PRINTER VII* Occupational Code 4-44.010

Apprenticeship Title Printer

Industry Printing and Publishing

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours, frequently turns and uses fingers of both hands to reach for, grasp, and assemble type when setting it by hand. Sits ___ hours and operates a linotype machine by depressing keys with fingers of both hands. Using both hands and arms, reaches for, grasps, and lifts 25-30-pound chase and positions it in printing press. Handles slugs, quoins, and quoin keys to lock type in chase, and levers, stops and type magazines when operating type-setting machines ___ hours. Grasps a wooden block and places it over face of type; hits block with a hammer to level type. Reads from type and from printed copy for errors ___ hours. Frequently lifts 35-pound pigs of typing metal and places them in melting pot of machine.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop. Exposed to noise and vibration of many machine operations. Hands and clothing are stained from contact with printing ink.

DETAILS OF HAZARDS: Possibility of eyestrain from reading copy and setting type, of burns from hot metal, and of skin disorders from printing ink.

*JOB DEFINITION: Performs any or all of the duties concerned with the hand and machine setting of type, the assembling of type and cuts in chases, and related duties prior to the actual printing operations. Is typically a skilled worker who has completed a lengthy apprenticeship and is thoroughly versed in type style and printed page make-up.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CYLINDER-PRESS MAN* Occupational Code 4-48.010

Apprenticeship Title Pressman (Cylinder Press)

Industry Printing and Publishing

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	28.
<input checked="" type="checkbox"/> 14. Lifting	29.
<input checked="" type="checkbox"/> 15. Carrying	30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Walks ___ feet, stands ___ hours, stoops and turns during job performance. Using either or both hands, reaches for, grasps and lifts set type or plate weighing up to ___ pounds and positions it in press ___ hours. Several times daily, lifts rollers weighing about ___ pounds from press to wipe them with waste and replace them in press. Handles wrenches and clamps ___ hours to lock rollers and plate in position, a spatula to ink rollers and an oil can to lubricate press. Pushes switch buttons with fingers of either hand to test action and to stop and start press. Uses a ruler to measure position of print on paper and screws and clamps to set and adjust automatic feeders. Visually examines sample printed sheet to check it for alignment, ink distribution and color arrangement. Frequently uses both arms to grasp and lift blank paper weighing up to ___ pounds to feed board of press.

DETAILS OF WORKING CONDITIONS: Works inside well lighted and ventilated room around others. Exposed to loud noises and vibrations of printing presses. Hands and clothing are soiled from contact with lubricating oil and printing ink.

DETAILS OF HAZARDS: Possibility of injury from moving parts of press and of skin disorders from printing ink.

***JOB DEFINITION:** Makes ready (sets up), tends, and supervises the operation of a cylinder type printing press: loosens inking rollers with a wrench, removes them from press, thoroughly cleans them with waste, and replaces them in press; lubricates moving parts of press; locks form (type set-up or plate) in position on bed of press; packs impression chamber; marks out sheet and fills in with tissue or folio; starts press and runs off a proof sheet; examines proof sheet to ascertain that ink is being distributed evenly and in proper quantities; instructs CYLINDER-PRESS FEEDER to feed sheets into press, if press is hand fed; tends press while it is in operation, making readjustments in inking mechanism as necessary to produce properly printed sheets; sets and adjusts automatic feeders; registers forms and mixes colors.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PLATEN-PRESS MAN* Occupational Code 4-48.020

Apprenticeship Title Pressman (Platen Press)

Industry Printing and Publishing

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input checked="" type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours while setting up and operating press. Using either or both hands and arms, reaches for, grasps, lifts and carries a type-filled chase weighing up to _____ pounds _____ feet, and inserts it in bed of press, manipulates socket wrench to lock chase into position. Lifts reams of paper weighing up to _____ pounds and positions paper on platen. Takes sheets of paper one by one between fingers and feeds each onto the feed board (when press is hand fed), then stacks printed sheets in a pile _____ hours. Visually observes all operations. Works at a rapid speed when feeding paper onto feed board.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted, ventilated, and heated plants. Exposed to constant noise and vibration from printing presses.

DETAILS OF HAZARDS: Possibility of crushing fingers in moving press, and of skin disorders from printing ink.

*JOB DEFINITION: Makes ready (sets up), tends, and supervises the feeding of a platen-type printing press (m): thoroughly lubricates moving parts of press; inserts form (type set-up or plate) in bed of press and tightens locking attachment with a wrench; tightens or loosens inking rollers as necessary to obtain even distribution of ink; regulates ink flow by tightening or loosening thumbscrews on fountain; starts press and directs the feeding of sheets onto feed board; readjusts press during operation to produce properly printed forms.

APPRENTICEABLE OCCUPATIONS

Dictionary Title WEB-PRESS MAN* Occupational Code 4-48.030

Apprenticeship Title Pressman (Web Press)

Industry Printing and Publishing

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	28.
<input checked="" type="checkbox"/> 14. Lifting	29.
<input checked="" type="checkbox"/> 15. Carrying	30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Walks ___ feet and stands ___ hours to operate press. Crawls, crouches, kneels, climbs, and balances on top of press while tending it. Using either or both hands and arms, pushes rolls of paper weighing ___ pounds down slope ___ feet to position it in press, handles a lever to fasten it in place, grasps and pulls paper to thread it through and around proper rollers to folder, adjusting guides and cutting blades as necessary. Mounts plates on cylinder by stooping and grasping them with both hands and arms and lifting them from floor to press. Removes plates from cylinders after press is shut down and throws them into a truck ___ hours. Observes press operation and examines printed paper to determine evenness of print. Extends either arm and hand to push and pull a cloth over press to clean it; pulls paper core from press, manipulates a knife to dig superfluous letters from surface of plate.

DETAILS OF WORKING CONDITIONS: Works in large, well lighted and ventilated room ___ hours. Room is very noisy and the operation of printing presses sets up slight vibration. Hands and clothes get soiled from contact with printing inks.

DETAILS OF HAZARDS: Possibility of strains from pushing heavy rolls of paper, of cutting hands when changing and adjusting cutting blades, and of skin disorders from printing ink.

***JOB DEFINITION:** Makes ready and tends the operation of an automatic printing press used for printing newspapers, books, and magazines in quantity on one or more continuous sheets of paper: (1) prepares press for operation: inspects and lubricates press; replaces or cleans ink rollers; locks printing plates in

position on printing cylinders; threads web (sheet of paper from supply roll) through and around proper rollers to folder, adjusting compensators (guides); changes and adjusts cutting blade as necessary; starts press for trial run, inspecting papers first printed, and readjusting press to correct faults; (2) installs make-over (new) plates in press to change from one edition to another: notes directions marked on plates regarding proper location on press and time of printing; stops press, and opens guard at proper cylinder; inches cylinder over until locking mechanism is accessible and unlocks plates to be changed; removes unlocked plates, sets new plates on cylinder, and locks them in place; re-starts press; (3) rethreads paper through press if web breaks due to improper tension or adjustment (press stops automatically if web breaks); (4) makes periodical inspections of papers during production, checking for unequal ink distribution and wrong cuts or folds, and makes readjustments to correct faults; lubricates press periodically during operation; supervises and instructs apprentices. May load supply rolls of paper in press at beginning and during run.

APPRENTICEABLE OCCUPATIONS

Dictionary Title OFFSET-PRESS MAN* Occupational Code 4-48.050

Apprenticeship Title Pressman (Offset Press)

Industry Printing and Publishing

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands at press _____ hours while manipulating levers and controls to operate and adjust press. Stoops, turns, and, using both hands, reaches for, grasps, lifts, and handles zinc plates and blanket cylinders weighing up to _____ pounds to position them in press. Handles hand tools to clamp plate to cylinder _____ hours. Lifts containers of solid ink and water weighing up to _____ pounds _____ feet to trough of press. Pushes and pulls cloths and brushes over plates to clean them, frequently using fingers to clean off back of plates _____ hours. Inspects printed sheets for flaws and observes all machine operations. Discusses work with others.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated shop. Work is dirty and worker is exposed to continuous noises from machine operations.

DETAILS OF HAZARDS: Possibility of injury to arms and fingers if caught in rollers of press, of cuts to fingers from sharp edges of metal sheets, and of skin disorders from printing ink.

***JOB DEFINITION:** Makes ready and tends an offset printing press (m) that imprints stock sheets with illustration or type material from lithograph (prepared zinc) plates: washes plate to remove protective coating and cleans back of plate to perfect smoothness; builds up back of plate to desired printing thickness (about 0.015-inch) with sheets of tissue paper; clamps one edge of plate to plate cylinder, using hand tools; operates press slowly to wrap plate and backing in place around cylinder, and clamps other edge to cylinder; adjusts diameter of blanket cylinder exactly to diameter of plate cylinder by building up tissue paper sheets under rubber blanket (covering) of cylinder; pours supply of ink in fountain (trough) of press and runs press until ink rollers are thoroughly coated; adjusts space between blanket and impression cylinders to thickness of stock to be printed and sets water roller so as to deliver proper moisture to plate cylinder; starts press and runs several sheets through press to prepare proofs; scans proofs closely for flaws and cleans plate or cylinders to correct any found; starts motor and press and tends press during production run; removes plate from press at end of run, and cleans plate and cylinders; lubricates and cleans press.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BOOKBINDER* Occupational Code 4-49.010

Apprenticeship Title Bookbinder

Industry Printing and Publishing

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input checked="" type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours to perform job process. Stoops, turns, and, using both hands, reaches for, grasps and lifts materials weighing up to ___ pounds and carries them up to ___ feet between worktable and various machines. With one hand firmly presses on a pile of books (positioned on worktable) and with the other hand draws a brush over backs of books to apply glue. Manipulates clamps on a pressing board to press books and a handle wheel to set rollers on a rollerback machine ___ hours. Places fingers of one hand on top of book and thumb on the fore edge and, exerting pressure, presses fingers and thumb together ___ hours to draw book. Grasps a paintbrush and draws it over edges of book ___ hours. Depresses treadle of cutting machine with either foot and pushes and pulls on levers ___ hours. Uses fingers of both hands dexterously to fold waste leaves and paper to form hinges ___ hours. Handles bookbinder's hammer, ruler, rubbing stick, and paring knives during job process ___ hours. Reads work orders and specifications. Uses color vision to match, blend, and apply dyes to edges of book. Receives oral instructions.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated shop. Exposed to odor of glue being melted and to odor of stains and dye used on book pages; to vibration and noise of machines in operation.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from use of sharp knives, and of irritation of skin from dyes and stains.

***JOB DEFINITION:** Performs any or all operations entailed in affixing covers to sewn-together signatures to form books or pamphlets, and performs operations entailed in finishing the books or pamphlets, such as the following: creases folds of sewn-together signatures of unbound books and compresses book to size; applies glue to back of sewn signatures to stiffen back of book body, and forms joint of book covers and book bodies; colors edges of signatures with plain colors or with mixed colors that give the appearance of marble; reinforces backs of books by gluing fabric strips to them; glues cover boards to end sheets and dries books in a press. May tool designs on book covers. May repair books.

APPRENTICEABLE OCCUPATIONS

Dictionary Title GLASS BLOWER, LABORATORY APPARATUS* Occupational Code 4-65.440

Apprenticeship Title Glass Blower (Non-Mechanical)

Industry Instrument and Apparatus

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input checked="" type="checkbox"/> 28. Blowing	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Sits at laboratory bench ___ hours during working day. Reaches for, grasps, lifts, and positions asbestos pattern and materials on workbench. Grasps glass tubing, holds it in gas flames, and rotates it with fingers of both hands ___ hours. Frequently blows into tubing and using both hands dexterously handles and fingers glass tubing to bend it ___ hours. Employs depth perception when shaping and bending glass tubing and feeling in determining the proper amount of pressure to apply when bending it. Checks accuracy of tubing by placing it in asbestos pattern. Handles a file to notch tubing. Reads blueprints and closely observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated shop or laboratory. Exposed to heat from gas burners.

DETAILS OF HAZARDS: Possibility of cuts from glass, and of burns from handling hot glass and from contacting gas burners or flames.

***JOB DEFINITION:** Shapes glass tubing according to specifications to form scientific apparatus, such as retorts, stills, and flasks: heats tubing to a viscous condition by manipulating it over a Bunsen burner; blows heated tubing into specified forms with either compressed air or own breath; shapes, bends, or joins together sections of blown tubing using various glass-forming tools. Usually works from blueprints.

APPRENTICEABLE OCCUPATIONS

Dictionary Title GOLDSMITH* Occupational Code 4-71.010

Apprenticeship Title Goldsmith

Industry Jewelry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Sits ___ hours on a stool. Uses both hands to reach for, grasp, handle and finger small saws, files, tweezers, emery paper, jeweler's lathe, soldering iron, and graduated ring stick ___ hours in order to make and repair gold jewelry. Observes job progress and inspects jewelry for imperfections of design and defective hues. Wears a magnifying glass over one eye for fine work.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated room. Exposed to inorganic dust caused by filing nonferrous metals.

DETAILS OF HAZARDS: Possibility of burns from soldering, and of eyestrain due to close and fine work.

***JOB DEFINITION:** A JEWELER I who fashions gold and other precious metals into articles such as rings and pins.

APPRENTICEABLE OCCUPATIONS

Dictionary Title JEWELER I* Occupational Code 4-71.010

Apprenticeship Title Jeweler

Industry Jewelry; Retail Trade

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Sits ___ hours on a stool. Uses both hands to reach for, grasp, handle and finger small saws, files, tweezers, emery paper, jeweler's lathe, soldering iron, and graduated ring stick ___ hours in order to make and repair jewelry. Visually observes job progress and inspects jewelry for imperfections of design and defective hues. Wears a magnifying glass over one eye for fine work.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated room. Exposed to inorganic dust caused by filing nonferrous metals.

DETAILS OF HAZARDS: Possibility of burns from soldering, and of eyestrain due to close and fine work.

*JOB DEFINITION: Makes and repairs articles of jewelry, such as rings, pins, and lockets: forms a mold of sand and pours molten metal into it; cuts, saws, files, and polishes molded pieces of jewelry; uses soldering iron or torch to fasten clasps on pins or settings on rings; enlarges rings by sawing through band, inserting piece of metal, and soldering it in place, using graduated ring stick to measure size; reduces size of rings by sawing through band in two places, removing sawed-out section and forcing and soldering the ends together; repairs broken clasps, pins, and other jewelry by soldering together the broken parts or by replacing them with new parts; reshapes old jewelry and cuts new jewelry, following designs or instructions, using hand tools, and jeweler's lathe (m), drill (m), or other machines; smooths soldered joints and rough spots with hand file and emery paper.

APPRENTICEABLE OCCUPATIONS

Dictionary Title STONE SETTER II* Occupational Code 4-71.020

Apprenticeship Title Stone Setter, Jewelry

Industry Jewelry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	___ 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	___ 78.
<input type="checkbox"/> 14. Lifting	___ 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	___ 79.
<input type="checkbox"/> 15. Carrying	___ 30.	<input checked="" type="checkbox"/> 65. Vibration	___ 80.

DETAILS OF PHYSICAL ACTIVITIES: Sits ___ hours at workbench in a slightly stooped position. Fingers ring to place it in and remove it from ring chuck. Grasps ring chuck with one hand and reaches for, grasps and handles a file, drill, mill graining tool, nicking-in tool and bright cutting tool with the other hand. Exercises fine muscular discrimination when working on settings ___ hours. Fingers a pointed picker-up tool to lift stone and to position it in mounting. Closely observes all operations. Reads work orders and specifications. Employs depth perception in all drilling operations.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated room. Exposed to slight vibration from drilling and cutting tools.

DETAILS OF HAZARDS: Possibility of cuts from sharp-edged tools.

*JOB DEFINITION: Alters settings to accommodate jewels, using fine, chisel-like instruments; files away small obstructions or irregularities; secures stone in setting by pressing holding prongs (beads) around it, or by raising a small ridge of retaining metal around stone with a sharp-pointed instrument. May drill holes in settings, preparatory to securing stones in settings.

APPRENTICEABLE OCCUPATIONS

Dictionary Title SILVERSMITH II* Occupational Code 4-71.310

Apprenticeship Title Silversmith

Industry Silverware

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours at workbench and crucible furnace. Walks ___ feet about work area. Using both hands, reaches for, grasps, and lifts scrap silver, weighing up to ___ pounds, and places it in crucible to be melted ___ hours. Aided by Apprentice, lifts crucible, weighing approximately ___ pounds, and carries it to furnace. Using tongs, lifts hot crucible from furnace. Stoops, reaches for, grasps, and lifts sheet silver or silver plate and places it on workbench. Stooping and turning, handles snips, cutting pliers, soldering blowtorch, files, hammers, and various shaped dollies ___ hours, and fingers calipers, surface gage, and measuring rule to repair old and make new silverware ___ hours. Grasps and handles ladle to insert it into crucible and lifts it filled with molten metal (lead or silver) and pours metal into molds ___ hours. Manipulates levers and switches to operate bench power shears, drop hammer, and rolling mill machines. Using both hands, holds article against grinding wheel to remove excess metal and against buffing wheel to polish it ___ hours. Reads work-order specifications and observes all operations. Gives and receives oral directions.

DETAILS OF WORKING CONDITIONS: Works with others inside well lighted and ventilated building. Exposed to loud noises from machine operations and hammering, to heat from molten metal and crucible furnace, and to fumes from molten metal.

DETAILS OF HAZARDS: Possibility of burns from hot metal and soldering torch, of cuts from sharp-edged instruments and metal, and of metal fume fever.

***JOB DEFINITION:** Hammers bent silverware to shape, repairs broken parts, and makes new silverware from sheet silver or silver plate: (1) hammers out deformations with hammer and dollies of various shapes; repairs cracks or holes by applying flux and melting silver solder into them, removing the excess metal on a grinding wheel until surface is smooth; (2) studies sketch of object to be made; makes measurements from sketch and selects sheet metal of proper thickness and size; makes body of object by hammering, bending, cutting, or spinning it to shape on a lathe; makes handles and spouts by hammering metal into shape and soldering seams; assembles and solders the parts together; polishes articles on a buffing wheel.

APPRENTICEABLE OCCUPATIONS

Dictionary Title WATCHMAKER* Occupational Code 4-71.510

Apprenticeship Title Watchmaker

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Sits ___ hours at workbench to perform watchmaker's duties. Stoops, and, using both hands, dexterously manipulates and fingers gravers, reamers, jewel pushers, small pliers, knives, tweezers, screwdrivers, and other watchmaker's tools ___ hours to repair and assemble watches. Fingers main and hair springs, pivots, and other small parts during job process. Grasps works of watches and inserts them in cleaning fluid, lifts them out and places them in sawdust container ___ hours. Handles a brush to remove sawdust from mechanism. Closely observes all operations, aided by a loupe worn over one eye. Using either or both hands, grasps chucks and positions them in and removes them from lathe. Depresses foot treadle with either foot ___ hours to operate lathe. Discusses work with customers and others. Listens to mechanism of watch for sounds of maladjustment.

DETAILS OF WORKING CONDITIONS: Works with others inside well lighted and ventilated shop.

DETAILS OF HAZARDS: Possibility of severe eyestrain.

*JOB DEFINITION: Cleans, adjusts, repairs and oils watches: takes timepiece apart for repairing or cleaning by prying off or unscrewing case, lifting mechanism from case, and disassembling springs, balances, and other parts with the aid of small pliers, screwdrivers, tweezers, and other watchmaker's tools; examines the various parts, usually through an eyepiece with strongly magnifying lenses, to discover defects, such as broken jewels, improperly fitted escape pinions and wheels, and other faults; repairs and adjusts timepiece by inserting new main or hairsprings, resetting pivots, and performing a variety of duties with aid of watchmaker's hand tools and lathe; cleans timepiece by brushing parts with watchmaker's brush and waste or by immersing them in gasoline, benzine, or other cleaning solutions and drying them in sawdust; oils timepieces by dropping small amounts of oil on moving parts; tests timepieces for magnetism and demagnetizes them. Usually repairs clocks, following same procedure as for watches. May perform a variety of jewelry repair duties.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ENGRAVER, HAND I* Occupational Code 4-73.030

Apprenticeship Title Engraver

Industry Automobile Manufacturing; Pottery and Porcelain

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input checked="" type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Sits in a slightly stooped position at work-bench during entire working day. Extends both arms and hands to lay out lettering and design on metal or pottery and to make measurements ___ hours. Handles gravers and punches to cut design in stone or metal ___ hours. Fingers measuring devices in checking design against sample. Reads blueprints and calibrations on measuring devices.

DETAILS OF WORKING CONDITIONS: Works inside, usually alone. There is some dust caused by chipping metal or stone.

DETAILS OF HAZARDS: Possibility of cutting hands with sharp tools.

***JOB DEFINITION:** Cuts lettering or designs in the surface of metal dies or plates used to imprint decorative designs or identifying information on porcelain ware or metal and plastic products: cuts designs with gravers, punches, and other hand tools, following a sample pattern. May enlarge, reduce, or adapt pattern to particular article for which engraved die or plate is made.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PLATER I* Occupational Code 4-74.010

Apprenticeship Title Electroplater

Industry Electroplating

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and walks ___ feet around water and acid tanks during job performance. Stoops, turns, and, using both arms and hands, reaches for, grasps, lifts and carries objects weighing up to ___ pounds to insert and lift them from various cleaning and coating baths ___ hours. Handles terminals of plating equipment to connect them to objects to be plated. Adjusts valves on tanks, using fingers of either hand. Uses both hands to grasp and hold hardware ___ hours against motor-driven discs to buff and polish it. Reads current gages during job process and visually inspects objects being plated to determine necessary procedure.

DETAILS OF WORKING CONDITIONS: Works around others in well lighted and ventilated room. Exposed to dampness from wet floors and contact with water and acid tanks.

DETAILS OF HAZARDS: Possibility of burns on hands and arms from acid solutions, of poisoning from inhaling cyanide potassium fumes, and of injury to hands from polishing discs.

***JOB DEFINITION:** Covers metal objects electrolytically with a coating of nickel, chromium, cadmium, or other metal to provide the objects with a corrosion-protective coating, to build up worn surfaces, or for other purposes: cleans objects by immersing them in a succession of cleaning baths; immerses cleaned objects in a vat or tank containing a solution of metallic salts of the plating metal; connects negative terminal of plating equipment to objects or container holding objects, or fastens hooks to objects and hangs them on negative electrode; fastens stick or plate of silver, nickel, or other plating metal to positive terminal (if this method of plating can be used); allows objects to remain in tank until desired thickness of coating is obtained, regulating electrical controls to maintain the desired intensity of electricity flowing through the plating solution; removes metal objects from tank and rinses them in water. May dry objects by hanging them in air or rolling them in sawdust; may mix plating solution. The strength of the plating solution, amount of electric current used, thickness of plate, size of object to be plated, size of electrodes, and length of immersion are interrelated factors taken into account in the plating process by the worker.

APPRENTICEABLE OCCUPATIONS

Dictionary Title MACHINIST II* Occupational Code 4-75.010
MACHINIST, AUTOMOBILE** 4-75.010

Apprenticeship Title Machinist (Aircraft);* Machinist (Railroad),* or Machinist (Automotive)**

Industry Machine Shop

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	28.
<input checked="" type="checkbox"/> 14. Lifting	29.
<input checked="" type="checkbox"/> 15. Carrying	30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands during major portion of working day. Stoops, turns, and, extending both arms, reaches for, grasps, and lifts tools and machine parts weighing up to 100 pounds and carries them ___ feet to position them on workbench or machines. Pushes and pulls levers and wheels ___ hours to operate engine-lathe, milling-machine, planer, and shaper machines. Handles scrapers, chisels, and files ___ hours to repair, construct or adjust tools and equipment. Fingers calipers, micrometers, gages, and steel rules to measure to close tolerances. Inspects parts visually and with fingers of either or both hands ___ hours for high spots and defects. Reads blueprints and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside with adequate light and ventilation amid noisy surroundings. Work is dirty.

DETAILS OF HAZARDS: Possibility of injuries to hands from sharp-edged machinery and tools.

JOB DEFINITIONS: *Carries through to completion the construction and repair of all kinds of metal parts, tools, and machines: understands blueprints and written specifications; uses skillfully all machinist's hand tools including scrapers, chisels, files, and measuring instruments; operates all machine tools including lathes, milling machines, planers, shapers, and specialized machines that have been developed from them. Possesses knowledge of shop mathematics, the use of charts and tables, the efficient planning of shop work, the dimensions and uses of standard bolts, screws, threads, and tapers;

must be familiar with the working properties of such metals as aluminum, brass, cast and wrought iron, and various steels, and should be capable of shaping metal parts to precise dimensions within the close tolerances prescribed.

**A MACHINIST II who makes machines, and repairs automobile-engine parts by setting up and operating various kinds of special or general metal-working machines, such as lathes, piston-grinding-and-turning machines, and valve-grinding machines: sets up and operates lathe, to perform work, such as machining water-pump castings or piston heads; grinds piston heads to fit cylinders by clamping piston into carriage of piston-grinding-and-turning machine, adjusting grinding wheel to make proper depth of cut, and starting, stopping, and controlling operation of machine; grinds seating surface of valves by fastening valve in adjustable clamp in proper relation to grinding wheel, and manipulating levers to control operation of machines.

APPRENTICEABLE OCCUPATIONS

Dictionary Title INSTRUMENT MAKER II* Occupational Code 4-75.130Apprenticeship Title Instrument MakerIndustry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and sits ___ hours to perform job process. Stoops, turns, and uses fingers of both hands when assembling, repairing, and overhauling precision instruments. Handles soldering iron, screwdrivers, and wrenches during job process. Pushes and pulls on levers to operate turret lathe, lapping and polishing machines, milling machine, and electric drill. Grasps and holds parts against grinding and polishing wheels, using both hands. Reaches for, grasps, lifts, and carries tools and equipment weighing up to ___ pounds a distance of ___ feet. Reads blueprints, drawings or sketches, and inspects parts visually and with fingers of either hand for defects or flaws. Receives and gives oral instructions.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated room. Exposed to vibration from grinding operations, and to noise from many machine operations.

DETAILS OF HAZARDS: Possibility of burns from hot soldering iron, and of cuts from sharp-edged tools, parts, and grinding wheels.

***JOB DEFINITION:** Specializes in the construction, alteration, or repair of mechanical instruments or the mechanical portions of electrical and optical instruments, requiring highly skilled workmanship and extreme accuracy for observations and scientific operations in the field for which the instrument is to be made; works from drawings, blueprints, rough sketches, or oral instructions; operates precision machinery of all kinds, such as lathes, drills, grinders, milling machines, lapping and polishing machines; brazes, welds, solders, hardens, anneals, and tempers metals; works in iron, steel, copper, aluminum, platinum, silver, nickel or any alloy, bakelite, ivory, bone, glass, or other material; paints, lacquers, enamels, engraves, or otherwise finishes instruments and cases.

APPRENTICEABLE OCCUPATIONS

Dictionary Title MACHINIST, OUTSIDE* Occupational Code 4-75.150

Apprenticeship Title Machinist, Marine

Industry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Climbs ___ feet up and down hulls, ramps, stairs, and ladders and walks ___ feet about ship ___ hours while carrying tools and parts weighing up to ___ pounds. Intermittently stands, stoops, turns, crouches, and kneels while reaching for, grasping, lifting, and handling mechanic's tools, and electric drill; fingers calipers, micrometers, and gages ___ hours to install and repair machinery. Pushes and pulls on parts to position and remove them from machines. Turns switches to start and stop various machines used during job process. Listens to machinery in operation for sounds of malfunctioning. Observes all operations. Receives and gives oral directions.

DETAILS OF WORKING CONDITIONS: Works with others inside engine room and outside on decks in all kinds of weather. Works in high places and in cramped quarters between machinery. Exposed to noise and vibration of many machine operations and to heat, dust, and dirt in engine rooms.

DETAILS OF HAZARDS: Possibility of cuts from sharp-edged tools, of burns from contacts with hot engines, of injury from parts dropped by overhead hoists and from falling off high places, and of injury to eyes from rays of electric welding arcs used by other workers.

***JOB DEFINITION:** Installs such machinery in a ship as propelling machinery, steam, Diesel, or electric auxiliaries, pumps, cargo-handling machinery, anchor-handling gear, ventilating and fire-fighting equipment, steering gear, and armament, working from blueprints and using hand and portable tools, such as calipers, micrometers, gages, files, and electric drills: installs below-deck auxiliaries, such as evaporators, stills, heaters, pumps, condensers, and boilers, and connects them to steam-pipe systems; completes the installation of temporarily connected piping systems in machinery spaces; lays out holes required for the passage of connections, such as shafting and steam lines, through bulkheads, decks, and other surfaces; tests and inspects installed machinery and equipment during dock and sea trials. May use such machine shop tools as lathe (m), boring mill (m), planer (m), shaper (m), slotter (m), and milling machine. May repair ship machinery.

APPRENTICEABLE OCCUPATIONS

Dictionary Title DIE SINKER* Occupational Code 4-76.010Apprenticeship Title Die SinkerIndustry Machine Shop

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands at shaping machine and workbench during major portion of working day. Stoops and, extending either or both arms, reaches for, grasps, and lifts material weighing up to ___ pounds and carries it ___ feet about job site to position it in machine or on workbench. Pushes and pulls on machine levers to operate machine and on handle of vise to hold die in place. Fingers handscrew ___ hours to raise and lower tool for cutting and calipers and gages ___ hours to measure parts. Handles scrapers, chisels, files, brushes, and tallow stick ___ hours during job process. Observes all operations and reads calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop which is noisy from metal-working machines.

DETAILS OF HAZARDS: Possibility of injuries from flying chips of steel.

*JOB DEFINITION: A DIE MAKER II who may make or finish dies, but usually performs a particular operation on sets of dies, such as cutting designs or lettering called for in the finished product, or cutting, by routing and profiling operations, deep cavities in forge dies.

APPRENTICEABLE OCCUPATIONS

Dictionary Title DIE MAKER II* Occupational Code 4-76.010
DIE MAKER I** 4-76.020

Apprenticeship Title Die Maker

Industry Machine Shop; Jewelry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands at shaping machine and workbench during major portion of working day. Stoops and, extending either or both arms, reaches for, grasps, and lifts material weighing up to ___ pounds and carries it ___ feet about job site to position it in machine or on workbench. Pushes and pulls on machine levers to operate machine and on handle of vise to hold die in place. Fingers handscrew ___ hours to raise and lower tool for cutting and calipers and gages ___ hours to measure parts. Handles scrapers, chisels, files, brushes, and tallow stick ___ hours during job process. Observes all operations and reads calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop which is noisy from metal-working machines.

DETAILS OF HAZARDS: Possibility of injuries from flying chips of steel.

JOB DEFINITIONS: *Specializes in the construction, repair, and maintenance of dies for forging, punching, stamping, or other metal forming work.

**Makes a set of dies to be used in forming metal blanks into various shapes for jewelry: marks out outline of design on flat surface of soft steel block with pointed instrument, following sketch; mounts block in small vise and cuts out lines of design, using small hand tools; chips and cuts away metal to form image represented on sketch, using metal-working machines and hand tools; checks dimensions of work with calipers and gages; hardens and tempers steel block (hub), and drives it into another block of soft steel to form sunken design, using a press (m), or sends hub to machine shop for processing; cleans design in hardened half of die with hand tools; engraves other half of die in a soft steel block, working from sketch or from a template formed by pounding thin sheets of metal into completed half of die; hardens and tempers second part of die or sends it to machine shop for processing. May engrave lettering and designs into dies, using a pantograph engraving machine.

APPRENTICEABLE OCCUPATIONS

Dictionary Title TOOL-AND-DIE MAKER* Occupational Code 4-76.040

Apprenticeship Title Tool-and-Die Maker

Industry Machine Shop

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and sits ___ hours at work-bench and machines. Walks up to ___ feet around shop while performing duties. Stoops and uses both hands to grasp and lift materials and tools weighing up to ___ pounds and to position them on bench and machine table. Intermittently stoops and reaches to handle and finger machine controls. Handles hammers, files, wrenches, screwdrivers, scrapers, emery cloth and precision measuring instruments ___ hours during job process. Pushes and pulls clamps, levers, and wrenches ___ hours to hold materials in position and to place new machine tools or dies in production machine. Reads blueprints and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop. Exposed to noise of many machine operations.

DETAILS OF HAZARDS: Possibility of minor cuts from sharp edges of material and tools handled and of injury to fingers if caught in operating parts of machine.

*JOB DEFINITION: Constructs, repairs, and maintains machine shop tools, jigs, fixtures, and instruments, calibrating them according to specifications, and also dies used for forging, punching, stamping, and other metal forming work; operates various machine tools, performing lay-out work and fitting and assembling parts as necessary.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ROLL TURNER I* Occupational Code 4-78.011

Apprenticeship Title Turner, Roll

Industry Iron and Steel

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands on cement floor or wooden platform during entire working period. Walks ___ feet about machine. Turns, stoops, and, using either or both hands, reaches for, grasps, and lifts metal pieces weighing up to ___ pounds, carrying them to and from machine. Pushes and pulls on hand wheels, levers, and small hand wrenches ___ hours. Uses fingers of either or both hands ___ hours to turn small adjusting screws and nuts and to adjust precision measuring devices. Pulls on chain hoist to lift heavy stock. Reads calibrations on measuring instruments. Listens for oral instructions and any malfunctioning of machine.

DETAILS OF WORKING CONDITIONS: Works around others inside an adequately lighted and ventilated shop. Exposed to noise and vibration from many machine operations. Work is dirty from contact with grease and oil on machines and materials.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from handling sharp metals and tools.

***JOB DEFINITION:** An ENGINE-LATHE OPERATOR I who finishes iron or steel rolls on a lathe (m) to various shapes and diameters for use in the rolling mills.

APPRENTICEABLE OCCUPATIONS

Dictionary Title SHEET-METAL WORKER II* Occupational Code 4-80.010

Apprenticeship Title Sheet-Metal Worker (Construction)

Industry Sheet Metal

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, stoops, turns, walks, climbs, crawls, crouches, and kneels during job process. Using either or both arms and hands, reaches for, grasps, lifts, and carries tools and material, weighing up to _____ pounds _____ feet to position them on workbench and machines _____ hours. Handles and fingers hacksaws, riveting machine, power shears, drills, mallets, soldering iron and punches. Pushes and pulls on material, vises, and machine operating levers to assemble, repair, or fabricate sheet metals _____ hours. Fingers calipers, dividers, micrometer, pencil, and scribe to mark and measure parts to specifications _____ hours. Reads blueprints and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others outside and inside with adequate light and ventilation amid noisy surroundings.

DETAILS OF HAZARDS: Possibility of receiving cuts and bruises from tools or material and burns from hot solder.

***JOB DEFINITION:** Fabricates, assembles, alters, repairs, and installs sheet-metal articles and equipment: cuts metal with hand shears, rotary shears (m) and square shears (m); shapes metal with brake (m) and forming machine; punches or drills holes for rivets, bolts, and screws with center punch and hammer, or hand drill; assembles sheet-metal parts, brackets, and hangers; bolts, rivets, or fits them into units for erection; makes attachments, seams, and joints by welding, riveting, bolting, soldering, nailing, or by fastening with metal ties and wood screws; grinds or files seams, joints, or rough surfaces, with grinding wheel or file. May mark lay-out on sheet metal according to blueprints or specifications.

APPRENTICEABLE OCCUPATIONS

Dictionary Title SHEET-METAL WORKER, AIRCRAFT II* Occupational Code 4-80.060

Apprenticeship Title Sheet-Metal Worker (Aircraft)

Industry Aircraft Manufacturing

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, walks, climbs, crawls, and kneels during job process. Stoops, turns, and, using both hands, reaches for, grasps, and lifts sheet metal weighing up to _____ pounds to position it on workbench, in annealing furnaces and baths and in machines. Holds metal sheets against metal saws, power shears, shaper, and drill press to fabricate parts _____ hours. Handles welding equipment, soldering iron, hammers, mallets, and pliers, and fingers calipers, squares, rulers, scribes and dividers _____ hours. Reads blueprints and calibrations on measuring instruments and closely observes all operations. Pushes and pulls switches and depresses buttons to regulate and operate machines.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated plant. Exposed to loud noises from hammering on sheet metal parts, and to heat from annealing furnaces.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from sharp edges of metal, of bruises from use of hammers, and of burns from annealing furnace.

***JOB DEFINITION:** Fabricates, assembles, alters, repairs, and installs all aircraft sheet metals, such as aluminum, Duralumin, steel, tin, brass, zinc, or galvanized iron; lays out metal parts according to blueprint specifications and fabricates parts, using sheet metal shop equipment including punches, drills, and metal saws; welds, brazes, or solders parts together; performs necessary heat treating operations; anneals metal parts as required.

APPRENTICEABLE OCCUPATIONS

Dictionary Title COPPERSMITH II* Occupational Code 4-80.080

Apprenticeship Title Coppersmith

Industry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours at workbench and aboard ship to perform job processes. Stoops, crouches, and, using both hands, reaches for, grasps, and lifts pipes, tools and sheet copper weighing up to ___ pounds and carries them ___ feet to position them on workbench or in ship. Pushes loaded truck weighing ___ pounds up to ___ feet. Pulls on chain hoist to lift heavy materials and uses both hands to push and guide material along monorail. Climbs ___ foot ladders, ramps, and scaffolds; stooping, crouching, turning, and kneeling while pushing and pulling on pipes ___ hours to position them. Handles finishing and sparking hammers, mallet, files, pliers, oil or oxyacetylene torch and soldering iron ___ hours during job process. Fingers rules, squares, templates, levels, and gages ___ hours to take measurements, working to a tolerance of 1/16-inch. Observes all operations, using color vision to determine malleability of copper. Reads blueprints, work orders, and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works with others inside well lighted and ventilated shop and outside on ship in high places and in cramped quarters. Exposed to loud noises.

DETAILS OF HAZARDS: Possibility of burns from hot metals and torches, of skin and respiratory irritations from sulfuric acid and metal fumes, and of falls from scaffolding or ladders.

***JOB DEFINITION:** Builds up assemblies of copper pipe and fittings and fabricates various articles of sheet copper: measures and cuts pipe lengths, slips fittings on them, and flares the ends with a hammer; using an oil or acetylene torch, cuts holes in pipes for branch lines, heats and manually bends pipe to desired shapes, and reduces pipe diameters by heating and drawing; solders pipe and fittings together to form complete assemblies; lays out, cuts, bends, solders, and rivets various shapes from sheet copper. May tin and lead-line the inner surface of pipe sections that are to carry salt water.

APPRENTICEABLE OCCUPATIONS

Dictionary Title	MOLDER, BENCH I*	Occupational Code	4-81.010
	MOLDER, FINISH		4-81.020
	MACHINE MOLDER, ROLL-OVER		4-81.025
	MOLDER, FLOOR		4-81.030
	MOLDER, PATTERN		4-81.040
	MACHINE MOLDER, SQUEEZE		4-81.050

Apprenticeship Title Molder

Industry Foundry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours, intermittently stooping, turning, crouching, and kneeling to perform molder's duties. Uses either or both hands to reach for, grasp, and lift patterns, and cores weighing up to ___ pounds and carries them approximately ___ feet to position them in flasks. Stoops, and, extending both hands, shovels sand into flask, and grasps a two-handled rammer to compact sand ___ hours. Pushes and pulls a strike-off bar across flask, using both hands ___ hours. Smooths irregularities with a spoon or with fingers of both hands. Aided by a Helper, taps pattern with a mallet or hammer held in one hand, while withdrawing mold with other hand ___ hours. With either hand, signals crane operator to lift, turn over, or shift heavy flasks, molds, or patterns. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works with others inside foundry. Exposed to dust, dirt, heat, drafts, and sudden temperature changes when metal is being poured in molds and to loud noises from many machine operations.

DETAILS OF HAZARDS: Possibility of burns from hot metal and sparks, of irritation of lungs from breathing dust-laden air, of impairment to hearing from loud noises, and of sprains and bruises from lifting heavy materials and equipment.

***JOB DEFINITION:** Makes molds in which metal is cast. Depending on kind of mold required, works at a bench or on foundry floor, or uses a squeeze, jarring, or other foundry machine. (See Part I of the DICTIONARY OF OCCUPATIONAL TITLES for complete definitions of the above job titles.)

APPRENTICEABLE OCCUPATIONS

Dictionary Title COREMAKER I* Occupational Code 4-82.010Apprenticeship Title CoremakerIndustry Foundry

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	28.
<input checked="" type="checkbox"/> 14. Lifting	29.
<input checked="" type="checkbox"/> 15. Carrying	30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands at core bench during major portion of working day. Walks _____ feet about job site. Stoops, turns, and uses both arms and hands to reach for, grasp, lift, handle and carry cores, core boxes, iron core plates, and materials weighing up to _____ pounds approximately _____ feet. Handles scrapers, rammers, slick spoons, trowels, and wooden hammers _____ hours during job processes. Mixes and kneads sand and cement mixture and piles it into pattern, using both hands and arms _____ hours. Grasps and lifts cores into and out of ovens and onto racks or grills. Fingers vent and reinforcing wires to set them into position. Shovels sand onto screens, into table bins from floor. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated foundry. Exposed to dust, dirt, and noise of foundry operations and to high temperatures.

DETAILS OF HAZARDS: Possibility of burns to hands and arms from core oven or handling baked cores, of poisoning from cement, and of silicosis from sand.

***JOB DEFINITION:** Makes sand cores used in molds to form hollows or holes in metal castings: cleans core box, blowing out old sand with compressed air; dusts parting sand over inside of core box to facilitate removal of finished core; packs and rams core sand solidly into core box, using shovel, hands, and tamping tools; sets vent wires and reinforcing wires as sand rises in box, lifts box from core, leaving core on plate for handling and drying; repairs breaks in core with spoon; sends core to baking oven to harden it for use in foundry molds. May bake cores to harden them. May assemble cores of more than one part.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BOILERMAKER I* Occupational Code 4-83.100

Apprenticeship Title Boilermaker

Industry Boilermaking

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp.changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours to operate machines. Climbs _____ feet on ladders to staging; stands, stoops, crouches, and lifts up to _____ pounds. Twists and reaches above and below shoulder height while grasping, pushing, and pulling parts into position. Uses either or both arms and hands to reach for, grasp, lift, carry, and handle riveting gun, arc welding and burring equipment, chipping hammer, crowbars, and wrenches weighing up to _____ pounds to secure parts into position. These job operations when performed in cramped quarters require the additional physical activities of kneeling, crawling, and sitting. Discusses work with others and observes ruler graduations of 1/16-inch.

DETAILS OF WORKING CONDITIONS: Works with others inside and outside. Exposed to noise and vibration from chipping, riveting and hammering; to welding fumes, asbestos dust, hot metal, and flying sparks.

DETAILS OF HAZARDS: Possibility of cuts from sharp-edged metal parts, of burns from hot metal, of injury to hearing from loud noises, of respiratory irritation from asbestos dust, and of falls from staging or ladders.

***JOB DEFINITION:** Performs any or all machine and hand operations necessary to fabricate and assemble boilers, tanks, vats, and other vessels made of heavy steel plates: lays out work on plates; cuts plates to size and shape; punches holes in plates for rivets or bolts; bends angle irons or plates to desired radius; forms flanges on plates; forms concave plates for boiler or tank heads; forms or shapes plates in bulldozer (m); bends plates; assembles headers, tubes, baffle plates, and other parts, riveting or welding parts together; calks seams and rivet heads; chips burrs from plate edges; fastens boiler tubes or flues into headers, expanding tube ends with an expanding tool.

APPRENTICEABLE OCCUPATIONS

Dictionary Title STRUCTURAL-STEEL WORKER* Occupational Code 4-84.010

Apprenticeship Title Iron Worker, Structural

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input checked="" type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Walks ___ feet, stands, and sits during job process. Climbs ___ feet on ladders and scaffolding, maintaining balance while working there. Stoops, turns, and, using both arms and hands, reaches for, grasps, lifts, and handles air hammers, acetylene torches, riveting guns, and wrenches. Occasionally kneels and crawls in cramped working places. Pulls on hoist chain to raise equipment and tools. Observes all operations. Receives and gives oral instructions.

DETAILS OF WORKING CONDITIONS: Works with others inside and outside. Exposed to loud noises from riveting and construction operations, to metallic dust from chipping, and to vibration from riveting gun.

DETAILS OF HAZARDS: Possibility of injury from falls off catwalk, of burns from hot metal and acetylene torch, of injury to eyes from glare of electric arc, and of being struck by crane carrying heavy material.

*JOB DEFINITION: Works as a member of a group that raises and places fabricated structural steel members, such as girders, plates, and columns, and unites them permanently to form a completed structure or the framework of a structure. Usually structural steel work is broken down into various phases, such as rigging up hoisting equipment, raising (erecting) steel, and riveting, with separate gangs (raising gang, riveting gang) performing each phase. The workers are usually, though not always, interchangeable on all phases of work except the heating of rivets, which requires a technique not possessed by all workers.

APPRENTICEABLE OCCUPATIONS

Dictionary Title SHIPFITTER* Occupational Code 4-84.012

Apprenticeship Title Shipfitter

Industry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Walks up to ___ feet and climbs ___ feet up and down hull ramps and stairs, using either or both arms to carry materials weighing up to ___ pounds. Stands, stoops, turns, and crouches while reaching above and below shoulder height to lift and handle rules, gages, welding rod, micrometer, center punch, hammer, and fourteen-pound portable grinder. Crouches, and, using both arms, grasps and lifts plates weighing up to ___ pounds; reaches above and below shoulder height in inserting them in position. Reaches forward to push and pull heavier installations into position. Discusses work with others and reads 1/16-inch ruler graduations.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated shop and outside on assembly skids. Exposed to dirt, grease, loud noises, and vibration from many machine operations in shop. Frequently works in cramped quarters.

DETAILS OF HAZARDS: Possibility of burns from hot metals, of injury to eyes from rays of electric welding arcs, of being struck and injured by materials carried by cranes, of cuts from sharp-edged materials, and of impairment of hearing from loud noises.

***JOB DEFINITION:** Fits large, structural members, such as plates, bulkheads, and frames within the hull of a ship and braces them in position for final riveting or welding; studies blueprints and actual locations and lays out positions of the members; forces members into alinement, using drift pins, wedges, jacks, hoists, and other such equipment, and braces them into position with planks, poles, or guy wires; marks holes to be drilled and any alterations to be made; similarly installs and fits small structural accessories and members, such as doors, hatches, brackets, and clips; prepares, directly from the hull, molds and templates for the fabrication of parts which, because of their unusual design or shape, cannot be accurately predetermined in the mold loft.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ORNAMENTAL-IRON WORKER* Occupational Code 4-84.020

Apprenticeship Title Iron Worker, Ornamental

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooing	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Walks, stands, stoops, and turns around workbench and climbs, crawls, crouches, and kneels about job site. Using either or both arms and hands, reaches for, grasps, and lifts material weighing up to _____ pounds to position it on workbench. Handles wrenches, bolts, drills, welding rod, and hammers _____ hours to assemble ironwork. Fingers dividers, steel rules, squares, and chalk _____ hours to mark and measure parts to blueprint specifications. May push and pull on ironwork when assembling it or when positioning it on workbench. Reads calibrations on measuring instruments and blueprints and observes all operations.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated shop and in cramped quarters and high places. Exposed to constant loud noises from machinery operations and hammering.

DETAILS OF HAZARDS: Possibility of injury to hands and fingers from handling heavy iron parts.

***JOB DEFINITION:** Bolts, clamps, or otherwise fits together various kinds of iron grills, gratings, special stairways, ornamental enclosures, and other ironwork not included as structural ironwork; fastens ironwork to walls of buildings, by means of bolts, brackets, or anchors; fastens newel posts, balusters, or other parts of stairways by bolting to supports or imbedding them in sockets; forges, welds, cuts, and drills as needed.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BLACKSMITH II* Occupational Code 4-86.010Apprenticeship Title BlacksmithIndustry Forging

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands at workbench and forge ___ hours. Walks up to ___ feet around shop during job performance. Stoops, turns, and, using both hands, reaches for, grasps, lifts, and carries implements or materials weighing up to ___ pounds to the forge. Grasps and handles tongs, to pick up and hold object being forged with one hand while rapidly hammering it into shape with a hammer held in the other hand. Frequently inserts object being forged into and lifts it from forge and quenching medium. Handles tools and pushes them against grinding wheel when sharpening them. Pushes and pulls on levers and switches to operate pneumatic press, power hacksaw, and grinding wheel. Frequently handles electric arc torch or an oxyacetylene torch to weld metal. Visually observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted, but hot and odorous, shop. Exposed to loud noises from forging operations.

DETAILS OF HAZARDS: Possibility of burns to hands and arms from hot iron, torches, and forge; of metal fume fever; and of heat prostration from excessive furnace heat.

***JOB DEFINITION:** Forges metal articles and parts for the building, repairing, or manufacturing of equipment: heats metal in a forge and hammers it into desired shape on an anvil, in a steam, electric, or compressed-air-powered hammer; forge-welds metal by heating parts and hammering them together; sharpens hand and machine tools, such as chisels, drills, and picks, by heating them and hammering the cutting edges to proper shape; tempers metal by heating it to proper temperature and then dipping it into a quenching medium; repairs or builds equipment, such as sleds, wheelbarrows, small tools, and hooks. May operate an annealing furnace, power hacksaw (m), grinding wheels (m), and a pneumatic press (m). May cut and weld metal with oxyacetylene or electric-arc torch. May shoe horses.

APPRENTICEABLE OCCUPATIONS

Dictionary Title SPINNER IV* Occupational Code 4-94.201

Apprenticeship Title Spinner, Metal

Industry Machine Shop

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stoopng	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours at machines and workbench during job process. Stoops and, using both hands, reaches for, grasps, and lifts steel finishing chucks weighing up to ___ pounds and carries them ___ feet to work area. Frequently pushes and pulls a loaded hand truck weighing up to ___ pounds. Fingers a compass and scribe to mark outlines on sheet metal ___ hours. Handles metal snips. Lifts and positions sheet metal in power shear machine and then inserts cut metal in power hammer machine ___ hours. Extends both hands to handle and mount forming die and to press metal on it ___ hours. Using both hands and exerting pressure, manipulates a spinning tool against the metal to push it against forming die ___ hours. Reads work orders and discusses work with others. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted but poorly ventilated shop which is very hot in summertime. Exposed to constant loud noises of hammers and to vibration from operating spinning machines.

DETAILS OF HAZARDS: Possibility of crushing fingers or feet and straining muscles while handling heavy dies and shafts, of broken shoulder or arm from tools entangled in cracks of the spinning metal, of eye injuries from flying chips of metal, of friction burns from touching rotating metal, of cuts from slipping parts or tools, and of crushing fingers in power hammer.

***JOB DEFINITION:** Operates a lathe (m) on which shaped articles are spun from sheet metal stock: measures, marks, and cuts disks from sheet metal stock, and drills a hole in each disk, using marking devices, shear (m), and drill press (m), or lays out disks to be sheared and drilled by others; clamps disk to spinning form, mounted on headstock spindle, by forcing the follow block against the disk with tailstock; starts machine; coats outside of rotating disks with beeswax; manipulates a form tool, by hand, against the disk, forcing it to the shape of the spinning form; smooths and trims spun piece with hand tools; removes completed part from machine.

APPRENTICEABLE OCCUPATIONS

 Dictionary Title LEAD BURNER I*

 Occupational Code 4-95.031

 Apprenticeship Title Lead Burner

 Industry Any Industry

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	28.
<input checked="" type="checkbox"/> 14. Lifting	29.
<input checked="" type="checkbox"/> 15. Carrying	30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, climbs, crawls, kneels, and crouches during job process. Using both hands, reaches for, grasps, and (aided by Helper) lifts lead sheets or pipes weighing up to ___ pounds and carries them ___ feet to position them on bench or floor. Intermittently stoops, turns, and kneels, and, using either or both hands, handles carpenter's saw, lead knife, ball peen hammer, tinner's snips, scrapers, and torch ___ hours during job process. Pushes and pulls ___ hours on lead sections or pipes to fit them in place. Grasps and manipulates a torch held with one hand and a bar of lead held in the other hand to seal joints. Uses fingers of either hand ___ hours to turn valves on welding equipment while welding seams. Observes all operations. Gives oral instructions to Helpers.

DETAILS OF WORKING CONDITIONS: Works with others inside in adequately lighted and ventilated surroundings. Exposed to noise from hammering and welding and to odors from welding.

DETAILS OF HAZARDS: Possibility of burns from torch, and of cuts from sharp-edged tools and materials.

***JOB DEFINITION:** Installs and repairs lead linings of tanks, lead pipes, sheet lead flooring, and lead fixtures and equipment: cuts out section of sheet lead or lead pipe; scrapes and levels edges of old and new sections of lead; fits new section in place; applies flame of burner to joint, melting in additional lead from a bar and manipulating the torch to make a tight joint and trim the added lead to a smooth even contour; makes lead fittings, cutting and shaping the lead and burning it to seal the joints; may melt lead scrap, shavings, and surplus sheet lead, and cast it into bars or pigs. May band steel surfaces by burning lead into the joints. May supervise one or more helpers.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ELECTRICIAN I* Occupational Code 4-97.010

Apprenticeship Title Electrician (Construction)

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and occasionally walks ___ feet during job performance. Climbs ___ feet on ladder or scaffold and, using either or both hands, reaches for, pushes and pulls wires while working above floor level. Stoops and, using both hands, fastens wires to terminal lugs and posts ___ hours. Handles and fingers thumb-screws, pliers, and other tools; and handles switchboard panels to cut them on machines. Lifts and carries up to ___ pounds of material ___ feet or pushes truck weighing ___ pounds.

DETAILS OF WORKING CONDITIONS: Works as a team to wire switchboards, but usually works around others inside a well lighted and ventilated room. Occasionally works outside. Exposed to noise and dirt from construction operations.

DETAILS OF HAZARDS: Possibility of injury caused by falls from ladder or scaffolding, of electric shock and burns when connecting electric wires, and of cuts to hands from wires and saws.

***JOB DEFINITION:** Lays out, assembles, installs, and tests electrical fixtures, apparatus, control equipment, and wiring used in the alarm, radio, communication, light and power systems of buildings or other construction projects, or telecommunication systems: plans proposed installation from blueprints, sketches, or specifications; secures panel boards, switch boxes, pull boxes and other concealed or recessed equipment to the frame of the structure prior to erection of walls, the plastering of rooms, or pouring of concrete; measures, cuts, threads, bends, assembles and installs conduit which connects the various outlets, panels, and boxes, using tools such as hacksaw, pipe benders, and threading tool; draws wires through conduit; splices wires by removing (skinning) insulation from conductors, scraping conductors clean with a knife or cutting pliers, twisting conductors together, soldering the connection, and applying several layers of friction tape; installs and connects equipment to wiring system; tests circuits for continuity and proper connections, using a battery and buzzer or light bulb.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ELECTRICIAN, AIRPLANE I* Occupational Code 4-97.910
ELECTRICIAN, AIRPLANE II** 4-97.915

Apprenticeship Title Electrician (Aircraft)

Industry Aircraft Manufacturing; Air Transportation

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input checked="" type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours during job performance. Climbs ___ feet into and from airplane, intermittently stooping, turning, crouching, kneeling, and crawling inside plane while using both hands ___ hours to remove and replace fixtures, instruments, and radio sets. Pushes and pulls on parts and wires to dismantle, assemble, and install them. Using both hands, reaches for, grasps, and lifts parts and equipment weighing up to ___ pounds and carries them ___ feet between plane and repair shop. Handles wrenches, pliers, screwdrivers, soldering iron, and oxyacetylene welding apparatus ___ hours during job process. Fingers wires to make contact with terminals of testing equipment. Reads blueprints and findings on testing equipment. Observes all operations, using color vision to properly select colored wires. Gives oral directions.

DETAILS OF WORKING CONDITIONS: Works with others inside well lighted and ventilated hangar. Frequently works in very cramped quarters in plane. Exposed to loud noises from machine operations and hammering. Hands and clothing are soiled from parts.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from use of sharp-edged tools and parts, of burns from use of welding equipment, and of slight electric shocks from handling testing equipment and other wires.

JOB DEFINITIONS: *Installs electrical wiring, fixtures, and switches in aircraft: cuts insulated wire to length according to blueprint and installs it in conduits attached to the aircraft structure; scrapes ends of wire and

solders them to their respective terminals; installs wing-tip lights and tail-lights, interior light fittings, and dashlights; hooks up electrical equipment. May test electrical equipment and instruments, using various testing devices.

**Maintains and repairs airplane electrical equipment, such as wiring, conduits, electrical instruments, and small motors: removes defective equipment, using hand tools to disconnect the various units, such as motors and conduits; examines conduits before or after their removal from the airplanes for breaks and weak places; replaces defective conduit segments; inspects and tests junction boxes; rewires airplanes and installs new conduits, arranging wiring and conduits so that they do not become entangled or otherwise interfere with fuel lines or other equipment; replaces electric motors, and tests and repairs defective motors, using testing devices, such as meters and testboards; tests and repairs airplane lighting systems, including wiring, running and landing lights, and cabin lights. Does not repair airplane ignition systems. Must be licensed by the Federal Government.

APPRENTICEABLE OCCUPATIONS

Dictionary Title SHIP RIGGER* Occupational Code 5-05.570Apprenticeship Title Rigger, ShipIndustry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	_____ 28.	<input type="checkbox"/> 63. Adequate lighting	_____ 78.
<input checked="" type="checkbox"/> 14. Lifting	_____ 29.	<input type="checkbox"/> 64. Adequate ventilation	_____ 79.
<input checked="" type="checkbox"/> 15. Carrying	_____ 30.	<input type="checkbox"/> 65. Vibration	_____ 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours and climbs _____ foot ladders and rigging during job performance. Stoops, crouches, and, using both hands, reaches for, grasps, and lifts up to _____ pounds to carry acetylene burning torch, rope, cable, twine, and other parts up to _____ feet several times hourly. Stoops and crouches to reach out to push and pull horizontally and downward on marlin spike and two-foot lever _____ hours in cutting and splicing cable. Stoops, crouches, kneels, and sits, frequently crawling _____ feet while turning and reaching with both hands above and below shoulder height to handle cable, rope, grease gun, grinder, rigging accessories, and parts, and to finger small ropes in tying knots to install ship rigging _____ hours. Observes all operations. Orally directs the positioning of materials. Reads blueprint specifications.

DETAILS OF WORKING CONDITIONS: Works with others outside in high places on board ship. Frequently works in cramped quarters. Exposed to rays of electric welding arcs used by others, and to nearby chipping and hammering noises.

DETAILS OF HAZARDS: Possibility of injury from falling off masts and ladders, and of being struck and injured by materials carried or accidentally dropped by other workers and cranes.

***JOB DEFINITION:** Installs all tackle and fittings of wire and manila rope on a ship and fabricates and installs shroud stays, lifts, braces, life lines, and radio aerials, and other rigging fitted to masts, spars, and booms: lays out and cuts materials according to specifications, using shears and cutting pliers; splices wire cable and manila rope when necessary and splices or otherwise attaches necessary fittings onto rigging, using hand tools; fabricates essential wooden and rope assemblies; nails, bolts, or ties rigging in place; tests ship rigging and crane lifting rigging on shipboard for proper functioning. May install canvas work, such as tarpaulins, hatch coverings, and boat, gun, and bunk covers on board ship. May sew canvas parts by machine or by hand, using a sailmaker's needle.

APPRENTICEABLE OCCUPATIONS

Dictionary Title LENS GRINDER I* Occupational Code 5-08.070

Apprenticeship Title Lens Grinder

Industry Optical Goods

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Sits ___ hours at workbench during job performance. Stands, stoops, and, using either hand, reaches for, grasps, and lifts material and tools weighing up to ___ pounds, and carries them ___ feet to workbench. Uses both hands to fit lens in block and position block in machine head ___ hours. Pushes lens against dies, constantly exerting tension on handle of grinder ___ hours to attain sufficient grinding pressure. Uses fingers of either hand to smear rouge over surface of die. Uses calipers and gages ___ hours to measure lens. Reads prescriptions and calibrations on measuring implements and scales. Manipulates knobs and switches to operate machines.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated room. Subject to noise and vibration from grinding machine.

DETAILS OF HAZARDS: Possibility of injury from grinding equipment.

*JOB DEFINITION: Grinds lenses for spectacles to the curvature called for by prescription: places lap (grinding tool) on spindle of grinder (m); adjusts machine head that holds block lens against lap so that its dioptric scale corresponds to the notations of the prescription; starts machine, frequently smearing rouge over the lap to aid the grinding process; checks dimensions of lens with gages; washes lens in cold water to remove abrasive.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ORTHOPEDIC TECHNICIAN* Occupational Code 5-09.410

Apprenticeship Title Brace Maker, General

Industry Surgical Appliances

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours and/or sits _____ hours to perform job process. Stoops, turns, and, using either or both hands, reaches for, grasps, and lifts pieces of metal weighing up to _____ pounds and carries them up to _____ feet. Grasps, handles, pushes, and pulls steel sheets and other metal stock to cut, shape, and work it with hand tools and metal working machines _____ hours. Lifts, handles, pushes and pulls hand tools, acetylene torches, electric drills, and small riveting machines in cutting, shaping and assembling parts _____ hours. Fingers calipers and steel rules to measure parts. Reads blueprints and calibrations on measuring instruments. Examines parts visually.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated shop. Exposed to heat from forges, to noise from many machine operations, and to vibration from drills and riveting machines.

DETAILS OF HAZARDS: Possibility of cuts from sharp-edged tools and metal and of burns from hot metal.

***JOB DEFINITION:** Makes and repairs arch supports, orthopedic braces and appliances for feet, legs, and body deformities: forms plaster cast of limb or body deformity, and makes patterns from measurements of members to be fitted; cuts and fashions supports from stainless steel, plastics, cork, steel, and leather, using welding equipment, shears, rivet punch, electric drill, chisels, saws, hammers, and other hand tools; heats metal supports in forge or furnace and hammers them to shape; molds leather parts over wooden lasts and rivets them to braces with riveting machines; pads brace with leather, felt, and cork; polishes completed aids on buffing wheel; adjusts nuts and screws at joints of artificial limbs to insure proper bending radius, using wrench.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ARTIFICIAL-LIMB MAKER, WOOD* Occupational Code 5-09.430

Apprenticeship Title Artificial-Limb Maker (Wood)

Industry Surgical Appliances

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours and sits _____ hours to perform job process. Stoops, turns, and, using either or both hands, reaches for, grasps, and lifts small blocks of wood weighing approximately _____ pounds and carries them up to _____ feet between workbench and various machines _____ hours. Pushes and pulls handwheels and levers on woodworking machines to adjust and operate them. Grasps wood piece and holds it against blade of band saw to cut and shape it and against revolving disc of sanding machine to remove roughness _____ hours. Handles and fingers small hand carving tools such as knives, chisels, wood mallets, hammers and drills _____ hours. Fingers rivets, eyelets, and screws to insert them in place _____ hours. Visually inspects surface of wood. Reads work orders and specifications.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop. Exposed to noise from operation of woodworking machines, and to vibration when operating sanding and band-saw machines.

DETAILS OF HAZARDS: Possibility of cuts on hands and fingers from contact with machine saws and knives.

***JOB DEFINITION:** Makes wooden artificial limbs to customer's specifications: lays out wooden block, and cuts and hollows limb parts, such as ankle block, leg, and socket from block, using hand and machine carving tools; makes trial fitting of limb parts to insure proper alignment on assembly; marks positions for elbow or knee irons, bolts, and screws on limb. May cover limb parts with leather. May assemble limbs.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PATTERNMAKER, METAL* Occupational Code 5-17.010

Apprenticeship Title Patternmaker, Metal

Industry Foundry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands during major portion of working day. Stoops, turns, and, extending both arms, reaches for, grasps, lifts and carries material weighing up to 50 pounds ___ feet to workbench and various machines. Handles soldering iron, files and scraping tools ___ hours during hand finishing operations. Pushes and pulls levers and handwheels of milling, boring, turning, grinding and drilling machines ___ hours during machine finishing operations. Fingers calipers, gages, micrometers, steel rules, squares and straightedges ___ hours to check results according to specifications. Visually inspects pattern castings for defects and reads blueprints and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop. Surroundings are noisy and work is dirty.

DETAILS OF HAZARDS: Possibility of minor cuts and bruises from machinery and sharp-edged tools, and of burns from hot soldering iron.

***JOB DEFINITION:** Performs all machine operations on rough metal castings designed for use as metal patterns or core boxes, such as milling, boring, drilling, grinding, and lathe turning; performs all hand finishing operations on casting by filing, filling in low spots with solder, and sometimes painting the casting with aluminum paint; occasionally joins several patterns by soldering to a common gate (brass strip) so that several castings can be poured at one time; checks result with calipers, limit gages, depth and surface gages, micrometers, steel scales (rules), squares, and straightedges, in order that pattern conforms to the drawings or blueprints; may make sweeps (templates for use in making molds for symmetrical castings or for castings, portions of which are symmetrical).

APPRENTICEABLE OCCUPATIONS

Dictionary Title PATTERNMAKER, WOOD* Occupational Code 5-17.020

Apprenticeship Title Patternmaker, Wood

Industry Foundry; Planing Mill

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands during major portion of working day. Using both arms, reaches for, grasps, and lifts material and tools weighing up to 25 pounds; carries them between workbench and machines ___ hours. Pushes hand truck weighing up to ___ pounds, ___ feet in transporting materials. Stoops, turns, and, using either or both hands, handles saws, planes, chisels, gouges, and mallets. Pushes stock against blade of band and circular saws during job processes ___ hours. Fingers calipers, various gauges, micrometers, rules, squares, and straightedges to check results. Uses vision to examine stock for grain and to read blueprints and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated shop. Exposed to noise of many machine operations and to dust and dirt of woodworking machines.

DETAILS OF HAZARDS: Possibility of cuts from sharp-edged tools and of irritation of upper air passages from organic dust.

***JOB DEFINITION:** Builds wooden patterns, core boxes, and match plates according to dimensions shown on blueprints by gluing, nailing, screwing, sawing, planing, sanding, and painting, using hand tools, such as saws, planes, chisels, gouges, and mallets, and shop machines, such as band saw, circular saw, borer, router, lathe, planer, drill press, sander, and shaper; checks results with calipers, rules, shrinkage rules, protractors, squares, straightedges, and other measuring instruments; may make sweeps (templates) for making molds by sweep-molding method.

APPRENTICEABLE OCCUPATIONS

Dictionary Title FORM BUILDER I* Occupational Code 5-17.060

Apprenticeship Title Jig Builder

Industry Automobile Manufacturing; Aircraft Manufacturing

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours at workbench. Stoops, turns, and uses both arms and hands to reach for, grasp, lift, and position material weighing up to _____ pounds on workbench. Handles saws, chisels, hammers, files, and screwdrivers. Pushes and pulls levers of machines to operate them. Dexterously handles and fingers component pieces of metal and wood to assemble them. Sits _____ hours on a high stool while fingering and manipulating drafting implements, crayons, pencils, gages and other measuring devices. Reaches for, grasps, lifts, and carries sheets of material weighing up to _____ pounds between bench and machines approximately _____ feet. Observes all operations and reads blueprints and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others in a well lighted and well ventilated room. Exposed to vibration and noise from metal-working operations.

DETAILS OF HAZARDS: Possibility of cuts and bruises from handling material and hand tools.

*JOB DEFINITION: Builds forms, fixtures, jigs, or templates of wood or metal for use as guides or standards by other workers in mass production of mechanical conveyances, such as automobiles and airplanes; studies blueprint of part for which template, jig, or other fixture is to be built; lays out, cuts, and assembles component pieces of wood or metal; checks and measures finished assembly against blueprint. May assign machining duties to other workers.

APPRENTICEABLE OCCUPATIONS

Dictionary Title LOFTSMAN II* Occupational Code 5-17.210Apprenticeship Title Ship LoftsmenIndustry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Kneels and crawls on floor and occasionally crouches while reaching forward to handle and finger carpenter tools, electric drill, crayon, knife, and small paint brush during job process. Stoops and, using both arms and hands, reaches for, grasps, and lifts lumber weighing up to _____ pounds, and carries it _____ feet. Stands and stoops _____ hours at power saw, pushing and pulling lumber against blades and handling levers of power saw. Observes all operations and reads ruler graduations of 1/16-inch. Discusses work with others.

DETAILS OF WORKING CONDITIONS: Works inside around others in adequately lighted and ventilated room.

DETAILS OF HAZARDS: Possibility of injury from electric saw and drill.

***JOB DEFINITION:** Lays out to full scale, on the mold loft floor, the lines of a ship and develops and makes full-size wooden or paper templates or molds to conform to these lay-outs, using his knowledge of geometric construction and developments, and using such hand and woodworking machine tools as crosscut, rip and cut-off saws, planers, jointers and band saws. May construct working models of vessels.

APPRENTICEABLE OCCUPATIONS

Dictionary Title MOLD MAKER X* Occupational Code 5-17.310

Apprenticeship Title Mold Maker, Jewelry

Industry Jewelry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and sits ___ hours at workbench. Using both hands, reaches for, grasps, lifts and positions jewelry models and clay on workbench. Pushes jewelry model into clay, manipulating clay with both hands to build it around model ___ hours. Grasps a mixing stick with one hand and, adding plaster and water with the other hand, stirs mixture, using a circular or push-pull motion, to obtain proper consistency ___ hours. Lifts container of mixed plaster and pours it over model imbedded in clay. Handles brushes to clean mold and to apply shellac and lubricant ___ hours. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated room. Work is dirty.

DETAILS OF HAZARDS: None.

*JOB DEFINITION: Makes plaster molds of model jewelry articles preparatory to casting metal molds: presses model of jewelry article into clay and builds up the clay around the model to retain plaster; mixes plaster powder with water and pours it over the model imbedded in the clay to form the mold; allows plaster to set and removes the ornament; brushes off loose particles in the mold and applies shellac to preserve it and prevent absorption of moisture; repeats process to make other half of mold; lubricates the mold surfaces to prevent it from sticking in the sand mold.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BRICKLAYER II* Occupational Code 5-24.010Apprenticeship Title Brickmason or BricklayerIndustry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours, intermittently stooping, kneeling, crouching, and climbing _____ foot ladders while performing bricklaying operations. Using both hands, reaches for, grasps, and lifts bricks or tile weighing up to _____ pounds and carries them _____ feet to job site _____ hours. Grasps trowel with one hand, pushing and pulling on it to spread mortar on wall surface, and uses the other hand to grasp, lift, and position tile or brick in place according to size and shape _____ hours. Taps tile or brick lightly with trowel to move or shift it into correct position. Handles plumb bob and level _____ hours to determine accurate positioning. Reads findings on measuring instruments. Gives oral instructions.

DETAILS OF WORKING CONDITIONS: Works with others outside. Exposed to dust, dirt, and dampness from handling bricks and mortar. Works on ladders and on high scaffolds and frequently works in cramped quarters.

DETAILS OF HAZARDS: Possibility of injury from falls off ladders and scaffold, and of cuts on hands from sharp edges of bricks.

*JOB DEFINITION: Lays brick, terra cotta, hollow tile, and similar building blocks, except stone and marble, to construct walls, partitions, arches, fireplaces, chimneys, smokestacks, and other structures: lays brick in horizontal rows or in designs and shapes, spreading mortar with trowel over brick to serve as a binder, and tapping brick with trowel to imbed it firmly into mortar; checks vertical and horizontal alinement of structures, as work progresses, with plumb bob and level; finishes mortar between blocks with point of trowel; fastens brick or terra cotta veneer to face of structures with tie wires imbedded in mortar between bricks or in anchor holes in veneer brick; performs other duties peculiar to bricklaying, following recognized procedures and techniques for such work.

APPRENTICEABLE OCCUPATIONS

Dictionary Title STONEMASON* Occupational Code 5-24.210

Apprenticeship Title Stonemason

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	_____ 28.	<input type="checkbox"/> 63. Adequate lighting	_____ 78.
<input checked="" type="checkbox"/> 14. Lifting	_____ 29.	<input type="checkbox"/> 64. Adequate ventilation	_____ 79.
<input checked="" type="checkbox"/> 15. Carrying	_____ 30.	<input checked="" type="checkbox"/> 65. Vibration	_____ 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands on ground or climbs _____ foot scaffold, balances, crawls, crouches, and kneels to perform stonemason's duties _____ hours. Stoops and extends both arms; and reaches, grasps, pushes, and pulls on steel bar to aid in positioning stone _____ hours. Grasps and wields hammer _____ hours. Handles wooden wedges, trowel, and raking tool _____ hours. Occasionally pushes on stone when hoist is used to guide it into position. Reads level findings to keep wall level or plumb and to select proper size stones for spaces to be filled.

DETAILS OF WORKING CONDITIONS: Works with others outside, frequently in high places. Exposed to loud noises from hammering and construction.

DETAILS OF HAZARDS: Possibility of injury from falls from high places, of injury from crane carrying heavy stones, and of injury to lungs from inorganic dust.

***JOB DEFINITION:** Builds stone structures, such as piers, walls, and abutments; shapes stone preparatory to setting, using chisel, hammer and other shaping tools; spreads mortar over stone with a trowel; sets stone in place by hand or with aid of crane (m); finishes joints between stone with a pointing trowel; aligns stone with plumb line.

APPRENTICEABLE OCCUPATIONS

Dictionary Title TILE SETTER II* Occupational Code 5-24.410

Apprenticeship Title Tile Setter

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	___ 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	___ 78.
<input checked="" type="checkbox"/> 14. Lifting	___ 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	___ 79.
<input checked="" type="checkbox"/> 15. Carrying	___ 30.	<input type="checkbox"/> 65. Vibration	___ 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, walks, turns, stoops, crouches, kneels, crawls, climbs, and balances on platforms or ladders during job performance. Reaches for and grasps trowel with one hand and, after dipping trowel in cement or plaster, applies mortar to walls or floors ___ hours. Using one hand, grasps tile blocks and lays them in place in mortar. Holds trowel in other hand and taps tile blocks to imbed them in mortar ___ hours. Handles and fingers hammers, pincers, and chisels to shape tile when necessary. Fingers ruler to measure tile blocks and area to be tiled. Reads measurements and matches tile for color and shape.

DETAILS OF WORKING CONDITIONS: Works with others outside and inside well lighted and ventilated room. Exposed to noise, and to inorganic dust caused by hammering and chiseling when shaping tile blocks.

DETAILS OF HAZARDS: Possibility of injury from falls when working on scaffolding, and of cuts from sharp edges of tiled blocks or chisels.

***JOB DEFINITION:** Applies tile to walls, floors, and ceilings, according to specified designs: applies plaster coat and layer of cement to walls and taps tile blocks with trowel handle into mortar; sprinkles dry cement on fresh concrete sub-floor and lays tile; shapes tile when necessary, using hammer and chisel, and blacksmith's pincers.

APPRENTICEABLE OCCUPATIONS

Dictionary Title TERRAZZO WORKER* Occupational Code 5-24.510

Apprenticeship Title Terrazzo and Mosaic Worker

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Walks up to ___ feet around job site. Stoops, grasps, and handles a roll of roofing paper weighing up to ___ pounds to spread it over sub-floor as a base ___ hours. Intermittently stoops, crouches, kneels, or crawls and, using either hand, grasps and dexterously manipulates a trowel to apply and spread terrazzo mixture, using a push-and-pull stroke ___ hours. Using either or both hands, throws marble chips on soft surface of composition. Pushes and pulls an electric floor surfacing machine ___ hours to grind marble and polish surfaces. Observes all operations, using color vision in work on color patterns. Receives and gives oral instructions.

DETAILS OF WORKING CONDITIONS: Works with others inside and outside in adequately lighted surroundings. Exposed to dust, dirt, and moisture from sand-mixing operations, noise and vibration from polishing and grinding machine.

DETAILS OF HAZARDS: Possibility of mild respiratory disorders from free silica.

***JOB DEFINITION:** Applies to floors a durable, smooth surfacing composed of cement, sand, and marble particles, following color patterns and designs as specified: spreads roofing paper on sub-floor; spreads courses of composition on prepared surface with a trowel; scatters marble chips on soft surface; grinds and polishes terrazzo surface, guiding by a handle an electric floor-surfacing machine that is equipped with grinding and polishing stones.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CARPENTER I* Occupational Code 5-25.110

Apprenticeship Title Carpenter

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Alternately stands, walks, kneels, crawls, stoops, and turns to perform job operations. Frequently climbs ladders or scaffolding up to _____ feet high, maintaining body balance while working there. Using either or both arms, reaches for, grasps, lifts, and carries lumber or other material, weighing up to 100 pounds, about job site. Handles and fingers nails, hammers, planes, chisels, knives, drills, screwdrivers, and handsaws _____ hours to shape and fasten material together. Occasionally grasps a piece of material in either or both hands and pushes it against blade of a band or buzz saw to cut a desired pattern. Using both arms, pushes and pulls on material _____ hours to assemble and position it. Fingers rules, squares, levels, and gages _____ hours to measure to specifications and fingers pencils _____ hours to mark and trace patterns. Reads blueprints and observes job operations.

DETAILS OF WORKING CONDITIONS: Works around others inside and outside. Exposed to loud noises and to dust and dirt of construction operations. Frequently works in cramped positions and in high places.

DETAILS OF HAZARDS: Possibility of injury caused by falls from ladders and of cuts from sharp-edged tools.

***JOB DEFINITION:** Performs general carpentry work involved in the erecting of wooden building frames, installing exterior and interior trim, laying floors, building concrete forms, pouring chutes, wooden scaffolds, and similar work entailing the cutting, shaping, and fastening together of wood or material, such as fiberboard, that is treated and used the same as wood.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BOATBUILDER, WOOD* Occupational Code 5-25.610

Apprenticeship Title Boatbuilder (Small Wooden)

Industry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	___ 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	___ 78.
<input checked="" type="checkbox"/> 14. Lifting	___ 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	___ 79.
<input checked="" type="checkbox"/> 15. Carrying	___ 30.	<input checked="" type="checkbox"/> 65. Vibration	___ 80.

DETAILS OF PHYSICAL ACTIVITIES: Stoops, turns, crouches, kneels, crawls, and stands up to ___ hours; walks up to ___ feet about job site during assembling operations. Using both arms and hands, reaches for, grasps, lifts above and below shoulder level material or parts weighing up to ___ pounds. Pushes and pulls them into position during assembly process. Handles drills, saws, braces, hammers, screwdrivers, chisels, and calking tools during job process. Fingers steel rule and gages to check measurements. Reads blueprint specifications and observes all operations. Frequently climbs up to ___ feet on ladders or scaffolding.

DETAILS OF WORKING CONDITIONS: Works with others outside and inside adequately lighted and ventilated shop which is noisy from hammering and riveting operations.

DETAILS OF HAZARDS: Possibility of cuts and bruises from sharp-edged hand tools, and of injury from falls off ladders.

***JOB DEFINITION:** Constructs and repairs small wooden boats, floats, pontoons and motorboats, using such boatbuilder's tools as a drill and screwdriver, brace, hammer, saws, planes, chisels, and calking tools.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CARPENTER, SHIP* Occupational Code 5-25.640

Apprenticeship Title Shipwright or Carpenter, Ship

Industry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Climbs ___ foot ladders or steps about ship. Stoops or crouches and, using both arms and hands, reaches for, grasps, lifts and carries shoring materials weighing up to ___ pounds as far as ___ feet. Stands, stoops, crouches, and reaches above and below shoulder height to grasp, push and pull horizontally, upward and downward to position shoring and to operate jack. Intermittently handles 8-pound sledge, broadax, adz, and all carpenter's tools. Discusses work with others. Reads blueprints and ruler graduations of 1/16-inch.

DETAILS OF WORKING CONDITIONS: Works with others inside ___ hours and outside ___ hours. Exposed to rays from electric welding arcs, to dampness, and to loud noises from nearby chipping and hammering. Frequently works in cramped quarters.

DETAILS OF HAZARDS: Possibility of injury from falls off ladders or stairs, of injury to eyes from electric welding arcs, of being struck by objects carried by crane, and of impairment of hearing from nearby chipping and hammering noises.

***JOB DEFINITION:** Performs skilled carpentry operations in the construction of a ship or in the making of repairs, using carpenter's tools, the broadax and the adz: builds wooden foundations, lines up and trues keel blocks, sets shores, erects stages, builds ship's cradle, and prepares vessels for launching; also lays decks, and prepares and installs in a vessel the necessary backing strips, furring pieces, aprons, uprights, sills and other wood framing against which the finished work is supported; also prepares cargo battens and wood sheathing for bulkheads. May perform all carpentry necessary for repairs and new construction aboard a ship at sea.

APPRENTICEABLE OCCUPATIONS

Dictionary Title JOINER VI* Occupational Code 5-25.650

Apprenticeship Title Joiner

Industry Ship and Boat Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Climbs ___ foot ladders, ramps and staging; and balances and crawls. Stands, stoops, and, using both hands, reaches forward to grasp, lift and carry lumber, templates, and wooden parts weighing up to ___ pounds as far as ___ feet. Reaches forward to push and pull fittings weighing up to ___ pounds into position. Handles hammers, saws, chisels, screwdrivers, and electric drills to assemble and fashion wood and metal articles. Fingers rulers, compasses, squares, and pencil to check measurements of assembly and templates. Reads calibrations on measuring instruments and blueprints and observes all operations.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated shop and inside compartments aboard hulls in cramped quarters. Exposed to loud noises from many machine operations, dust from woodworking machines.

DETAILS OF HAZARDS: Possibility of cuts to hands and arms, of injury from falls off ladders or staging, and of impairment to hearing from nearby chipping and machine operations.

***JOB DEFINITION:** Assembles, fits, and securely joins wooden parts of vessel interiors, such as furniture, cabinets, closets, and berths, and installs these in vessels under construction or repair, using hand and powered tools: fits and assembles prefabricated parts into finished units of furniture; lays out and cuts decorative paneling and bulkhead sheathing from wood or composition material; lays out on light sheet-metal, for fabrication by other workers, such items as berth supports, storage racks, and flooring; locates and fits light metal fittings on shipboard, to blueprint specifications, cutting or grinding them to size as necessary with hand and power tools; installs the fitted items by drilling and bolting, riveting, screwing, or tack-welding, as specified; lays linoleum on interior decks, and wooden decking on exterior decks. May calk the seams of wooden decks. Does not perform carpentry of a heavy or rough character.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CEMENT FINISHER II* Occupational Code 5-26.100

Apprenticeship Title Cement Finisher

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, kneels, stoops and turns while performing the following operations: Grasps shovel with either or both hands and lifts shovelfuls of cement weighing _____ pounds, and throws into mold _____ hours. Using either hand, reaches for, grasps, handles, pushes, pulls, and draws floating trowel, finishing trowel, and screed over wet concrete _____ hours to smooth and spread it. Observes operations. Grasps chisel with one hand and a mallet with other; holds chisel against rough spots and, striking mallet against chisel, knocks off rough spots. Using both hands, reaches for, grasps, handles and fingers chalk line, spirit level tool, squares, and ruler in making measurements of construction.

DETAILS OF WORKING CONDITIONS: Works with others inside _____ hours and outside _____ hours. Surroundings are wet, dirty, and dusty from cement.

DETAILS OF HAZARDS: Possibility of skin irritation from cement.

*JOB DEFINITION: Secures a surface of specified texture on floors, walls, or other float cement surfaces by using hand tools, such as trowels, floats, and screeds; finishes vertical surfaces by wetting surface and rubbing with abrasive, chipping bad spots with cold chisel and hammer and patching holes with fresh concrete; refinishes old concrete by roughing (chipping) the surface and using a trowel to spread a layer of new concrete which sometimes requires special coloring or mixing. May supervise the subgrade work, the mixing of concrete, and the proper setting of the forms.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PAINTER I* Occupational Code 5-27.010

Apprenticeship Title Painter

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Intermittently sits, stands, stoops, turns, crouches, crawls, kneels, and climbs scaffolding or ladders. Walks ___ feet to and from supply room to obtain supplies and equipment. Uses either or both hands and arms to reach for, grasp, lift, and carry cans of paint, brushes, ladders weighing approximately ___ pounds, and spray gun to working area. Grasps mixing stick with one hand and, adding ingredients with the other, stirs paint with a circular motion to obtain desired color and texture. Observes painting operations and paint for texture and color. Using either hand, grasps paint brush, dips brush into can, and using a push-and-pull motion draws brush over surface to be painted. Occasionally reaches for, grasps, lifts, and manipulates spray gun ___ hours to paint surface.

DETAILS OF WORKING CONDITIONS: Works with others inside ___ hours and outside ___ hours. Exposed to paint and mixing-ingredient fumes during working day. Works on high places and occasionally in cramped quarters.

DETAILS OF HAZARDS: Possibility of injury from falls from scaffold and ladders, and of irritation of eyes and respiratory tract due to use of paints.

***JOB DEFINITION:** Performs all classes of painting work, such as painting the exterior of houses, sheds and other structures, and painting and decorating the interior of buildings; mixes paint and matches colors by stirring together the proper proportions of pigment, base, and thinner; uses brushes and spray gun to apply paint; erects working scaffold; removes old paint by applying liquid paint-remover or by heating surface with blowtorch and scraping off paint.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PAPERHANGER II* Occupational Code 5-28.100Apprenticeship Title PaperhangerIndustry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input checked="" type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, kneels, crouches, turns, stoops, and walks about job site to perform paperhanging duties. Climbs ___ foot ladders, carrying strips of wallpaper in one hand. Maintains body balance while working on ladders ___ hours. Extends both arms and hands to reach for, grasp, and lift equipment and paper weighing up to ___ pounds. Carries them ___ feet. Grasps a paste brush with either hand and applies sizing to walls and paste to paper, drawing brush over surface ___ hours with a push-and-pull motion. Handles scissors or a knife ___ hours to cut paper to proper size. Lifts and holds strip of paper in position with one hand ___ hours, smoothing it in place with a dry brush and a seam roller held in the other hand. Occasionally prepares wall for papering by manipulating a scraper, sandpaper, and a trowel, using either or both hands. Fingers a ruler ___ hours to measure surfaces of room. Uses vision to match patterns and seams of wallpaper and to read calibrations on measuring rule.

DETAILS OF WORKING CONDITIONS: Works alone inside with adequate light and ventilation. Work is dirty.

DETAILS OF HAZARDS: Possibility of injury from falls off ladders, and of cuts to hands or fingers from sharp-edged knife and scissors.

***JOB DEFINITION:** Covers interior of rooms with strips of wallpaper or fabric; measures wall and ceiling areas; measures and cuts paper from roll with scissors; applies coating of size (watery glue) to walls and ceiling with brush; mixes paste to desired consistency with water, and applies to reverse side of paper with paste brush; places paste-coated paper on wall or ceiling in strips, smoothing it in place with dry brush; matches adjacent edges of figured paper; cuts overlapping ends at ceiling and baseboard lines, and smooths seams between adjacent strips with seam roller. May scrape off old paper when repapering walls, using water and scraper, and fill cracks with quick-setting plaster, using a small trowel.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PLASTERER I* Occupational Code 5-29.100

Apprenticeship Title Plasterer

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Walks, stands, kneels, stoops, turns, crawls, crouches, and climbs ladders. Uses both hands to reach for, handle, grasp, lift, and carry ladders weighing _____ pounds, bags of plaster weighing _____ pounds, and various plasterer's tools. With one hand and arm, reaches for and grasps a hawk and with the other hand and arm a trowel which he swings in a 90° arc for _____ hours in applying and smoothing plaster to walls. Handles paint brush and draws it over plastered surface with a push-and-pull motion _____ hours to aid in hardening process. Grasps and lifts a straightedge and, holding it vertically, tests the wall for straightness. Observes work.

DETAILS OF WORKING CONDITIONS: Works inside well lighted and ventilated room. Exposed to constant dampness from mixing and using wet plaster. Works with others.

DETAILS OF HAZARDS: Possibility of falls from high places.

*JOB DEFINITION: Applies plaster to walls and ceilings: spreads plaster over laths with trowel; smooths surface by rubbing darby (a narrow, level board with handles at each end) over the plaster; may coat the back surface of pre-cast ornamental plaster with plaster mortar and stick or set it by pressing it into the wall or ceiling. May do "three-coat work," which is usually done on flat surfaces; the first coat, consisting of plaster containing hair, is well scratched and roughly smoothed; the second coat, which is like the first, except that it contains no hair, is put on and floated; the third or finish coat, consisting of lime and plaster of paris, is put on very thin and the surface smoothly finished.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PIPE FITTER I* Occupational Code 5-30.010

Apprenticeship Title Pipefitter

Industry Construction

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 58. Wet	<input checked="" type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours at workbench and job site. Climbs ___ foot ladders and scaffolds several times daily, maintains body balance while working there. Stoops and, using both hands, reaches for, grasps, and lifts pipes weighing up to ___ pounds and carries them ___ feet between workbench and job site. Stoops, kneels, crouches, and, using both hands, pushes and pulls on pipes ___ hours while installing them. Handles chisels, hammers, and oxyacetylene torch ___ hours during job process. Pushes and pulls ___ hours on levers of pipecutter, vise, stock and dies to cut and thread pipes. Uses fingers of either or both hands to assemble pipes with couplings, nuts, bolts, and wrenches ___ hours. Uses squares, compasses, and squares ___ hours to locate position where pipes are to be installed. Reads blueprints and calibrations on measuring instruments, and observes results of hydrostatic pressure tests.

DETAILS OF WORKING CONDITIONS: Works with others outside and inside adequately ventilated and lighted shop. Exposed to noises, dust, and dirt from construction work. Frequently works in cramped positions and in high places when installing pipes.

DETAILS OF HAZARDS: Possibility of injury from falls off scaffolding and ladders, of burns on hands from use of oxyacetylene torch, and of cuts to hands from use of sharp-edged tools and pipes.

***JOB DEFINITION:** Installs, bends, cuts and threads air, water, and gas pipe and fittings; locates position of pipe by measuring; cuts holes in walls or floors with an ax, saw, or drill; bolts or screws pipe hangers to supports; cuts large pipe to correct length with chisel and hammer, or oxyacetylene torch, and small pipe with pipe-cutting machine; threads pipe with stock and dies; bends pipe by hand-driven or power-driven machines; assembles pipe with couplings and fastens pipe to hangers; if pipe has flange fittings, places gasket in flanges and bolts pipes together; calks pipe, makes hydrostatic pressure tests of complete work.

APPRENTICEABLE OCCUPATIONS

Dictionary Title PLUMBER I* Occupational Code 5-30.210

Apprenticeship Title Plumber

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, walks, kneels, crouches, stoops, and turns during job process. Occasionally climbs ladders up to ___ feet, maintaining body balance while working. Using either or both arms and hands, reaches for, grasps, and lifts tools and materials weighing up to ___ pounds and carries them ___ feet between workbench and job site. Handles chisels, hammers, and oxyacetylene torch, and pushes and pulls on levers of pipecutter, vise, stock and dies ___ hours to cut and thread pipes. Uses fingers of either or both hands to assemble pipes and fittings with nuts, bolts, and wrenches. Pushes and pulls on pipes to position them. Uses rulers, compasses, and squares to measure and locate openings. Reads blueprints and calibrations on measuring instruments. Receives and gives oral instructions.

DETAILS OF WORKING CONDITIONS: Works with a PLUMBER HELPER in buildings, sometimes in high places or cramped quarters. Work is dirty and wet.

DETAILS OF HAZARDS: Possibility of injury from heavy lifting, and of bruises and cuts from tools.

***JOB DEFINITION:** Assembles and installs air, gas, water, and waste-disposal system: cuts openings in walls for pipes; bends pipe over blocks by hand; cuts, reams, and threads pipe; calks joints; wipes joints; pours molten solder over joints and spreads and shapes solder with a cloth; tests joints and pipe system for leaks by filling pipe with water under pressure and checking with a gage for a fall in pressure; installs gas, water, and sanitary fixtures and equipment with their supports, hangers, or foundations.

APPRENTICEABLE OCCUPATIONS

Dictionary Title STEAM FITTER* Occupational Code 5-30.410Apprenticeship Title SteamfitterIndustry Construction

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	28.
<input checked="" type="checkbox"/> 14. Lifting	29.
<input checked="" type="checkbox"/> 15. Carrying	30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and climbs ___ foot ladders and scaffolds during job performance. Stoops and, using both hands, reaches for, grasps, and lifts pipes and tools weighing up to ___ pounds and carries them ___ feet to job site. Stoops, turns, crouches, and kneels while pushing and pulling on pipes ___ hours to aline and fit them in place. Pushes and pulls handle of vise, wheels of pipe cutter; and handles stock and die to cut pipe and pipe threads ___ hours. Handles reamer, oxyacetylene torch, wrenches, brushes and rules during job process ___ hours. Fingers pencils and chalk to mark pipes and fingers nuts, bolts, compasses, and other small instruments ___ hours to measure and assemble pipes. Reads blueprints and calibrations on measuring instruments. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works with others inside, with adequate lighting and ventilation. Works in cramped quarters and in high places. Work is dusty and dirty.

DETAILS OF HAZARDS: Possibility of falls from ladders or scaffolding, of cuts on hands from sharp tools, and of burns from oxyacetylene torch and contact with hot pipes.

*JOB DEFINITION: Installs pipes and equipment that must withstand high pressure for the distribution of steam.

APPRENTICEABLE OCCUPATIONS

Dictionary Title FLOOR LAYER* Occupational Code 5-32.752

Apprenticeship Title Linoleum, Carpet, and Soft Tile Layer

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Alternately kneels, crouches, and crawls about floor when fitting and laying linoleum. Stoops, turns, and, using either hand, reaches for, grasps, and handles a trowel to spread cement on floor _____ hours. Grasps, lifts, and handles rolls of felt base and linoleum weighing up to _____ pounds and uses both hands _____ hours to push, to pull, and to position them on floor. Handles a sharp knife and a rule _____ hours to measure and cut linoleum. Pushes and pulls a roller (100 pounds) over surface of floor to set linoleum in place _____ hours. Uses color vision to match pattern.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated room. Hands and clothing are soiled by cement.

DETAILS OF HAZARDS: Possibility of cuts to hands and fingers from sharp-edged knife and trowel.

***JOB DEFINITION:** Applies blocks or strips of shock-absorbing, sound-deadening, decorative floor covering; removes or disconnects obstructions, such as radiators; measures and cuts floor covering and foundation material, such as felt or building paper, to fit projections and openings; coats floor with floor-covering cement and lays foundation material over cement, rolling it smooth with hand roller; marks foundation with guide lines for each course of floor-covering material, spreads cement over foundation material, covering small area at one time, and lays floor-covering material on cement, matching borders and patterns and following guide lines to keep tile courses straight and to execute designs; rolls finished floor surface with hand roller to smooth the surface and make covering adhere to cement.

APPRENTICEABLE OCCUPATIONS

Dictionary Title LATHER, METAL* Occupational Code 5-32.761

Apprenticeship Title Lather, Metal

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, walks, kneels, stoops, turns, crawls, and crouches during job process. Climbs ___ feet on ladders and scaffolds, maintaining body balance while working there ___ hours. Using both arms and hands, reaches for, grasps, and lifts laths weighing up to ___ pounds to assemble and position them ___ hours. Occasionally pushes and pulls on laths when fitting them into position. Handles hammers, hatchets, saws, wire, and nails to shape and fasten laths to walls ___ hours. Pulls on chain hoist to lift heavy material. Fingers ruler and plumb line ___ hours to determine measurements and accuracy of vertical lines. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside. Exposed to construction noises.

DETAILS OF HAZARDS: Possibility of injury from falls off ladders and scaffolding, and of minor cuts to hands and arms from sharp-edged tools and material.

*JOB DEFINITION: Nails or wires metal lath on ordinary studding to provide a supporting base for plaster or fireproofing material.

APPRENTICEABLE OCCUPATIONS

Dictionary Title LATHER, WOOD* Occupational Code 5-32.762

Apprenticeship Title Lather, Wood

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	_____ 28.	<input type="checkbox"/> 63. Adequate lighting	_____ 78.
<input checked="" type="checkbox"/> 14. Lifting	_____ 29.	<input type="checkbox"/> 64. Adequate ventilation	_____ 79.
<input checked="" type="checkbox"/> 15. Carrying	_____ 30.	<input type="checkbox"/> 65. Vibration	_____ 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, walks, kneels, stoops, turns, and crouches during job process. Climbs _____ feet on ladders and scaffolds, maintaining body balance while working there _____ hours. Using both arms and hands, reaches for, grasps, lifts laths weighing up to _____ pounds to assemble and position them _____ hours. Occasionally pushes and pulls on laths when fitting them into position. Handles hammers, hatchets, saws, wire, and nails to shape and fasten laths to walls _____ hours. Pulls on chain hoist to lift heavy material. Fingers ruler and plumb line _____ hours to determine measurements and accuracy of vertical lines. Observes all operations.

DETAILS OF WORKING CONDITIONS: Works around others inside. Exposed to construction noises.

DETAILS OF HAZARDS: Possibility of injury from falls off ladders and scaffolding, and of minor cuts to hands and arms from sharp-edged tools and material.

***JOB DEFINITION:** Cuts wooden lath to size with hatchet or saw, and nails the lath to walls and ceilings to provide a supporting base for plaster.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ASBESTOS WORKER, GENERAL* Occupational Code 5-33.110
PIPE COVERER II** 5-33.110

Apprenticeship Title Asbestos Worker ---

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands, stoops, kneels, turns, crawls, and crouches during job process. Reaches for, grasps, lifts, and carries rolls of material weighing up to ___ pounds a distance of ___ feet. Handles prefabricated material and positions it on object being insulated, fingering wire, twine, or needles while securing material in place. Handles a trowel, pushing and pulling it across surface of material when applying cement or plastic. Frequently climbs ___ foot ladders and scaffolds, maintaining balance while working there ___ hours. Observes all operations, and reads blueprints or work-specification plans.

DETAILS OF WORKING CONDITIONS: Works around others inside, frequently in damp, dirty, poorly ventilated cellars or basements of buildings. Frequently works in cramped quarters.

DETAILS OF HAZARDS: Possibility of injury caused by falls from scaffolding or ladders, and of injury from hand tools.

JOB DEFINITIONS: *Covers with insulating material the exposed hot or cold surfaces of equipment, such as boilers, ducts, pipe lines, and tanks; binds wires around object being insulated either to hold prefabricated insulating material in place or to form a base and reinforcement for plastic insulating material; applies coats of plastic insulating material with trowel.

**Prepares and installs insulation material around pipes, tanks, and boilers; binds heavy wires around object to be insulated, using pliers and tin snips; attaches small wires to heavy wires; applies coating of asbestos mastic or

insulating cement, or covers with a layer of asbestos or magnesia blocks; covers the base coating with a wire netting and fastens the netting in place with the tie wires; applies one or more secondary coats of plastic cement and trowels the finish coating to an even and smooth finish, when covering brine, ammonia, and ice water piping, wraps felt frost-proofing material around pipes and secures it in place with wire or jute twine; covers insulation with a layer of waterproof felt and seals all joints of felt with a waterproof compound; wraps rosin-sized, tar, or asbestos paper around insulation or applies a coating of asbestos cement; stitches a canvas jacket on insulated pipe, with a waxed sewing twine, using scissors, needle, and sailor's palm.

APPRENTICEABLE OCCUPATIONS

Dictionary Title LINEMAN IV* Occupational Code 5-53.420

Apprenticeship Title Lineman

Industry Light, Heat, and Power

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing	<input type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input checked="" type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	_____ 28.	<input type="checkbox"/> 63. Adequate lighting	_____ 78.
<input checked="" type="checkbox"/> 14. Lifting	_____ 29.	<input type="checkbox"/> 64. Adequate ventilation	_____ 79.
<input checked="" type="checkbox"/> 15. Carrying	_____ 30.	<input type="checkbox"/> 65. Vibration	_____ 80.

DETAILS OF PHYSICAL ACTIVITIES: Walks _____ feet about poles and job site during erection of or repairing of power lines. Climbs poles up to _____ feet high by driving spikes, attached to both feet, into pole. Uses either or both arms and hands to pull on wires and handle soldering iron, knives, screwdrivers, hammers, and wrenches when fastening wires in place _____ hours. Frequently throws wires and ropes up into air to catch them on pole, using a swinging motion of hand and arm. Occasionally pulls on ropes to raise and lower material and tools, and reaches for, grasps, lifts, and carries material and tools weighing up to _____ pounds for short distances. Observes all operations. Receives and gives oral directions and instructions.

DETAILS OF WORKING CONDITIONS: Works with others outside.

DETAILS OF HAZARDS: Possibility of burns from hot soldering iron, of injury from falls off pole, and of electric shock or electrocution from contact with high-voltage wires.

*JOB DEFINITION: Erects power line, consisting of poles, cable, and auxiliary equipment, to conduct electricity from the power plant to the place of use, erects poles; attaches fixture to pole by climbing pole and attaching cross arms to pole with lug screws, nailing insulator with clamps; fastening lightning-arresters and auxiliary equipment; splices and solders cables.

APPRENTICEABLE OCCUPATIONS

Dictionary Title BUTCHER, MEAT* Occupational Code 5-58.100
MEAT CUTTER II** 5-58.100

Apprenticeship Title Meat Cutter or Butcher

Industry Hotel and Restaurant; Retail Trade; Wholesale Trade

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands at butcher's block major portion of working day. Walks _____ feet between icebox and butcher's block several times per hour, using either or both arms and hands to reach for, grasp, lift, and carry meats weighing up to _____ pounds. Handles knives, saws, and cleavers _____ hours to cut, trim, and remove bones. Handles small pieces of meat _____ hours to feed them to grinder or place them in a brine solution. Occasionally grasps and manipulates a knife to clean fish and poultry. Gives oral directions to other butchers and confers with others regarding meat supply.

DETAILS OF WORKING CONDITIONS: Works around others inside adequately lighted and ventilated room. Exposed to sudden temperature changes from going in and out of refrigerator room.

DETAILS OF HAZARDS: Possibility of pulmonary disease from sudden temperature changes, and of severe cuts to hands, fingers, and other parts of body from use of knives, saws, and cleavers.

JOB DEFINITIONS: *Cuts, trims, and removes bones to prepare meats, usually entire packing-house carcasses, for frying, roasting, or broiling, using knives, saw, and cleaver; chops or grinds meats, using a hand-powered or electrically-powered meat grinder (m); pickles beef or other meats in brine solution to make corned beef or other products. May clean fish and sea food, and fowls.

**Displays and sells meat and fish, and, in addition, cuts meat to size desired for display or desired by customer, using knife, saw, or cleaver, and attempting to utilize every portion of the carcass; cleans fish and poultry; suggests various cuts of meat to customers and indicates best manner to cook the meat, basing his comments on experience in handling all cuts of meat.

APPRENTICEABLE OCCUPATIONS

Dictionary Title STATIONARY ENGINEER* Occupational Code 5-72.010

Apprenticeship Title Operating and Stationary Engineer

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input checked="" type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input checked="" type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input checked="" type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	___ 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	___ 78.
<input checked="" type="checkbox"/> 14. Lifting	___ 29.	<input type="checkbox"/> 64. Adequate ventilation	___ 79.
<input type="checkbox"/> 15. Carrying	___ 30.	<input type="checkbox"/> 65. Vibration	___ 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands major portion of working day. Walks ___ feet around engines and equipment to determine operating conditions and to make minor repairs and adjustments. Stoops and, using both arms and hands, reaches for and grasps a shovel ___ hours to throw coal into furnace or hopper. Handles levers and switches ___ hours to operate furnace and boilers. Occasionally stoops, turns, crawls, crouches, or kneels to clean boiler, using both hands to handle compressed-air cleaning equipment. Fingers pencil or pen ___ hours to record hours of operation, temperature, fuel consumed, and analysis of flue gases. Reads steam pressure gages and meters.

DETAILS OF WORKING CONDITIONS: Works alone inside adequately lighted furnace room. Exposed to high temperatures in summertime, to dust and dirt from coal, and to odors of gas and smoke. Works in cramped quarters when cleaning or repairing equipment.

DETAILS OF HAZARDS: Possibility of burns from contact with boilers, and of heat exhaustion and heat cramps.

***JOB DEFINITION:** Operates and maintains stationary engines and mechanical equipment such as steam engines, air compressors, generators, motors, turbines, ventilating and refrigerating equipment, steam boilers, and boiler-feed-water pumps; observes meters and gages to determine operating condition of equipment, and makes adjustments or minor repairs necessary to insure efficient performance; keeps clerical records, such as temperature of equipment and hours of operation, fuel consumed, and temperature and analysis of flue gases. In most states and municipalities, licenses (first, second, or third class) are required for boiler attendance and for the operation of the various engines and machines, the worker being restricted to the operation of types and sizes of equipment authorized by the license possessed. In many localities, such a license is required to fire a boiler to heat a building, or to supply steam for steam-consuming equipment. May oil and lubricate machines, or may supervise oilers who do this.

APPRENTICEABLE OCCUPATIONS

Dictionary Title GLAZIER II* Occupational Code 5-77.010

Apprenticeship Title Glazier

Industry Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands and walks about job site during major portion of work day. Frequently climbs ladders and scaffolds up to ___ feet, maintaining balance while working there. Using either or both arms and hands, reaches for, grasps, and lifts glass weighing up to ___ pounds and carries it up to ___ feet to position it in frame or on worktable ___ hours. Stoops, turns, kneels, or crouches and handles putty knife, glass cutter, screwdriver, and wrenches ___ hours during job process. Pushes and pulls on glass to fit it into place. Fingers ruler and squares to measure glass and frame ___ hours. Reads measurements and observes job operations.

DETAILS OF WORKING CONDITIONS: Works with others inside shop and other buildings and outside buildings. Exposed to sudden temperature changes, and to dirt from putty and unwashed glass.

DETAILS OF HAZARDS: Possibility of cuts to hands and arms from broken or sharp-edged glass, and of injury from falling off ladders or scaffolds.

***JOB DEFINITION:** Cuts and sets window or skylight glass, or glazing of any character: cements glass panes into sash with putty and putty knife; installs plate glass in store fronts, bolting it to molding; fastens by clips and bolts plate-glass panes into puttyless steel skylight sash; installs sheets of structural glass to form decorative building fronts, walls, ceilings, or partitions by spreading mastic cement over support and pressing glass into it.

APPRENTICEABLE OCCUPATIONS

Dictionary Title MILLWRIGHT I* Occupational Code 5-78.100

Apprenticeship Title Millwright

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours and walks up to _____ feet about shop during job processes. Intermittently stoops, turns, kneels, crouches, climbs, and crawls, and uses either or both hands to reach for, grasp, lift, handle, push, and pull machine parts weighing up to _____ pounds for _____ hours when installing or changing machine layouts. Pulls on chain hoist to lift and move heavy machinery. Pushes hand dollies or trucks weighing up to _____ pounds. Handles wrenches, hammers, and screwdrivers and fingers micrometer, calipers, squares and plumb bobs for _____ hours. Orally discusses changes with engineer or other workers. Reads blueprints and calibrations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside and outside, sometimes in cramped quarters and high places. Exposed to loud noises from many machine operations.

DETAILS OF HAZARDS: Possibility of cuts and bruises from handling tools and parts, and of injury from material carried on overhead crane.

***JOB DEFINITION:** Changes the lay-out and set-up of machines and mechanical equipment in a plant or mill wherein the machinery is usually of the heavy type, and keeps the machines and equipment in efficient operating condition: performs duties, such as dismantling, moving, installing, or repairing machines, power shafting, pulleys, conveyors, hoist, and other equipment; uses hoists, dollies, rollers and trucks to aid in moving machinery; uses wrenches, hammers, and other hand tools in erecting or dismantling machines and in installing new or repair parts; uses measuring devices, such as squares, micrometers, calipers, and plumb bobs in erecting machine foundations, in installing the machines and equipment in correct position, and in alining power shafting and pulleys. Is primarily concerned with installing, changing lay-out, and setting up machines, usually of the heavy type, rather than with keeping them in a state of good repair.

APPRENTICEABLE OCCUPATIONS

Dictionary Title CARMAN V* Occupational Code 5-79.020

Apprenticeship Title Carman, Railroad

Industry Locomotive and Car Building and Repair

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	_____ 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	_____ 78.
<input checked="" type="checkbox"/> 14. Lifting	_____ 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	_____ 79.
<input checked="" type="checkbox"/> 15. Carrying	_____ 30.	<input checked="" type="checkbox"/> 65. Vibration	_____ 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours and walks up to _____ feet to perform job process. Stoops, turns, and, using both arms and hands, reaches for, grasps, and lifts material and parts, weighing up to _____ pounds, and carries them _____ feet. Pushes and pulls on parts _____ hours when assembling and dismantling cars. Pulls on chain hoists or pushes and pulls levers of crane _____ hours to lift and position heavy parts. Stoops, turns, crouches, kneels, climbs, and crawls, and handles large wrenches, pinch bars, sledge hammer, screwdriver, taps, electric drill, and air chipping hammer; fingers scribes, center punches, rules, screws, nails, etc. _____ hours. Observes all operations. Reads blueprints and calibrations on measuring instruments. Discusses work with others and gives oral instructions.

DETAILS OF WORKING CONDITIONS: Works with others outside and inside hot and noisy but well lighted and ventilated shop. Exposed to vibration of electric drills and air chipping hammer.

DETAILS OF HAZARDS: Possibility of cuts from use of sharp-edged tools and of bruises from handling heavy tools and parts.

***JOB DEFINITION:** Performs various duties in connection with (1) building, repairing, dismantling, painting, upholstering, and inspecting of passenger and freight cars, both wood and steel; (2) building and repairing of motor cars, lever cars, hand cars, and station trucks; (3) building and repairing, removing and applying of locomotive cabs, pilots, pilot beams, tender frames and trucks; (4) and planing mill cabinet and bench carpentry work, pattern and flask making, and all carpentry work in shop and railroad yards. Usually specifically designated according to the type of work he is doing, such as carman, linoleum laying; carman, electric welding; carman, car-truck dismantling; carman, freight-car repairman; carman, passenger-car repairman.

APPRENTICEABLE OCCUPATIONS

Dictionary Title AIRPLANE MECHANIC I* Occupational Code 5-80.100
AIRCRAFT MECHANIC I** 5-80.120
AIRCRAFT-ENGINE MECHANIC*** 5-80.130

Apprenticeship Title Airplane Mechanic

Industry Air Transportation

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Walks up to ___ feet around plane to inspect it and check service. Climbs ___ feet on ladder to get on wings of plane. Intermittently stands, kneels, sits, stoops, turns, and crawls both inside and underneath plane while using either or both hands to pull on wires to finger them, to test and install them; and to handle mechanic's hand tools ___ hours to make repairs and adjustments to parts. Visually examines all parts and observes balancing of propeller on vertical arbor. Listens for sounds of malfunctioning of engine and gives verbal instructions to Helpers.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated shop and hangar. Exposed to loud noises of planes. Frequently works in cramped quarters. Work is dirty and greasy.

DETAILS OF HAZARDS: Possibility of falls from plane, of cuts and bruises from handling sharp-edged tools, and of coming in contact with revolving propeller.

JOB DEFINITIONS: *Overhauls, services, and inspects airplanes and airplane engines: inspects and repairs airplanes in shops and on the line; inspects, services, adjusts, and overhauls airplane engines. Must be licensed by the Federal Government.

**Inspects, overhauls, and services airplanes except engines: repairs, replaces, and assembles such parts as wings, fuselage, tail assembly, landing or flotation gears, control cables, fuel and oil tanks, and lines; removes damaged parts and installs replacement from stock, or duplicates wooden and metal

parts; performs necessary welding, metal fitting, covering, doping, rigging, and woodworking operations, using metalworking, woodworking, and welding equipment. Must hold license from Civil Aeronautics Authority as AIRCRAFT MECHANIC or perform duties under supervision of licensed worker.

***Inspects, services, repairs, and overhauls airplane engines: examines external appearance of engines and listens to them in operation to detect sounds indicative of malfunctioning; replaces worn or damaged parts, such as cylinders and carburetors, while engines are still mounted in airplanes; removes engines from airplanes, disassembles them, and checks all parts for wear, warping, or other defects; repairs or replaces defective parts, and reassembles and reinstalls engines; performs miscellaneous duties to service engines, such as flushing crankcase, cleaning strainer screens, and greasing moving parts; uses mechanic's tools and equipment, such as wrenches, hoists, and gages. Must hold license from Civil Aeronautics Authority as AIRCRAFT ENGINE MECHANIC, or perform duties under supervision of licensed worker.

APPRENTICEABLE OCCUPATIONS

Dictionary Title AUTOMOBILE MECHANIC* Occupational Code 5-81.010

Apprenticeship Title Automobile Mechanic

Industry Automotive Service

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input checked="" type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stoops, crouches, and, using both hands, reaches for, grasps, and lifts parts weighing up to _____ pounds and carries them up to _____ feet to workbench _____ times per day. Stands, stoops, crouches, turns, kneels, and sits while reaching above and below shoulder height to push and pull wrenches, levers, and crowbars in all directions; and to handle and finger mechanic's tools and parts _____ hours to make adjustments and repair automobiles. Listens to sound of motor for smooth functioning. Drives cars on road tests _____ hours. Reads ruler, gages, and dial markings and uses color vision to distinguish various colored cables and traffic lights. Discusses repairs with others.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated garage and outside when driving car. Frequently works in cramped quarters under car.

DETAILS OF HAZARDS: Possibility of cuts from sharp-edged tools and parts, burns from hot surfaces of motor, and of nausea and headaches from fumes of motor exhaust.

***JOB DEFINITION:** Repairs passenger automobiles and light delivery trucks, performing duties such as disassembling and overhauling engines, transmissions, clutches, rear ends, and other assemblies on automobile, replacing worn or broken parts, grinding valves, adjusting brakes, tightening body bolts, and alining wheels; uses hoists (m), various sized wrenches, gages, drills (m), grinding wheels (m), and other general or specialized machines, gages, and tools. This worker, when employed in public garages, may be restricted to repair of automobile motors, transmissions, and clutches, the remainder of repair work being performed by other workers.

APPRENTICEABLE OCCUPATIONS

Dictionary Title OFFICE-MACHINE SERVICEMAN* Occupational Code 5-83.111

Apprenticeship Title Business-Machine Mechanic

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands _____ hours and sits _____ hours at work-bench or at desk in office where repair is being made. Walks up to _____ feet around work area. Using either hand, carries tool kit weighing up to _____ pounds when on service calls. Stoops, and, using both hands, reaches for, grasps, and lifts machine weighing up to _____ pounds and carries it up to _____ feet. Intermittently stoops, turns, kneels, and crouches while handling and fingering wrenches, pliers, screwdrivers, nippers, new and old parts, soldering iron, calipers, gages, and micrometers _____ hours in making repairs. Pushes and pulls on parts when dismantling and reassembling machines. Using fingers of either hand, depresses buttons or turns switches to stop and start machines. Listens for any unusual sounds when machine is in operation. Visually examines all parts of machine to locate part needing repair or replacing. Discusses repairs with others.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated surroundings. Work is dirty and hands and clothing become soiled from grease and oil.

DETAILS OF HAZARDS: Possibility of minor cuts and bruises from handling sharp-edged tools and parts, and of burns from hot soldering iron.

*JOB DEFINITION: Inspects, adjusts, repairs, cleans, and services office machines, such as adding machines, calculating machines, tabulating machines, bookkeeping machines, multigraph machines, mimeographs, typewriters, or cash registers: diagnoses the defect in the machine by inspection, by disassembling the machine and examining the moving parts or other mechanisms, or by starting the machine in operation and listening for any unusual sounds; if machine is merely out of adjustment, tightens, loosens, sets, and otherwise adjusts gears, guides, rollers, pinions, and other parts, using hand tools, such as wrenches, pliers, and screwdrivers; if machine has a broken or defective part, removes the part and repairs it, or replaces it with a new one; oils the moving parts of machines and cleans them. May give instructions to machine operator, explaining the action of the mechanism and otherwise instructing him how to avoid damaging the machine. May assemble new office machines.

APPRENTICEABLE OCCUPATIONS

Dictionary Title RADIO REPAIRMAN I* Occupational Code 5-83.411

Apprenticeship Title Radio Repair and Service Mechanic

Industry Any Industry

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking
<input type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Walks ___ feet to and from stockroom and stands ___ hours at workbench. Using fingers of both hands, grasps, handles, and fingers small hand tools and various radio parts ___ hours in assembling, repairing, and disassembling radio sets. Using both hands and arms, reaches for, grasps, and lifts radio sets weighing up to ___ pounds to test bench or hand truck. Occasionally pushes hand truck weighing ___ pounds short distances to transport radio sets. Fingers controls and listens to radio to detect faulty reception. Visually checks radio parts against invoice and observes all operations. Discusses repairs and estimates with customers.

DETAILS OF WORKING CONDITIONS: Works around others in repair shop.

DETAILS OF HAZARDS: Possibility of minor cuts and bruises from small hand tools, and of minor electrical shock.

*JOB DEFINITION: Repairs defective radios: tests circuits, tubes, and other parts, using various testing meters and devices; isolates defects, and either fixes them or replaces defective parts with new ones; resolders loose connections.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ELECTRIC-MOTOR REPAIRMAN* Occupational Code 5-83.433

Apprenticeship Title Motor Repairman, Electric

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours, walks ___ feet, stoops and turns while working at bench. Using both hands and arms, wraps chain of hoist around motor and pulls on chain to raise motor weighing ___ pounds into position. Inspects wiring and reads blueprints. Using hands and fingers, reaches for, grasps and manipulates fibre wedging and shaping tools, rawhide mallet, scraper, knife, screwdrivers, cutting pliers, scissors, Martindale top stick driver, table-type shears, and soldering iron in making repairs and adjustments.

DETAILS OF WORKING CONDITIONS: Works inside around others in noisy but adequately ventilated and lighted room. Hands and clothing become soiled.

DETAILS OF HAZARDS: Possibility of burns from soldering iron, of injury from overhead crane or hoist, of cuts to hands and fingers from sharp-edged tools, and of electrical shock.

*JOB DEFINITION: Repairs electric motors, generators, and accessory equipment, such as starting devices and switches, performing various duties, such as removing defective motors or equipment from customer's home or place of business, winding armatures and field coils, testing armatures, refacing commutators, and installing repaired motors in customer's establishment. May repair transformers.

APPRENTICEABLE OCCUPATIONS

Dictionary Title MAINTENANCE MECHANIC II* Occupational Code 5-83.641Apprenticeship Title Mechanic, MaintenanceIndustry Any Industry

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and walks up to ___ feet around shop area, balances, climbs, and crawls. Stoops, turns, kneels, or crouches and, using either or both hands, reaches for, grasps and handles parts, wrenches, screwdrivers, pliers, and other hand tools in dismantling and reassembling machines ___ hours. Lifts parts weighing up to ___ pounds and carries them up to ___ feet. Pushes and pulls on parts to position them in and remove them from machine. Listens to machines to detect faulty operation. Pulls on chain hoists to lift and move heavy machine parts. Reads blueprints and graduations on measuring instruments.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated shop. Work is dirty and greasy and is frequently performed in cramped quarters. Exposed to loud noises from many machine operations.

DETAILS OF HAZARDS: Possibility of cuts or bruises from use of sharp-edged hand tools, of injury from moving machine parts, and of electric shock while connecting machine to circuit.

***JOB DEFINITION:** A classification title for workers who keep machinery and mechanical equipment of an establishment in a state of good repair: examines machines for defects in operation, locating faulty part by listening to machine while it is in operation or by other methods based on his mechanical knowledge; dismantles or partially dismantles machine to gain access to defective part and removes part, using various hand tools, such as wrenches, screwdrivers, and pliers; repairs part, using hand tools, or obtains replacement part from stock; reassembles machine, making necessary adjustments to insure efficient operation; affixes special attachments, sets dies, oils and greases machinery, repairs belts, and performs other similar duties as necessary; moves heavy machine parts with aid of hoists and rollers. In general, works with lighter machinery than a MILLWRIGHT I, and is primarily concerned with keeping machinery in good repair rather than with changing lay-out and setting up or installing machines.

APPRENTICEABLE OCCUPATIONS

Dictionary Title SEWING-MACHINE REPAIRMAN* Occupational Code 5-83.641

Apprenticeship Title Sewing Machine Mechanic (Garment Industry)

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Walks ___ feet around factory carrying parts and hand tools weighing up to ___ pounds. Intermittently turns, stoops, kneels, crouches, and reaches in all directions, pushing and pulling on machines when adjusting, repairing, dismantling, and assembling them ___ hours. Handles and fingers mechanic's tools during job process. Fingers precision measuring devices. Manipulates hand wheels and levers to operate drill presses and lathes when making new parts ___ hours. Inspects machines, shafts and belts daily and observes all operations. Frequently inspects parts with fingers to determine signs of wear or rough surfaces. Discusses work with others. Listens to machines for sounds of malfunctioning.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated shop. Exposed to noises of many machine operations and to vibration when using drill press. Work is dirty and greasy and is frequently performed in cramped quarters.

DETAILS OF HAZARDS: Possibility of cuts or bruises from use of hand tools and of mechanical injury from moving machine parts.

***JOB DEFINITION:** Inspects, lubricates, adjusts, and repairs sewing machines in homes, or in the sewing departments of plants, such as automobile factories, garment factories, hat and cap plants, and hosiery mills: adjusts machines to function efficiently by turning adjusting screws and nuts; regulates length of stroke of needle and horizontal movement of feeding mechanism under needle; dismantles machines and replaces or repairs broken or worn parts. When employed in garment or other factories, inspects machines, shafts, and belts daily, mends broken transmission belts, initiates orders for new machines or parts, and may operate machine tools such as lathes (m) and drill presses (m) to make new parts in completely rebuilding machines.

APPRENTICEABLE OCCUPATIONS

Dictionary Title ELEVATOR REPAIRMAN* Occupational Code 5-83.921Apprenticeship Title Elevator MechanicIndustry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input checked="" type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Using either hand, reaches for, grasps, and lifts tool kit, weighing approximately ___ pounds, and carries it to job site, a distance of ___ feet. Climbs ___ foot ladders or stairs to visually examine elevator mechanism. Pushes and pulls on parts ___ hours to dismantle and reassemble them. Stoops, turns, kneels, and crouches while handling and fingering hammers, screwdrivers of various sizes, pliers, wrenches, hacksaw, level, gasoline torch, electric drill, and acetylene cutting equipment ___ hours to make necessary repairs or replacements. Fingers small wires when rewiring motors and contact terminals ___ hours. Pulls on chain hoist to lift heavy motors and parts ___ hours. Uses a finger to depress buttons and either hand to push and pull a lever to start and stop elevators. Discusses repairs with customer and helper. Listens to motor in operation for sounds of malfunctioning.

DETAILS OF WORKING CONDITIONS: Works with others inside dusty and dirty elevator shafts which are hot in summertime. Exposed to loud noises and vibrations of motors and drill in operation. Work is dirty and oily.

DETAILS OF HAZARDS: Possibility of electric shock from wires, of cuts to hands and fingers from sharp-edged tools, of burns from torches and electrical flashes or sparks, and of injury from falls off ladders, etc.

***JOB DEFINITION:** Inspects, adjusts, and repairs elevator motors, door locks, signal systems, control switches, braking mechanisms, and other parts; repairs electric-elevator motors by unscrewing motor housing, inspecting interior mechanism, applying oil to various parts, smoothing commutator brushes with sandpaper, replacing gears and worms, and performing a variety of electrical and mechanical repair jobs; repairs electrical or mechanical locks on elevator cage doors, taking lock apart, making replacements, rewiring lock, and otherwise restoring its action; repairs electric control and signal systems by rewiring and adjusting tightening mechanisms; installs push-button control systems and performs other duties necessary to modernize elevators, such as removing rope controls; regulates elevator speeds and braking mechanism by adjusting motors and other mechanical parts. May similarly repair and service escalators.

APPRENTICEABLE OCCUPATIONS

Dictionary Title REFRIGERATION MECHANIC* Occupational Code 5-83.941

Apprenticeship Title Refrigerator Mechanic

Industry Any Industry

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input checked="" type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input checked="" type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input checked="" type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input checked="" type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input checked="" type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input checked="" type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours and walks up to ___ feet during job performance. Intermittently stoops, turns, kneels, and crouches while using either or both hands to reach for, grasp, handle, and finger parts, pushing and pulling on them to remove and replace them in refrigerating equipment after visually examining parts for flaws and repairing them when necessary ___ hours. Using both hands, reaches for, grasps, and lifts parts and planks, weighing up to ___ pounds, and carries them ___ feet to job site. Handles wrenches of various sizes, screwdrivers, and pipe-threading or cutting tools ___ hours during job process. Fingers micrometers, feeler gages, and surveyor's level ___ hours to check and measure installation of parts. Pushes and pulls on handle of a jack to lift equipment. Reads various gages, meters, and manometers. Listens to machinery in operation to detect any malfunctioning. Gives oral directions.

DETAILS OF WORKING CONDITIONS: Works with others inside adequately lighted and ventilated buildings, also works inside iceboxes where temperature is zero or below. Exposed to odors of ammonia when compressors leak or are under repair. Frequently works in cramped quarters.

DETAILS OF HAZARDS: Possibility of irritation of eyes and upper respiratory passages from ammonia fumes and sudden temperature changes, and of injury from materials or parts being moved or dropped by other workers.

***JOB DEFINITION:** Installs, maintains, and repairs refrigerating equipment used in refrigerating plants and for conditioning air and cooling water in buildings: installs and assembles condensers, compressors, motors and other units of refrigerating equipment; assembles and connects various pipes and ducts used in piping brine and conditioned air; overhauls and repairs pumps, compressors, piping, and other equipment used in refrigerating and air-conditioning systems by (1) inspecting and examining the various parts which comprise the system to detect leaks and other faults, (2) disassembling various parts such as valves, springs, brushes, and connections, to note their condition, and (3) installing new piping, packing, valves, and pipe couplings to stop leaks; uses hand tools, such as wrenches, pliers, and pipe-threading or cutting tools. May operate refrigerating equipment.

APPRENTICEABLE OCCUPATIONS

Dictionary Title INSTRUMENT MAN IV* Occupational Code 5-83.972
ELECTRICAL-INSTRUMENT REPAIRMAN I** 5-83.975

Apprenticeship Title Instrument Mechanic

Industry Any Industry

PHYSICAL ACTIVITIES	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering
<input type="checkbox"/> 6. Crawling	<input checked="" type="checkbox"/> 21. Feeling
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision
<input type="checkbox"/> 11. Kneeling	<input checked="" type="checkbox"/> 26. Depth perception
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.

WORKING CONDITIONS	
<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Sits ___ hours and stands ___ hours at workbench or at site of instrument being repaired. Using either or both hands, reaches for, grasps, lifts, and carries instruments or meters weighing up to ___ pounds to workbench (approximately ___ feet). Stoops and fingers small wires, nuts, screws, bolts, and other small parts and handles spot welder, soldering iron, machinist's tools and a watchmaker's kit of hand tools ___ hours to repair and assemble electrical instruments and control devices. Uses keen vision to work with small wires and parts. Manipulates dials and switches to operate testing equipment.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and heated room. Exposed to loud noise of many machines in operation.

DETAILS OF HAZARDS: Possibility of burns from use of soldering iron, of shock and burns from high voltage in testing equipment, and of cuts from sharp-edged tools.

JOB DEFINITIONS: *Removes, tests, repairs, calibrates, and reinstalls aircraft instruments, such as air speed indicators, gyro compasses, altimeters, turn and bank indicators, tachometers, and engine and carburetor temperature indicators, using small wrenches, pliers, tweezers, and other small tools and various testing devices, such as a vacuum pump tester; makes new parts if replacement parts are not available, using precision hand and power drills. A thorough knowledge of the functions and operation of the various instruments is required.

**Cleans, adjusts, repairs, and calibrates electrical instruments and control devices, such as voltmeters, recording gages, relays, thermostats, motor-starting boxes, and other delicate electrical apparatus, using machinist's and electrician's tools; works at a bench or at location of device being repaired. Job requires a combination of the skills of a machinist and an electrician.

APPRENTICEABLE OCCUPATIONS

Dictionary Title — RIGGER III* Occupational Code 5-88.020

Apprenticeship Title — Rigger, Construction

Industry — Construction

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input type="checkbox"/> 51. Inside	<input type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input checked="" type="checkbox"/> 52. Outside	<input checked="" type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input checked="" type="checkbox"/> 53. Hot	<input checked="" type="checkbox"/> 68. Cramped quarters
<input checked="" type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input checked="" type="checkbox"/> 54. Cold	<input checked="" type="checkbox"/> 69. High places
<input checked="" type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input checked="" type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input checked="" type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input checked="" type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input checked="" type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input checked="" type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input checked="" type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input checked="" type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input type="checkbox"/> 76. Working around others
<input checked="" type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input checked="" type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input checked="" type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours, walks up to ___ feet, and climbs ___ foot ladders and rigging during job performance. Stoops, turns, sits, kneels, and uses both arms and hands to reach for, grasp, lift, push, and pull on masts and platforms weighing up to ___ pounds and to set up hoisting equipment and hand working platforms ___ hours. Handles and fingers ropes and steel cables ___ hours intertwisting the ends when splicing them, and inserts them through blocks or pulleys for operation of power equipment and for moving machinery. Pulls on hoists ___ hours to raise and lower materials and equipment into place. Handles wrenches, sledges, hammers, electric and air drills ___ hours to install and erect steel supports on framework. Observes all operations. Gives and receives oral instructions.

DETAILS OF WORKING CONDITIONS: Works with others outside in high places. Frequently works in cramped quarters. Exposed to loud noises from construction operations.

DETAILS OF HAZARDS: Possibility of electrical shock from working near high tension wires, and of injuries from falls off poles or framework.

*JOB DEFINITION: Sets up, braces, and rigs hoisting equipment for erecting and dismantling structural steel shapes, construction machines, or other heavy objects; splices ropes or steel cables, intertwisting the ends by hand; erects and hangs working platforms; reeves and runs manila and wire rope for operation of power equipment and moving of materials, equipment, and machinery.

APPRENTICEABLE OCCUPATIONS

Dictionary Title GLOVE CUTTER* Occupational Code 6-62.040Apprenticeship Title Glove Cutter, TableIndustry Leather Products

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input checked="" type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input checked="" type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input checked="" type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	28.	<input checked="" type="checkbox"/> 63. Adequate lighting	78.
<input type="checkbox"/> 14. Lifting	29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	79.
<input type="checkbox"/> 15. Carrying	30.	<input type="checkbox"/> 65. Vibration	80.

DETAILS OF PHYSICAL ACTIVITIES: Stands all day at workbench. Reaches out with both hands while laying out and pulling leather into place. Uses left hand to pick up cutting molds, holds them in place on leather while grasping and wielding with the right hand for ___ hours a mallet weighing from two to five pounds. Frequently grasps large scissors with right hand and exerts force upon them in cutting pieces of leather. Turns constantly from left to right while picking up molds and laying down finished product. Visually inspects pieces of leather for grain and for estimating approximate size.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and well ventilated room.

DETAILS OF HAZARDS: Possibility of cuts from use of scissors, and of hitting left hand with mallet.

*JOB DEFINITION. Cuts out leather glove parts by use of a hand knife or scissors and following a pattern, or by placing a cutting die on leather and hitting die with a hammer; cuts leathers so as to have a minimum of waste, taking care not to cut any parts with blemishes on them.

APPRENTICEABLE OCCUPATIONS

Dictionary Title POLISHER* Occupational Code 6-77.070

Apprenticeship Title Silverware Polisher

Industry Silverware

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
<input checked="" type="checkbox"/> 1. Walking	<input type="checkbox"/> 16. Throwing	<input checked="" type="checkbox"/> 51. Inside	<input checked="" type="checkbox"/> 66. Mechanical hazards
<input type="checkbox"/> 2. Jumping	<input checked="" type="checkbox"/> 17. Pushing	<input type="checkbox"/> 52. Outside	<input type="checkbox"/> 67. Moving objects
<input type="checkbox"/> 3. Running	<input type="checkbox"/> 18. Pulling	<input type="checkbox"/> 53. Hot	<input type="checkbox"/> 68. Cramped quarters
<input type="checkbox"/> 4. Balancing	<input checked="" type="checkbox"/> 19. Handling	<input type="checkbox"/> 54. Cold	<input type="checkbox"/> 69. High places
<input type="checkbox"/> 5. Climbing	<input checked="" type="checkbox"/> 20. Fingering	<input type="checkbox"/> 55. Sudden temp. changes	<input checked="" type="checkbox"/> 70. Exposure to burns
<input type="checkbox"/> 6. Crawling	<input type="checkbox"/> 21. Feeling	<input type="checkbox"/> 56. Humid	<input type="checkbox"/> 71. Electrical hazards
<input checked="" type="checkbox"/> 7. Standing	<input type="checkbox"/> 22. Talking	<input type="checkbox"/> 57. Dry	<input type="checkbox"/> 72. Explosives
<input type="checkbox"/> 8. Turning	<input type="checkbox"/> 23. Hearing	<input type="checkbox"/> 58. Wet	<input type="checkbox"/> 73. Radiant energy
<input type="checkbox"/> 9. Stooping	<input checked="" type="checkbox"/> 24. Seeing	<input checked="" type="checkbox"/> 59. Dusty	<input type="checkbox"/> 74. Toxic conditions
<input type="checkbox"/> 10. Crouching	<input type="checkbox"/> 25. Color vision	<input checked="" type="checkbox"/> 60. Dirty	<input type="checkbox"/> 75. Working with others
<input type="checkbox"/> 11. Kneeling	<input type="checkbox"/> 26. Depth perception	<input type="checkbox"/> 61. Odors	<input checked="" type="checkbox"/> 76. Working around others
<input type="checkbox"/> 12. Sitting	<input type="checkbox"/> 27. Working speed	<input type="checkbox"/> 62. Noisy	<input type="checkbox"/> 77. Working alone
<input checked="" type="checkbox"/> 13. Reaching	<input type="checkbox"/> 28.	<input checked="" type="checkbox"/> 63. Adequate lighting	<input type="checkbox"/> 78.
<input checked="" type="checkbox"/> 14. Lifting	<input type="checkbox"/> 29.	<input checked="" type="checkbox"/> 64. Adequate ventilation	<input type="checkbox"/> 79.
<input type="checkbox"/> 15. Carrying	<input type="checkbox"/> 30.	<input checked="" type="checkbox"/> 65. Vibration	<input type="checkbox"/> 80.

DETAILS OF PHYSICAL ACTIVITIES: Stands ___ hours at workbench and walks up to ___ feet around work area. Handles an applicator to apply lampblack and kerosene to polishing wheel and a burnishing tool to correct and remove blemishes from silverware. Uses both hands to reach for, grasp, lift, and hold silverware against polishing wheel ___ hours. Fingers article to wrap it in tissue and a pencil to label tag. Examines articles for blemishes and observes polishing operation.

DETAILS OF WORKING CONDITIONS: Works around others inside well lighted and ventilated shop. Exposed to vibration from holding articles against polishing wheel.

DETAILS OF HAZARDS: Possibility of injury from contact with revolving polishing wheel.

*JOB DEFINITION: Polishes white metal hollow ware using a power-operated polishing wheel; inspects objects to be polished for uniformity of finish which is necessary for successful polishing; applies lampblack and kerosene to polishing wheel; starts wheel and presses objects against it so that they have uniform color and polish; corrects marks and blemishes, using a burnishing tool.

Physical

Code No.	Dictionary Title	Page No.	1. Walking	2. Jumping	3. Running	4. Balancing	5. Climbing	6. Crawling	7. Standing	8. Turning	9. Stoopng	10. Crouching	11. Kneeling	12. Sitting	13. Reaching	14. Lifting	15. Carrying	16. Throwing	17. Pushing	18. Pulling	19. Handling
0-44.71	Model Maker IV	4	X						X	X	X			X	X	X			X	X	X
0-48.	Draftsman	5	X						X	X	X			X	X						X
0-48.41	Tool Designer	6	X						X	X	X			X	X	X					X
0-48.42	Die Designer	7	X						X		X			X	X	X					X
0-50.06	Dental Technician	8	X						X	X	X			X	X	X				X	X
2-26.31	Chef III	9	X						X	X	X	X		X	X	X	X			X	X
2-26.32	Cook V	9	X						X	X	X	X		X	X	X	X			X	X
2-32.01	Barber II	10	X						X	X	X			X	X					X	X
2-32.15	Beauty Operator	11	X						X	X	X			X	X					X	X
4-01.100	Baker I	12	X						X	X	X			X	X	X				X	X
4-16.010	Loom Fixer	13	X						X	X	X	X		X	X	X				X	X
4-26.101	Custom Tailor	14	X			X	X	X	X	X	X	X		X	X	X				X	X
4-26.101	Tailor I	15	X						X	X	X	X		X	X	X				X	X
4-32.100	Cabinetmaker I	16	X						X	X	X	X		X	X	X				X	X
4-33.914	Millman	17	X						X	X	X	X		X	X	X				X	X
4-35.610	Automobile Upholsterer	18	X						X	X	X	X		X	X	X				X	X
4-35.710	Furniture Repairman I	18	X						X	X	X	X		X	X	X				X	X
4-35.720	Upholsterer II	18	X						X	X	X	X		X	X	X				X	X
4-39.423	Treating Engineer	20	X						X					X	X					X	X
4-44.010	Printer VII	21	X						X	X				X	X	X				X	X
4-48.010	Cylinder-Press Man	22	X						X	X	X	X		X	X	X				X	X
4-48.020	Platen-Press Man	23	X						X	X	X	X		X	X	X				X	X
4-48.030	Web-Press Man	24	X			X	X	X	X	X	X	X		X	X	X	X			X	X
4-48.050	Offset-Press Man	26	X						X	X	X	X		X	X	X				X	X
4-49.010	Bookbinder	27	X						X	X	X			X	X	X				X	X
4-65.440	Glass Blower, Laboratory Apparatus	28												X	X	X					X
4-71.010	Goldsmith	29										X		X	X						X
4-71.010	Jeweler I	30									X			X	X						X
4-71.020	Stone Setter II	31									X			X	X						X
4-71.310	Silversmith II	32	X						X	X	X			X	X	X					X
4-71.510	Watchmaker	33												X	X	X					X
4-73.030	Engraver, Hand I	34									X			X	X					X	X
4-74.010	Plater I	35	X						X	X	X			X	X	X					X
4-75.010	Machinist II	36	X						X	X	X			X	X	X				X	X
4-75.010	Machinist, Automobile	36	X						X	X	X			X	X	X				X	X
4-75.130	Instrument Maker II	38	X						X	X	X			X	X	X				X	X
4-75.150	Machinist, Outside	39	X			X			X	X	X	X		X	X	X				X	X
4-76.010	Die Sinker	40	X						X	X	X			X	X	X				X	X
4-76.010	Die Maker II	41	X						X	X	X			X	X	X				X	X
4-76.020	Die Maker I	41	X						X	X	X			X	X	X				X	X
4-76.040	Tool-and-Die Maker	42	X						X	X	X			X	X	X				X	X
4-78.011	Roll Turner I	43	X						X	X	X			X	X	X				X	X
4-80.010	Sheet-Metal Worker II	44	X			X	X	X	X	X	X	X		X	X	X				X	X
4-80.060	Sheet-Metal Worker, Aircraft II	45	X			X	X	X	X	X	X	X		X	X	X				X	X
4-80.080	Coppersmith II	46	X			X	X	X	X	X	X	X		X	X	X				X	X
4-81.010	Molder, Bench I	47	X						X	X	X	X		X	X	X				X	X
4-81.020	Molder, Finish	47	X						X	X	X	X		X	X	X				X	X
4-81.025	Machine Molder, Roll-Over	47	X						X	X	X	X		X	X	X				X	X
4-81.030	Molder, Floor	47	X						X	X	X	X		X	X	X				X	X
4-81.040	Molder, Pattern	47	X						X	X	X	X		X	X	X				X	X
4-81.050	Machine Molder, Squeeze	47	X						X	X	X	X		X	X	X				X	X
4-82.010	Coremaker I	48	X						X	X	X			X	X	X	X			X	X
4-83.100	Boilermaker I	49	X			X	X	X	X	X	X	X		X	X	X				X	X
4-84.010	Structural-Steel Worker	50	X	X		X	X	X	X	X	X	X		X	X	X				X	X
4-84.012	Shipfitter	51	X			X	X	X	X	X	X	X		X	X	X				X	X
4-84.020	Ornamental-Iron Worker	52	X			X	X	X	X	X	X	X		X	X	X				X	X
4-86.010	Blacksmith II	53	X						X	X	X			X	X	X				X	X
4-94.201	Spinner IV	54	X						X	X	X			X	X	X				X	X
4-95.031	Lead Burner I	55	X			X	X	X	X	X	X	X		X	X	X				X	X
4-97.010	Electrician I	56	X			X	X	X	X	X	X	X		X	X	X				X	X
4-97.910	Electrician, Airplane I	57	X			X	X	X	X	X	X	X		X	X	X				X	X
4-97.915	Electrician, Airplane II	57	X			X	X	X	X	X	X	X		X	X	X				X	X
5-05.570	Ship Rigger	59	X			X	X	X	X	X	X	X		X	X	X				X	X
5-08.070	Lens Grinder I	60	X						X	X	X			X	X	X				X	X
5-09.410	Orthopedic Technician	61	X						X	X	X			X	X	X				X	X

OF PHYSICAL DEMANDS

Activities

Working Conditions

Activities	51. Inside	52. Outside	53. Hot	54. Cold	55. Sudden Temp. Changes	56. Humid	57. Dry	58. Wet	59. Dusty	60. Dirty	61. Odors	62. Noisy	63. Adequate Lighting	64. Adequate Ventilation	65. Vibration	66. Mechanical Hazards	67. Moving Objects	68. Cramped Quarters	69. High Places	70. Exposure to Burns	71. Electrical Hazards	72. Explosives	73. Radiant Energy	74. Toxic Conditions	75. Working With Others	76. Working Around Others	77. Working Alone	
20. Fingering	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21. Feeling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22. Talking	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23. Hearing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24. Seeing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
25. Color Vision	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26. Depth Perception	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
27. Working Speed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28. Blowing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
29. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
30. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
31. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
32. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
33. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
34. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
35. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
36. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
37. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
38. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
39. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
40. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
41. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
42. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
43. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
44. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
45. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
46. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
47. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
48. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
49. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
50. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
51. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
52. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
53. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
54. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
55. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
56. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
57. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
58. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
59. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
60. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
61. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
62. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
63. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
64. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
65. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
66. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
67. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
68. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
69. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
70. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
71. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
72. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
73. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
74. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
75. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
76. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
77. ...	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

DEFINITIONS

PHYSICAL ACTIVITIES

Definitions are included below for those items about which there might be some question or lack of understanding. Those items which are self-explanatory are not included.

4. **Balancing.** Walking, standing, or running on narrow, slippery, or elevated surfaces by maintaining body equilibrium to prevent falling.
5. **Climbing.** Ascending or descending ladders, stairs, scaffolding, ramps, poles, ropes, and the like, using the feet and legs or using hands and arms as well.
6. **Crawling.** Moving about on the hands and knees or hands and feet.
8. **Turning.** Twisting partly around from a stationary standing or sitting position, usually involving the spine, trunk, neck and legs.
9. **Stooping.** Bending the body downward and forward by bending the spine at the waist; not to be confused with **crouching**.
10. **Crouching.** Bending the body downward and forward by bending the legs and spine; not to be confused with **stooping**.
11. **Kneeling.** Bending the legs at the knees to come to rest on the knee or knees.
13. **Reaching.** Extending the hands and arms in any direction.
14. **Lifting.** Raising or lowering an object from one level to another; includes upward pulling.
15. **Carrying.** Transporting an object, usually by holding it in the hands and arms.
16. **Throwing.** Propelling an object through space by swinging motion of the hand and arm with or without the use of tongs or other devices.
17. **Pushing.** Exerting force upon an object so that the object moves away from the force, including slapping, striking, kicking, and treadle actions.
18. **Pulling.** Exerting force upon an object so that the object moves toward the force, including jerking.
19. **Handling.** Seizing, holding, grasping, turning, or otherwise working with the hand or hands; not to be confused with **fingering**.
20. **Fingering.** Picking, pinching, or otherwise working with the fingers primarily (rather than with the whole hand or arm, as in **handling**).
21. **Feeling.** Perceiving such attributes of objects as size, shape, temperature or texture, by means of receptors in the skin, typically those of the finger tips.
25. **Color Vision.** Perceiving the color of objects by sight.
26. **Depth Perception.** Perceiving relative or absolute distances of an object from the observer or from one object to another.
27. **Working Speed.** The rate of speed the job requires of the worker. This item is checked with an "X" only where the job requires a significantly high rate of working speed.

WORKING CONDITIONS

51. **Inside.** Indoor protection from weather conditions.
52. **Outside.** Out of doors, or under an overhead covering with slight protection from the weather.
53. **Hot.** Temperature sufficiently high to cause perceptible bodily discomfort.
54. **Cold.** Temperature sufficiently low to cause perceptible bodily discomfort.
55. **Sudden Temperature Changes.** Variations in temperature which are sufficiently marked and abrupt to cause perceptible bodily reactions.
56. **Humid.** Atmospheric condition with moisture content sufficiently high to cause perceptible bodily discomfort.
57. **Dry.** Atmospheric condition with moisture content sufficiently low to cause perceptible bodily discomfort.
58. **Wet.** Contact with water or other liquids.
59. **Dusty.** Air filled with small particles of any kind such as textile dust, flour, wood, leather, feathers, etc., and inorganic dust including silica and asbestos, which make the workplace unpleasant or are the source of occupational diseases.
60. **Dirty.** Contact with or exposure to dirt, litter, soiled materials, etc.
61. **Odors.** Perceptible smells, either toxic or nontoxic.
62. **Noisy.** Sufficient sound to cause thought distraction or possible injury to the sense of hearing.
63. **Adequate Lighting.** Sufficient lighting to minimize eyestrain. (A zero before this item on the physical demands form indicates the lighting is either insufficient or excessive. Explain under *Details of Working Conditions*. A zero or a check will not occur before this item on the physical capacities form; consequently, when it is imperative for the worker to have adequate lighting, it is important to make a comment to that effect under *Details of limitations for specific working conditions*.)
64. **Adequate Ventilation.** Sufficient ventilation to cause neither a feeling of suffocation nor exposure to drafts. (A zero before this item on the physical demands form indicates that the ventilation is insufficient or excessive. Explain under *Details of Working Conditions*. A zero or a check will not occur before this item on the physical capacities form; consequently, when it is imperative for the worker to have adequate ventilation it is important to make a comment to that effect under *Details of limitations for specific working conditions*.)
65. **Vibration.** Production of an oscillating or quivering movement of the body or strain on the muscles, particularly

of the legs and arms, as from repeated motion, pressure, or shock.

66. **Mechanical Hazards.** Exposure to materials or mechanical parts involving the risk of bodily injury.

67. **Moving Objects.** Exposure to moving equipment and objects such as overhead cranes, hand and motor driven vehicles, falling objects, etc., which involve the risk of bodily injury; also the act of operating such equipment.

68. **Cramped Quarters.** Workplace where freedom of movement is restricted or where worker cannot maintain an upright position.

69. **High Places.** Workplace at an elevation above the floor or ground level from which it is possible to fall and be injured.

70. **Exposure to Burns.** Workplace involving the risk of being burned from hot materials, fire, or chemical agents.

71. **Electrical Hazards.** Exposure to high-tension wires, transformers, busbars, or other uninsulated or unshielded electrical equipment which involve the risk of electric shock.

72. **Explosives.** Exposure to explosive gases, vapors, dusts, liquids, and substances which involve the risk of bodily injury.

73. **Radiant Energy.** Exposure to radio-active substances (radium, uranium, thorium, etc.), X-rays, ultraviolet rays, or infra-red rays, which involve the risk of impairment of sight or general or localized disabling conditions.

74. **Toxic Conditions.** Exposure to toxic dusts, fumes, gases, vapors, mists, or liquids which cause general or localized disabling conditions as a result of inhalation or action on the skin.

75. **Working With Others.** Job requires occupational cooperation with fellow workers, or direct contact with the public.

76. **Working Around Others.** Job requires independent occupational effort but in proximity to fellow workers or the public.

77. **Working Alone.** Job requires independent occupational effort and virtually no contact with fellow workers or the public.

OTHER PUBLICATIONS OF THE DIVISION OF OCCUPATIONAL ANALYSIS

PUBLICATIONS ON SALE AT THE OFFICE OF SUPERINTENDENT OF DOCUMENTS,
UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON 25, D. C.

DICTIONARY OF OCCUPATIONAL TITLES (published in 4 parts):

Part I.—Definitions of Titles: 1,287 pages, June 1939, \$2.

Defines and gives occupational code numbers for 17,452 separate jobs.

Part II.—Group Arrangement of Occupational Titles and Codes: 330 pages, June 1939, \$1.

Arranges job titles according to their occupational code numbers.

Part IV.—Entry-Occupational Classification: 242 pages, October 1944, 35 cents.

Technique and structure for the classification of people who have had little or no work experience.

Supplement to the Dictionary of Occupational Titles, Edition II: 525 pages, July 1943, 60 cents.

An extension of Parts I and II which defines over 4,000 additional basic jobs in war activities.

GUIDE FOR ANALYZING JOBS: 40 pages, January 1944, 10 cents.

A work book for the TRAINING AND REFERENCE MANUAL FOR JOB ANALYSIS.

INDUSTRIAL EVALUATION SYSTEMS: 28 pages, August 1943, 10 cents.

An introduction to the subject of job evaluation. A summary of job evaluation principles and explanation.

JOB DESCRIPTIONS:

There are 27 Job Descriptions published in pamphlet form, describing in non-technical language the work performed, equipment used, training practices, employment variables, and physical demands of single occupations. 5 cents; \$1.50 for 100 identical copies.

JOB FAMILIES

Industrial Series, 5 to 35 cents.

1. List job-groups from each of which a specified key job in a particular industry can be filled.

2. List job-groups in specified industries from each of which workers can be effectively upgraded or transferred to a specified key job in the same industry.

There are 46 Job Families available in the Industrial Series.

Occupational Series, 5, 10, 15 cents.

List job-groups which constitute good sources of workers to fill specified base jobs. There are 19 Job Families available in this series.

NATIONAL JOB DESCRIPTIONS, \$1 to \$5.75.

Published for 15 major industries.

Describe in non-technical language the work performed, equipment used, and the customary job-relationship for key occupations.

PHYSICAL DEMANDS ANALYSIS AND PHYSICAL CAPACITIES APPRAISAL: 37 pages, 1945, 10 cents.

This manual presents information and instructions on the preparation and matching of physical demands and capacities information. It does not describe the complete selective placement process.

SELECTIVE PLACEMENT FOR THE HANDICAPPED (revised February 1945).

Available from the Government Printing Office about October 1, 1945.

Explains, describes and defines the United States Employment Service Selective Placement Program.

SPECIAL AIDS FOR PLACING MILITARY PERSONNEL IN CIVILIAN JOBS (ENLISTED ARMY PERSONNEL): 490 pages, March 1944, \$1.

Provides information, not elsewhere found, facilitating maximum utilization of experience gained in military life for related civilian employment. Summarizes the additional training required for transfer to related civilian occupations. Lists and defines physical activities and working conditions associated with the work of each civilian occupational group.

SPECIAL AIDS FOR PLACING MILITARY PERSONNEL IN CIVILIAN JOBS (ENLISTED NAVAL PERSONNEL) (in press—price not yet set).

Supplies information comparable to that found in SPECIAL AIDS FOR PLACING MILITARY PERSONNEL IN CIVILIAN JOBS (ENLISTED ARMY PERSONNEL).

TRAINING AND REFERENCE MANUAL FOR JOB ANALYSIS: September 1944, 104 pages, 20 cents.

An operational and reference manual for job analysis. The application of job analysis is not limited to any one specific application, but is designed for general utilization in any type of program requiring information about jobs.

FREE PUBLICATIONS AVAILABLE FROM THE DIVISION OF OCCUPATIONAL ANALYSIS, BUREAU OF MANPOWER UTILIZATION, WAR MANPOWER COMMISSION, WASHINGTON 25, D. C.

INDUSTRY COMPOSITION PATTERNS (or MANNING TABLES).

There are now 15 of these patterns available which supply information on occupations found in single industries, the percentage distribution of workers in these occupations, and training time required to reach normal production. Can be used in the transfer and recruitment of workers.

INTERVIEWING AIDS.

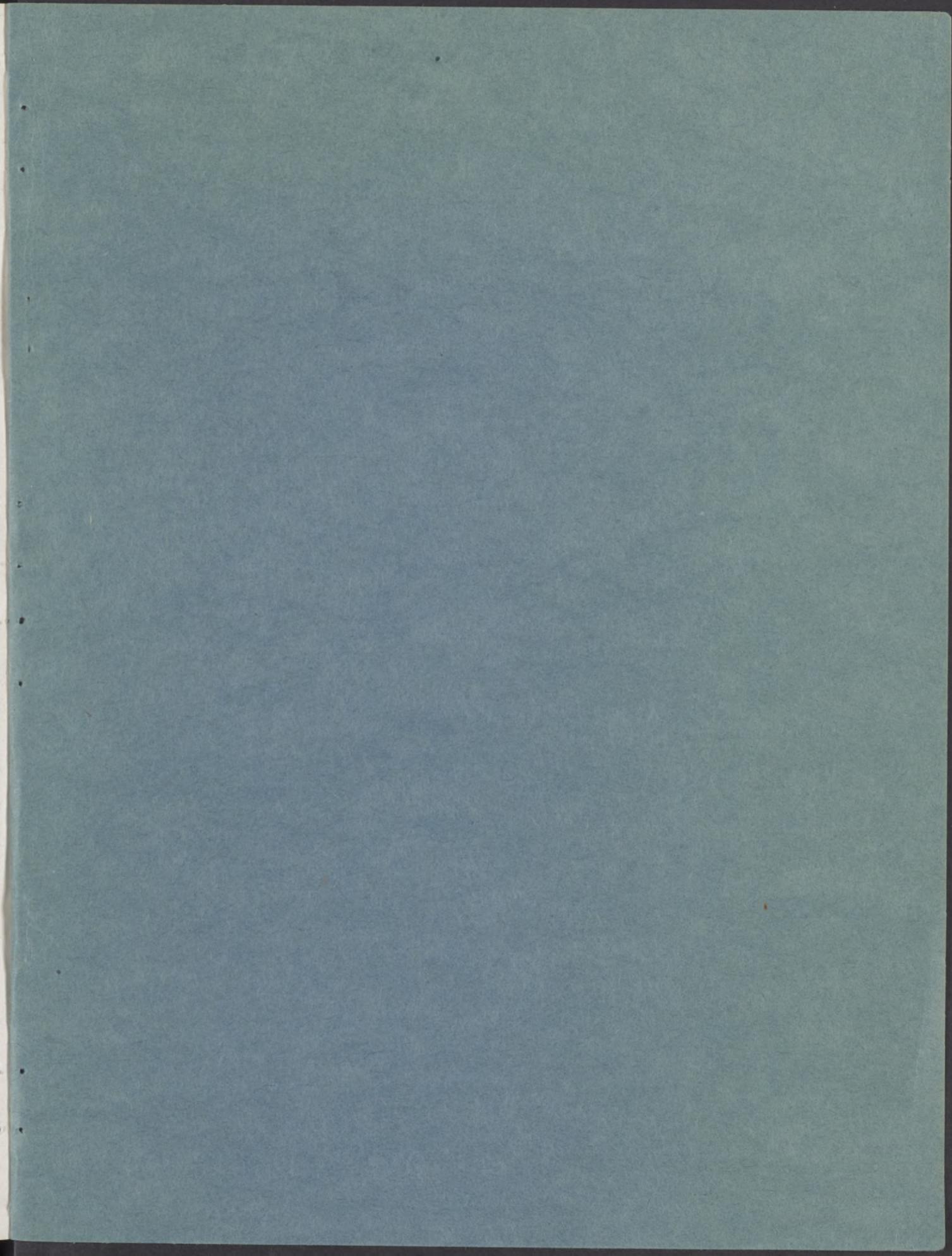
There are 229 Interviewing Aids published in card form. Each shows significant variations in the work performed, in a single occupation, and is used in the selection and training of workers to perform the elements of a job as it occurs in a specific plant.

JOB DESCRIPTIONS.

There are 131 of these free Job Descriptions similar to those described above.

JOB FAMILIES.

74 Job Families for Occupations are available without charge, including 17 Job Families for Army Occupations. They list job-groups which constitute good sources of workers to fill specified base occupations. There are now 10 free Job Families in the Industrial Series that show job-groups from which a specified key job in a particular industry can be filled; or job-groups in specified industries from which workers can be effectively upgraded or transferred to a specified key job in the same industry.



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