Conventional Job Analysis Procedures

The conventional job analysis programs used in many organizations typically involve the collection of job-related information by observation of and/or interview with job incumbents, and the preparation of job descriptions that usually are written in essay form. The specific features of such programs as carried out by different organizations are quite varied in terms of the type of information obtained, the job analysis forms used, the procedures followed in the analysis process, and the format, organization, and writing style of the final descriptions or specifications. At the same time, the basic patterns used by different organizations have much in common.

Job Analysis Procedures of the USES

The United States Employment Service of the Training and Employment Administration (formerly the Manpower Administration) of the Department of Labor has had more experience in conventional job analysis activities than any other organization, public or private, so we will present as an example the format it uses (the job analysis schedule) along with a few of the points and guidelines covered in the Handbook for Analyzing Jobs, which is the basic manual used in its job analysis procedures.

Job Analysis Schedule

The job analysis schedule of the USES is shown in Figure 4-1, which presents a completed job description. The schedule provides for certain information that would not usually be relevant for most other organizations, for example, certain identification information and certain ratings that are to be entered on the schedule. The specific directions regarding the analysis process and the preparation of the schedule are given in the Handbook for Analyzing Jobs and are not repeated in detail here. However, we will briefly discuss a few sections of the schedule that typically would be provided for in most job analysis procedures. (Reference to these is by the item number on the schedule.) In addition, some supplementary observations and comments are made with respect to certain items, and in certain instances, relevant material from other sources is brought in.

In discussing the job analysis procedures of the USES we first illustrate and discuss the final product of typical job analysis processes in the form of a complete job description (as presented in Figure 4-1), and then back up to discuss certain aspects of the initial processes of obtaining the information ultimately presented in the form of a job description.

Establishment of job title (item 1). The title by which the job is commonly referred to is entered as the main title, in all capital letters. Under no circumstance should the analyst coin a title to use. If the title used is ambiguous a qualifying word or phrase can be entered in parentheses after the title. It is usually the practice to enter other alternate titles after the main title, but with initial capital and lower case letters.

Job summary (item 4). The job summary typically consists of a brief, yet comprehensive statement to describe the primary activities of the job and to characterize the role of the job in the organization. In this regard Bouchard, in discussing what he refers to as "defining the job," which is essentially the same thing as a job summary, urges that the analyst begin with a general statement of job objectives that should focus on general outcomes, or what a person who does the job well should be expected to accomplish. He goes
on to make the point that even if there are multiple objectives (that make the formulation of such a statement difficult) it is still the job analyst's duty to create such a statement.

Figure 4-1. Job analysis schedule used by the USES in its job analysis program. (Source: Handbook for Analyzing Jobs, pp. 42-45)

**JOB ANALYSIS SCHEDULE**

1. **Title:** Dough Mixer

2. **Infl. Assign.:** Becky, Prod.

3. **SIC Code(s) and Title(s):** 2051 Bread and other bakery products

**1. JOB SUMMARY:**

Operates mixing machine to mix ingredients for straight and spoon (yeast) doughs according to established formulas, directs other workers in fermentation of dough, and cuts dough into pieces with hand cutter.

**2. WORK PERFORMED RATINGs:**

<table>
<thead>
<tr>
<th>Worker Functions</th>
<th>D</th>
<th>P</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>5</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>People</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Things</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**M.P.S.N.S.: 584 - Bakery Products**

**3. WORKER TRAITS RATINGs:**

| GED | 1 (2) 3 4 5 6 |
| SVP | 1 2 3 (4) 5 6 7 8 |

**Aptitudes:** G 3 V 3 N 3 S 3 P 3 Q 4 K 3 F 3 M 3 X 4 C 4

**Temperaments:** D F 1 J (H) P R S (T) V

**Interests:** (1a) 1b 2a 2b 3a 3b 4a (4b) 5a 5b

**Phys. Demands:** S L M (H) V 2 (3) 4 5 (6)

**Environ. Cond.:** 1 0 2 3 4 (5) 6 7

**4. Experience:** One year as DOUGH-MIXER HELPER

**5. Education:** None

**6. Training:** None

**7. Promotion:** From DOUGH-MIXER HELPER To BAKER

**8. Supervision Received:** By BAKER

**9. Supervision Given:** DOUGH-MIXER HELPER

**10. Machines, Tools, Equipment, and Work Area:** Dough mixing machine; balance scales; hand scoops; measuring vessels; portable dough troughs.

**11. Description of Tasks:**

1. Dumps ingredients into mixing machine: Examines production schedule to determine type of bread to be produced, such as rye, whole wheat, or white. Refers to formula card for quantities and types of ingredients required, such as flour, water, milk, vitamin solutions, and shortening. Weighs out, measures, and dumps ingredients into mixing machine. (205)
2. Operates mixing machine: Turns valves and other hand controls to set mixing time according to type of dough being mixed. Presse button to start agitator blades in machine. Observes gages and dials on equipment continuously to verify temperature of dough and mixing time. Feels dough for desired consistency. Adds water or flour to mix measuring vessels and adjusts mixing time and controls to obtain desired elasticity in mix. (35%)

3. Directs other workers in fermentation of dough: Prepares fermentation schedule according to type of dough being raised. Sprays portable dough trough with lubricant to prevent adherence of mixed dough to trough. Directs DOUGH-MIXER HELPER in positioning trough beneath door of mixer to catch dough when mixing cycle is complete. Pushes or directs other workers to push troughs of dough into fermentation room. (10%)

4. Cuts dough: Dumps fermentated dough onto worktable. Manually kneads dough to eliminate gases formed by yeast. Cuts dough into pieces with hand cutter. Places cut dough on proofing rack and covers with cloth. (10%)

5. Performs miscellaneous duties: Records on work sheet number of batches mixed during work shift. Informs BAKE SHOP FOREMAN when repairs or major adjustments are required for machines and equipment. (55%)

16. Definition of Terms

**Trough** — A long, narrow, opened vessel used for kneading or washing ingredients.

17. General Comments

None

18. Analyst: Jane Smith Date 3/21/70 Editor: John Riley Date 3/30/70

Reviewed By: Alexandra Pursey Title, Org: Foreman, Bake Shop

National Office Reviewer: Mary Moore

Conventional Job Analysis Procedures

As a procedure for developing such a statement, Bouchard proposes that a number of qualified supervisors or their equivalent should be asked to specify what the objectives of the job are, indicating that such responses can be elicited with one or another of the following types of questions:

1. Please describe in general terms what objectives a person holding the position of ___(job title)___ should achieve in his/her job.
2. Please describe in general terms what the primary purpose of ___(activity)___ is.
3. What are the general aims that ___(job title)___ should strive for.

He suggests that respondents be allowed to answer such a question in as much detail as they wish, but that their responses should be followed by a request for a brief summary of the objectives, using a question such as this: “In a few words, or a sentence at most, how would you summarize the objectives (aims, primary purpose) of this job?”

Although the USES does not itself emphasize this point in its general job analyses procedures, it is argued here that an emphasis on the objectives of a job (or its role in the organization) would be very relevant in describing jobs or positions within specific individual organizations. This would be the case especially with higher level jobs or with jobs for which such objectives or roles are not otherwise clearly manifest.

A special aspect of the job description of the USES (especially of the job summaries) is the reflection of the level of involvement of the worker with data, people, and things. These three types of involvement are based on what are referred to as worker functions, which are discussed more extensively in Chapter 6 in connection with functional job analyses. The USES Handbook lists all the specific functions in each of the three categories. (See Figure 4-2.)

Each category is viewed as a hierarchy, with any given function subsuming all those below it. Examples of a few job summaries given in the USES Handbook are listed here, along with the respective level of involvement of each job with those worker functions that characterize the jobs.

- Shovels coal into mine cars for haulage (things relationship, nonmachine) (handling level).
- Examines structural aircraft assemblies to verify conformance to specifications (data and things relationships) (analyzing and handling levels).
are relevant to the work field, and examples of work activities that
would be classified in that work field.

The section MPSMS as used by the USES refers to materials,
products, subject matter, and services. Entries for this section are

Figure 4-3. Illustration of one of the work fields* used by the USES in
its job analysis procedures. (Source: Handbook for Analyzing Jobs,
pp. 121-122)

COOKING - FOOD PREPARING
Preparing foods for human or animal consumption, by any combination
of methods which may include methods specific to other work fields,
such as Baking-Drying, Mixing, Shearing-Shaving, Stock Checking,
and Weighing.

Methods Verbs
Basting Curing Measuring Roasting
Bottling Flavoring Pasteurizing Rotting
Browning Frying Pickling Seasoning
Churning Heating Rendering Spreading
Knitting Kneading Squeezing

Machines
Continuous churn Pasteurizer Vane churn

Tools
Cleaver Cutters Forks Ice Picks Knives Paddles Sitters Spatulas Spoons

Equipment
Broilers Grills Ovens Roasters Smoke chambers Steam digesters

Work Aids
Charts Dishes Hoppers Kettles Mixing bowls Pans Pots Recipes Storage bin Storage tank

Controls battery of smoke chambers in which such meat products as
bacon, hams, meat loaf, sausage, shoulders, and weiners are cooked
and cured.

Mixes and bakes ingredients, according to recipes, to produce breads,
pastries, and other baked goods.

Mixes, cooks, and freezes ingredients to prepare frozen desserts such
as sherbets, ice cream, and custards.

Operates ovens to roast dry breakfast cereals made from corn, rice,
bran, and oats.

Plans menus and cooks meals in private home, according to recipes
or tastes of employer.

*The work field for any given job is entered in the job analysis schedule (see Fig. 4.1)
in a designated space labeled 5, Work Performed Ratings.
taken from a specific list, for example, clay (a material), bakery products (a product, the one applicable to the job of a dough mixer in Figure 4-1), horticulture (a subject), and retail trade (a service).

Although the USES procedures provide for ratings of these aspects of work performed, such ratings normally would not be involved in job analysis procedures used by individual organizations.

Worker traits ratings (item 6). Many job analysis procedures provide for the analyst to rate or make a judgment about the worker traits or attributes that are considered important to a job. Such ratings or judgments must be based on inferences from the job activities. (See Chapter 10 for further reference to this matter.) In the case of the USES procedures these ratings, as described in the Handbook for Analyzing Jobs, include the following:

- General Educational Development [GED]
- Specific Vocational Preparation [SVP]
- Aptitudes [G—Intelligence; V—Verbal; N—Numerical; S—Spatial; P—Form perception; Q—Clerical perception; K—Motor coordination; F—Finger dexterity; M—Manual dexterity; E—Eye-hand-foot coordination; and C—Color discrimination]
- Temperaments [10]
- Interests [5 bipolar interest factors]
- Physical Demands [ratings on a strength factor as expressed in terms of sedentary, light, medium, heavy, and very heavy, and on four other physical demand factors]
- Environmental Conditions [rating on seven environmental conditions]

For each of these worker traits there is provision in the USES procedure for rating any given job using specific rating scales that are included in the Handbook for Analyzing Jobs. Certain of these rating scales, and portions of others, are given in Appendix A. The job analysis procedures of other organizations (such as private organizations) frequently provide for the analyst to rate each job in terms of one or more human traits or attributes. The Summary of National Job Analysis Survey Methods includes provision for reporting the worker attributes for which ratings were obtained. The results of this part of the survey are summarized in Table 4-1. It can be seen that ratings of experience required, training and education, and mental skills were the attributes most commonly included. Such ratings typically are used as the basis for establishing the personnel specifications for the job in question.

Description of tasks (item 15). What is referred to in the USES job analysis schedule as the description of tasks is sometimes referred to as the work performed. Since this portion of a job description is generally the most important one, certain of the instructions relating to it in the Handbook for Analyzing Jobs are given below:

Describe in concise form the tasks performed, following the concepts and procedures outlined in this handbook. Each description must designate the worker's actions and the results accomplished; the machines, tools, equipment, and/or work aids used; materials, products, subject matter, or services involved; and the requirements made of the worker.

This description should provide a basis for and be compatible with the assignment of work performed and worker traits ratings.

In order to provide the clearest presentation, divide the job into its major tasks. Number each task consecutively and introduce it with a flag statement. (The flag statement is a short summary of the task and should be followed by a description of the elements it encompasses. For many kinds of jobs the tasks should be described in the chronological order in which they are performed. However, in other types of jobs the tasks should be listed in order of importance.)

Indicate in parenthesis at the end of each task description an estimate of the percentage of time required for its performance. The percentage should be on the basis of 100 percent for all of the tasks performed.

The description-of-tasks section should include the occasionally performed activities as well as those that are a more regular, ongo-
ing part of the job. In this regard, when activities are performed on a “now-and-then” basis it usually is desirable to indicate in some way the conditions or circumstances under which the activity is performed, such as: “At the end of each month balances the books . . .” “When requested by customer, arranges for . . .” “When observing that generator is discharging . . .”

Further, this section should bring out somehow the way in which any tools, equipment, and materials are involved in the job. There usually is provision for listing these (as in item 13 of Figure 4-4), and therefore their use should be reflected in the description of the tasks.

In writing job description material (as in describing tasks), certain types of information usually should be included (sometimes referred to as the what, how, and why of job analysis procedures), and there is a somewhat standardized style of writing. The writing of such material will be discussed in a later section of this chapter.

Physical demands and environmental conditions. The job analysis procedures of the USES provide for the completion of a form (Figure 4-4) for recording and explaining the physical demands and environmental conditions, and for entering certain codes relating to these on the job analysis schedule. The responses to some items are to be given in percents, weights, and (in the case of noise) in decibels. For most items, however, the following code symbols are used:

NP Not present (the 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)

Comments about the activities or conditions, identified by number and letter, are to be entered in the righthand column of the form. (Appendix B includes definitions of the specific physical demands and environmental conditions incorporated in the USES form as presented in Figure 4-4).

In the case of some other job analysis procedures there is also provision for recording information on physical demands and environmental conditions. For example, in the Summary of National Job Analysis Methods Survey it was reported that the following items were provided for by the percents of respondents indicated:

<table>
<thead>
<tr>
<th>Item</th>
<th>Salaried</th>
<th>Hourly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfort variables (temperature, humidity, noise, etc.)</td>
<td>35%</td>
<td>61%</td>
</tr>
<tr>
<td>Hazards (physical health)</td>
<td>36%</td>
<td>68%</td>
</tr>
</tbody>
</table>

The Use of Questionnaires in Conventional Job Analysis

Some job analysis programs involve the completion by job incumbents of a preliminary questionnaire in which they describe their own jobs. Usually such questionnaires provide for giving the same type of information as that to be included in the final job description (such as provided for in the job analysis schedule shown in Figure 4-1). The purpose of these questionnaires is to provide the analyst with a first draft of a job description. Although this procedure may give some employees a feeling of participation in the program, it usually has some limitations. For example, some employees may not welcome the opportunity to describe their jobs, and some do not have the verbal skills necessary to describe their jobs adequately. Further, there may be a tendency on the part of some employees to “inflate” their jobs by, for example, indicating that they have more responsibility than is actually the case; conversely, some employees may tend to understated their responsibilities.

When a questionnaire is employed, it may be useful to ask the employees to maintain a record of their daily activities (including their time allocation) in advance of the actual completion of the questionnaire, as an aid to them in preparing it. Further, they should be encouraged to express themselves in their own words and to complete the questionnaires entirely independently. Normally, such questionnaires can be completed more adequately by salaried personnel (supervisors, or office personnel) than by hourly paid personnel; this suggests that questionnaires normally should be used with salaried personnel rather than with hourly paid employees.

When such questionnaires are used, the job analyst usually follows up by interviewing and possibly observing the job incumbents in order to clarify doubtful items of information and to fill in additional information about the job.

Writing Job Descriptions and Related Material

The description of work activities can be pitched at various levels, perhaps most typically at the level of job summaries or of descriptions of tasks. Whatever the intended level might be, the descrip-
Figure 4-4. Physical demands and environmental conditions forms used by the USES in its job analysis procedures. (Source: Handbook for Analyzing Jobs, pp. 340-341)

<table>
<thead>
<tr>
<th>ENVIRONMENTAL CONDITIONS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ENVIRONMENT</td>
<td></td>
</tr>
<tr>
<td>Inside _____ %</td>
<td></td>
</tr>
<tr>
<td>Outside _____ %</td>
<td></td>
</tr>
<tr>
<td>2. EXTREME COLD WITH OR WITHOUT TEMPERATURE CHANGES</td>
<td></td>
</tr>
<tr>
<td>3. EXTREME HEAT WITH OR WITHOUT TEMPERATURE CHANGES</td>
<td></td>
</tr>
<tr>
<td>4. WET AND/OR HUMID</td>
<td></td>
</tr>
<tr>
<td>5. NOISE</td>
<td></td>
</tr>
<tr>
<td>Estimated maximum number of decibels</td>
<td></td>
</tr>
<tr>
<td>VIBRATION</td>
<td></td>
</tr>
<tr>
<td>6. HAZARDS</td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
</tr>
<tr>
<td>Burns</td>
<td></td>
</tr>
<tr>
<td>Explosives</td>
<td></td>
</tr>
<tr>
<td>Radiant Energy</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>7. ATMOSPHERIC CONDITIONS</td>
<td></td>
</tr>
<tr>
<td>Fumes</td>
<td></td>
</tr>
<tr>
<td>Odors</td>
<td></td>
</tr>
<tr>
<td>Dusts</td>
<td></td>
</tr>
<tr>
<td>Mists</td>
<td></td>
</tr>
<tr>
<td>Gases</td>
<td></td>
</tr>
<tr>
<td>Poor Ventilation</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

RATINGS: E.C.: 1 0 B 2 3 4 5 6 7

PROTECTIVE CLOTHING OR PERSONAL DEVICES

RATINGS: P.D.: S L M H VH 2 3 4 5 6
Content of Job Description Material

In job analysis jargon one frequently hears reference to the **what**, **how**, and **why** of job analysis processes. In describing human work, the analyst must be sure that the description covers **what** the worker does, **how** he does it, and **why** he does it. Although in some circumstances the **how** and **why** may be implicitly obvious, if there is any question at all about these aspects they should be explicitly brought out in the description.

**What** the worker does is characterized by statements regarding the physical and mental activities that are performed on the job. As Butler points out, physically the worker may transport materials, cut, grind, set up, regulate, finish, or otherwise change the position, shape, or condition of the work by the expenditure of physical effort; and mentally he may engage in such activities as planning, computing, judging, or directing, including in some instances the governing of the expenditure of his own or others' physical effort. In describing the **what** of the job Butler suggests that the analyst should ask himself the following questions:

- What tasks have been observed during the performance of the job?
- Are the tasks included for this job performed by all workers designated by the job title?
- What is the frequency with which the tasks are performed?
- What is the relative difficulty of each task as compared with the rest of the tasks on the job?
- Are there additional tasks which have not been observed?
- Are there additional tasks customary to all workers on the job?
- Have the data obtained by observation been verified?

The **how** of the work activities performed deals with the methods or procedures used to carry out the job tasks. In the case of physical activities, this may involve the use of machinery and tools or other equipment, the following of certain procedures or routines, or the execution of certain physical responses such as hand movements. In the case of mental activities, this may involve the use of calculations or formulas, the exercise of judgment, or the selection and transmittal of thought. In considering the **how** of the job, Butler suggests that the analyst should try to cover the following questions:

- What tools, materials, and equipment have been used to accomplish all of the tasks of the job?
- Are there other tools, materials, and equipment which have not been observed? If so, how do they work?
- What methods or processes have been used to accomplish the tasks of the job?
- Are there other methods or processes by which the same work can be done?

The **why** of the job analysis process goes back to the objective of the job as emphasized by Bouchard and discussed earlier in this chapter (Job Summary). The basic purpose(s) of the job should be one of the first things the analyst should seek to determine and should be brought out in any job summary. Aside from setting forth in the job summary the overall purpose of the job (that is, why the job exists), the description of the specific tasks should also include some indication as to why the individual tasks are performed, in case this is not manifest or is not clearly implied in the description of **what** and **how**. The **why** of each individual task generally would characterize the purpose of the task as related to the fulfillment of the overall objectives of the job as incorporated in the job summary.

Butler illustrates the manner in which the **what**, **how**, and **why** are brought out in the portions of a job description given below, which deal with the job summary and a couple of tasks.

**Job: ENGINE LATHE OPERATOR—FIRST CLASS**

**Job summary:** Sets up and operates an engine lathe to turn small airplane fittings from brass or steel bar stock or from unfinished aluminum or magnesium alloy castings (why), finishing fitting down to specified close tolerances (what, how).  

*Work performed (descriptions of two tasks):*

1. Sets up lathe (what); carefully examines blueprints (what) to determine the dimensions of the part to be machined (why), using shop mechanics (how) to calculate any dimensions (what) not given directly on the print (why) or to calculate machine settings (why).  

2. Sets up lathe to turn stock held in chuck (what); attaches to lathe the accessories such as chuck and tool holder (what) necessary to perform the machining (why) threading and locking the chuck and the head stock spindle (how) and setting.
In writing job description material there sometimes is a problem in determining the degree of specificity. The *Handbook for Analyzing Jobs* includes the following observations in its discussion of the description of tasks:

The analyst should keep in mind the necessity for stating a task completely but should not allow the explanation to develop into a motion study. For example, regarding an inspector of small parts, it may be said, "Slides fingertips over machine edges to detect ragged edges and burrs."

On the other hand, it would be absurd to state, "Raises right hand one foot to table height, superimposes hand over mechanical part and, by depressing the first and second fingers to the machined part and moving the arm slowly sidewise about six inches, feels with his fingertips for snags or pricks that are indicative of surface irregularities."

**Writing Style in Job Analysis**

The writing style for conventional job descriptions is described in the *Handbook for Analyzing Jobs* as follows:

a. A terse, direct style should be used.

b. The present tense should be used throughout.

c. Each sentence must begin with an active verb.

d. Each sentence must reflect an objective, either specifically stated or implied in such manner as to be obvious to the reader. A single verb may sometimes reflect both objective and worker action.

e. All words should impart necessary information; others should be omitted. Every precaution should be taken to use words that have only one possible connotation and that specifically describe the manner in which the work is accomplished.

f. The description of tasks should reflect the assigned work performed and worker traits ratings.

The last rule relates specifically to the practice of the USES in assigning Work Performed and Worker Traits ratings (as discussed earlier in this chapter) and would also be applicable for other organizations that provide for any type of similar ratings. Even if such ratings are not required, however, the task descriptions should reflect the same substance as such ratings would cover.

As indicated by rule c, each sentence usually should begin with an active verb. The worker is the assumed—but unstated—subject. Here are some examples from the *Handbook for Analyzing Jobs*:

---

**Conventional Job Analysis Procedures**

- Drives tractor to plow . . .
- Demonstrates . . . merchandise, such as . . . to sell . . .
- Turns valves to regulate coolant flow . . .
- Feeds material into machine that stamps out parts . . .
- Devises and installs accounting systems to maintain records of . . .
- Compiles reports to show . . .
- Talks with supervisors to obtain information . . .
- Analyzes medical data to diagnose . . .

There are, however, circumstances in which some qualifying word or phrase should precede the verb, for example, to specify the circumstances under which a particular activity is performed: "At the end of each week compiles reports to show . . ." or "Verbally assigns . . ."

**Basic sentence structure.** Most job description material has a basic, somewhat standardized sentence structure. This basic sentence structure, as set forth in the *Handbook for Analyzing Jobs*, is given in Figure 4-5 with an example of a "job worker" situation, the opera-

---

**Figure 4-5. Example of the analysis of the sentence structure for describing job activities, namely, the verb, the immediate object, and an infinitive phrase.** (Source: *Handbook for Analyzing Jobs*, p. 201)

---

**Analysis**

<table>
<thead>
<tr>
<th>VERB (WORKER FUNCTION)</th>
<th>IMMEDIATE OBJECT</th>
<th>INFINITIVE (WORK FIELD)</th>
<th>OBJECT OF INFINITIVE (MPSMS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compares</td>
<td>switchboard operation with standards</td>
<td>to relay</td>
<td>calls</td>
</tr>
<tr>
<td>Converses with caller</td>
<td></td>
<td>to convey, to receive</td>
<td>information</td>
</tr>
<tr>
<td>Operates</td>
<td>card or cordless switchboard</td>
<td>to relay</td>
<td>incoming, outgoing, and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>interoffice calls</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIERARCHY</td>
</tr>
<tr>
<td>Data</td>
</tr>
<tr>
<td>People Things</td>
</tr>
</tbody>
</table>
The job worker situation is defined briefly, and the analysis consists of the following components:

- **Verb (the worker function)**
- **Immediate object** (typically materials, tools, equipment or work aids, data, or people)
- **Infinitive phrase**
  - Infinitive (a work field)
  - Object of the infinitive (some material, product, subject matter, or service)

Some further examples of such sentence structure are given in Table 4–2.

The lower part of Figure 4–5 shows the USES classification of job activities in terms of the data, people, things hierarchy, worker function, work field, and MPSMS (materials, products, subject matter, and services). In typical job analysis programs within individual organizations, such classification procedures usually would not be relevant.

In describing most work activities, the analyst should keep in mind the writing style and the type of sentence structure discussed.

### Table 4–2. Examples of sentence analysis as used by USES, showing how sentences can be structured in terms of the verb, the immediate object, and an infinitive phrase. (Source: Handbook for Analyzing Jobs)

<table>
<thead>
<tr>
<th>Verb (Worker Function)</th>
<th>Immediate Object</th>
<th>Infinitive Phrase</th>
<th>Object of Infinitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzes</td>
<td>examination papers</td>
<td>to evaluate</td>
<td>knowledge of law candidates</td>
</tr>
<tr>
<td>Compiles</td>
<td>credit information</td>
<td>to determine</td>
<td>credit rating</td>
</tr>
<tr>
<td>Computes</td>
<td>hours, pay scale, etc.</td>
<td>to calculate and post</td>
<td>wages</td>
</tr>
<tr>
<td>Compares</td>
<td>appearance of hides with specifications</td>
<td>to grade</td>
<td>hides</td>
</tr>
<tr>
<td>Describes</td>
<td>features of interest</td>
<td>to inform</td>
<td>visitors to factory</td>
</tr>
<tr>
<td>Sets up</td>
<td>metal-working machines</td>
<td>to machine</td>
<td>metal patterns, core boxes</td>
</tr>
<tr>
<td>Works</td>
<td>tooth-cleaning instruments</td>
<td>to clean</td>
<td>teeth</td>
</tr>
<tr>
<td>Operates</td>
<td>saw</td>
<td>to cut to size</td>
<td>metal materials</td>
</tr>
<tr>
<td>Tends</td>
<td>sanding machine</td>
<td>to smooth</td>
<td>broomsticks</td>
</tr>
<tr>
<td>Feeds</td>
<td>blending machine</td>
<td>to blend</td>
<td>flour</td>
</tr>
<tr>
<td>Handles</td>
<td>shovel, pick</td>
<td>to fill</td>
<td>holes in road</td>
</tr>
</tbody>
</table>

Functional Job Analysis (FJA) as used by the USES has been further developed by Dr. Sidney A. Fine. The system is discussed in more detail in Chapter 6, but one aspect of this system is relevant to our present discussion. The use of the FJA system is predicated in part on the careful description of tasks. In this regard Dr. Fine provides for incorporating into the sentence structure some indication of the nature of the instructions that serve as the basis for the worker’s actions, in addition to the components discussed above. Figure 4–6 shows the form used. Certain examples of task statements prepared in the framework of the FJA system are given below. These examples come from jobs involved in the social welfare field (Fine et al.).

1. Calculates/perform statistical analysis of population movements within state’s correctional facilities, using a desk calculator, in order to compute data to be used in report requested by the bureau director.

2. Advises/counsels mother on emotional and legal consequences of decision to place child in adoptive home, listening to mother, asking questions, and reflecting her feelings, and suggesting ways of coping with problems, guilt, and anxieties arising from separation, in order to help mother adjust to permanent separation from child.

3. Visually inspects applicants’ files, noting missing information, and indicates omissions on form letters, in order to complete form letters to applicants requesting the missing information by return mail.

4. Verbally assigns tasks/gives directions to the clerical staff worker, explaining and answering questions about prescribed and discretionary elements of procedures and performance requirements, based upon prior assessment of operation flow, workload, and worker’s capabilities, in order to ensure that the worker understands his duties and responsibilities.
Although the further elaboration of task descriptions to incorporate provision for the instructions on which actions are to be based is especially relevant in the use of the FJA system, such elaboration can also be very useful in the preparation of conventional job descriptions.

**Standardization of Job Analysis Terminology**

Since individual words can have different meanings, and since different words can be used to express the same meaning, some type of standardization of terminology can contribute to the clarity of job description material.

There are two ways to achieve some level of standardization of terminology. One way is to carefully select and define relevant categories or specified items that are sometimes used in various job analysis formats. The USES definition of physical activities and working conditions in its Physical Demands and Environmental Conditions Form (Figure 4-4) represent examples of this type of standardization. (The definitions are given in Appendix B.)

The other way to standardize terminology is to suggest uses of specific job-related terms (which sometimes are individually defined) in job descriptions and other job-related materials. One set of such standardized terminology used by the USES and included in the Handbook for Analyzing Jobs consists of a list of work fields to be used by job analysts, when appropriate, in describing job activities, along with a listing for each work field of several method verbs relevant to the work field. The complete material relating to one work field was given in Figure 4-3. Following are listings of two other work fields with examples of certain of the methods verbs associated with them:

<table>
<thead>
<tr>
<th>Work Field</th>
<th>Methods Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaving</td>
<td>Doffing, Drawing, Requisitioning</td>
</tr>
<tr>
<td>Stock checking</td>
<td>Cataloging, Counting, Requisitioning</td>
</tr>
</tbody>
</table>

The USES Handbook also contains a list of functional verbs for use in preparing occupational analyses, with definitions for each. A few examples are given below.

- **Anneals.** Subjects to high heat, with subsequent cooling, for the purpose of softening thoroughly and rendering less brittle.
- **Calibrates.** Ascertains the caliber of, determines, rectifies or marks the graduations of; adjusts in accordance with a previously defined standard.
- **Diagnoses.** Recognizes, analyzes and identifies (usually a disease, but also other states or conditions) by examination or observation.
- **Prescribes.** Lays down or sets as a guide, directions or rules of action; e.g., procedures, regulations, etc.
- **Splices.** Joins or unites (wires and ropes) by weaving together the end strands.

Still another example of such standardization comes from Stone and Yoder. As one phase of a broader project they developed definitions of certain verbs which represent specific types of job activities that fall within the categories of certain of the worker functions given in Figure 4-2. For example, for the worker function of copying, Stone and Yoder identified various verbs which characterize specific aspects of copying, and have defined these as follows:

- **COPYING**
  - Transcribing, entering, or posting data
  - To make a written note or account of
  - To transfer (an entry or item) from one record to another
Discussion

The shortcomings of job descriptions resulting from conventional job analysis procedures are certainly well recognized. At the same time it must be recognized that they do serve certain useful purposes which other methods cannot serve, such as presenting an organized description of individual jobs and reflecting the role of individual jobs within organizations. Thus, although conventional job descriptions are far from perfect, we should not throw up our hands in despair and abandon any effort to prepare and use them. Rather, it behooves the analysts who prepare them to obtain all relevant information about any given job and to prepare as good a description as possible.

References


Methods and Task Analysis

Conventional job analysis procedures usually result in job descriptions prepared in essay form or in discursive fashion. For some purposes, however, the work performed in jobs is better characterized in terms of individually identified activity units. There are many variations on this theme, one of which is the level of description. In most instances such descriptions are pitched at the task level or subunits thereof, such as subtasks and elemental motions of the body members. Some variations provide for the organization of the activities into a sequence, whereas others do not. In addition, some variations provide for the recording of certain information related to each activity. The common denominator, however, is that work is dissected into individually identified units.

Although the different approaches have much in common (and thus defy any nice, orderly classification scheme), we will divide our discussion into two general categories, namely, methods analysis and related techniques (dealing essentially with various industrial engineering procedures related to work analysis), and certain other approaches commonly referred to as task analysis.