

Dictionary of Occupational Titles

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Foreword

The escalating number of jobs affected by new technologies presents a tremendous challenge to those involved in the effort to provide accurate data on the array of work activities in the American economy. And yet, valid documentation of what workers do in their jobs and which skills, knowledges, and abilities employers require is essential in planning for and realizing the optimal utilization of our national work force.

This second Supplement to the 1977 Fourth Edition *Dictionary of Occupational Titles* (DOT) is a vehicle for maintaining the currency of the *Dictionary* and for responding to the requests of users in the public and private sectors for comprehensive up-to-date occupational information. It is hoped that the information contained in this publication will enhance the usefulness of the *Dictionary* for its many and varied users. For ease of reference, this Supplement contains information included in the 1982 Supplement to the Fourth Edition *Dictionary* and supersedes that publication.

User participation in the Occupational Code Request program continues to provide valuable information on omitted, new, and changing jobs. The Occupational Code Request form, a facsimile of which appears in Appendix A, is available at local Job Service Offices. We express appreciation to *Dictionary* users who have used this means to add to the source data reflected in the Supplement. Such interest and vigilance helped make this publication possible.

Comments and inquiries about the *Dictionary* and this Supplement are invited and should be addressed to:

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Appendix D

Rating Structures of Physical Demands and Environmental Conditions

I. PHYSICAL DEMANDS

The Physical Demands (PD) given in the profile at the end of each definition reflect both the physical requirements of the occupation and the physical capacities a worker must have to meet those requirements. These ratings estimate the overall strength requirement (expressed in terms of the letter corresponding to the particular strength rating) and identify other PD factors considered critical or important for average, successful work performance (identified by the number corresponding to the particular factor). The absence of a factor rating in the PD estimates profile does not necessarily mean that the physical activity is not present in the job. Rather, it indicates that the occupational data collected and evaluated by occupational analysts did not establish the activity as critical or important for successful job performance. Below are explanations of the strength ratings and the nineteen other Physical Demands factors.

1. STRENGTH

This factor is expressed by one of five terms: Sedentary, Light, Medium, Heavy, and Very Heavy. In order to determine the overall rating, an evaluation is made of the worker's involvement in the following activities:

a. Standing, Walking, Sitting

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 the normal seated position.

b. Lifting, Carrying, Pushing, Pulling

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).

Lifting, pushing, and pulling are evaluated in terms of both intensity and duration. Consideration is given to the weight handled, position of the worker's body, and the aid given by helpers or mechanical equipment. Carrying most often is evaluated in terms of duration, weight carried, and distance carried.

Estimating the Strength factor rating for an occupation requires the exercise of care on the part of occupational analysts in evaluating the force and physical effort a worker must exert. For instance, if the worker is in a crouching position, it may be much more difficult to push an object than if pushed at waist height. Also, if the worker is required to lift and carry con-

tinuously or push and pull objects over long distances, the worker may exert as much physical effort as is required to similarly move objects twice as heavy, but less frequently and/or over shorter distances.

c. Controls

Controls entail the use of one or both arms or hands (hand/arm) and/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.

Following are descriptions of the five terms in which the Strength Factor is expressed:

S—Sedentary Work—Exerting up to 10 pounds of force occasionally* and/or a negligible amount of force frequently** or constantly*** 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 are sedentary if walking and standing are required only occasionally and all other sedentary criteria are met.

L—Light Work—Exerting up to 20 pounds of force occasionally, and/or up to 10 pounds of force frequently, and/or a negligible amount of force constantly to move objects. Physical demand requirements are in excess of those for Sedentary Work. Light Work usually requires walking or standing to a significant degree. However, if the use of arm and/or leg controls requires exertion of forces greater than that for Seden-

*Occasionally: activity or condition exists up to 1/3 of the time.

**Frequently: activity or condition exists from 1/3 to 2/3 of the time.

***Constantly: activity or condition exists 2/3 or more of the time.

tary Work and the worker sits most of the time. the job is rated for Light Work.

M—Medium Work—Exerting up to 50 pounds of force occasionally, and/or up to 20 pounds of force frequently, and/or up to 10 pounds of force constantly to move objects.

H—Heavy Work—Exerting up to 100 pounds of force occasionally, and/or up to 50 pounds of force frequently, and/or up to 20 pounds of force constantly to move objects.

V—Very Heavy Work—Exerting in excess of 100 pounds of force occasionally, and/or in excess of 50 pounds of force frequently, and/or in excess of 20 pounds of force constantly to move objects.

CLIMBING

Ascending or descending ladders, stairs, scaffoldings, ramps, poles, and the like, using feet and legs and/or hands and arms. Body agility is emphasized. This factor is important if the amount and kind of climbing required exceeds that required for ordinary locomotion.

BALANCING

Maintaining body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery, or irregularly moving surfaces; or maintaining body equilibrium when performing gymnastic feats. This factor is important if the amount and kind of balancing exceeds that needed for ordinary locomotion and maintenance of body equilibrium.

STOOPING

Bending body downward and forward by bending spine at the waist. This factor is important if it occurs to a considerable degree and requires full use of the lower extremities and back muscles.

KNEELING

Bending legs at knees to come to rest on knee or knees.

CROUCHING

Bending body downward and forward by bending legs and spine.

CRAWLING

Moving about on hands and knees or hands and feet.

REACHING

Extending hand(s) and arm(s) in any direction.

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.

FINGERING

Picking, pinching, or otherwise working primarily with fin-

gers rather than with the whole hand or arm as in handling.

11. FEELING

Perceiving attributes of objects, such as size, shape, temperature, or texture, by touching with skin, particularly that of fingertips.

12. TALKING

Expressing or exchanging ideas by means of the spoken word. Talking is important for those activities in which workers must impart oral information to clients or to the public, and in those activities in which they must convey detailed or important spoken instructions to other workers accurately, loudly, or quickly.

13. HEARING

Perceiving the nature of sounds. Hearing is important for those activities which require ability to receive detailed information through oral communication, and to make fine discriminations in sounds, such as when making fine adjustments on running engines.

14. TASTING/SMELLING

Distinguishing, with a degree of accuracy, differences or similarities in intensity or quality of flavors and/or odors, or recognizing particular flavors and/or odors, using tongue and/or nose.

15. NEAR ACUITY

Clarity of vision at 20 inches or less. This factor is important when special and minute accuracy is demanded and when defective near acuity would adversely affect job performance and/or safety of self and others.

16. FAR ACUITY

Clarity of vision at 20 feet or more. This factor is important when visual efficiency in terms of far acuity is required and when defective far acuity would adversely affect job performance and/or safety of self and others.

17. DEPTH PERCEPTION

Three-dimensional vision. Ability to judge distances and spatial relationships so as to see objects where and as they actually are. This factor is important when depth perception is required for successful job performance and/or for reasons of safety to oneself and others.

18. ACCOMMODATION

Adjustment of lens of eye to bring an object into sharp focus. This factor is important when doing near point work at varying distances from eye.

19. COLOR VISION

Ability to identify and distinguish colors.

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. This factor is important when job performance requires seeing a large area while keeping the eyes fixed.

II. ENVIRONMENTAL CONDITIONS

The Environmental Conditions (EC) listed in this publication serve as a means of describing the physical surroundings of a worker in a specific job and of indicating the hazards that pose a definite risk of bodily injury to the worker. The physical surroundings are reflected in factors numbered one (1) through seven (7) and the hazards are reflected in factors numbered eight (8) through fourteen (14). The EC factors identified for an occupation are those which are considered to be important or critical. Below are explanations of the fourteen Environmental Conditions factors.

PHYSICAL SURROUNDINGS

1. EXPOSURE TO WEATHER

Exposure to hot, cold, wet, humid, or windy conditions, caused by the weather. This factor is rated important when exposure to weather results in marked bodily discomfort.

2. EXTREME COLD

Exposure to nonweather-related cold temperatures. This factor is rated important when temperatures are sufficiently low to cause marked bodily discomfort.

3. EXTREME HEAT

Exposure to nonweather-related hot temperatures. This factor is rated important when temperatures are sufficiently high to cause marked bodily discomfort.

4. WET AND/OR HUMID

Contact with water or other liquids; or exposure to nonweather-related humid conditions. This factor is rated important when contact with water or other liquids or exposure to humidity causes marked bodily discomfort.

5. NOISE*

Exposure to constant or intermittent sounds of a pitch or level sufficient to cause marked distraction or possible hearing loss.

6. VIBRATION

Exposure to a shaking object or surface. This factor is rated important when vibration causes a strain on the body or extremities.

7. ATMOSPHERIC CONDITIONS

Exposure to conditions, such as fumes, noxious odors,

dusts, mists, gases, and poor ventilation, that affect the respiratory system, eyes, or the skin. This factor is rated important if these conditions are present to a degree or length of time sufficient to cause marked bodily discomfort or possible injury.

HAZARDS

A hazard is a condition in the work environment that subjects or exposes the worker to the possibility of serious bodily injury or danger to the worker's life or health. A hazard is specific, related to the job, and has a greater likelihood of occurring than it would away from the job. The following conditions are evaluated as possible hazards in specific jobs:

8. Proximity to Moving, Mechanical Parts
9. Exposure to Electrical Shock
10. Working in High, Exposed Places
11. Exposure to Radiant Energy
12. Working with Explosives
13. Exposure to Toxic or Caustic Chemicals
14. Other Hazards

If protective measures eliminate the hazard entirely and if the worker has no choice regarding their use, the hazard is considered to be reduced and the factor is not rated. However, if the protective device is subject to the worker's discretionary use, the hazard is not considered reduced, and if appropriate, is rated, irrespective of the presence of the device.

*With regard to Factor 5, NOISE, the current standards of the Occupational Safety and Health Administration (OSHA) for permissible noise exposure apply. Factor 5 is rated important when the noise level exceeds these standards. The following chart indicates those standards:

PERMISSIBLE NOISE EXPOSURES

Duration Per Day, Hours	Sound Level DB
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼	115