

APPENDIX A

Using Selected Characteristics for Occupational Exploration

Data in the *Selected Characteristics of Occupations* (SCO) may be used in a variety of ways to supplement data associated with the 12,741 occupations defined in the revised fourth edition *Dictionary of Occupational Titles* (DOT). The *Dictionary* contains occupations arranged according to similarities, such as tasks the worker must perform or knowledge the worker must have. The *SCO* provides lists of occupations arranged by similar Worker Characteristics required of an individual to fit a specific job-worker situation.

Based on data obtained and evaluated during job analysis studies to develop the revised *DOT*, analysts modified and prepared information for a significant number of occupations. Many of these had been published previously in the *Dictionary*; some had not. In addition, analysts revised their method of reporting ratings for clusters of Physical Demand (PD) and Environmental Condition (EC) components to reporting ratings for individual components.

The *Dictionary* provides information on the typical tasks of an occupation. Some users find it difficult to extract information that may appear to be implied about Worker Characteristics from the more explicit information about tasks. This publication provides users a means to access the Worker Characteristic ratings of Specific Vocational Preparation (SVP) as well as individual PD and EC ratings for all occupations defined in the *Dictionary*.

Use of these data with those contained in the *Dictionary* will permit better interpretation and evaluation of job characteristics for a wide range of occupations requiring similar adaptabilities and capabilities. Use of this supplement with the *Dictionary* can promote a better understanding of the relationships and/or differences among

occupations and provide transfer possibilities from one occupation to another.

Among other uses, the data provides reference materials helpful in determining the potential transferability of impaired or physically handicapped individuals from one occupation to another while permitting them to retain their fullest possible application of experience and remaining functional capacity. In addition, it may also be useful in informing applicants for employment of occupations suited to the skills acquired on previous jobs; make use of military training and experience in assessing civilian occupations and conversely, consider civilian experience in assessing military occupations; redirect workers displaced because needed training; and help determine benefits eligibility for impaired individuals.

There may be situations for which an individual is interested in finding employment in another occupation in which either the typical Strength Level or level of Specific Vocational Preparation (SVP) is constant or changes in relationship to the levels associated with the individual's current job.

The following examples are only two of many possible scenarios for evaluating significant characteristics of workers to make occupational change. 1. An individual may be interested in finding employment in another occupation which requires less physical exertion but which allows the application of most or all of one's existing vocational preparation. 2. In other situations, an individual may be interested in an occupation for which the most important factor is applying existing vocational preparation while the strength required by the job is relatively unimportant.

In such situations, it may be helpful to refer to the following table which contains information about the number of occupations in the *Dictionary* which have specific levels of Strength and SVP. After locating the cell in the

table where a specific Strength Level intersects a specific SVP level, it is possible to determine the number of occupations in the *Dictionary* that have the same or a different level of Strength and/or SVP.

SVP And Strength Level Ratings of DOT Occupations

SVP	Sedentary	Light	Medium	Heavy	Very Heavy	Total
1	6	107	50	25	3	191
2	131	1464	917	400	22	2934
3	144	1067	724	247	17	2199
4	137	736	586	168	10	1637
5	140	540	397	110	18	1205
6	161	670	414	73	10	1328
7	298	1088	542	118	9	2055
8	352	628	140	23	3	1146
9	28	18	0	0	0	46
Total	1397	6318	3770	1164	92	12741

The *SCO* relies heavily on the coding system used in the *Guide for Occupational Exploration* (GOE). It provides users with information about the interests, aptitudes, adaptabilities, and other requisites of occupational groups. The coding system described in the *GOE* is designed for use in self-assessment and counselor-assisted settings to help people understand themselves realistically in regard to their ability to meet job requirements. A brief description of GOE coding structure and classification system is given below so readers may better understand how to use the *SCO*. (The *GOE* is also available from the U.S. Government Printing Office. Interested users are referred to that publication for more detailed information regarding applications of data contained in it and for expanded definitions of work groups.)

The assignment of a GOE code to a *Dictionary of Occupational Titles* definition, provides a linkage from the GOE arrangement of occupations with similar interests, aptitudes, adaptability requirements, and other requisites to the industrial-occupational coding system published in the *Dictionary*.

The GOE classification structure is organized into three levels. The first level is composed of twelve interest areas corresponding to interest factors identified through research conducted by the Division of Testing in the U.S. Employment Service. The interest factors, identified by a two-digit code, are defined in terms of broad inter-

est requirements of occupations as well as vocational interests of individuals.

The second level subdivides interest areas into work groups. Each work group is composed of occupations that require similar adaptabilities and capabilities of the worker in similar work settings. Part A of this publication contains a short description of the types of occupations contained in each four-digit work group. Included at the end of the work group description is a brief list of skills and abilities usually required of workers in the group's occupations. (The *GOE* contains additional descriptive information for each work group.) In many interest areas, occupations that require the most education, training, and experience are in the first group while those requiring less formal education or experience are listed in the last group.

Work groups are subdivided into subgroups of occupations with even more homogeneous interests, aptitudes, and adaptability requirements. Each subgroup is identified with a unique six-digit code and title. In Part A of this publication, occupations that have the same six-digit GOE subgroup code are listed first by Specific Vocational Preparation (SVP) code (see Appendix B), then by Strength Level (see Appendix C), and finally by nine-digit DOT code (see Appendix E).

The next section describes the 12 GOE Interest Areas and outlines the Work Groups contained within each In-

terest Area. Part A in the *SCO* is organized around these Interest Areas.

DEFINITIONS AND WORK GROUPS OF GOE INTEREST AREAS

01 Artistic

An interest in creative expression of feelings or ideas.

A person can satisfy this interest in several of the creative or performing arts fields. A person may enjoy literature and find writing or editing appealing. A person may prefer to work in the performing or visual arts. A person could direct or perform in drama, music, or dance, become a critic in painting, or create or decorate products. A person may prefer to model clothes or develop acts for entertainment.

- 01.01 Literary Arts
- 01.02 Visual Arts
- 01.03 Performing Arts: Drama
- 01.04 Performing Arts: Music
- 01.05 Performing Arts: Dance
- 01.06 Craft Arts
- 01.07 Elemental Arts
- 01.08 Modeling

02 Scientific

An interest in discovering, collecting, and analyzing information about the natural world and applying scientific research findings to problems in medicine, the life sciences, and the natural sciences.

A person can satisfy this interest by working with the knowledge and processes of the sciences. A person may enjoy researching and developing new knowledge in mathematics or solving problems in the physical or life sciences. A person may wish to study medicine and help humans or animals and work as a practitioner in the health field. A person may want to work with scientific equipment and procedures and seek a job in research or testing laboratories.

- 02.01 Physical Sciences
- 02.02 Life Sciences
- 02.03 Medical Sciences
- 02.04 Laboratory Technology

03 Plants and Animals

An interest in activities related to plants and animals, usually in an outdoor setting.

A person can satisfy this interest by working in farming, forestry, fishing, and related fields. A person may like doing physical work outdoors, such as working on a farm. A person may enjoy animals and train or take care of animals. A person may have management ability and could own, operate, or manage farms or related businesses or services.

- 03.01 Managerial Work: Plants and Animals
- 03.02 General Supervision: Plants and Animals
- 03.03 Animal Training and Service
- 03.04 Elemental Work: Plants and Animals

04 Protective

An interest in using authority to protect people and property.

A person can satisfy this interest by working in law enforcement, fire fighting, and related fields. A person may enjoy mental challenge and intrigue and could investigate crimes or fires. A person may prefer to fight fires and respond to other emergencies or may want more routine work, such as guarding or patrolling. A person may have management ability and could seek a leadership position in law enforcement and the protective services.

- 04.01 Safety and Law Enforcement
- 04.02 Security Services

05 Mechanical

An interest in applying mechanical principles to practical situations using machines, handtools, or techniques.

A person can satisfy this interest in a variety of jobs ranging from routine to complex professional positions. A person may enjoy working with ideas about things (objects) and could seek a job in engineering or a related technical field. A person may prefer to deal directly with things and could find a job in the crafts or trades and build, make, or repair objects. A person may like to drive or operate vehicles or special equipment. Or a per-

son may prefer routine or physical work in settings other than factories, such as in mining or construction.

- 05.01 Engineering
- 05.02 Managerial Work: Mechanical
- 05.03 Engineering Technology
- 05.04 Air and Water Vehicle Operation
- 05.05 Craft Technology
- 05.06 Systems Operation
- 05.07 Quality Control
- 05.08 Land and Water Vehicle Operation
- 05.09 Materials Control
- 05.10 Crafts
- 05.11 Equipment Operation
- 05.12 Elemental Work: Mechanical

06 Industrial

An interest in repetitive, concrete, organized activities in a factory setting.

A person can satisfy this interest by working in one of many industries that manufacture goods on a mass production basis. A person may enjoy manual work or using handtools. A person may prefer to operate, take care of, or set up machines; supervise other workers; or inspect, sort, count, or weigh products.

- 06.01 Production Technology
- 06.02 Production Work
- 06.03 Quality Control
- 06.04 Elemental Work: Industrial

07 Business Detail

An interest in organized, clearly defined activities requiring accuracy and attention to details, primarily in an office setting.

A person can satisfy this interest in a variety of jobs by attending to the details of a business operation. A person may enjoy using math skills and find a job in billing, computing, or financial record keeping satisfying, or enjoy operating computer terminals or typewriters. A person may prefer to deal with people and want a job meeting the public, talking on the telephone, or supervising other workers.

- 07.01 Administrative Detail
- 07.02 Mathematical Detail
- 07.03 Financial Detail

- 07.04 Oral Communications
- 07.05 Records Processing
- 07.06 Clerical Machine Operation
- 07.07 Clerical Handling

08 Selling

An interest in bringing others to a point of view by personal persuasion, using sales and promotional techniques.

A person can satisfy this interest in a variety of sales jobs. A person may enjoy selling technical products or services. Or a person may prefer a selling job requiring less background knowledge and work in stores, sales offices, or customers' homes. A person may wish to buy and sell products to make a profit. A person may also satisfy this interest in legal work, business negotiations, advertising, and related fields found under other categories in the GOE.

- 08.01 Sales Technology
- 08.02 General Sales
- 08.03 Vending

09 Accommodating

An interest in catering to the wishes and needs of others, usually on a one-to-one basis.

A person can satisfy this interest by providing hospitality services in hotels, restaurants, or airplanes, or by taking tickets, carrying baggage, or ushering. A person may enjoy improving the appearance of others and work in the hair and beauty care field.

- 09.01 Hospitality Services
- 09.02 Barber and Beauty Services
- 09.03 Passenger Services
- 09.04 Customer Services
- 09.05 Attendant Services

10 Humanitarian

An interest in helping individuals with their mental, spiritual, social, physical, or vocational concerns.

A person can satisfy this interest by caring for the welfare of others. When spiritual or mental well-being of others is a concern, a person could prepare for a job in religion or counseling. A person may wish to help others with physical problems and work in the nursing, therapy, or rehabilitation fields. A person may like to provide

needed but less difficult care by working as an aide, orderly, or technician.

- 10.01 Social Services
- 10.02 Nursing, Therapy, and Specialized Teaching Services
- 10.03 Child and Adult Care

11 Leading-Influencing

An interest in leading and influencing others by using high-level verbal or numerical abilities.

A person can satisfy this interest through study and work in a variety of professional fields. A person may enjoy the challenge and responsibility of leadership and seek work in administration or management. Or a person may prefer working with technical details and find satisfaction in a job in finance, law, social research, or public relations. A person may like to help others learn by working in education.

- 11.01 Mathematics and Statistics
- 11.02 Educational and Library Services

- 11.03 Social Research
- 11.04 Law
- 11.05 Business Administration
- 11.06 Finance
- 11.07 Services Administration
- 11.08 Communications
- 11.09 Promotion
- 11.10 Regulations Enforcement
- 11.11 Business Management Services
- 11.12 Contracts and Claims

12 Physical Performing

An interest in physical activities performed before an audience.

A person can satisfy this interest through jobs in athletics, sports, and by performing physical feats. A job as a professional player or official may be appealing. Or a person may wish to develop and perform special acts, such as acrobatics or wire walking.

- 12.01 Sports
- 12.02 Physical Feats

APPENDIX B

Specific Vocational Preparation

Specific Vocational Preparation (SVP) is the amount of lapsed time required by a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job-worker situation. Lapsed time is not the same as work time. For example, 30 days is approximately 1 month of lapsed time and not six 5-day work weeks, and 3 months refers to 3 calendar months and not 90 work days.

SVP excludes orientation time required of a fully qualified worker to become accustomed to the special conditions, as well as establishment policies, of any new job. Further, SVP does not include time a worker spends obtaining reasoning, language, and mathematical skills which are often (1) learned in school and (2) are also necessary for a person to be able to function in society. [In the Occupational Analysis Program of the U.S. Employment Service, a difficulty factor, not a time factor, is assigned to the component used to estimate reasoning, language, and math skills (General Educational Development - GED).]

SOURCES OF SPECIFIC VOCATIONAL PREPARATION

SVP may be acquired in a school, work, military, institutional, or vocational environment through such settings as:

- vocational education (high school; commercial or shop training; technical school; art school; and that part of college training which is organized around a specific vocational objective);
- apprenticeship training (for apprenticeable jobs only);
- inplant training (organized classroom study provided by an employer);
- on-the-job training (serving as learner or trainee on the job under the instruction of a qualified worker);
- essential experience in other jobs (serving in less responsible jobs which lead to the higher grade job or serving in other jobs which qualify).

SCALE OF SPECIFIC VOCATIONAL PREPARATION

Level	Time
1	Short demonstration only
2	Anything beyond short demonstration up to and including 1 month
3	Over 1 month up to and including 3 months
4	Over 3 months up to and including 6 months
5	Over 6 months up to and including 1 year
6	Over 1 year up to and including 2 years
7	Over 2 years up to and including 4 years
8	Over 4 years up to and including 10 years
9	Over 10 years

CALCULATION OF SPECIFIC VOCATIONAL PREPARATION

The levels of SVP presented in the scale on the previous page are mutually exclusive and do not overlap. Time that applies to General Educational Development is not considered in estimating Specific Vocational Preparation. Analysts consider employer's requirements as well as similar jobs when they estimate an SVP level for a job, i.e., they do not restrict their rating to only the employ-

er's stated vocational preparation requirements. When calculating SVP, analysts usually count the average four-year college curriculum as equivalent to two years of specific vocational preparation and each year of graduate school as a year of specific vocational preparation. If necessary, analysts may calculate two classroom hours of secondary school vocational education, as an hour of SVP. However, at the post-secondary level of vocational education, they count each classroom hour as an hour of SVP.

APPENDIX C

Physical Demands

Physical Demand components, as used within the U.S. Employment Service (USES) Occupational Analysis Program, provide a systematic way of describing the physical activities that an occupation requires of a worker.

Within USES, the assessment of physical demands

- is focused primarily on the physical demands of the job— not the physical capacities of the worker;
- provides the means to combine information about many jobs into composite occupational information;
- permits the matching of workers and jobs based upon the workers' capabilities;
- permits the modification of the physical demands of a job to fit the capabilities of disabled workers.

PHYSICAL DEMAND FACTORS AND DEFINITIONS

The Physical Demands of an occupation are described in relationship to twenty different factors.

1. STRENGTH

This factor is defined by one of five levels: Sedentary, Light, Medium, Heavy, and Very Heavy. Most jobs require workers to expend energy to some extent. The amount can be affected by a worker's body position and the frequency of the repetition of a task. For instance, a worker in an awkward crouching position may experience as much difficulty exerting five pounds of force as when exerting thirty pounds at waist height while stand-

ing. Further, a worker who continuously lifts, pushes, or pulls 15-pound objects or carries them over long distances may exert as much physical effort as when lifting, pushing, pulling, or carrying 30-pound objects over short distances on a frequent basis.

To determine Strength Level, analysts review three elements in the physical demands of a job and condense these three elements into a single rating reported as the overall Strength Level of the occupation. The three elements and their subcomponents are defined below:

a. Body Position

Standing: Remaining on one's feet in an upright position at a work station without moving about.

Walking: Moving about on foot.

Sitting: Remaining in a seated position.

b. Weight/Force

Lifting: Raising or lowering an object from one level to another (includes upward pulling).

Carrying: Transporting an object, usually holding it in the hands or arms or on the shoulder.

Pushing: Exerting force upon an object so that the object moves away from the force (includes slapping, striking, kicking, and treadle actions).

Pulling: Exerting force upon an object so that the object moves toward the force (includes jerking).

c. Controls: Hand-Arm and Foot-Leg

Controls entail use of one or both arms or hands (hand-arm) or one or both feet or legs (foot-leg) to move controls on machinery or equipment. Controls include, but are not limited to, buttons, knobs, pedals, levers, and cranks.

Physical Demand factors other than those listed above may affect the Strength Level rating. Analysts consider these factors when they are present and adjust the overall Strength Level rating accordingly.

Sedentary Work

Sedentary Work involves exerting up to 10 pounds of force occasionally or a negligible amount of force frequently to lift, carry, push, pull, or otherwise move objects, including the human body. Sedentary work involves sitting most of the time, but may involve walking or standing for brief periods of time. Jobs may be defined as Sedentary when walking and standing are required only occasionally and all other Sedentary criteria are met. In Part A of this publication, occupations rated Sedentary have an **S** in the Strength column.

Light Work

Light Work involves exerting up to 20 pounds of force occasionally, or up to 10 pounds of force frequently, or a negligible amount of force constantly to move objects. Physical demand requirements are in excess of those for Sedentary Work. Even though the weight lifted may be only a negligible amount, a job/occupation is rated Light Work when it requires: (1) walking or standing to a significant degree; (2) sitting most of the time while pushing or pulling arm or leg controls; or (3) working at a production rate pace while constantly pushing or pulling materials even though the weight of the materials is negligible. (The constant stress and strain of maintaining a production rate pace, especially in an industrial setting, can be and is physically demanding of a worker even though the amount of force exerted is negligible.) In Part A of this publication, occupations rated Light have an **L** in the Strength column.

Medium Work

Medium Work involves exerting 20 to 50 pounds of force occasionally, or 10 to 25 pounds of force frequently, or an amount greater than negligible and up to 10 pounds constantly to move objects. Physical demand requirements are in excess of those for Light Work. In

Part A of this publication, occupations rated Medium have an **M** in the Strength column.

Heavy Work

Heavy Work involves exerting 50 to 100 pounds of force occasionally, or 25 to 50 pounds of force frequently, or 10 to 20 pounds of force constantly to move objects. Physical demand requirements are in excess of those for Medium Work. In Part A of this publication, occupations rated Heavy have an **H** in the Strength column.

Very Heavy Work

Very Heavy Work involves exerting in excess of 100 pounds of force occasionally, or in excess of 50 pounds of force frequently, or in excess of 20 pounds of force constantly to move objects. Physical demand requirements are in excess of those for Heavy Work. In Part A of this publication, occupations rated Very Heavy have a **V** in the Strength column.

LIMITS OF WEIGHTS LIFTED/CARRIED OR FORCE EXERTED

Rating	Occasionally	Frequently	Constantly
Sedentary	*—10	*	N/A
Light	*—20	*—10	*
Medium	20—50	10—25	*—10
Heavy	50—100	25—50	10—20
Very Heavy	100 +	50 +	20 +

* = negligible weight; N/A = Not Applicable

In the preceding chart, lifting, pushing, and pulling are expressed in terms of both intensity and duration. Judgments regarding intensity involve consideration of the weight handled, position of the worker's body or the part of the worker's body used in handling weights, and the aid given by helpers or by mechanical equipment. Duration is the total time spent by the worker in carrying out these activities. Carrying most often is expressed in terms of duration, weight carried, and distance carried. This information is summarized in the table on the next page.

The range excludes the lower number and includes the higher number, i.e., the range 10—25 excludes 10 (begins at 10 +) and includes 25. Overlapping ranges of *—10 in the Occasionally column for Sedentary Work and Light Work occupations are differentiated on the

basis of the worker's posture and the rate at which work is performed. For example, all Sedentary occupations involve sitting constantly. However, in some occupations workers sit constantly but exert force of an amount or at a frequency rate that exceeds those for Sedentary Work. Such occupations are, therefore, rated at least for Light Work.

ABSENCE OR PRESENCE OF OTHER PHYSICAL DEMAND COMPONENTS

Analysts use the following symbols to indicate the absence or presence (and when present, the frequency of occurrence) of the other nineteen Physical Demand components.

Code	Frequency	Definition
N	Not Present	Activity or condition does not exist.
O	Occasionally	Activity or condition exists up to 1/3 of the time.
F	Frequently	Activity or condition exists from 1/3 to 2/3 of the time.
C	Constantly	Activity or condition exists 2/3 or more of the time.

2. CLIMBING

Ascending or descending ladders, stairs, scaffolding, ramps, poles, and the like, using feet and legs or hands and arms. Body agility is emphasized. In Part A, the rating for the Climbing component appears second in the first Physical Demand column under the vertical heading **Cl**.

3. BALANCING

Maintaining body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery, or erratically moving surfaces; or maintaining body equilibrium when performing gymnastic feats. In Part A, the rating for the Balancing component appears third in the first Physical Demand column under the vertical heading **Ba**.

4. STOOPING

Bending body downward and forward by bending spine at the waist, requiring full use of the lower extremities and back muscles. In Part A, the rating for the

Stooping component appears fourth in the first Physical Demand column under the vertical heading **St**.

5. KNEELING

Bending legs at knees to come to rest on knee or knees. In Part A, the rating for the Kneeling component appears fifth in the first Physical Demand column under the vertical heading **Kn**.

6. CROUCHING

Bending body downward and forward by bending legs and spine. In Part A, the rating for the Crouching component appears sixth in the first Physical Demand column under the vertical heading **Co**.

7. CRAWLING

Moving about on hands and knees or hands and feet. In Part A, the rating for the Crawling component appears seventh in the first Physical Demand column under the vertical heading **Cw**.

8. REACHING

Extending hand(s) and arm(s) in any direction. In Part A, the rating for the Reaching component appears eighth in the first Physical Demand column under the vertical heading **Re**.

9. HANDLING

Seizing, holding, grasping, turning, or otherwise working with hand or hands. Fingers are involved only to the extent that they are an extension of the hand, such as to turn a switch or shift automobile gears. In Part A, the rating for the Handling component appears ninth in the first Physical Demand column under the vertical heading **Ha**.

10. FINGERING

Picking, pinching, or otherwise working primarily with fingers rather than with the whole hand or arm as in handling. In Part A, the rating for the Fingering component appears tenth (last) in the first Physical Demand column under the vertical heading **Fi**.

11. FEELING

Perceiving attributes of objects, such as size, shape, temperature, or texture, by touching with skin, particularly that of fingertips. In Part A, the rating for the Feel-

ing component appears first in the second set of Physical Demand ratings under the vertical heading Fe.

12. TALKING

Expressing or exchanging ideas by means of the spoken word to impart oral information to clients or to the public and to convey detailed spoken instructions to other workers accurately, loudly, or quickly. In Part A, the rating for the Talking component appears second in the second set of Physical Demand ratings under the vertical heading Ta.

13. HEARING

Perceiving the nature of sounds by ear. In Part A, the rating for the Hearing component appears third in the second set of Physical Demand ratings under the vertical heading He.

14. TASTING/SMELLING

Distinguishing, with a degree of accuracy, differences or similarities in intensity or quality of flavors or odors, or recognizing particular flavors or odors, using tongue or nose. In Part A, the rating for the Tasting/Smelling component appears fourth in the second set of Physical Demand ratings under the vertical heading TS.

15. NEAR ACUITY

Clarity of vision at 20 inches or less. In Part A, the rating for the Near Acuity component appears fifth in the second set of Physical Demand ratings under the vertical heading NA.

16. FAR ACUITY

Clarity of vision at 20 feet or more. (Note: There is no Physical Demand component for rating clarity of vision in the middle distance of 20 inches to 20 feet.) In Part A, the rating for the Far Acuity component appears sixth in the second set of Physical Demand ratings under the vertical heading FA.

17. DEPTH PERCEPTION

Three-dimensional vision. Ability to judge distances and spatial relationships so as to see objects where and as they actually are. In Part A, the rating for the Depth Perception component appears seventh in the second set of Physical Demand ratings under the vertical heading DP.

18. ACCOMMODATION

Adjustment of lens of eye to bring an object into sharp focus. This factor is required when doing near point work at varying distances from the eye. In Part A, the rating for the Accommodation component appears eighth in the second set of Physical Demand ratings under the vertical heading Ac.

19. COLOR VISION

Ability to identify and distinguish colors. In Part A, the rating for the Color Vision component appears ninth in the second set of Physical Demand ratings under the vertical heading CV.

20. FIELD OF VISION

Observing an area that can be seen up and down or to right or left while eyes are fixed on a given point. In Part A, the rating for the Field of Vision component appears last in the second set of Physical Demand ratings under the vertical heading FV.

APPENDIX D

Environmental Conditions

Environmental Condition components within the USES Occupational Analysis Program provide a systematic means to describe fourteen possible surroundings or settings in which the occupation is found or the job may be performed.

For thirteen of these factors, analysts determine whether a factor is absent or present. When they determine that a factor is present, they then determine whether it has an effect on the occupation in terms of its frequency of occurrence. (Analysts use the same scale and symbols, reproduced below, to rate both Environmental Conditions and Physical Demands.) For one factor, Noise, analysts estimate the general or typical intensity level of the immediate surroundings in which the occupation occurs. The scale for Noise Intensity Level appears with the definition for Noise.

ABSENCE OR PRESENCE OF ENVIRONMENTAL CONDITION COMPONENTS

Code	Frequency	Definition
N	Not Present	Activity or condition does not exist.
O	Occasionally	Activity or condition exists up to 1/3 of the time.
F	Frequently	Activity or condition exists from 1/3 to 2/3 of the time.
C	Constantly	Activity or condition exists 2/3 or more of the time.

ENVIRONMENTAL CONDITION FACTORS AND DEFINITIONS

1. EXPOSURE TO WEATHER

Exposure to outside atmospheric conditions. In Part A, the rating for the Exposure to Weather component appears first in the Environmental Conditions column under the vertical heading **We**.

2. EXTREME COLD

Exposure to nonweather-related cold temperatures. In Part A, the rating for the Extreme Cold component appears second in the Environmental Conditions column under the vertical heading **Co**.

3. EXTREME HEAT

Exposure to nonweather-related hot temperatures. In Part A, the rating for the Extreme Heat component appears third in the Environmental Conditions column under the vertical heading **Ho**.

4. WET AND/OR HUMID

Contact with water or other liquids or exposure to nonweather-related humid conditions. In Part A, the rating for the Wet and/or Humid component appears fourth in the Environmental Conditions column under the vertical heading **Hu**.

5. NOISE INTENSITY LEVEL

The noise intensity level to which the worker is exposed in the job environment. This factor is expressed by one of five levels. In Part A, the rating for the Noise Intensity Level component appears fifth in the Environmental Conditions column under the vertical heading **No**.

Code	Level	Illustrative Examples
1	Very Quiet	isolation booth for hearing test; deep sea diving; forest trail
2	Quiet	library; many private offices; funeral reception; golf course; art museum
3	Moderate	business office where typewriters are used; department store; grocery store; light traffic; fast food restaurant at off-hours
4	Loud	can manufacturing department; large earth-moving equipment; heavy traffic
5	Very Loud	rock concert - front row; jackhammer in operation; rocket engine testing area during test

6. VIBRATION

Exposure to a shaking object or surface. In Part A, the rating for the Vibration component appears sixth in the Environmental Conditions column under the vertical heading **Vi**.

7. ATMOSPHERIC CONDITIONS

Exposure to such conditions as fumes, noxious odors, dusts, mists, gases, and poor ventilation, that affect the respiratory system, eyes, or the skin. In Part A, the rating for the Atmospheric Conditions component appears seventh in the Environmental Conditions column under the vertical heading **AC**.

8. PROXIMITY TO MOVING MECHANICAL PARTS

Exposure to possible bodily injury from moving mechanical parts of equipment, tools, or machinery. In Part A, the rating for the Proximity to Moving Mechanical Parts component appears eighth in the Environmental Conditions column under the vertical heading **MP**.

9. EXPOSURE TO ELECTRICAL SHOCK

Exposure to possible bodily injury from electrical shock. In Part A, the rating for the Exposure to Electrical Shock component appears ninth in the Environmental Conditions column under the vertical heading **ES**.

10. WORKING IN HIGH, EXPOSED PLACES

Exposure to possible bodily injury from falling. In Part A, the rating for the Working in High, Exposed Places component appears tenth in the Environmental Conditions column under the vertical heading **HE**.

11. EXPOSURE TO RADIATION

Exposure to possible bodily injury from radiation. In Part A, the rating for the Exposure to Radiation component appears eleventh in the Environmental Conditions column under the vertical heading **Ra**.

12. WORKING WITH EXPLOSIVES

Exposure to possible injury from explosions. In Part A, the rating for the Working with Explosives component appears twelfth in the Environmental Conditions column under the vertical heading **Ex**.

13. EXPOSURE TO TOXIC, CAUSTIC CHEMICALS

Exposure to possible bodily injury from toxic or caustic chemicals. In Part A, the rating for the Exposure to Toxic or Caustic Chemicals component appears thirteenth in the Environmental Conditions column under the vertical heading **TC**.

14. OTHER ENVIRONMENTAL CONDITIONS

Other Environmental Conditions, not defined above. These may include, but are not limited to, such settings as demolishing parts of buildings to reach and combat fires and rescue persons endangered by fire and smoke; mining ore or coal underground; patrolling assigned beat to prevent crime or disturbance of peace and being subjected to bodily injury or death from law violators; diving in ocean and being subjected to bends and other conditions associated with high water pressure and oxygen deprivation; patrolling ski slopes prior to allowing public use and being exposed to danger of avalanches. In Part A, the rating for the Other Environmental Conditions component appears last in the Environmental Conditions column under the vertical heading **Ot**.

APPENDIX E

Occupational Code Number

The last means or system of sorting/organizing occupations listed in Part A of this publication is by nine-digit DOT code. A DOT code is comprised of nine numbers subdivided into three sets containing three numbers. In the classification system used in the *Dictionary*, each digit has a specific purpose or meaning. Together, these nine numbers provide a unique code which identifies an individual occupation from all others listed in the *Dictionary*.

The first three digits of a code number identify a particular occupational group. All occupations are clustered into one of nine broad "categories" (represented by the first digit). Examples of categories are professional, technical and managerial; and clerical and sales occupations. Categories are further divided into 83 more specific "divisions" (the first two digits). Examples of divisions are occupations in architecture and engineering within the professional category, and stenography, typing, and related occupations in the clerical and sales category. Divisions, in turn, are divided into small, homogeneous "groups" (the first three digits). The *Dictionary* contains 564 groups.

According to the Occupational Analysis Methodology used within the U.S. Department of Labor, every occupation requires a worker to function to some degree in relation to data, people, and things. The middle three digits of the DOT code reflect the Worker Function relationships of an occupation, that is the ratings for this job in relationship to data, people, and things.. The table in the next column contains information that identifies the various code numbers used to represent the data function (fourth digit), people function (fifth digit), and things function (sixth digit) of occupations defined in the *Dictionary*.

WORKER FUNCTIONS

Code	Data (4th Digit)
0	Synthesizing
1	Coordinating
2	Analyzing
3	Compiling
4	Computing
5	Copying
6	Comparing

Code	People (5th Digit)
0	Mentoring
1	Negotiating
2	Instructing
3	Supervising
4	Diverting
5	Persuading
6	Speaking-Signaling
7	Serving
8	Taking Instructions-Helping

Code	Things (6th Digit)
0	Setting Up
1	Precision Working
2	Operating-Controling
3	Driving-Operating
4	Manipulating
5	Tending
6	Feeding-Off Bearing
7	Handling

The last three digits of the occupational code number differentiate a particular occupation from all others. When a six-digit code is applicable to only one occupational title, the final three digits are always "010". When there is more than one occupation with the same first six digits, the final three digits are usually assigned in multiples of four, such as 010, 014, 018, and 022.

Originally all occupations with the same first six digits were in alphabetical order by title with the final three digits in sequential multiples of four. However, as occupations have disappeared from the economy (been deleted from the *Dictionary*), changed, or emerged, the

titles and codes included in the *Dictionary* have not been realphabetized or renumbered.

Specific definitions of Categories, Divisions, and Groups are located throughout the *Dictionary*. For additional information about the twenty-four Worker Functions, see "Appendix B: Explanation of Data, People, and Things" in the fourth edition *Dictionary of Occupational Titles*, revised 1991 or "Chapter 3: Worker Functions" in the *Handbook for Analyzing Jobs*, 1991. Both U.S. Department of Labor publications are available through the U.S. Government Printing Office.

IDENTIFICATION KEY

This key provides a single reference location of codes and headings used in *Selected Characteristics of Occupations*.

Worker Functions

Appendix E of this publication contains additional information about Worker Functions.

Code	Data (4th Digit)
0	Synthesizing
1	Coordinating
2	Analyzing
3	Compiling
4	Computing
5	Copying
6	Comparing

Code	People (5th Digit)
0	Mentoring
1	Negotiating
2	Instructing
3	Supervising
4	Diverting
5	Persuading
6	Speaking-Signaling
7	Serving
8	Taking Instructions-Helping

Code	Things (6th Digit)
0	Setting Up
1	Precision Working
2	Operating-Controling
3	Driving-Operating
4	Manipulating
5	Tending
6	Feeding-Off Bearing
7	Handling

Dot Code Digit Sets

“Parts of The Occupational Definition” in the DOT contains additional information about Categories, Divisions, and Groups.

Digit Group	Represents
First	Category (1st digit) Division (2nd digit) Group (3rd digit)
Second	Worker Functions Data (4th digit) People (5th digit) Things (6th digit)
Third	Unique Identifier

Specific Vocational Preparation (SVP)

Appendix B of this publication contains additional information about Specific Vocational Preparation.

Level	Time
1	Short demonstration only
2	Anything beyond short demonstration up to and including 1 month
3	Over 1 month up to and including 3 months
4	Over 3 months up to and including 6 months
5	Over 6 months up to and including 1 year
6	Over 1 year up to and including 2 years
7	Over 2 years up to and including 4 years
8	Over 4 years up to and including 10 years
9	Over 10 years

Physical Demands Factors

Appendix C contains additional information about Physical Demands.

Number	Heading	Physical Demands
1	St	Strength
2	Cl	Climbing
3	Ba	Balancing
4	St	Stooping
5	Kn	Kneeling
6	Co	Crouching
7	Cw	Crawling
8	Re	Reaching
9	Ha	Handling
10	Fi	Fingering
11	Fe	Feeling
12	Ta	Talking
13	He	Hearing
14	TS	Tasting/Smelling
15	NA	Near Acuity
16	FA	Far Acuity
17	DP	Depth Perception
18	Ac	Accommodation
19	CV	Color Vision
20	FV	Field of Vision

Environmental Condition Factors

Appendix D contains additional information about Environmental Conditions.

Number	Heading	Environmental Condition
1	We	Exposure to Weather
2	Co	Extreme Cold
3	Ho	Extreme Heat
4	Hu	Wet and/or Humid
5	No	Noise Intensity Level
6	Vi	Vibration
7	AC	Atmospheric Conditions
8	MP	Proximity to Moving Mechanical Parts
9	ES	Exposure to Electrical Shock
10	HE	Working in High, Exposed Places
11	Ra	Exposure to Radiation
12	Ex	Working with Explosives
13	TC	Exposure to Toxic or Caustic Chemicals
14	Ot	Other Environmental Conditions

Limits of Weights Lifted/Carried or Force Exerted by Strength Level

Rating	Occasionally	Frequently	Constantly
Sedentary	*—10	*	N/A
Light	*—20	*—10	*
Medium	20—50	10—25	*— 10
Heavy	50—100	25—50	10—20
Very Heavy	100 +	50 +	20 +

* = Negligible Weight; N/A = Not Applicable

Absence or Presence of Physical Demand and Environmental Condition Components

Code	Frequency	Definition
N	Not Present	Activity or condition does not exist.
O	Occasionally	Activity or condition exists up to 1/3 of the time.
F	Frequently	Activity or condition exists from 1/3 to 2/3 of the time.
C	Constantly	Activity or condition exists 2/3 or more of the time.

Noise Intensity Level

Code	Level	Illustrative Examples
1	Very Quiet	isolation booth for hearing test; deep sea diving; forest trail
2	Quiet	library; many private offices; funeral reception; golf course; art museum
3	Moderate	business office where typewriters are used; department store; grocery store; light traffic; fast food restaurant at off-hours
4	Loud	can manufacturing department; large earth-moving equipment; heavy traffic
5	Very Loud	rock concert - front row; jackhammer work; rocket engine testing area during test

The Handbook for Analyzing Jobs, 1991 contains additional information about components of occupational analysis used by the U.S. Department of Labor.