

AN ABSTRACT OF THE THESIS OF

William Kenneth Woodward for the M.S. in Ind. Educa.

Date thesis is presented May 14, 1951

Title DISSEMINATION OF OCCUPATIONAL INFORMATION THROUGH  
INDUSTRIAL ARTS IN THE SECONDARY SCHOOLS OF OREGON

Abstract approved Redacted for privacy  
(Major Professor)

The specialization of labor has resulted in a multiplicity of occupations. The number of jobs defined in the Dictionary of Occupational Titles, Volume I and its supplement exceeds 22,000. It is impossible for any one person to become familiar with all of these occupations; however, each individual needs to gain an acquaintance with the various fields of work in order to select a vocation which is in harmony with his own interest, aptitude, and ability. It is a definite responsibility of the schools to offer authentic, comprehensive, and continuing information designed to bring about satisfactory vocational adjustment for the pupils.

Industrial-arts teachers have an excellent opportunity for disseminating occupational information since the exploratory opportunities provided by the shop program give training in tool and machine operations which seem to parallel those of industrial occupations.

A questionnaire was used to determine current practices in dissemination of occupational information in the high schools of Oregon. A return of 53 per cent was realized from a total of 95 questionnaires mailed out. Some of the interesting facts pointed out by the questionnaire are:

Four principal methods of disseminating occupational information are employed by fifty per cent of the schools reporting. These are, in order of importance, visual aids, information on opportunities for vocational training, pupil visits to local occupational activities, and use of briefs, monographs, and pamphlets. Other methods, used to a lesser degree, are: guest speakers, community occupational survey, emphasis on occupations considered by students, instruction of use of job analysis, occupational trends, and shop club programs on various careers.

The greatest amount of class time devoted to information on occupations occurs in the following courses: machine shop, general crafts, carpentry, foundry, drafting.

Since much of the pupil's information about occupations is derived from books and pamphlets, a list of free and inexpensive materials has been compiled for the industrial-arts section of the occupational information library. In addition, sources for motion pictures, film strips, and posters have been listed.

As a result of this study the author has set forth several recommendations, including the following:

That industrial-arts teachers should have a course in occupations and careers so that they may become more proficient in aiding the pupils to develop an adequate conception of the industrial world.

That industrial-arts teachers should be increasingly aware of their favorable opportunity to disseminate occupational information. They should become familiar with and help their pupils to assimilate material on occupations which have a definite relationship to the industrial arts.

That industrial-arts teachers should help develop appreciation for the manual and minimal skill level work as well as for white-collar jobs.

That industrial-arts teachers strive to integrate their program of vocational assistance to the pupils, with the total school program of guidance services.

DISSEMINATION OF OCCUPATIONAL INFORMATION  
THROUGH INDUSTRIAL ARTS  
IN THE SECONDARY SCHOOLS OF OREGON

by

WILLIAM KENNETH WOODWARD

A THESIS

submitted to

OREGON STATE COLLEGE

in partial fulfillment of  
the requirements for the  
degree of

MASTER OF SCIENCE

June 1951

APPROVED:

Redacted for privacy

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Head of Department of Industrial Arts

In Charge of Major

Redacted for privacy

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Chairman of School Graduate Committee

Redacted for privacy

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Dean of Graduate School

Date thesis is presented May 14, 1951

Typed by Margaret Lieber



## ACKNOWLEDGMENTS

The writer wishes to express his sincere appreciation to Professor George B. Cox, Professor of Industrial Education, and Doctor Franklin R. Zeran, Dean, School of Education, for suggestions and constructive criticism in the development of this study.

Grateful acknowledgment is also made to Evelyn Jacobs, Head Librarian, Corvallis High School, and Mr. Glen L. Weaver, State Supervisor, Occupational Information and Guidance Service, for courtesies extended in the use of materials on vocational guidance.

Sincere appreciation is expressed to my wife for continuous encouragement and assistance.

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DISSEMINATION OF OCCUPATIONAL INFORMATION  
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CHAPTER I  
INTRODUCTION

This study is concerned with the dissemination of occupational information through the industrial-arts subjects in the secondary schools of Oregon. Every teacher can offer occupational information through his respective subject fields. The industrial-arts teacher seems to be in a natural position for giving occupational information since he covers several fields of industry and related activities.

Students enrolled in industrial-arts courses have an opportunity to participate in a wide variety of tool and machine operations which are typical of trade and industrial occupations. It is recognized, however, that the purpose of industrial arts in general education is not to produce skilled workers; that is the responsibility of the vocational education division. However, teachers of industrial arts can help prepare the students for post-high-school or job training by presenting the vocational implications to be found in the shop courses. Manipulative skills developed in the school shop may be of decided assistance to the student in his future vocation.



There are many methods of disseminating occupational information which the industrial-arts teacher can use without too much deviation from his instructional duties as set forth by the school's curriculum program. This study presents several of these methods, but the industrial-arts teacher should use discretion in selecting only those methods which best serve the needs of the students and the school.

#### A. Purpose of the Study

The principal purposes of the study are as follows:

1. To determine the methods used by industrial-arts teachers throughout the State of Oregon in providing pupils with information to help them in the wise selection of a vocation.
2. To determine the amount of time allotted to occupational information in the industrial-arts subjects.
3. To suggest ways and means of collecting and filing occupational information for use by industrial-arts teachers.
4. To show the relationship of shop courses to specific vocations in which the courses may be helpful.

#### B. Methods and Procedure of the Study

In order to obtain pertinent information from the industrial-arts teachers in the secondary schools of Oregon,

a letter of transmittal and a questionnaire were formulated and sent to schools selected on the basis of total enrollment and industrial representation. A questionnaire was sent only to schools whose student enrollment was one hundred or more since larger schools usually offer a wider range of industrial-arts courses.

All available literature was studied in order to determine the opinions of educational authorities on occupational information and its function in education.

#### C. Limitations of the Study

Occupational information is only one phase of the total guidance program, and the field of industrial arts was chosen because the exploratory opportunity offered by the shop places the instructor in a unique position for offering occupational information related to his area of work.

The nature and scope of this paper does not permit full treatment of certain specific methods for disseminating occupational information. Individual counseling and community occupational surveys are too extensive for thorough elucidation in this study.

#### D. Need for Occupational Information

Since the lives of most persons are spent in gainful occupations, it is proper that each school child be well informed about life's occupations. Ample information should

be made available for the best choice of jobs, in order to obtain optimum goals. By presenting occupational information in the schools, teachers can help orient young people in those areas of work in which they show aptitude, interest, and ability.

Parsons, the recognized founder of vocational guidance, stresses the importance of choosing a vocation: (21:1)

The wise selection of the business, profession, trade, or occupation to which one's life is to be devoted and the development of full efficiency in the chosen field are matters of the deepest moment to young men and to the public. These vital problems should be solved in a careful, scientific way, with due regard to each person's aptitudes, abilities, ambitions, resources, and limitations, and the relations of these elements to the conditions of success in different industries.

In the present industrial world there are some 22,000 jobs which have come about because of the specialization and mechanization of labor. Newer discoveries and inventions have offered more kinds of different jobs until a tremendous array of trades and occupations exists today. To be effective, educators must be aware of the importance of the school's responsibility to the students in presenting information essential to the wise selection of future vocations. This responsibility is pointed out in an article by Hays: (11:214-215)

It is the fault of the school that young people leave its doors with scant knowledge of the jobs which are open to them, of the preparation needed for them, and of the steps to be taken in order to secure them. The vocational guidance,



training, placement, and follow-up of youth offering their labor for the first time, called occupational adjustment, is as much the responsibility of the school as is guidance and training for college.

Resources for providing students with information on occupations are unlimited, and the schools have the responsibility of helping the pupils utilize the boundless materials available. This is conceded by Roberts (23:174) to be a definite function of the school.

American education in its endeavor to shape the well-adjusted adult from the amorphous clay of youth cannot minimize the importance of occupational adjustment in attaining satisfactory results. A wealth of facilities, subject matter, and vocational training opportunities are accessible to large segments of the people in this country. Each individual requires preparation so that he can utilize these boundless resources intelligently in order to become proficient in the occupation for which he is best suited. This selection cannot be adequately effected by the youth who does not possess appropriate working tools. The professional guidance occupational information, and pertinent practical experience provided by the school can contribute significantly in furnishing these vitally needed tools to the students, thus facilitating the choice of the optimum occupation -- one of the major factors in enabling the individual to live harmoniously within the framework of the present social structure.

The Harvard Report, (22:7) published in 1945, pointed out that in 1870 three out of every four high school graduates attended college. Today, it is the accepted thing and usual requirement that every youth shall attend high school. In a study of the elementary and secondary educational program of the State of Oregon, Holy (12:42) points out that 80



per cent of Oregon high school graduates do not go to college. They go directly into vocations from high school.

The Fourteenth Biennial Report of the State Division of Vocational Education in Oregon reveals that definite progress has been made in Oregon's vocational guidance program.

(19:22)

Educators and school boards are attempting to adopt high school offerings to include courses which will suit the needs of today's greater variety of students, and will better prepare individuals for living and for making a living in today's economic and social world.

The right job is important not only to the individual but also to the country in which he lives. Dissatisfied workers often change jobs and, in so doing, offset the nation's economic stability and progress. The effect of occupational choice on both the individual and the nation's economy is pointed out by Parsons: (21:1)

If a boy takes up a line of work to which he is adapted, he will achieve far greater success than if he drifts into an industry for which he is not fitted. An occupation out of harmony with the worker's aptitudes and capacities means inefficiency, unenthusiastic and perhaps distasteful labor, and low pay; while an occupation in harmony with the nature of the man means enthusiasm, love of work, and high economic values -- superior product, efficient service, and good pay.

In the future, we may find nearly half of our adult population untrained and discontented, if the schools fail to prepare for occupational adjustment. Disillusioned young people, ripe for political agitation, are a genuine

threat to democracy. Our schools today must meet this danger which threatens our democratic way of life.

E. Objectives of General Education as Related to Occupational Information

Recent statements of educational aims and objectives indicate that vocational guidance is very important in life adjustment education. The following formulations of objectives illustrate the importance of occupational information to life adjustment. (Objectives with implications to industrial arts are underlined)

The North Central Association of Colleges and Secondary Schools states: (6:43)

1. To maintain health and physical fitness
2. Exploration of vocations and vocational efficiency
3. Successful social relationships: civic, domestic, community
4. Right use of leisure

The objective of vocational effectiveness has been set forth by Harl Douglass, for the American Youth Commission: (6:43)

1. Citizenship in local, national, and world-wide civic, recreational, economic, and religious groups
2. Home membership -- domestic compatibility, rearing of children, purchasing and consumption of goods and services
3. Enjoyment of life -- recreation and other leisure occupations, appreciation and enjoyment of environment in general
4. Physical and mental health -- sound physical and mental conditions and healthy personality
5. Vocational effectiveness -- ability to

- contribute to the economic assets of  
society and to market contributions
6. Continued learning interests and abilities to read, to think, to make numerical computations, and to study most effectively

Emphasis was placed on occupational information as stated by the Educational Policies Commission: (6:44)

The Objectives of Self-Realization: The Inquiring Mind, Speech, Reading, Writing, Number, Sight and Hearing, Health Knowledge, Health Habits, Public Health, Recreation, Intellectual Interests, Esthetic Interests

The Objectives of Human Relationship: Respect for Humanity, Friendships, Cooperation, Courtesy, Appreciation of the Home, Conservation of the Home, Homemaking, Democracy in the Home

The Objectives of economic efficiency: Satisfaction in Good Workmanship, Occupational Choice, Occupational Efficiency, Occupational Adjustment, Occupational Appreciation, Personal Economics, Consumer Judgment, Efficiency in Buying, Consumer Protection

The Objectives of Civic Responsibility: Social Justice, Social Activity, Social Understanding, Critical Judgment, Tolerance, Conservation, Social Applications of Science, World Citizenship, Law Observance, Economic Literacy, Political Citizenship, Devotion to Democracy

Educators have long recognized the need for preparing youth for occupations. Wenrich states: (27:15)

Educators have always recognized the need for occupational preparation as one of several goals of secondary education; educators concerned with the total program, as well as vocational educators, have been consistently emphasizing this need. The original purpose of American high schools, as stated in the report of the Boston Committee appointed in 1828, was



to "prepare youth for occupational life". The Commission on the Reorganization of Secondary Education, 1917, included this aim among the cardinal principles and called it "vocational success". More recently, the Educational Policies Commission, in their 1944 report, Education for All American Youth, stated five purposes of secondary education, the first of which was that every child in the United States "should experience a broad and balanced education which will equip him to enter an occupation suited to his abilities and offering reasonable opportunity for personal growth and social usefulness".

As affirmed by the Educational Policies Commission, the aim of education within a democracy is to assist each individual in the development of his potentialities in fullest degree.

#### F. Terminology

1. Occupation is a vocational pursuit in which one is gainfully employed.

2. Occupational Information refers to information presented on any specific occupation. This information should include a description of the occupation, its present status, trends, duties, physical and mental requirements, training and preparation required, compensation, and opportunities for advancement.

3. Related Information is that information associated with the units of instruction considered important in a general way but not necessary for the pupil to know in order to perform the manipulative operations.



4. Job Analysis is an intensive, direct method for obtaining the pertinent facts about jobs. It includes the observation of the job and the reporting of facts which are observed and which are obtained in conversation with workers, supervisors, and others who have information of value. (25:13)

5. Occupational Abstracts and Briefs are descriptions of occupations and groups of occupations prepared for students and counselors. These pamphlets contain information about salaries and probable future opportunities for employment.

6. Occupational Monographs cover similar kinds of information found in the occupational abstracts and briefs, but the monograph is a much longer document. They usually describe a field of work that involves a number of related occupations.

7. Dictionary of Occupational Titles (D.O.T.) contains 22,028 defined jobs which are known by an additional 17,995 titles, making a total of 40,023 defined titles. The Dictionary is not complete since old job titles are being discarded and new ones added, which calls for constant revision.

8. Dictionary of Occupational Titles, Part IV, Entry Occupational Classification describes fields of work and not specific occupations. It is designed to assist individuals who must find employment on some basis other than prior work

experience or fully qualified training. These individuals are referred to as "entry applicants".

9. Life Adjustment Education means an adjustment to home, work, and the community in terms of what homes, jobs, and getting along with fellow citizens require of people in real life. (1:9)

10. A General Shop is one organized and equipped to offer instruction in two or more broad areas of work at the same time, usually under the supervision of one instructor.

## CHAPTER II

### HISTORICAL BACKGROUND

In primitive times, man had little choice about the type of work, or vocation, he followed. The father of the family trained the son to hunt and kill animals. After this chore was completed, it was left to the women to clean, cook, and prepare the meat for food. There was no division of labor as every man had about the same task to perform.

As civilization advanced, it was soon apparent that certain men were better craftsmen than others and trades soon developed. This paved the way for apprenticeship training.

As labor has become even more specialized and complex, the need has become greater for trained young men for various fields of work. New inventions and discoveries have offered more kinds of different jobs, until we have a bewildering array of trades and occupations today.

The complexity of our industrial world may be more fully realized when we are reminded that the 1949 Edition of the Dictionary of Occupational Titles states: (5:Forward XI)

There are 22,028 defined jobs which are known by 17,995 titles, making a total of 40,023 defined titles. The coverage of this edition, both occupational and industrial, is by no means complete. In a rapidly moving economy, such as our own, where both progress and change are inherent, no edition can ever be considered complete and current. New jobs constantly come into being and old ones change or become obsolete.



The early history of our educational system reveals the fact that vocational guidance failed to keep pace with the rapid developments in the industrial world. It is generally recognized that vocational guidance had its beginning in 1908 under the influence of Frank Parsons. It should be noted, however, that some educators recognized the need for presentation of occupational information within the classroom many years before its perpetuation by Parsons. Literature dealing with the qualifications and preparation necessary for success in various occupations and professions began to emerge very early in the educational program. Brewer (4:41-42) discusses some of the early literature on occupational information as follows:

Books offering systematic occupational information addressed to parents, teachers, educators, and incidentally to the young, began to appear as early as 1747. Guidance in the choice of a vocation was for the most part general in nature, except when combined with occupational information; many of the books giving occupational information were written to guide in the choice of a vocation. We find that early books on occupational information total nearly forty. A few of these were textbooks in form if not in fact. This indicates the extent of early interest in guiding young people. The need for vocational tryouts and for guidance in vocational education, placement, and readjustment, in cooperation with the schools, was being expressed definitely before 1908, but with little or no response on the part of the school and colleges.

Further interest in presenting occupational information may be seen in a book in 1836 (4:30) by Edward Hazen. This book, The Panorama of Professions and Trades, or Every Man's



Book, was recommended for use in classes on occupations and several schools in Philadelphia were said to have used it. Although Hazen prefaced his textbook with the statement that occupational information should be taught in schools, it made no permanent contribution toward the provision of classes in occupation information in the school curriculum. This idea was to wait approximately eighty more years.

William A. Wheatley is credited with the inauguration of the first definitely scheduled classes in occupational information. (4:124) As Superintendent of Schools in Fairfield, Connecticut, and later in both Fairfield and the adjoining town of Westport, he developed a profound conviction that formal education fails to appeal to a large number of pupils, especially boys. He was convinced that a study of vocations, at least for all boys, should be introduced into the school curriculum. He secured the assistance and co-operation of Superintendent Frank L. Mead of Westport, and George H. Boyden, Principal of Westport High School. They were favorable to the plan, and Boyden agreed to teach the class, which began in September 1908.

Wheatley later teamed with E. B. Gowin and the two wrote the book Occupations, (4:125) expressly for boys, which furthered the introduction of classes in occupations. This book was published in 1916, by Ginn and Company. Similar courses were organized in Boston, and by 1912 Henrietta Rodman had developed a course in occupational information

for girls in a New York City high school.

As the new movement for an organized vocational guidance program was developed, it became more complex, requiring a diversity of tools, facilities, procedures, and personnel. In many cases new facilities were developed for effecting vocational guidance. Manual training, which gave little scope for exploration of interests and abilities in industry, was abandoned or transformed into a plan for sampling several kinds of industrial work.

It should be noted that industrial arts was introduced initially to serve vocational interests. This grew out of the interest of a man who desired to connect manual training with the rising movement for vocational education and training. George Merrill (4:49) set up a four-year program in 1894, known as the California School of Mechanic Arts. During the first two years, emphasis was placed on exploratory shop work combined with regular academic subjects, but the last two years were devoted to specialized trade preparation. No person was designated as counselor and there was no systematic study of occupational information, but these duties were recognized and carried out by the management of the school.

The need for exploratory and tryout ideas for vocational guidance also gave rise to the general shop. As early as 1915 (4:128) such a shop was set up in Washington Junior High School in Rochester, New York. The areas of work were

woodworking, metalworking, electricity, painting, machine shop, and general craftsmanship. The general shop plan was organized and operated by Alfred P. Fletcher, the assistant superintendent in charge of vocational education.

The characteristics of the general shop are indicated by the following quotation from Newkirk and Stoddard:

(17:127)

The general shop is a broad group of educative industrial arts activities embracing techniques of shop organization and teaching methods which enables a community, whether large or small, to present a unified core of content, based on life needs, as summarized in these aims: developmental experience interpretative of the major phases of the world's industrial work, "handy-man activities", consumer's knowledge and appreciation, guidance, hobbies, social habits, and (for a very small per cent) vocational preparation.

A brief glance into the development of vocational guidance shows that great strides have been made since the founder, Frank Parsons, in 1908 set up the Boston Vocational Bureau. According to Williams: (29:344)

At Parsons' death, Meyer Bloomfield took up the work, and in the years that followed he became an evangelist for the guidance movement. From this Boston Vocation Bureau there arose and was developed the idea of school responsibility for aiding youth to choose their lifework with discretion and to make suitable preparation therefor. Through publications sponsored by this bureau, the concept and the procedures spread all over the nation. New York, Grand Rapids, and Los Angeles, to name only a few of the large cities, soon began to develop guidance programs for their school systems.

Since that time the movement has grown very rapidly. This is evidenced partly by the growth of the National



Vocational Guidance Association founded in 1913 at a meeting in Grand Rapids, Michigan. Guidance services now have become accepted and important functions in the school curriculum and have been given official status in the United States Office of Education. Jones has pointed out: (14:556-557)

Guidance now has a definite status in the Federal government. In 1938, plans were made for Occupational Information and Guidance Service in the Vocation Division of the United States Office of Education and it was formally inaugurated on August 1, 1939. Its scope and purpose have frequently been described by its chief, Harry A. Jager, and by John W. Studebaker, Commissioner of Education.

a. Purpose -- Through a broadly conceived guidance program, it promotes staff services in a school to care for all aspects of the guidance needs of the pupil, the school, and the community. Emphasis is laid upon individual counseling and upon the essential provisions in the school program to make this counseling effective in the pupil's attack upon his vocational, educational, personal, placement, and other collateral problems. This involves the encouragement of the development of personnel and organization for counseling services in state departments of education, local school systems, and in individual school units so that they may function in helping youth and adults, in school and out, to make better decisions about ways of making a living and other personal problems.

b. Activities -- Its activities are chiefly in the following fields:

1. Collecting and disseminating information about occupations.

2. Developing plans for a permanent cumulative inventory of the individuals who pursue these occupations.

3. Promoting throughout the nation the consciousness of the need for occupational information and general guidance as an integral part of the school program.

It should be noted that the name of Occupational Information and Guidance Service in the above quotation has been replaced recently by the title Guidance and Counseling Branch. Also, note that the present Commissioner of Education is Earl J. McGrath.

Shartle states: (25:5-6)

Occupational information in secondary schools has had considerable growth during the past decade. Many larger schools and some smaller schools have originated programs for developing, filing, and using occupational information.

The Occupational Information and Guidance Service was inaugurated in Oregon in July 1943, under the Division of Vocational Education.

## CHAPTER III

## OCCUPATIONS RELATED TO INDUSTRIAL-ARTS SUBJECTS

Every course offered in the school shop has vocational implications and can be related to one or more occupations. The Los Angeles Curriculum Committee has recognized that industrial arts can contribute to occupational exploration. As the result of the committee's recommendations, vocational guidance sections have been added to all industrial-arts courses in the Los Angeles city schools. The following excerpt from the general-metals area course outline is indicative of the recognized vocational implications for other industrial-arts areas: (18:343)

General metal in the senior high school is an exploration of the areas that comprise the mechanical field (construction, design, operation, production, and repair). It is closer examination of the metalworking opportunities and requirements within these areas. It especially is an exploration of the student's own abilities.

Occupational information has a very definite place in the teacher's instructional program of each term. The pupil's choice of a high school major and his future career will be greatly influenced by his industrial-arts experiences and by his knowledge of general requirements and occupational opportunities in the mechanical field. The instructor will give much occupational information incidental to other instruction, but he should also set aside one or more periods before the close of the semester to review and pull together the metalworking experiences of the class and to relate these to the occupational opportunities and requirements of the metal trades and related occupations .....



The extent to which industrial-arts courses offer occupational exploration in Oregon may be noted from results of the questionnaire. A total of 38 per cent of the respondents indicated that emphasis is placed on occupations for which shop courses are desirable. In response to the question, "Is the occupational information which you offer limited to those areas explored in your shop?", 32 per cent answered in the affirmative. It is hoped that the newly formed industrial-arts curriculum committee in Oregon will be fully aware of the vocational implications to be found in shop courses.

Eleven major groups of high school subjects selected by the United States Office of Education have been related to more than 1000 important occupations to which an ability in and knowledge of a subject may lead. The list of occupations related to industrial arts as set forth by Bacher and Berkowitz (2:66-73) has been revised by the author in accordance with the new edition of the Dictionary of Occupational Titles, Volume I, and Schloerb, School Subjects and Jobs (24:16-47). The primary purpose of this revised list is to familiarize the shop teacher with a sampling of the numerous occupations which may be related to industrial-arts courses. The multiplicity of occupations makes it impracticable to present a more thorough list.

Jobs related to industrial-arts subjects:

AERONAUTICAL ENGINEER -- Designs, tests, and supervises the construction of aircraft.

AIR-CONDITIONING ENGINEER -- Specializes in design, construction, operation, maintenance or sale of air-conditioning equipment; is a mechanical engineer.

AIRPLANE CLEANER -- Cleans dust, oil, and grease from the exterior of transport planes.

AIRPLANE COVERER -- Sews airplane fabric to airplane structure.

AIRPLANE INSPECTOR -- Inspects aircraft fittings and assembled parts of transport planes before and after flight and during overhaul.

AIRPLANE MECHANIC -- Checks condition of airplane and engine, makes repair, replacements, and adjustments.

AIRPLANE PILOT -- Operates an airplane for the transportation of mail, passengers, or freight.

AIRPLANE RIGGER -- Aligns wings and tail surfaces, installs wires and control cables.

AIRPORT CONTROL OPERATOR -- Controls the take-off and landing of transport and non-commercial aircraft at an airport by means of radio, lights, and flags.

ANNEALER -- Tends an annealing furnace in which metal parts are subjected to heat treatment to relieve internal stresses and to soften and strengthen the metal.

ARCHITECT -- Plans, designs, and oversees construction of buildings, such as private residences, office buildings, factories, and similar structures.

ARCHITECT, LANDSCAPE -- Plans and prepares drawings for ornamental development of an area of land.

ARMATURE AND FIELD COIL BAKER -- Removes moisture from wet field or armature coils of electric motors, and bakes varnished surfaces.

ARMATURE SHAFT REPAIRMAN -- Repairs and machines armature shafts to be used in rebuilt or repaired motors or generators.

- ARMATURE SOLDERER -- Fastens the connections of wire windings on electric motor or generator armatures to the proper commutator segments and wires.
- ARMATURE WINDER -- Winds coils of wire into slots of armature coils.
- AUTO BODY REPAIRMAN -- Removes dents in automobile bodies and fenders; may weld breaks in body metal; may install upholstery.
- AUTO MECHANIC -- Repairs automobiles and trucks.
- AUTOMOBILE TESTER -- Determines the need and extent of repairs to be made on autos.
- AUTO SERVICE STATION ATTENDANT -- Performs duties at service station as requested by customer.
- AUTOMOBILE WASHER -- Washes automobiles and trucks.
- AUTOMOTIVE ENGINEER -- Designs and supervises the construction of automobiles, trucks, trailers, and other automotive equipment.
- BABBITTER -- Tins and babbitts bearing caps of automobiles; may apply metal to bearing surfaces of metal parts in locomotive and car building or in a machine shop.
- BAND SAW OPERATOR -- Supervises and directs activities of crew of workmen and controls operation of band head saw and log carriage to cut logs into cants or boards.
- BARKERMAN, HAND -- Removes bark remaining on logs or blocks after logging operations, using disk barker.
- BARREL CENTERER -- Drills and countersinks a hole in each end of a rifle barrel before it is drilled.
- BARREL CHAMBERER -- Counterbores and reams chambers in barrels of guns to shape of cartridges to be used.
- BARRELL REAMER -- Reams out marks left from drilling and brings bore to proper size by machining.
- BELT SANDER -- Smooths rough surfaces of milled stock in woodworking.
- BENCH HAND -- Performs any one or a number of hand or small jobs at a bench.



- BLACKSMITH -- Forges metal articles and parts for the building, repairing, or manufacturing of equipment.
- BLAST FURNACE BLOWER -- Produces molten pig iron by melting iron ore in a blast furnace.
- BLAST FURNACE OPERATOR -- Performs various supervisory duties concerned with the operation and maintenance of a blast furnace in which iron ore is melted in order to recover the metal.
- BLUEPRINTING MACHINE OPERATOR -- Operates machine that automatically exposes, develops, washes, and dries prints.
- BOATBUILDER, WOOD -- Constructs and repairs small wooden boats.
- BOILER INSPECTOR -- Inspects boilers under construction or boiler installed in homes, plants, or ships.
- BOILERMAKER -- Performs any or all machine and hand operations necessary to fabricate and assemble boilers, tanks, vats, and other vessels made of metal plates.
- BOOKBINDER -- Performs any or all of the operations in affixing covers to sewn-together signatures to form books or pamphlets.
- BORING MACHINE OPERATOR -- Sets up and operates a machine to bore holes in wooden or metal parts.
- BRAKE ADJUSTER -- Tests and adjusts mechanical and hydraulic brakes on automobiles.
- BRAKE ASSEMBLER -- Installs brake shoes and other brake apparatus on an automobile assembly line.
- BRAKEMAN, AIR -- Inspects, adjusts, repairs, and oils railroad car brakes; may specialize in repairing and relining air brakes on trucks, buses, etc.
- BRAKE OPERATOR -- Operates brake to form angular bends in sheet metal.
- BRICKLAYER -- Lays brick, terra cotta, hollow tile, and similar building blocks, except stone and marble in building construction.
- BUFFER -- Polishes metal and hard composition objects to a high lustre by holding the objects against a rapidly rotating wheel.

BUILDING CONTRACTOR -- Is responsible for construction of buildings in accordance with specifications.

BUILDING CONSTRUCTION ENGINEER -- Supervises and directs the erection and completion of building-construction projects; is a civil engineer.

BUILDING ENGINEER -- Works in an office building, department store, hotel, or similar building; is a stationary engineer.

BUILDING INSPECTOR -- Makes inspections of buildings to rate them for fire insurance.

CABINETMAKER -- Performs the hand carpentry necessary to cut, shape, and assemble high grade articles of furniture.

CABLE DRILLER -- Supervises set-up and drilling operations and operates controls of a cable drilling rig which is used to drill oil and gas wells.

CABLE ENGINEER -- Plans and directs work of laying and repairing cable.

CABLE SPLICER -- Joins the ends of wire cables in interweaving the strands making up the cables.

CABLE SPOOLER -- Places empty spools on spindles that wind up the finished cable onto the spools; is a spooling machine operator.

CABLE SQUEEZER -- Binds bridge suspension cables with wire.

CAMERAMAN -- Photographs persons, scenes, motion picture sets; may be commercial, aerial, motion pictures, etc.

CALKER -- Makes edges and seams watertight or airtight in pipes, tunnel linings, boards, and steel plates.

CARPENTER -- Performs general carpentry work involved in the erecting of wooden building frames, laying floors, and similar work involving the fastening together of wood or material such as fiberboard.

CEMENT FINISHER -- Paves the surfaces of floors, walls, etc. with cement.

CERAMIC ENGINEER -- Conducts research and directs the technical work in the manufacture of ceramic products.

CHAIN MORTISER OPERATOR -- Cuts mortises in wooden parts with a power-revolved, toothed, endless chain saw.

CHIPPER -- Works an air hammer to drive a sharp chisel for trimming excess metal from the edges of sheet-metal stampings; or chips defective spots, flaws, and slivers from ingots, rails, or steel plates and bars with a hammer and cold chisel; or removes rivet heads from steel plates and bars, using a chipping gun.

CIRCULAR SAW OPERATOR -- May operate gang saws or singular saws for milling out stock.

CIVIL ENGINEER -- Specializes in the construction of bridges, water works, dams, highways, buildings, and sanitary systems.

COIL BUILDER -- Assembles parts of induction coil units used to produce high voltage ignition current.

COIL WINDER -- Winds armature coils on a coil winding machine; winds specified amount of wire into a coil on a rotating disc.

COMPOSITOR -- Sets type by hand for the printing of short articles, headings, and other printed matter.

CONDENSER INSPECTOR -- Visually examines radio condensers for holes in terminals or cans, excess solder, and imperfect stamping.

COPPERPLATE PRINTER -- Sets up plate process and prints cards, letterheads, announcements, and similar forms from engraved copperplates.

COPY READER -- Corrects copy and writes headlines to put copy into final form for composing room.

COPY WRITER -- Writes original descriptive advertising copy.

COREMAKER -- Makes sand cores used in molds to form hollows or holes in metal castings.

CUPOLA CHARGER -- Charges scrap iron or pig iron, coke, and limestone into a cupola in which the iron is melted so that it may be poured into sand molds to make castings.

CUPOLA HOISTMAN -- Controls a skip hoist to lift pig iron, coke, or limestone to the top of the cupola furnace.



CUPOLA REPAIRMAN -- Repairs and rebuilds the lining of a cupola.

CUPOLA TAPPER -- Draws molten metal from cupola into ladles for pouring into molds to make castings.

CUT-OFF SAWYER -- A general term used to designate a worker who cuts stock lumber to length.

CYLINDER-PRESS MAN -- Makes ready (sets up), tends, and supervises the operation of a cylinder-type printing press.

DIE CASTING MACHINE OPERATOR -- Makes zinc, aluminum, or magnesium alloyed castings of machine parts in a die-casting machine.

DIE CUTTER -- Operates a die-cutting machine to cut or stamp small pieces of various shapes.

DIE DESIGNER -- Makes drawings of dies necessary to form a complete stamping, forging, or other part.

DIE SINKER -- May make or finish dies, but usually performs a particular operation such as cutting.

DRAFTSMAN -- Prepares clear, complete, and accurate working plans and detailed drawings for manufacturing and engineering purposes.

DRILL PRESS OPERATOR -- Drills holes in parts or articles of plastics, wood, light metal, or similar material.

DRILL SHARPENER -- Sharpens drills with a tool-grinding machine; is a tool-grinder operator.

ELECTRICAL ENGINEER -- Designs electrical equipment, plans electrical systems, and supervises the erection and operation of the equipment.

ELECTRICAL REPAIRMAN -- Keeps electrical equipment in good repair and operating condition.

ELECTRICIAN -- Lays out, assembles, installs, and tests electrical fixtures, apparatus, control equipment, and wiring.

ENGINE LATHE OPERATOR -- Shapes and finishes precision machined parts on automatic lathes.

- ENGINEER -- Operates various machines and equipment for the production of power or to convert power from one form to another; repairs and operates all types of engines, pumps, injectors, condensers, boilers, and supplementary mechanical equipment on a ship.
- ENGRAVER -- Engraves lettering or designs on printing plates or jewelry.
- ESTIMATOR -- Computes labor, material, and equipment installation costs to prepare bids for contractors for construction work.
- FARM MECHANIC -- Repairs tractors and other farm machinery, constructs and repairs barns, houses, sheds, pens, coops, silos, fences, and other farm structures.
- FILM OPERATOR -- Produces synthetic rubber film by passing emulsion through coagulation system, wash belts, squeeze rolls, and driers.
- FILM PRINTER -- Feeds, adjusts, and operates a film-printing machine by which the image on the negative motion-picture film is printed on the positive film.
- FOREMAN -- Is a supervisory worker.
- FORGER -- Forges metal by hand or machine.
- FORGING MACHINE OPERATOR -- Operates a power or drop hammer equipped with a die that forms hot or cold metal stock into various shapes.
- FURNITURE WORKER -- Repairs and rebuilds upholstered furniture.
- FURNITURE FINISHER -- Finishes or refinishes surfaces of furniture.
- FURNITURE DESIGNER -- Designs new furniture for manufacture and lays out alterations to be made on furniture already completed.
- GALVANIZER -- Applies a coating of zinc to iron or small steel objects to prevent rusting.
- GENERAL MECHANIC -- Repairs and maintains machines, vehicles, and other mechanical objects.
- GLAZIER -- Cuts, smooths, and polishes glass.

- INSPECTOR -- Examines articles after various stages of manufacturing or processing, or after completion.
- INVENTOR -- Originates a new device or machine, usually of a mechanical or scientific nature.
- JANITOR -- Keeps building in clean, orderly condition and good state of repair and operates furnaces and boilers.
- JOB SETTER -- Installs cutting tools in various types of automatic or semi-automatic machinery.
- JOINER -- Constructs interior woodwork for a ship or boat.
- LADLE MAN -- Pours molten metal from steel mill ladles into molds.
- LATHE OPERATOR -- Operates a lathe for turning wood stock.
- LEAD BLOWER -- Operates a blower furnace to melt lead.
- LEATHER DRESSER -- Applies oil and soap compounds to the surfaces of tanned hides or skins.
- LENS GRINDER - Grinds lenses for spectacles to the curvature called for by prescription.
- LINOTYPE OPERATOR -- Operates the keyboard of an automatic machine that selects and assembles matrices of letters into lines and casts strips of type from type metal for use in printing.
- LITHOGRAPHER -- Makes ready and tends the operation of a printing press used for printing subject matter from engraved stones.
- LOCKSMITH -- Repairs locks, changes combinations, opens locks, and makes new or duplicate keys.
- LUMBER HANDLER -- Performs many duties connected with the moving and stacking of lumber.
- LUMBERJACK -- A general term used to designate anyone engaged in logging operations in a logging camp.
- LUMBER SCALER -- Determines the board footage of lumber that is supplied to plant by measuring width of lumber of standard lengths and thicknesses with lumber scale. Records the footage on tally sheet.
- MACHINE FILER -- Shapes dies and machine parts of intricate shape on a precision filing and sawing machine.



- MACHINIST -- Carries through to completion the construction and repair of all kinds of metal parts, tools, and machines.
- MARINE ENGINEER -- Designs and supervises the construction and installation of mechanical equipment in ships.
- MASON -- Works with artificial stone, brick, concrete, stone, and other such material.
- MATRIX INSPECTOR -- Examines metal matrices (dies) for defects which are readily discernible with the naked eye.
- MAT-ROLLER-PRESS OPERATOR -- Operates a mat-roller press to make impressions of type and cuts on mats (wood fiber sheets) to form molds for casting type metal into printing plates.
- MECHANICAL ENGINEER -- Designs industrial tools and machinery, supervises their operation, and conducts research.
- METALLURGIST -- Purchases metal, tests metal, computes values, and determines the uses of various kinds of metals.
- MICA EYELETING MACHINE OPERATOR -- Positions radio-tube mica support plates between jaws of eyeletting machine that automatically drops eyelets into plate holes.
- MILLING MACHINE OPERATOR -- Performs shaping, planing, and grooving machine work on metal objects.
- MILLWRIGHT -- Changes the layout and set-up of machine and mechanical equipment in a plant or mill.
- MOLDER -- Makes molds in which metal is cast or one who operates a press to mold materials into desired shapes.
- MOTION PICTURE PROJECTIONIST -- Operates motion picture projection machine and sound reproducing equipment.
- OCCUPATIONAL THERAPIST -- Conducts programs for patients confined in hospitals and other institutions to provide them with directed activity and to assist in their rehabilitation.
- OILER -- Lubricates with oil or grease the moving parts or wearing surfaces of mechanical equipment.
- PAINTER -- Performs all types of painting work.

PATTERNMAKER -- Engages in making patterns of clay, plaster, or other materials for use in making open sand molds from which dies and parts are cast.

PHOTOGRAPH PRINTER -- Prints and develops photographs by the contact-printing method.

PHOTOENGRAVER -- Prepares copper and zinc plates to be used in printing.

PIPE CALKER -- Pours molten lead or melted calking compound into pipe joints of water, gas or oil pipe lines, and forces sealing material into joints to make them watertight.

PIPE FITTER -- Prepares and installs insulation materials around pipes; installs, bends, cuts, and threads pipes and fittings.

PIPE-THREADING-MACHINE OPERATOR -- Operates a machine used for threading or cutting external screw threads on pipe or other tubing.

PLANER OPERATOR -- Machines plane surfaces of large metal objects with a machine.

PLASTICS-SHEET-FINISHING PRESS OPERATOR -- Imparts any desired finish, such as mat, linen, or bright, to plastics sheets by pressing them between appropriate metal plates.

PLASTERER -- Applies plaster to walls and ceilings of a building.

PLATEN-PRESS MAN -- Makes ready (sets up), tends, and supervises the feeding of a platen-type printing press.

PLUMBER -- Assembles and installs air, gas, water, and waste-disposal systems.

POWER HOUSE ENGINEER -- Works in a small central power or lighting plant that supplies mechanical or electrical power for distribution or for the operation of machines and equipment in an industrial plant.

POWER PRESS OPERATOR -- Operates a power-driven press to punch, trim, forge, or perform other shaping or fabrication operations on metal.

PRINTER -- Performs any and all of the duties concerned with the hand and machine setting of type, the assembling of type and cuts, and related duties prior to actual printing operations.

PUNCH PRESS OPERATOR -- Operates a press to punch holes in metal or other stock by means of dies.

RADIO ELECTRONICS ENGINEER -- Designs and supervises construction and installation of radio, television, and allied equipment, such as radar and frequency-modulation transmitters and receivers.

RESAW FEEDER -- Places lumber, one board at a time, in feed rollers of saw which cuts the boards edgeways into two or more pieces.

RIGGER -- Selects and attaches proper lifting and grappling equipment and directs the lifting and moving of loads in various parts of ship yard or manufacturing plant.

RIVETER -- Joins metal or other parts of an article together by means of rivets and a riveting machine.

ROOFER -- Applies any type of roofing.

SAILMAKER -- Fabricates and assembles ship and boat canvas parts.

SAND HOG -- Works in the construction industry under compressed air as in a caisson or tunnel.

SANDBLASTER -- Cleans paint, scale, grease, tar, and dirt from the surface of metal or stone objects; also frosts panes of glass and cuts lettering or designs on monuments.

SAND CONTROL MAN -- Operates a sand-conditioning machine that cleans, moistens, mixes, and stores molding sand.

SAW FILER -- Sharpens and reconditions all types of saws.

SHEET METAL WORKER -- Fabricates, assembles, alters, repairs, and installs sheet-metal articles and equipment.

SHIPWRIGHT -- Performs skilled carpentry operations in the construction of a ship or in the making of repairs.

SHOEMAKER -- Repairs, resoles, and reheels shoes.



- STAGE OR SCENE DESIGNER -- Designs sets for theatrical productions and directs construction of scenery backdrops.
- SOLDERER -- Joins metal parts together by melting and applying solder.
- STATIONARY ENGINEER -- Operates and maintains stationary engines and mechanical equipment.
- STEAM FITTER -- Installs pipes and equipment that must withstand high pressure for the distribution of steam.
- STRUCTURAL STEEL WORKER -- Works with structural steel members, such as girders, plates, and columns, and helps to unite them permanently into a completed structure or into the steel framework of a structure.
- TANNER -- Treats hides or skins in solutions to convert them into leather.
- TEACHER -- Instructs students in an educational institution in shop subjects.
- TINSMITH -- Makes and repairs household equipment; is a sheet metal worker.
- TOOL CLERK -- Is in charge of storing tools and equipment and may make minor repairs.
- TOOL DESIGNER -- Designs special tools and fixtures.
- TOOL GRINDER -- Sharpens fine-edged cutting tools.
- TOOL INSPECTOR -- Tests and approves new gages, jigs, fixtures, and precision tools before they are used by production workers, and checks to make sure the tools are maintaining their accuracy.
- TRACER -- Traces and copies drawings made by a draftsman.
- TYPEWRITER SERVICEMAN -- Specializes in the repairing of typewriters.
- TYPE SETTER -- Sets type by hand for the printing of short articles, headings, and other printed matter.
- UPHOLSTERER -- Secures padding over cushion springs which have been previously fastened to metal frames.
- VARNISHER -- Applies transparent finishes to articles by brush or spray brush.

veneer-slicing-machine operator -- Sets up and operates a machine that cuts thin sheets of wood from flitches by moving the flitches up and down against a knife.

veneer stacker -- Stacks plywood panels and mats for thorough drying of glue.

wire drawer -- Forms wire of a desired diameter by drawing a bar of metal through successively smaller holes in hardened steel plates.

wood turner -- Cuts specified designs of furniture parts, automatic lathe patterns, or other wooden pieces of circular cross-section.

wood carver -- Carves designs and other objects in wood for novelty or ornamental values.

## CHAPTER IV

## METHODS OF DISSEMINATING OCCUPATIONAL INFORMATION

Providing occupational information must be a continuing process throughout the secondary school years. To rely on career day once each year, or upon a well-organized vocational file in the library, is not sufficient to bring about desired results. Other methods of disseminating this information must be used. Subject-matter teachers must realize the importance of stressing occupations relating to their subjects, at the appropriate time.

The responsibilities and duties of the classroom teacher in the role of dissemination of occupational information are clearly stated by Zeran: (31:4)

Every teacher, whether he is conscious of the fact or not, has an important role to play in the guidance program. The position of the classroom teacher is of such a nature that he can give valuable assistance to the pupil, particularly with regard to occupations related to his field, these being occupations for which that particular subject is necessary and those for which it is recommended. His duties and responsibilities in the phase of occupational information are:

1. Cooperate with school counselors in the dissemination of occupational information.
2. Contribute occupational information from his own specialized field.
3. Stress, with careful regard to realistic conditions, the occupational value of subjects taught.
4. Provide developmental group activities in citizenship, leadership, and personality.
5. Explain the importance of traits of character and personality needed to become a successful worker.



6. Help the student to evaluate important outcomes of successful work in addition to salary.
7. Encourage the pupil to work up to capacity.
8. Assist in preparing assembly programs dealing with vocational guidance.
9. Interpret the vocational implications of school subjects and help students develop proper work attitudes.
10. Assist the counselor in arranging and carrying out occupational trips.
11. Assist in the development of poster materials, plays, and similar activities related to guidance.
12. Encourage the use of visual and auditory aids.

No teacher should be at a loss for methods of disseminating occupational information as the procedures are numerous and varied enough for each teacher to select those which best serve the needs of the students. As previously stated, a questionnaire was formulated and sent to shop teachers of selected schools in Oregon to determine the most frequently used methods of providing occupational information through their subject field. A result of the findings has been incorporated with the methods suggested in this study.

The questionnaire was divided into two major parts. The first section was designed to learn whether the school has an organized guidance program and the necessary tools for its function. A return of 53 per cent was realized from a total of 95 questionnaires sent out.

It is normally conceded that, in order to have an organized guidance program, the school must furnish a

competent counselor with definite time set aside for counseling duties.

Holy makes the following recommendation: (12:68)

A minimum of one period per day of teacher-counselor time for each 150 students enrolled be provided with the suggestion that one period for each 100 is preferable.

Results from the questionnaire returns show a total of 31 of the 50 schools have counselors with time set aside for counseling duties. This leaves the remaining 19 schools without counseling services.

It seems logical that dissemination of occupational information in the various subject fields would be facilitated in schools having counselors and the necessary tools for vocational guidance. However, comments on the questionnaire returns reveal that the concensus among industrial-arts teachers is to leave all of vocational guidance, including dissemination of occupational information, to the counselors. Two of the comments indicate that classroom teachers are becoming more aware of their responsibilities in the vocational guidance program:

1. "We have a job placement counselor who does all things mentioned for occupational information, but we should do it in class".
2. "We have a full time vocational counselor and a full time distributive education instructor. They direct all occupational studies; we cooperate".

The classroom teachers should cooperate with the librarian in ordering books pertaining to occupational information and should see that both they and their pupils make occasional reference to appropriate related materials. The following questions were asked primarily to ascertain if industrial-arts teachers are familiar with available materials in the occupational fields and if the school library is well equipped to meet the needs of the teachers in presenting this information.

	Percentage of Total Returns	
	<u>Yes</u>	<u>No</u>
Does the library have the Dictionary of Occupational Titles?	67%	33%
Does the library have an occupational bookshelf?	46%	54%
Do you use Part IV of the Dictionary of Occupational Titles?	18%	82%

After sending out the questionnaire, the author has made a thorough study of the usefulness and values to be derived from the Dictionary of Occupational Titles for high school students. The opinion is that the Dictionary of Occupational Titles is not essential in a good guidance program in the high school. It is quite complicated for the average high school student.

The second part of the questionnaire was devoted to current practices of dissemination of occupational information by industrial-arts teachers in Oregon. Results of the



findings substantiate the author's belief that the Dictionary of Occupational Titles is not frequently used for student referral. As previously shown, 46 per cent of the schools reported that the library has the Dictionary of Occupational Titles, but only 30 per cent of these schools make use of this book for student referral.

Four principal methods of disseminating occupational information are employed by 50 per cent or more of the schools reporting. These are, in order of importance, visual aids, information on opportunities for vocational training, pupil visits to local occupational activities, and use of occupational briefs, monographs, and pamphlets. Other methods used to a lesser degree are: guest speakers discussing occupations, community occupational survey, emphasis on occupations considered by students, instruction on use of job analysis, study on occupational trends, and workshop sessions or club programs on various careers.

All of these methods will be discussed further in the following suggestive means of providing occupational information to secondary school pupils. Teachers of industrial arts will want to adopt for immediate use only those methods which they can accomplish satisfactorily.

#### Occupational Information Library

The school librarian has an important place in the guidance program. The librarian may be of great assistance

to both teachers and students, when occupational information is collected and filed for ready reference. Most of the material made available is usually free or may be purchased for a nominal fee. Books on occupations become outmoded very rapidly; therefore, it is wiser and more economical to purchase recent and up-to-date publications, such as briefs, monographs, leaflets, abstracts, magazines, catalogues, bulletins, and booklets. Any teacher locating materials on occupational information should have this discovery brought to the attention of the librarian in order that it might be purchased and placed on file for all students. Some of the weekly newspapers used in social-studies classes, such as the American Observer, contain authentic and well written articles on careers. The librarian should designate a place for college, university, trade and business school catalogues. Erickson and Smith state: (8:61)

The librarian should make the library a workshop for pupils who are in need of information about occupational, educational, and training information, and should be able to guide their selection of books on study habits, personality development, job getting, and other similar subjects. He should be sufficiently familiar with the titles and the content of guidance materials in the library to offer adequate assistance to pupils in choosing materials to meet individual needs.

### Field Trips - Visits to Local Occupational Activities

This method rated fairly high as an activity for disseminating occupational information in industrial-arts

classes. The survey results show that 66 per cent of the industrial-arts teachers used this method. An orientation and planning period should precede the trip, and time should be allotted after the trip for discussion and evaluation of the findings. The value of these visits is clearly stated by Ericson: (9:181)

Well organized visits to industrial plants, buildings under construction, drafting rooms, and other places where the world's work is being done, are valuable in broadening the students' views of occupations and their responsibilities, as well as in learning related and scientific facts. Next to the actual participation in the occupation, this method is probably the most effective for obtaining a fairly true picture of the work of an occupation and the conditions under which the work is done.

Individual visits may be carried out by students who are particularly interested in different phases of industry. This method allows more coverage of a larger number of plants and business establishments. The student may then report to the class any interesting facts found on the trip.

#### Use of Occupational Monographs, Briefs, and Pamphlets

Results of the survey show that approximately one-half of the industrial-arts teachers make use of printed materials in the form of briefs, monographs, and pamphlets. The shop teacher must be cognizant of available material in order to help meet the needs of the students. Several respondents to the questionnaire mentioned that printed materials by Science Research Associates (SRA) are available for



the students. Guidance Index, published monthly by Science Research Associates, lists and describes current releases in the occupational fields, all of which may be secured at little or no cost.

Schools having organized guidance programs should have an occupational file of monographs, briefs, and pamphlets in the school library. The shop teacher may wish to supplement this file with some free and inexpensive materials related to shop courses which can be placed in the shop library. Students are often induced to read material more readily if it is easily accessible, and many students who dislike going to the library will be reached through an occupational corner in the shop.

A possible classroom activity is to have the pupils select and contribute some free and inexpensive material for the occupational file. This serves to motivate and helps the pupils to become aware of the vast amount of literature available on occupations. Forrester makes the following statement regarding the teacher's role in acquainting pupils with printed information about specific occupations:

(10:233)

One of the principles of vocational guidance is that the counselor or teacher does not determine for the pupil what occupation he shall enter, but that he gives him sources of reliable information upon which he can base his own choice. The teacher of many subjects can provide pupils with the opportunity to become acquainted with reliable sources of occupational information, to develop skill in using these sources, as well as

to acquire proficiency in judging their reliability. These materials can be used to survey a number of different vocations, to investigate specific fields of work, and to compile reading lists.

### Visual Aids

Movies, film strips, posters, and other forms of visual material rated favorably among the shop teachers. Over three-fourths, or 76 per cent, of the schools indicated that movies, film strips, and other visual aids were used.

Every shop teacher should have access to proper equipment for using film slides and motion pictures, and should make full use of such equipment as a part of his teaching procedure. Suitable films are essential in presenting occupational information and in several ways have the advantage over the previously mentioned industrial visitations. The many distractions which occur on plant visits are eliminated in the film showing. Movies and film strips may be slowed or stopped for emphasizing certain points on jobs.

As in field trips, much planning should take place before reviewing films. The teacher should preview the film and follow up with a short discussion on the important phases shown. The shop teacher will find several general sources of films for school use, some of which are listed in Chapter V. Films may be offered as: (1) rental of selected films, (2) purchased for permanent school library, (3) local productions of film, and (4) free use of films contributed

by industry. Sources from which educational films may be purchased or rented have increased greatly in recent years. Visual aids, sources, and uses are discussed by Erickson: (7:460)

Visual aids have assumed a position of major importance in the field of education. Recent wide usage of motion pictures, film strips, and diagrammatic aids, has demonstrated the value of visual aids as educational vehicles. The tendency of many students to avoid printed materials as media for presentation of facts about occupational and educational opportunities and requirements.

#### Workshop Sessions or Club Programs

Many of the school shops have a student personnel organization for managing the activities given in the shop. This is usually developed by the class with the advice and assistance of the instructor. A foreman, assistant foreman, safety engineer, and tool checker are usually the designated officers in the student personnel plan. This organization provides motivation for the study of various types of organization within industry. The occupational club could be similarly organized to encourage visits to industries where each member may study the particular occupation of his own interests. The major occupations in any entire industry may be studied in this fashion.

Industrial-arts club programs on occupations have exercised no great appeal in the industrial-arts classes in Oregon. Only 8 per cent reported organized shop clubs on



occupations. This unpopularity may be indicative of the average shop teacher's limited knowledge in methods of presenting occupational information through this medium, or it may be accredited to the lack of interest and enthusiasm on the part of both teacher and students for this type activity.

Shop clubs on careers could stem from the avocational pursuits of the pupils. Hobbies such as photography, model making, and handicrafts form a nucleus for development of worthwhile leisure time activities and at the same time offer concomitant values in vocational planning. Forrester recognizes the values to be derived from avocational pursuits in the following: (10:166)

Among the values to be derived from avocational pursuits there are at least seven that are related to vocational guidance: recognition of interests and ambitions; exploration, tryout, and sampling of kinds of work; vocational training; development of work habits; concentrated and efficient effort; development of personality; and contacts with adults of similar interest, both amateur and professional.

### Community Occupational Survey

The community occupational survey offers valuable material for the occupational information library, and it easily creates interest in future vocations.

The nature and scope of this paper does not permit a complete discussion of the methods employed in conducting a community occupational survey. The Guidance and Counseling Branch of the U. S. Office of Education has published a

bulletin (30:1-199) which is based on a comprehensive study of 96 surveys completed during the period of 1930-40. Surveys included in the study are limited to those which give an over-all picture of the occupational distribution of all or most of the workers in a given area. The bulletin gives detailed steps to be taken in making a community occupational survey. A more recent article, "New Techniques for Community Occupational Surveys", (15:532-36) presents changes in methods which evolved following World War II.

The magnitude of a community occupational survey does not make it feasible for shop teachers to launch such a survey as a shop project. However, it is possible that the entire school may be asked to participate in a community occupational survey. The teacher may refer to the above-mentioned articles which will aid in class planning. Other agencies in the community may conduct these surveys and the industrial-arts teacher should be alert to all such materials which can be presented in industrial-arts courses.

Results of the questionnaire indicated that 32 per cent of the shop teachers have used the community occupational survey as a means for disseminating occupational information.

The importance of occupational information on a state and local level is recognized by the Oregon State Division of Vocational Education: (20:12-13)

Obtaining occupational information and making it available to both students and teachers is a real problem in most schools. Even though there is considerable amount of information available through business and professional concerns on a free or inexpensive basis, and available through different companies which supply it on an annual subscription price basis, there is a great lack of this information available on a state and local level. Present and future occupational opportunities on these two levels are most useful to students. The state division of vocational education, through its occupational information and guidance services, is providing a limited amount of this kind of material. The school itself has an excellent opportunity to make a local survey of occupations and supplement it each year. Students under some supervision can obtain local facts in an organized way. Local offices of the State Employment service have reports on occupational demands and other information useful to teachers and students.

### Individual Counseling

Survey results show that approximately 50 per cent of the teachers in industrial arts offer individual counseling. On the other hand, however, several teachers indicated that it is not the duty of the subject-matter teachers to counsel as that is the counselor's responsibility. The shop teacher should interview each student once every semester concerning problems and plans growing out of shop experiences. This way the teacher may provide occupational information needed when the interest of the student is at its peak. The only draw-back to this suggestion is that, if no counselor is provided, the shop teacher is often so heavily loaded with classes and the necessary paper work of ordering



and accounting for supplies, and with laboratory maintenance, that he does not have sufficient time for effective individual counseling.

Opportunities for effective individual counseling by classroom teachers are so great as to present a challenge to the superior teachers. The nature of this study does not call for a treatment of specific practices in counseling, but every teacher (6:473) who wishes to achieve success in this area should take two or three courses or read several good books on guidance.

Wilbur (28:76-77) lists the following activities which serve to disseminate occupational information through individual counseling:

- a. Have the students indicate their present plans for a future occupation, and have them list reasons and advantages. Discuss these choices with the individuals.
- b. Be on the alert for possible aptitudes, and advise with students about these.
- c. Give the student opportunities to try out their abilities along lines of their interest, where possible.
- d. Discuss with the individual students their choices of elective courses.
- e. Point out to the class what courses will give them additional occupational information, e.g., mechanical drawing (draftsman, engineer), chemistry (pharmacist), etc.

### Guest Speaker Discussing Occupations

This is an excellent method of disseminating occupational information throughout the school year, and need not be confined to Career Day, which is usually an annual event. Shop teachers should be alert to learning situations that present opportunities for guest speakers to discuss, demonstrate, or give any information relative to particular occupations. For instance, the class in carpentry could have an architect discuss the occupations in the building trades. The class in printing could have a local print shop proprietor explain some of the jobs in his establishment as related to the work the class is doing.

This method of disseminating occupational information was reported in use by 44 per cent of the shop teachers. As in the presentation of movies, the shop teacher must do some preplanning before the speaker arrives. This may be done through class discussion in which pupils list questions which they would like to have the speaker answer. It is advisable to have the speech outline in the hands of both students and speaker.

Ericson gives some good points on presentations by guest speakers: (9:181)

A series of talks by outstanding men in the field of occupations under consideration has been resorted to in various schools. This type of approach creates interest among students, particularly until it becomes commonplace. Extreme care must be exercised in selecting the persons

who assist in such a program, or it may result both in waste of time and in unfortunate reactions. Even with the best selections possible, it is necessary to impress such speakers beforehand with both the purpose for the arrangement and the most effective procedure. Too many persons either feel that they have come to entertain or else that they must attempt to induce every student to reject or accept the occupation they represent. A definite outline for studying and presenting an occupation is of value in the hands of such persons as a step in preparation for a valuable talk.

### Instruction on Use of Job Analysis

The job analysis is an exhaustive survey of facts about jobs in the community. Before a job analysis program is undertaken, some specific objectives should be stated for the use of the material resulting from such a survey.

Shartle corroborates this statement: (25:15)

The contents and scope of a job analysis program depend upon the uses which are to be made of the occupational information obtained from such analysis. Thus the first step in organizing such a program is to discover the various uses which are to be made of the information.

Survey results show that 20 per cent of the shop teachers have used job analysis for collecting and filing information about jobs in the community. This small percentage makes it obvious that such an undertaking is a tremendous task. Shop teachers who wish to use this method of collecting material are advised to consult and elicit suggestions and assistance from civic and service clubs within the community.



### Study on Occupational Trends

The idea of studying job trends received about the same degree of favoritism on questionnaire returns as did the method of job analysis. Only 22 per cent of the shop teachers indicated study on occupational trends is used in disseminating occupational information.

Resource materials for studying occupational trends are provided by Occupational Trends, the Magazine for Vocational Guidance, and the Occupational Outlook Handbook. The latter contains reports on each of 288 occupations and introductory sections which summarize the major trends in population and employment in the broad industrial and occupational groups. Included in the section on construction trades are employment, trends, and outlooks for each of the following occupations: carpenters, painters, plumbers and pipe fitters, construction machinery operators, bricklayers, electricians, sheet metal workers, construction foreman, plasterers, paperhangers, roofers and slaters, cement finishers, and glaziers. Similar information on other occupations related to industrial arts may be found in this publication. It is suggested that two copies of the Occupational Outlook Handbook (10:407) be taken apart and filed for a wider distribution among students.

Another useful method to use in studying job trends is suggested by Forrester (10:85) as the Job Thermometer of

Want Ads. The students collect "want ads" from the newspaper and make weekly, monthly, and yearly summaries. This will offer excellent opportunity to study occupational needs and seasonal fluctuations of the community.

### Information on Opportunities for Vocational Training

The shop teacher is in an excellent position to determine the degree of interest and aptitude which each student shows for the various areas of shop work. He can do this by direct observation or by testing. If a student shows marked aptitude for any specific area, such as metal work, the instructor may wish to recommend that he go to a technical school to further his training. The alert instructor will want to keep available the latest catalogs and descriptive folders regarding vocational opportunities and entrance requirements of the various training agencies within the states.

Approximately 72 per cent of the shop teachers indicated on the questionnaire returns that information is available on opportunities for vocational training.

### Amount of Time Devoted to Occupational Information

The last phase of the questionnaire was to determine the areas of work which possess the greatest opportunities for the dissemination of occupational information. Table II shows the number of courses offered in shop work throughout

the secondary schools of Oregon with the average percentage of time given for disseminating information about related occupations. It will be observed that the greatest amount of class time is used for occupational information in the following subjects: machine shop, general crafts, carpentry, foundry, and drafting.

Many of the comments on the questionnaire returns indicate that the teachers in industrial arts feel that occupational information is a function of the vocational education program and should not be included in a general educational program. This reverts to the traditional dichotomy in education -- "vocational" and "general" -- and serves to prevent concerted action among the schools in providing a life adjustment program which will meet the needs of all youth.

Following are some of the comments received on the questionnaire:

1. "According to the state course of study we are to treat industrial arts as a general subject. Our job is not along vocational lines. Industrial arts is the same as math, English, geography, etc. -- a related subject".
2. "No time is devoted to occupational information in industrial arts. Our purpose and aim is general education not vocational training".

Other comments indicate that presentation of occupational information is a function of the social studies and English teachers:



1. "Practically all occupational information is dealt with in social-studies classes in grades 8 and 9".
2. "Our sophomore English classes provide occupational units in which SRA materials are presented".
3. "The occupational material is presented in a unit on vocations in social-studies class".

TABLE I

EXTENT TO WHICH RESPONDENTS REPORTED "YES" AS TO THE USE OF METHODS OF DISSEMINATING  
OCCUPATIONAL INFORMATION LISTED IN THE SURVEY

Rank of each method reported	Method	Number of respondents reporting "Yes"	Percentage of respondents
1	Use of Visual Aids	38	76
2	Information on Opportunities for Vocational Training	36	72
3	Pupil Visits to Local Occupational Activities	33	66
4	Use of Briefs, Monographs, and Pamphlets	25	50
5	Guest Speakers Discussing Occupations	22	44
6	Emphasis on Occupations Considered by Students	21	42
7	Community Occupational Survey	16	32
8	Study on Occupational Trends	11	22
9	Instruction on Use of Job Analysis	10	20
10	Referral of Students to Dictionary of Occupational Titles	7	14
11	Shop Clubs on Various Careers	4	8

TABLE II

EXTENT TO WHICH SHOP TEACHERS REPORTED THE COURSES TAUGHT  
AND AVERAGE PERCENTAGE OF OCCUPATIONAL INFORMATION  
GIVEN DURING THE SCHOOL YEAR

Rank of each course offered	Course	Number of schools offering course	Average % of total time for occupa- tional information
1	Woodworking	38	1.7
2	Drafting	26	3.0
3	General Crafts	18	6.0
4	Carpentry	14	5.0
5	Cabinet Making	11	2.3
6	Leathercraft	10	1.9
7	Plastics	9	1.5
8	Welding	7	1.5
8	Sheet Metal	7	1.6
9	Metalcraft	6	1.8
10	Electricity	5	2.1
11	Foundry	3	4.0
11	Auto Mechanics	3	1.0
11	Machine Shop	3	8.0
12	Printing	2	1.5
12	Pattern making	2	0.0
12	Radio	2	0.5
13	Photography	1	1.0
14	Ceramics	0	
14	Aircraft	0	



There are a few general principles which all subject-matter teachers should observe in providing information about occupations by means of any of the foregoing methods. Pupils should be helped to recognize interrelationships among jobs. Pupils should also be taught to appreciate and respect all forms of useful work. On this point Forrester concurs: (10:20-21)

Every teacher and counselor must be struck by the tendency of modern youth to choose high-sounding whitecollar occupations and to look down on manual labor. Every teacher is obligated to do what he can to change this attitude and to inculcate in pupils a healthy respect for all sorts of useful work .....

An attitude of recognition of the worth and dignity of the worker, and of the work he does, may permeate many instructional activities in giving information about the workaday world. It may be an underlying philosophy. On trips to observe workers at work, pupils may be helped to discover that the needs of daily life are met through the interdependence of many workers. The motion picture, radio, career conference, and printed literature may be used to encourage respect for the personal dignity and ability of the worker without the pomp of rank or special occupation. Social barriers which frequently exist in regard to industrial or non-whitecollar jobs certainly may be lowered.

The industrial-arts teachers should play an important role in stressing usefulness and dignity of manual labor, since the exploratory experiences provided in the shop range from the unskilled and manual through the highly skilled, technical, and professional occupations.

In a recent issue of Occupations, Brayfield (3:507-8) points out disparities in occupational information coverage:

Currently available occupational information is concentrated upon the white collar and professional occupations; manual and minimal skill level occupations and farming are relatively neglected. A realistic analysis of occupational structure and trends by writers and publishers is needed so that gaps in coverage will be reduced.

Robert Hoppock gives the following reason for this prevailing situation: (13:508)

The publisher who wants to stay in business will -- if he knows his business -- publish literature on the glamour fields, and on the aspects of the popular professions that have not been covered; for example, Children's Librarian, Special Librarian, Atomic Physicist, Plastic Chemist, etc. Any one of these titles will sell 3,000 copies almost overnight. But titles like Domestic Service, Boilermaker, Farm Laborer, and Porter are publisher's poison. The reason the skilled and semi-skilled stuff sold in 1941 was because that year marked the beginning of the rearmament program and the glamour fields of that day were the defense industries in which unskilled workers could quickly learn to make \$80 a week.

When counselors in large numbers buy the kind of literature that now is scant, publishers will fall over each other in their rush to publish it.

Industrial-arts teachers of Oregon have an opportunity to assist counselors in helping to make the so-called "unattractive" jobs more popular through the collection of materials and the dissemination of occupational information.

## CHAPTER V

BIBLIOGRAPHY FOR INDUSTRIAL ARTS  
SECTION OF OCCUPATIONAL INFORMATION LIBRARY

There is a vast amount of occupational material available, much of which is free or very inexpensive. In order that the industrial-arts teachers may impart to the pupils information on occupations, some of this material must be assembled and filed for ready reference. The school library is the logical depository, but assembling this material should be a cooperative undertaking by the entire school. Holy (13:68) recommends that guidance personnel in the high schools of Oregon should frequently bring the materials on occupational information up to date, and that the students should be motivated to use the library of occupational information. He also stresses the importance of including local information pertaining to occupations.

It is the duty and responsibility of the industrial-arts teacher to inform the librarian of printed materials about various occupations related to the industrial-arts program. Two of the best sources for current publications giving occupational information are Guidance Index, published monthly by Science Research Associates, and Occupational Index, published quarterly by Personnel Services, Peapack, New Jersey. Each teacher should also become familiar with Occupations, the Vocational Guidance Journal, published monthly from October through May, and



Occupational Trends, published bi-monthly, September to June, by Bellman Publishing Company, Inc.

To acquaint the shop teacher with materials currently available, the author has listed the following sources of free and inexpensive material.

Bellman Publishing Company, 83 Newbury Street,  
Boston, Mass.

B'nai B'rith Vocational Service Bureau,  
1424-16th Street, N.W., Washington, D. C.

C. G. Morgan Company, 4616 North Clark Street,  
Chicago, Illinois.

Commonwealth Book Company, 80 East Jackson Blvd.,  
Chicago, Illinois.

Field Enterprises, Inc., 35 East Wacker Drive,  
Chicago, Illinois.

Institute for Research, 537 South Dearborn Street,  
Chicago, Illinois.

Personnel Services, Inc., Peapack, New Jersey.

Superintendent of Documents, Government Printing  
Office, Washington, D. C.

Science Research Associates, 57 West Grand Avenue,  
Chicago, Illinois

Research Publishing Company, 687 Boylston Street,  
Boston, Mass.

United States Department of Commerce, Division of  
Publications, Office of the Secretary,  
Washington, D. C.

United States Department of Labor, Occupational  
Outlook Service, Washington, D. C.

United States Employment Service, Department of  
Labor, Government Printing Office,  
Washington, D. C.

United States Office of Education, Vocational  
Division, Guidance and Counseling Branch,  
Washington, D. C.

Vocational Guidance Manuals, Inc., 45 West 45th  
Street, New York 19, N. Y.

Western Personnel Institute, 30 Raymond Avenue,  
Pasadena 1, California.

For the following list of materials, only the names of  
the publishers will be given. The correct addresses may be  
obtained from the above list of sources.

The material selected is more suitable for occupations  
and professions which may be related to industrial-arts  
courses. Many pamphlets and monographs are not listed be-  
cause they are usually sold in series and, in order to get  
one or more specific pamphlets, the entire series must be  
ordered. The following is an example:

Group P

Career as a Merchandise Buyer  
Dairy Farming as a Career  
Careers in the Dairy Products Industry  
Ceramic Engineering as a Career  
Exploring as a Career

Since only one of the above series is related to indus-  
trial-arts courses, it would not be profitable to buy the  
entire series for the shop library. However, the school  
librarian may order the whole series for the occupational  
file.

The following list of free and inexpensive material has  
been compiled from several sources, including Shartle  
(25:82-94), Trillingham (26:23-63), and Minnesota State

## Division of Vocational Education Bulletin (16:12-62).

## AIR CONDITIONING:

Educational Guide to Refrigeration and Air Conditioning Training Facilities. American Society of Refrigerating Engineers, 40 West 40th Street, New York. 50¢.

Air Conditioning Service. Personnel Services. 1946. 50¢.

Air Conditioning. Commonwealth Book Company. 75¢.

Air Conditioning Workers. Science Research Associates. 1945. 15¢.

Refrigeration Industry. Air Conditioning and Refrigeration Machinery Association, Inc., Washington, D. C. 1945. Free.

## ARCHITECTURE:

Opportunities in Architecture, by William Thorpe. Vocational Guidance Manuals. 1946. \$1.00.

Architecture. C. G. Morgan Company. 1948. 50¢.

Landscape Architect. Personnel Services, Inc. 1944. 25¢.

Ceramic Engineers and Designer. Science Research Associates. 1944. 15¢.

Architects. Occupational Brief No. 57, Science Research Associates. 1949. 15¢.

Architecture, A Profession and a Career. American Institute of Architects. 1741 New York Avenue, N.W., Washington, D. C. 1945. 25¢.

## AVIATION:

Aviation Maintenance. Air-age Education Research, 100 East 42nd Street, New York. 1944. 10¢.

Career Opportunities in Aviation. National Council of Technical School, 837-17th Street, N.W., Washington, D. C. Free.



Job Description for Engine Tester. United States  
Department of Labor. 1944. 5¢.

The Job of Aircraft Mechanic. Department of  
Labor. 1945. 5¢.

Aircraft Makers. Science Research Associates.  
1948. 15¢.

Airplane Coverer. Department of Labor. 1944. 5¢.

Airplane Electrician. Department of Labor.  
1945. 10¢.

Aircraft Sheet Metal Workers. Department of Labor.  
1945. 5¢.

Airplane Woodworker. Department of Labor. 1945.  
Free.

Jobs in the Aircraft Industry. Science Research  
Associates. 1943. 15¢.

#### BLACKSMITH:

Blacksmith. Personnel Services, Inc. 1948. 25¢.

Job Description and Labor Market Information for  
Blacksmith. U. S. Employment Service.  
1947. 5¢.

#### CARPENTRY:

Careers in Carpentry and Painting. B'nai B'rith  
Vocational Service. 1949. 20¢.

Career as a Carpenter and Residential Building  
Contractor. Institute for Research. 1946.  
\$1.00.

Carpenter. Department of Labor. 1947. 5¢.

Carpenter. Occupational Brief No. 56, Science  
Research Associates. 1949. 15¢.

Carpentry. C. G. Morgan Company. 1940. 50¢.

Job Description for Floor Layer. Department of  
Labor. 1945. 5¢.

## CERAMICS:

Clay Working as a Career. The Institute for Research. 1949. \$1.00.

Clay Products Industry Worker. Science Research Associates. 1948. 15¢. Brief No. 181.

Pottery Workers. Brief No. 140, Science Research Associates. 1948. 15¢.

## CONSTRUCTION:

The Job of the Building Contractor, Light Construction. Department of Labor. 1946. 5¢.

Employment Outlook in the Building Trades. Occupational Outlook Series Bulletin No. 967. Department of Labor. 1949. Free.

Building Contractors. Personnel Services, Inc. 1944. 50¢.

Career as Carpenter and Residential Building Contractor. Institute for Research. 1946. \$1.00.

New Career Opportunities in the Building Industry. Johns-Manville Corp., 22 East 40th Street, New York, N. Y. 1944. Free.

Plasterer. Science Research Associates. 1945. 15¢.

Painters. Science Research Associates. 1945. 15¢.

Scaffold Builder, (Wood). Department of Labor. Free.

Steel Erector. Department of Labor. 1947. Free.

Your Career in the Building Trades. National Urban League, New York City, N. Y. 1949. Free.

Job Descriptions for the Construction Industry. Department of Labor. 1936. \$1.25.

Careers in Carpentry and Painting. B'nai B'rith Vocational Service Bureau. 1949. 20¢.

## DRAFTSMAN:

Draftsman. Brief No. 40, Science Research Associates. 1949. 15¢.

Job Description for Architectural Draftsman. Department of Labor. 1947. 5¢.

The Job of the Draftsman. Brief No. 83, Department of Labor. 1945. 5¢.

Mechanical Drafting and Design. C. G. Morgan Company. 1940. 32¢.

## ELECTRICAL WORK:

Careers in Electrical Work and Plumbing. B'nai B'rith Vocational Service. 1949. 20¢.

Armature Winder. Department of Labor. Free.

Electricians and Electrical Workers. Science Research Associates. 1943. 15¢.

Electrician. Personnel Services, Inc. 1946. 25¢.

Careers in the Electrical Industry. General Electric Company, Schenectady, New York. 1946. Free.

Electrical Appliance Industry Workers. Science Research Associates. 1947. 15¢.

Electronics. Personnel Services, Inc. 1944. 25¢.

Lineman. Department of Labor. 1939. 5¢.

Electrical Engineers. Science Research Associates. 1943. 15¢.

Electric Light and Power Occupations. Department of Labor. 1949. 30¢.

If You are Considering a Career in the Electrical Field. Rochester Institute of Technology, Rochester, New York. 1946. 10¢.

National Apprenticeship and Training Standards for the Electrical Industry. Department of Labor. 1945. Free.



## FOUNDRY:

Jobs in the Foundry. Science Research Associates.  
1944. 15¢.

Job Descriptions for Job Foundries. Department of  
Labor. 1938. \$1.25.

Foundry Occupations. Department of Labor. 1946.  
15¢.

The Foundry is a Good Place to Work. American  
Foundrymen's Association, 222 West Adams  
Street, Chicago, Illinois. 1947. Free.

Job Description for Bessemer Converter Blower.  
Department of Labor. 1944. 5¢.

Job Description and Labor Market Information for  
Molder. Department of Labor. 1947. 5¢.

Job Description and Labor Market Information for  
Coremaker. 1947. 5¢.

## INDUSTRIAL DESIGNER:

Industrial Designers. Brief No. 192, Science  
Research Associates. 1947. 10¢.

Industrial Designing as a Career. Institute for  
Research. 1948. \$1.00.

Industrial Design as a Profession. J. G. Lippencott  
and Company, 500-5th Avenue, New York.  
1945. Free.

Industrial Design. C. G. Morgan Company. 1940. 32¢.

Courses in Industrial Design. Society of  
Industrial Designers, 48 East 49th Street,  
New York. 1947. Free.

## INDUSTRIAL-ARTS TEACHER:

Teaching Industrial Arts. School of Education,  
New York University, New York. 1945. Free.

Teachers. Brief No. 65, Science Research  
Associates. 1949. 15¢.

Teaching as a Career. Institute for Research.  
1948. \$1.00.

#### IRON AND STEEL INDUSTRY:

Iron and Steel Workers. Science Research  
Associates. 1943. 15¢.

Iron and Steel Foundries. Department of Labor.  
1945. Free.

Ship Builders. Science Research Associates.  
1948. 15¢.

Iron and Steel Industry. Bellman Publishing  
Company. 1941. 75¢.

#### LEATHER INDUSTRY:

Leather Workers. Brief No. 84, Science Research  
Associates. 1945. 15¢.

Occupations Related to Leather Products  
Manufacturing. Department of Labor.  
1942. Free.

Shoe Repairman. Brief No. 69, Science Research  
Associates. 1949. 15¢.

Shoe Industry Workers. Science Research Associates.  
1947. 15¢.

Establishing and Operating a Shoe Repair Business.  
U. S. Department of Commerce. 1945. 35¢.

#### LUMBERMAN:

Job Descriptions for Grader, Millman, Planer  
Operator, and Faller. Department of Labor.  
1948. 5¢.

Prefabricated Housing. Personnel Services, Inc.  
1947. 50¢.

Establishing and Operating a Small Saw Mill.  
Department of Commerce. 1945. 35¢.

Logging Camps and Lumber Mills. Department of  
Labor. 1945. Free.

Lumber Industry. West Coast Lumberman's  
Association, Portland, Oregon. 1950. Free.

# MACHINE SHOP OCCUPATIONS:

Machinist. Personnel Services, Inc. 1946. 25¢.

Machinist. Science Research Associates. 1944. 5¢.

Jig Boring. Department of Labor. 1947. Free.

Cylindrical Grinder Operator. Department of  
Labor. 1947. Free.

Die Designer. Department of Labor. 1947. Free.

Die Maker. Department of Labor. 1947. Free.

Driller. Department of Labor. 1947. Free.

Engine Lathe Operator. Department of Labor.  
1947. Free.

Lay-Out Man. Department of Labor. 1945. Free.

Milling Machine Operator. Department of Labor.  
1947. Free.

Millwright. Department of Labor. 1947. 5¢.

Planer Operator. Department of Labor. 1947. Free.

Shaper Operator. Department of Labor. 1947. Free.

Surface Grinder Operator. Department of Labor.  
1947. Free.

Tool Designer. Department of Labor. 1948. 5¢.

Tool and Die Maker. Science Research Associates.  
1949. 15¢.

Tool Maker. Department of Labor. 1947. Free.

Turret Lathe Operator. Department of Labor.  
1947. Free.

Jobs in the Machine Shop. Science Research  
Associates. 1945. 15¢.



Job Descriptions for Job Machine Shops.  
Department of Labor. 1938. 75¢.

Machine Shop Occupations. Department of Labor.  
1947. 20¢.

#### MECHANIC (AUTO):

Auto Mechanic and Garage Operator. C. G. Morgan  
Company. 1939. 50¢.

Auto Sales and Service Workers. Science Research  
Associates. 1944. 15¢.

Establishing and Operating an Automobile Repair  
Shop. U. S. Department of Commerce. 1946. 35¢.

Auto Mechanic. Department of Labor. 1947. 5¢.

Auto Mechanic (Diesel Engines). Department of  
Labor. 1945. Free.

Engine Tester. Department of Labor. 1947. 5¢.

Diesel Engines. Personnel Services, Inc. 1945. 25¢.

Diesel Engineering. Department of Labor. 1945. 5¢.

General and Auto Mechanics. Science Research  
Associates. 1944. 15¢.

#### NON-FERROUS METALS INDUSTRIES:

Magnesium Industry Workers. Science Research  
Associates. 1948. 15¢.

Aluminum Industry Workers. Science Research  
Associates. 1948. 15¢.

Non-Ferrous Metal Workers. Science Research  
Associates. 1943. 15¢.

Aluminum and Magnesium. Labor Market Information,  
Department of Labor. 1944. Free.

#### OCCUPATIONAL THERAPY:

Occupational Therapists. Science Research  
Associates. 1949. 15¢.

Occupational Therapy. Personnel Services, Inc.  
1944. 50¢.

Occupational Therapy. Bellman Publishing Company.  
1941. 50¢.

#### PATTERNMAKER:

Patternmaker. Personnel Services, Inc. 1948. 25¢.

Patternmaker, Metal. Department of Labor. 1947. 5¢.

Patternmaker, Wood. Department of Labor. 1947. 5¢.

Patternmaker. C. G. Morgan Company. 1948. 50¢.

#### PHOTOGRAPHY:

Chart of Photography Jobs. Reprint from Mademoiselle,  
122 East 42nd Street, New York, N. Y. 1946. 10¢.

If You are Considering a Career in Photography.  
Institute for Research. 1944. 10¢.

Careers for You and Your Camera. Graflex, Inc.,  
Rochester, New York. 1947. Free.

Film Industry, (Motion Pictures). Science Research  
Associates. 1948. 15¢.

Record Photography in Industry. Bellman  
Publishing Company. 1945. 15¢.

The Motion Picture Industry. Western Personnel  
Institute. 1944. 25¢.

Motion Picture Projectionist. Department of  
Labor. 1948. 5¢.

Photography as a Vocation. Science Research  
Associates. 1941. 15¢.

Photographers. Science Research Associates.  
1949. 15¢.

Careers in Photography. Science Research  
Associates. 1943. 15¢.

Consider Photo-Lithography in Your Choice for a  
Future Livelihood. U. S. Civil Service  
Commission, Washington, D. C. Free.

#### PLASTICS:

Plastics Production Industry. Department of  
Labor. 1948. 15¢.

Employment Outlook in the Plastics Industry.  
Department of Labor. 1948. 15¢.

Plastics Workers. Science Research Associates.  
1950. 15¢.

Plastics. Personnel Services, Inc. 1944. 25¢.

Plastics -- The Story of an Industry. Society  
of the Plastics Industry, 295 Madison Avenue,  
New York, N. Y. 1946. Free.

Your Opportunity in Plastics. Plastics  
Industries Technical Institute,  
122 East 42nd Street, New York, N. Y.  
1944. Free.

#### PLUMBER:

Careers in Electrical Work and Plumbing. B'nai  
B'rith Vocational Service Bureau. 1949. 20¢.

Plumber. Department of Labor. 1947. 10¢.

The Job of the Construction Plumber.  
Department of Labor. 1945. 5¢.

Plumbers and Steam Fitters. Science Research  
Associates. 1944. 15¢.

Careers in Plumbing and Plumbing Contracting.  
Institute for Research. 1948. \$1.00.

Plumber. Commonwealth Book Company, Inc.  
1948. 75¢.

#### PRINTING AND PUBLISHING:

If You are Considering Printing and Publishing.  
Rochester Institute of Technology,  
Rochester, New York. 1944. 10¢.



Facts About the Printing Industry for Schools,  
with Guidance Addendum. Department of  
Education, American Type Founders,  
Elizabeth, New Jersey. 1946. Free.

Book Binder. Science Research Associates.  
1945. 15¢.

Book Publishing. MacMillan Company, New York,  
N. Y. 1945. 75¢.

Compositor. Department of Labor. 1947. Free.

Your Career in Printing. New York Employing  
Printer's Association, 461-8th Avenue,  
New York. 1949. Free.

Cylinder Press Man. Department of Labor.  
1947. 5¢.

Job Possibilities in the Printing, Publishing,  
and Allied Graphic Arts Industries.  
Book Manufacturer's Institute, New York.  
1945. Free.

Employment Outlook in the Printing Occupations.  
Department of Labor. 1947. 20¢.

Linotype Operator. Personnel Services. 1944. 50¢.

Lithographer. Commonwealth Book Company. 1948.  
75¢.

Magazine Publishing Workers. Science Research  
Associates. 1948. 15¢.

Paper Industry. Department of Labor. 1947. 20¢.

Paper and Pulp Workers. Science Research  
Associates. 1950. 15¢.

Photoengravers. Science Research Associates.  
1946. 15¢.

Printer. Commonwealth Book Company. 1948. 15¢.

Establishing and Operating a Small Print Shop.  
Department of Commerce. 1946. 15¢.

Printing Occupations. Department of Labor.  
1947. 20¢.

Type Setters and Printers. Science Research  
Associates. 1946. 15¢.

#### RADIO WORKERS:

Careers in Electronics. Institute for Research.  
1946. \$1.00.

Occupations in Radio. Science Research Associates.  
1945. 15¢.

Radio. Vocational Monographs, Field Enterprises,  
Inc. 1948. 20¢.

Opportunities in Radio. Vocational Guidance  
Manuals. 1946. \$1.00.

A Vocational Guide in Radio, Electronics, and  
Television. Valparaiso Technical Institute,  
Valparaiso, Indiana. 1949. Free.

Radio Jobs. Science Research Associates. 15¢.

Radio Service. Personnel Services, Inc. 1944. 25¢.

Television. Personnel Services, Inc. 1944. 25¢.

Radio and Television. Commonwealth Book Company.  
1947. 75¢.

Television Workers. Science Research Associates.  
1945. 15¢.

Operating an Electrical Appliance and Radio Shop.  
Department of Commerce. 1946. 35¢.

#### SHEET METAL WORKERS:

Sheet Metal Workers. Brief No. 43, Science  
Research Associates. 1949. 15¢.

Sheet Metal Installer. Department of Labor.  
1947. Free.

Sheet Metal Lay-out Man. Department of Labor.  
1945. 5¢.

Welder, Spot. Department of Labor. 1947. Free.

Establishing and Operating a Metal-working Shop.  
Department of Commerce. 1945. 35¢.

#### STONEMASON:

Bricklaying. Bulletin No. 208, Superintendent of Documents, Washington, D. C. 1941. 40¢.

Brick and Stone Mason. Brief No. 55, Science Research Associates. 1949. 15¢.

Bricklayers. Personnel Services, Inc. 1946. 25¢.

Careers in Bricklaying. B'nai B'rith Vocational Service Bureau. 1949. 20¢.

The Job of the Construction Bricklayer.  
Brief No. 70, Department of Labor. 1945. 5¢.

Brick and Tile and Your Future. Structural Clay Products Institute, 10 South La Salle Street, Chicago, Illinois. Free.

Granite Cutting. Bulletin No. 137, Superintendent of Documents, Washington, D. C. 50¢.

#### UPHOLSTERING:

Upholstery. Personnel Services, Inc. 1948. 50¢.

Careers in Upholstery. B'nai B'rith Vocational Service Bureau. 1949. 20¢.

Upholsterers. Brief No. 208, Science Research Associates. 1947. 15¢.

Job Description for Upholsterer, and Labor Market Information for Upholsterer. U. S. Employment Service. 1947. 5¢.

#### WELDING:

Unionmelt Operator. Department of Labor. 1947. Free.

Job Description for Welder, Combination.  
Department of Labor. 1947. 5¢.

Job Description for Heat Treater. Department of Labor. 1947. 5¢.



The Job of the Welder, Hand. Department of Labor. 1045. 10¢

Flame Cutter Operator. Department of Labor. 1947. Free.

Oxygen Plant Operator. Department of Labor. 1947. Free.

Welding Tester. Department of Labor. 1947. Free.

Welding. Personnel Services, Inc. 1946. 25¢.

Welders. Science Research Associates. 1949. 15¢.

Welder, Oxy-Acetylene. Department of Labor. 1947. Free.

Welder, Tack. Department of Labor. 1947. Free.

#### WOODWORKING:

Boat Building, (Wood). Department of Labor. 1947. Free.

Wood Carver. Department of Labor. 1945. 5¢.

Joiner. Department of Labor. 1947. 5¢.

Lay-out Man. Department of Labor. 1945. Free.

Mill Man. Department of Labor. 1948. Free.

Pattern Maker. Department of Labor. 1947. 5¢.

Wood Calker. Department of Labor. 1947. Free.

Cabinet-making. C. G. Morgan Company. 1940. 32¢.

Establishing and Operating a Small Woodworking Shop. Department of Commerce. 1945. 15¢.

Furniture Workers. Brief No. 82, Science Research Associates. 1950. 15¢.

Job Description for Cabinet-maker and Labor Market Information. U. S. Employment Service. 1947. 5¢.

Paint and Varnish Workers. Science Research Associates. 1950. 15¢.

Charts and posters which should prove useful in vocational guidance are listed below:

B'nai B'rith Occupational Orientation Charts.

1948. B'nai B'rith Vocational Service Bureau, 1424-16th Street, N.W., Washington, D. C. Set of nine charts 38 inches wide by 16 to 50 inches long. Price \$2.00.

Brewer's Vocational Chart. Superintendent of Documents, Washington 25, D. C. 1945. Two pages 16x 21 in. 5¢.

Champaign Guidance Charts. Champaign High School. 1939. 12x12 inches. \$1.05. Bristol Board \$3.75. Twenty-five charts showing relationship between school subjects and vocations.

College Majors Chart. Glamour, 420 Lexington Avenue, New York 17, N. Y. 1946. 49x33 inches. 25¢.

National Association of Manufacturers. 14 West 49th Street, New York 20, N. Y. Series of posters. Free.

"Will you Choose a Job This Way?"

"You Sure Can Go Places in America"

"What You Do Now Pays Off"

"Want a Job?"

Science Research Associates, 57 West Grand Avenue, Chicago 10, Illinois. Guidance Poster Packets. \$1.50 annual subscription.

Science Research Associates, 57 West Grand Avenue, Chicago 10, Illinois. "Job in Action Picture Series". \$3.50.

Wall Chart Series. Occupational Outlook Service, United States Department of Labor, Washington 25, D. C. 12½x17 inches. 1950. Free. Charts which present outlook data on machine shop, electricity, plastics, and forge shop occupations.

The following bibliography is suggestive of recent books on vocational planning which should be placed in the occupational information library for use by the entire school.

1. Amiss, John. New careers in industry. New York, McGraw-Hill Book Company, 1946.
2. Campbell, William G. and James H. Bedford. Your future job. Los Angeles, California, The society for occupational research, 1950.
3. Davey, Mildred A., Elizabeth M. Smith, and Theodore R. Meyers. Everyday occupations. (2nd ed.) Boston, D. C. Heath Company, 1950.
4. Detjin, Mary F. and E. W. Detjin. Your high school days. New York, McGraw-Hill Book Company, 1947.
5. Employment outlook in the building trades. Occupational outlook series bulletin number 967, U. S. Department of Labor, Bureau of labor statistics, Washington, D. C., 1948.
6. Endicott, Frank S. Vocational planning. Scranton, Pa., International Book Company, 1948.
7. Frankel, Alice H. Handbook of job facts. Chicago, Science Research Associates, 1948.
8. Greenleaf, John. Guide to occupational choice and training. Superintendent of Documents, Washington 25, D. C., 1947.
9. Humphreys, J. Anthony. Choosing your career. Chicago, Science Research Associates, 1949.
10. Kitson, H. D. How to find the right vocation. New York, Harper and Brothers, 1947.



11. Lovejoy, Clarence. Lovejoy's complete guide to American colleges and universities. New York, Simon and Schuster, Inc., 1948.
12. Occupational outlook handbook. Department of labor, Superintendent of Documents, Bulletin 940, Washington, D. C., 1948.
13. Recreational reading list of books which present occupational information. Guidance manual series number 3, West Virginia state board of education, Charleston, West Virginia, 1949.
14. Schloeb, Lester J. School subjects and jobs. Chicago, Science Research Associates, 1950.
15. Bacher, Otto R. and George J. Berkowitz. School courses and related careers. Chicago, Science Research Associates. 1945.
16. What to read kit. B'nai B'rith Vocational Service Bureau, Washington, D. C.
17. Worthy, James C. What employers want. Chicago, Science Research Associates, 1950.
18. The "which" book, a guide to the vocational relationship of school subjects. B'nai B'rith Vocational Service Bureau, Washington, D. C.

The author has compiled a list of movies available from the General Extension Division, Department of Visual Instruction, Oregon State College, Corvallis, Oregon.

Films are loaned on daily, weekly, or monthly basis. Rental fees are charged to help defray the service costs plus depreciation and purchase of new subjects.

1. Automotive Service. Sound 11 minutes. Rental \$2.00. What the work is, working conditions, training required and where it can be obtained, personal qualities required and opportunities. How the high school can contribute. Manuscript on request. Vocational Guidance Films.
2. Builders. Sound 22 minutes. Rental \$2.00. Cross-section of the building trades. Centers about the construction of a huge skyscraper and shows the specialized artisans at work. Manuscript on request. Encyclopaedia Britannica Films.
3. Finding Your Life Work. Sound 20 minutes. Rental \$3.50. To find the best life work requires careful planning. Know yourself. Study the occupations. Make the most of your high school education. Manuscript on request. Vocational Guidance Films.
4. Furniture Craftsman. Sound 11 minutes. Rental \$2.00. The roles of the designer and skilled craftsman in making custom-built furniture. Steps in making a fine chair are shown. Manuscript on request. Encyclopaedia Britannica Films.
5. Machine Maker. Sound 11 minutes. Rental \$2.00. The setting and personnel of a machine tool factory. Manufacture and operation of machine tools. Close-ups of checking and assembly line operations. Mass production of automobiles showing the flow of parts. Manuscript on request. Encyclopaedia Britannica Films.

6. Mechanic. Sound 14 minutes. Rental \$2.00.  
Work and life of a master mechanic -- his job in the factory, activities around home, a family trip to the country on Sunday. U. S. Office of Education Film.
7. Oxyacetylene Welding in Industrial Production.  
Silent 30 minutes. Service Fee 75¢.  
Hand and machine welding for production. Variety of applications. Linde Air Products.
8. The Plywood Fleet. Sound 40 minutes. Service Fee 75¢. Building and sailing all types of small craft -- some from plywood. Some construction and details. Color. Douglas Fir Plywood Association.
9. Story of Arc Welding. Sound 24 minutes.  
Service Fee 75¢. Scenes in shipyards and plants, as well as drawings, depict the part played by each unit of the welding equipment in fusing metallic joints to make them in many cases far stronger than the metal itself. Shows welding in many occupations. Bureau of Mines.
10. Unionmelt Welding. Silent 12 minutes. Service Fee 75¢. A graphic description of the unionmelt process -- an electric welding process. Applications. Linde Air Products.
11. Woodworker. Vocations of carpentry, millwork, furniture making, and pattern making. Working conditions, training necessary, etc. Manuscript on request. Encyclopaedia Britannica Films.



The shop teacher may find two or three of the widely used film guides in the school library.

1. Educators Film Guide. Standard Catalog Series. New York, H. W. Wilson Company, 1950. \$4.00 for annual edition and monthly supplements.
2. Blue Book of 16mm. Films, 1950. Educational Screen. 64 East Lake Street, Chicago, Illinois. \$1.50.
3. Educational Motion Pictures and Slides, 1951. Department of Visual Instruction, Corvallis, Oregon.
4. Industrial Films, a source of occupational information. Department of Labor, United States Employment Services, Washington, D. C.
5. Your Life Work Films. Vocational Guidance Films, Inc. Carl F. Mahnke Productions, 215 East 3rd Street, Des Moines, Iowa.
6. A Directory of 897 16mm. Film Libraries, Federal Security Agency, Office of Education 1949, Bulletin Number 10, Washington, D. C.
7. Filmstrip Guide. Annual edition, accompanied by monthly supplements. H. W. Wilson Company. \$3.00.
8. Vocational Guidance Filmstrips and Student Manuals. By Walter J. Greenleaf and Franklin Zeran, Washington, D. C.
9. The Society for Visual Education Guide. Chicago, Ill. Forty-two filmstrips on occupations.
10. Encyclopaedia Britannica Films. University of Chicago, Chicago, Ill.

This list is by no means exhaustive, but will serve to acquaint the shop teachers with the types of informational materials available through the library.

## CHAPTER VI

## SUMMARY AND RECOMMENDATIONS

A questionnaire was used to determine current practices in dissemination of occupational information in the high schools of Oregon. A return of 53 per cent was realized from a total of 95 questionnaires mailed out. Information sought included the following: Does the school have the necessary tools and facilities for an organized guidance program? What are the most widely used practices for disseminating occupational information, currently employed by industrial-arts teachers? What percentage of the total teaching time is devoted to presenting occupational information?

Some of the interesting facts pointed out by the questionnaire are:

Sixty-two per cent of the schools responding have counselors with specific time allotted for counseling duties.

Forty-six per cent of these schools have an occupational bookshelf in the library.

Four principal methods of disseminating occupational information are employed by fifty per cent of the schools reporting. These are, in order of importance, visual aids, information on opportunities for vocational training, pupil visits to local occupational activities, and use of briefs, monographs, and pamphlets. Others used to a lesser degree are: guest speakers, community occupational survey, emphasis on occupations considered by students, instruction on use of job analysis, study on occupational trends, and shop club programs on various careers.

The greatest amount of class time devoted to information on occupations occurs in the following courses: machine shop, general crafts, carpentry, foundry, drafting.

In connection with providing occupational information, industrial-arts teachers should make special plans for giving the pupils an understanding of interrelationships among occupations and development of appreciation for socially useful labor.

The specialization of labor has resulted in a multiplicity of occupations. It is impossible for any one person to become familiar with all of these. Therefore, it is a definite responsibility of the school to offer guidance services designed to help the pupils in occupational adjustment.

The vocational guidance movement gave rise to the general shop since it provides rich opportunities for exploratory activities relating to the industrial world.

Literature on occupational information began to emerge as early as the eighteenth century, but until a decade or so ago this material was very limited in amount and scope.

Today there is a wealth of literature about jobs, in the form of pamphlets, monographs, briefs, and job descriptions which can be filed for ready reference. There is an abundance of free and inexpensive material which places an occupational information file within reach of every school. Additional information may be assembled through community



occupational surveys and first-hand contact with local industries.

Shop teachers have an excellent opportunity to disseminate occupational information. Approximately 200 listed occupations have a definite relationship to industrial-arts courses.

## RECOMMENDATIONS

It is recommended that:

1. Industrial-arts teachers should have a course in occupations and careers so that they may become more proficient in aiding the pupils to develop an adequate conception of the industrial world.
2. Material on occupations be properly classified and filed for ready reference.
3. The shop teacher should use discretion in selecting materials for the occupational information file. This material must be accurate, authoritative, current, complete, appealing, and easy to use.
4. Very few books be included in the occupational file, as bound volumes are very expensive and become rapidly out-dated.
5. Industrial-arts teachers should be increasingly aware of their favorable opportunity to disseminate occupational information and should become familiar with the list of occupations which have a definite relationship to the industrial arts.
6. Industrial-arts should devote a sufficient amount of the total teaching time in each

course to give pupils information, concerning the vocational implication of the subject.

7. Local information relating to occupations be included in the occupational information file.
8. Industrial-arts teachers exert a greater demand for occupational information on the manual and minimal skill level occupations, in addition to material on the white-collar and professional occupations.
9. Industrial-arts teachers should help develop appreciation for menial work as well as for white-collar jobs.
10. Industrial-arts teachers strive to integrate their program of vocational assistance to the pupils, with the total school program of guidance services.



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22. Report of the Harvard committee. General education in a free society. Cambridge, Harvard University Press, 1945. 267p.
23. Roberts, Andrew. School leavers show lack of vocational guidance. Occupations, the vocational guidance journal 22:174. October 1947.
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## APPENDIX

Industrial Arts Dept.  
Oregon State College  
Corvallis, Oregon  
January 30, 1951

Dear Sir:

The many criticisms brought to our schools from industry indicate that we have failed to gear our educational programs to the actual requirements found on the job.

Every teacher can offer occupational information through his respective subject fields. This task may seem bewildering until the teacher has his materials and his information easily available. The industrial arts teacher seems to be in a natural position for giving occupational information since he covers several fields of study and activities.

For this reason, a study is proposed to determine the amount and kind of occupational information which should be offered by the industrial arts teachers. Probably the most satisfactory way to obtain this information is from shop teachers in the field.

We shall be anxious to learn of your reaction to the questions enclosed. It is our hope that your interest in a study of occupational information in industrial arts will prompt you to give the few minutes required to record the practices and methods used in your shop. The names and information will be treated in a confidential manner.

A summary of the finds will be made available if you indicate on the questionnaire whether or not you desire such. Your cooperation will be appreciated.

Thank you.

Sincerely yours,

William K. Woodward

Name _____ School _____		
Total student enrollment: Boys _____ Girls _____		
<b>HOW TO USE THE QUESTIONNAIRE</b>		
Place a check of (X) under the Yes or No at the right of the page opposite the questions.		
	Yes	No
1. Does your school have a counselor with time set aside for counseling duties? If so, encircle the number of periods which he has specifically for this duty. 1-2-3		
2. Does the library have an occupational bookshelf?		
3. Does the library have the Dictionary of Occupational Titles?		
4. Do you use Part IV of Dictionary of Occupational Titles?		
5. Do you use follow-up for graduates or dropouts who have taken shop work?  How?		
6. Do you stress occupations for which shop courses are desirable?  How?		
7. Is the occupational information which you offer limited to those areas explored in your shop?		
Please send any sample material you use for the dissemination of occupational information.		
Does your shop program provide the following means for presenting occupational information?		
	Yes	No
1. Referral of students to Dictionary of Occupational Titles		
2. Use of occupational briefs, monographs, and pamphlets  How?		



Continued	Yes	No
3. Instruction on use of job analysis		
4. Emphasis on occupations considered by students		
How?		
5. Guest speakers discussing occupations		
6. Shop clubs on various careers		
7. Information on opportunities for vocational training		
8. Study on occupational trends		
9. Community occupational survey		
10. Pupil visits to local occupational activities		
11. Film strips, posters and motion pictures of occupations		
Check the courses which you teach in industrial arts and indicate the total number of hours in each area per school year. Approximately, what number of total hours in each area is devoted to occupational information. (Any information leading to a vocation from any particular shop course.)		
	Total hrs. for school year	Percentage of time for Occupational Information
Machine shop		
Plastics		
Printing		
Auto mechanics		
Ceramics		
Foundry		
Welding		
Sheet metal		
Carpentry		
Aircraft		
Drafting		
Electricity		
Leather craft		
Metal craft		
Woodwork (hand and machine)		
Cabinetmaking		
Pattern making		
Radio		
General crafts		