The Revised Handbook for Analyzing Jobs

U.S. Department of Labor
Lynn Martin, Secretary

Employment and Training Administration
Roberts T. Jones
Assistant Secretary for Employment Training
1991

This digital version of *The Revised Handbook for Analyzing Jobs* is a reprint of the original text printed by the U.S. Department of Labor (1991). It includes pages that were missing in the original printing (Chapter 9) by:

U.S. Government Printing Office
Superintendent of Documents. Mail Stop: SSOP. Washington, DC 20402-9328
ISBN 0-16-035877-9
STOCK NO. 029-013 00095-1

CONTENTS

CHAPTER 13

WRITING JOB SUMMARIES AND DESCRIPTIONS OF TASKS

A JAR is an organized presentation of the facts about a job; it distinguishes one job from all others. The report includes the purposes, tasks, responsibilities, and worker characteristics of a job. Job summaries condense into one sentence the information contained in job descriptions.

Job descriptions, the products of job analysis studies, are derived from the collection, organization, and presentation of job data in accordance with USES occupational analysis methodology. The analyst should arrange and describe tasks that comprise a job in either a chronological or functional order. Tasks are usually arranged functionally when a job has no regular cycle of operations.

The job summary should reflect: 1) the significant involvement(s) of the worker with Data, People, or Things and the level of such involvement(s); 2) the assigned Work Field(s); and 3) the assigned MPSMS. In some cases, MTEWA and the work setting or type of establishment should be reflected. Jobs should be summarized in a concise, general way.

PREPARING JOB SUMMARIES

For a Things job with a significant relationship to machines or equipment (Setting Up, Operating-Controlling, Driving-Operating, Tending, or Feeding-Off Bearing), apply the sentence analysis technique to the steps used to prepare a job summary.

Start the sentence with a verb. This verb expresses the worker's action and reflects the assigned Worker Function for Things. Remember that ''the worker'' is always the implied subject of the verb.

Example: ''Tends. . .''

Follow the worker action verb with an immediate object, which will be the machine or equipment used.

''Tends injection molding machine. . . ''

Next, indicate the purpose of the worker action. For jobs rated at levels 0 (Setting Up), 2 (Operating-Controlling), and 3 (Driving-Operating), an infinitive should be used to reflect the purpose of the job. For jobs rated at level 5 (Tending) and 6 (Feeding-Off Bearing), the purpose of the worker action is introduced by the word ''that. . . ''. The purpose, thus stated, should reflect the assigned Work Field(s).

''Tends injection molding machine that molds. . . ''

Next, indicate the materials or products, as the object of the infinitive. Materials and products must be appropriate to the MPSMS rating assigned.

''Tends injection molding machine that molds resin pellets into plastic bottles.''

For a nonmachine, Things-significant job (Precision Working, Manipulating, or Handling), begin the job summary with a verb that states the worker action in terms of the job's purpose; then follow with the MPSMS. Next, include in some logical order the basic work devices used (including, when appropriate, the types of work instructions followed). If a limited number of work devices are used, each type should be specified, such as ''. . . using tweezers, eye loupe, and hand soldering iron''; if a variety of work devices is used, only the general types should be indicated, such as ''. . . using variety of metalworking machines, handtools, power tools, and precision measuring instruments.'' The summary of a Plumber job illustrates the latter style format:

Assembles, installs, and repairs heating, water, and drainage systems, using variety of machines, welding equipment, power tools, and handtools, and following blueprints, specifications, and plumbing codes.

''Assembles, installs, and repairs. . . '' states both the worker actions and the job objectives, while ''heating, water, and drainage systems'' are the products (MPSMS). Because the job is also Data-significant, the Data function (Compiling) is substantiated by ''. . . following blueprints, specifications, and plumbing codes''. The work devices (''. . . variety of machines, welding equipment, power tools, and handtools'') and types of instructions also substantiate the Things-function (Precision Working), which would otherwise not be evident by the action verbs alone.

For a job that is essentially Data-significant, begin the job summary with the worker action verb that matches or is synonymous with the Data Worker Function, and follow with the object of the verb, which must reflect information of some kind. For example:

Evaluates credit information to investigate credit ratings of bank customers.

''Evaluates'' places the job at the analyzing level. Unless the job is also People- or Things-significant, only the Data involvement need be included in the job summary, as in the above example. If the job is Data and People- or Things-significant, begin the job summary with a verb that states the worker action in terms of the job's purpose.

For a job that is People-significant, begin the job summary with the worker action verb that matches or is synonymous with the People Worker Function, and state the object of the verb, which is usually the people who are dealt with or served. In the example below, the worker action ''instructs'' denotes the job objective (to teach), which need not be separately stated; the object of the verb is ''students''.

Instructs students in social studies and English.

In sales jobs, the object of ''sells'' is the commodity or service sold rather than the customers.

Sells shoes in men's shoe store.

Using discretion, additional information can be included in the job summary to indicate the work setting or type of establishment. This information may or may not be important for a complete understanding of the job's objective or MPSMS. The previous examples are expanded as follows to show how the work setting and type of establishment can be incorporated into a job summary:

Tends injection molding machine that molds resin pellets into plastic bottles, working in container department of pharmaceutical-manufacturing firm.

Assembles, installs, and repairs heating, water, and drainage systems, using variety of machines, welding equipment, power tools, and handtools, and following blueprints, specifications, and plumbing codes, working for plumbing contractor specializing in new construction.

Evaluates credit information to investigate credit ratings of bank customers, working for credit-reporting establishment.

Instructs students in social studies and English in private, parochial junior high school.

PREPARING DESCRIPTIONS OF TASKS

The description of tasks is the main part of the JAR and lists, in order, the tasks that comprise the job. Each task statement is numbered and includes an estimate of the percentage of time allocated to that task. Detailed task descriptions are preceded by flag statements summarizing the work elements that follow.

The organization of job analysis data from notes and the selection of the number and scope of tasks to include in the job description is an integral requirement of job analysis. The primary consideration is to organize the data and to write the job description so that the uninformed reader can gain a clear concept of the work performed.

Identifying Tasks

From the definitions of task and element (Chapter 2), it is shown that they differ in scope; yet an identical activity may be a task in one job, an element in another, or an entire job in itself. The identification of tasks is based on a multifactor approach, using the following questions as guidelines.

Can the activity readily be discerned to be a discrete task or element? If an activity is sufficiently distinguishable from other activities of the job, this may be an indication that it is a separate task. If not, it should be treated as an element, integrally related to other elements of a task by common purpose, sequence of actions, or decision-making factors.

Does the activity differ significantly from other activities of the job observed? This may be determined by different levels of involvement with Data, People, and Things, for example, or by machine-or-nonmachine-oriented activities.

Is the activity performed frequently enough to be included as a distinct task? An activity performed a small percentage of the time may be consolidated as an element of a broader task or included with other infrequent activities as a separate task. On the other hand, if an activity requires a significant percentage of the worker's time, this is an indication that the activity should be identified as a separate task. It should be noted at this point that two analysts, studying the same job, are likely to write job descriptions with different task breakdowns; provided both descriptions are clear, complete, and accurate neither will be any more ''correct'' than the other.

Arranging Tasks

Once the tasks of the job are identified, the next step is to arrange them in a way that results in a clear, logical presentation.

For jobs that have specific cycles or sequences of operations, arrange tasks in the order in which they are performed. The sequential arrangement is often applicable to production jobs in manufacturing that have a definite cycle. For jobs having no established sequence of operations, arrange tasks according to their function. Tasks so described may be arranged either according to amount of time spent on them or according to their relative importance in the overall job. For a detailed explanation of identifying and organizing tasks and grouping work activities into tasks see Appendix A.

Flag Statements

A flag statement is a short summary of a task that precedes the complete task description. A flag statement consists of a verb and its object and orients the reader to the scope and content of the task, about to be described, by stating in general terms what the worker does. It is important that flag statements be sufficiently comprehensive to cover all basic activities of the task. If it is difficult to develop a concise flag statement for a prospective task, this may indicate a need to separate the activities into two or more tasks. Flag statements may be written in Worker Function terms, such as ''Compiles data'', ''Instructs students'', and ''Tends machine'', or they may have other verbs, such as ''Maintains files'', ''Prepares report'', and ''Responds to customer inquiries''. The task description which follows the flag statement elaborates on the flag statement through specific action verbs, as well as the other categories of job information.

For example, the following task description amplifies the flag statement "Sets up lathe:"

Sets up lathe: Examines blueprints to determine dimensions of part to be machined, and calculates unspecified dimensions and machine settings, utilizing knowledge of shop math and metalworking. Threads and locks chuck on headstock spindle, and sets and tightens toolholder in tool carriage, using setscrew and wrench. Positions and secures workpiece in chuck jaws, using dial indicator and chuckwrench. Selects cutting tool according to specifications for metal type and cut, and clamps tool at prescribed cutting angle in toolholder, visually judging angle of cut. Sets and adjusts control levers to regulate lathe speed, utilizing knowledge of metalworking and machine operation.

Estimating Time Percentages of Tasks

Estimating and recording the time percentage of each task is one of the last steps in preparing task descriptions. Indicate in parenthesis at the end of each task description an estimate of the time required for its performance. The percentage should be allocated on the basis of 100% for all the tasks performed. The assignment of time spent on tasks is an estimate, not a precise measurement; estimates are rounded to the nearest 5% interval.

WRITING DESCRIPTIONS OF TASKS

These guidelines provide a framework for preparing job descriptions and a technique for evaluating their adequacy.

AREAS OF INFORMATION: Every job description must tell what the worker does; what gets done; the MPSMS involved; and the MTEWA used. This is essentially an extension of the "what, how, why" concept of the job analysis formula in use prior to 1972 when the HAJ was published. In addition, each description should reflect the ratings for Work Performed and the Worker Characteristics and indicate the criteria for acceptable work. These six areas of information are necessary to: (1) ensure uniformity of description content; (2) make certain that the minimum essential information has been included; and (3) simplify and standardize review procedures. The areas are called:

1. Worker Action
2. Objective or Purpose
3. Machines, Tools, Equipment, and Work Aids
4. Materials, Products, Subject Matter, and Services
5. Work Performed and Worker Characteristics Ratings
6. Criteria for Acceptable Work

The areas are defined and applied as follows, at least for the body of a job description, i.e., the description of tasks. The job summary is a special case, however, and is treated separately.

1. Worker Action. This is an active verb in the present tense, third person singular that reflects a specific action taken by a worker. It tells what the individual does as distinguished from what gets done as a result of the action. (This ultimately leads to the rated Worker Functions.)
   a. Examples of adequate statements:
      1) *Demonstrates*. . . merchandise, such as. . . to sell. . .
      2) *Turns* valves to regulate coolant flow. . .
      3) *Feeds* material into machine that stamps out parts. . .
      4) *Talks* with supervisors to obtain information. . .

NOTE: These examples are intended only to illustrate worker actions. They are not the only ways to write such work elements.

In the first example, the worker *demonstrates* to sell. In the second example, the worker *turns* valves to regulate.

b. Examples of inadequate statements:

1) "Stamps out metal parts of toys with punch press."

The writer has failed to distinguish between the worker action and the purpose of that action. In this job, the verb "stamps" is a function performed by the machine, not the worker. The worker really "feeds," "tends," or performs some other action in relation to the machine, but this worker action has been omitted.

2) "Fills paper bags with flour, using machine that automatically fills bags to preset weight."

The worker action has been omitted. The word "fills" is a function performed by the machine, not by the worker. The phrase ". . . using machine. . ." neither states nor implies a worker action since the reader cannot be expected to know what are the specific actions involved.

a) If the worker keeps the hopper of the machine filled by shoveling flour into it, the sentence should read: "*Shovels* flour into hopper of machine that automatically fills. . ."

b) If the worker starts, stops, and observes the operation of the machine, occasionally making minor adjustments to ensure an even flow, the sentence should read: "*Tends* machine that automatically fills. . ."

c. The verb sometimes reflects both action and purpose. When both are reflected in the same verb, it is not necessary to express them separately as awkward or wordy sentences may result. For example:

"Instructs students in principles of engineering." The verb "instructs" implies both the *action* of the worker and the *purpose* of the action. It expresses the worker action adequately because the more specific actions involved in instructing are well known to most readers. It simultaneously expresses the purpose because, unlike "machine" or "tool" jobs, there are no intermediate instruments through which the worker's actions are transformed into achievement of their purpose. In this case, the instrument is the worker. This situation usually occurs when the worker is dealing with people or data, rather than with things.

d. Worker action is sometimes implied or understood. For example:

"Assembles parts of wooden packing crates, using hammer and nails." Although the purpose "Assembles" is specifically stated, the worker action "*hammers* nails" is not. It is implied by the phrase "using hammer and nails." In the context of the example, the actions involved in using hammer and nails are sufficiently well known to make specific expression of an action verb unnecessary.

e. Worker action rule: EACH ELEMENT SENTENCE MUST REFLECT A WORKER ACTION. This must be stated specifically or implied in such a manner as to be obvious to the reader.

2. Objective or Purpose. This is what gets done as a result of worker actions. It has been discussed under Item 1. Worker Action since the two are closely related. There are two types:

a. The overall objective or purpose of a job, indicated in the job summary, which reflects the assigned Work Field(s).

b. The intermediate purposes that are the objectives of specific worker actions in the description of tasks. For example:

1) Operates. . . machines to *drill and lap* channels in industrial diamonds for use as wire drawing dies. . .

2) Turns controls *to regulate* speed of revolution and reciprocating action of drilling machine. . .

3) Operates machine that rotates diamond as revolving wire rocks back and forth in channel, *to lap* inner wall of channel.

"Operates" is a worker action. The overall objective appearing in the job summary is "*to drill and lap* channels in industrial diamonds." "*To regulate* speed. . . " becomes an intermediate purpose because it is the objective of a specific worker action in the description of tasks and is a step along the way to the overall objective. "*To lap*," the purpose of the worker action "Operates" in the last sentence, is another intermediate objective.

c. Objective rule: EACH SENTENCE MUST REFLECT AN OBJECTIVE. This must be stated specifically or implied in such a manner as to be obvious to the reader. (Remember that a single verb may sometimes reflect both objective and worker action.)

3. MTEWA. These include the machines, mechanical equipment, handtools, and work aids, such as jigs, measuring devices, and graphic instructions, used to attain an objective or perform a worker action.

a. Examples:

1) Counts number of red blood cells. . . using *microscope*. . .

2) Operates *turret lathe*. . .

3) Tends *power generator*. . .

4) Assembles. . . using *electricians' handtools*.

5) Inspects. . . parts, using *plug gauges*.

6) Saws furniture parts. . . according to *blueprint specifications*.

7) Repairs radios. . . following *schematic diagrams*. . .

This area of information is essential to an understanding of the worker actions and ultimately the nature of the skills involved in performing a job.

b. MTEWA rule: THIS AREA OF INFORMATION MUST BE INCLUDED IN EACH STATEMENT WHEREVER IT IS PRESENT IN THE JOB ELEMENT CONCERNED.

4. MPSMS. These are the materials processed, products manufactured or handled, subject matter dealt with, or services rendered.

a. Examples:

1) Positions *aluminum shingles* on roof and nails. . .

2) Threads *steel wire* through rollers of machine. . .

3) Instructs students in one or more *modern or classical languages*. . .

4) Renders. . . *beauty services* to patrons. . .

b. MPSMS rule: THIS AREA OF INFORMATION MUST BE INCLUDED IN EVERY STATEMENT WHEREVER IT IS PRESENT. This requirement is necessary to place the job in its general occupational area and to contribute to an understanding of the basic knowledge required. Repetition of the identical item throughout the job description, however, should be avoided.

5. Work Performed and Worker Characteristics Ratings. The definition for these components and instructions for making the ratings are contained elsewhere in the HAJ. The discussion which follows is concerned primarily with their applicability to writing the description of job duties.

   a. Relationship to Data, People, and Things. In most jobs the worker relates in some degree to data, people, and things. Workers deal with instructions and information (data); with supervisors, fellow workers, or the general public (people); and with material objects (things). In many instances the relationship may be so obvious that no special reference is required in the body of the job description. For example, every job involves a relationship to a supervisor or to a set of instructions. Where these relationships are not significant, they may be ignored. In all other instances, however, wherever such a relationship is *occupationally significant*, the analyst must provide an indication of that relationship.

      1) Examples of relationship to data:

         a) Saws pieces. . . to *blueprint specifications*. . . using handsaw. (In this instance specifications are a work aid in the form of data.)

         b) . . . to adjust fluorescent penetration depth. . . *according to density of casting*.

         c) Drives automobile. . . noting performance of engine. . . *as indicated by instrument dials and gauges*.

      2) Examples of relationship to people:

         a) *Instructs students* in principles of. . .

         b) *Negotiates with sellers* to purchase. . .

         c) *Supervises workers* engaged in. . .

         d) *Serves* food *to customers* in. . .

      3) Examples of relationship to things:

         a) *Saws pieces*. . . to blueprint specifications. . .

         b) . . . to adjust fluorescent penetration depth. . . according to density of *casting*.

         c) *Drives automobiles*. . . noting performance of engine. . .

      4) Example of a job description from which the worker's relationship to data has been omitted:

         DRILL-PRESS OPERATOR (mach. shop)

         Locates and marks points at which holes are to be drilled. . . Selects drill bit and secures it in chuck of machine. . . Verifies depth and diameter of hole, using plug gauges.

         In the first sentence, since no indication is provided as to how the worker knows where to place the holes (relationship to instructions and information), no inference can be made as to the difficulty of the decision made. If a template is used, then the worker's basic decision is quite simple and the following qualifying phrase would cover the situation: "Locates and marks. . . using templates." If the holes are located when the worker ". . . measures surface area, using ruler, square, and triangle. . . according to blueprint specifications. . . ", then a more difficult mental activity is involved and a phrase as above would be required to convey this information. Of all three relationships, the one referring to data is most often overlooked. It is a significant relationship since it provides an indication of the body of knowledge on which the worker's actions or decisions are based. Only through this type of data can inference be made as to the difficulty or complexity of the decisions made or actions taken.

5) When judgments are made: The relationship to data is extremely significant whenever a judgment is made by the worker. In cases when the worker "estimates, ascertains, classifies, grades, locates, recommends, develops, judges, describes, selects, determines, or makes any sort of decision", the basis for the judgment must be given. This reveals, in part, the level of complexity of the job.

b. Worker Functions. These summarize the activities performed by workers. Each job is rated for a function in each of the "Data-People-Things" hierarchies. Worker Functions are broader in scope than worker actions, which are verbs that describe specifically what a worker does. The sum total of all the worker actions in a description, however, should lead the reader to an understanding of the three assigned Worker Functions within the respective hierarchies.

1) Rate the job for its Worker Functions before preparing the job description. After the job description has been completed, evaluate it against the Worker Functions to ensure that the ratings and description reflect one another.

2) The Worker Functions establish the level at which the job description is written. If a job has been rated for "tending," the description should not imply that the worker usually performs at an "operating" level. If a job has been rated for "analyzing," it is not enough to describe "computing" or "compiling" elements without describing that aspect of the job which justifies the "analyzing" rating. The sentence analysis technique described earlier in the HAJ will assist in determining the most pertinent Worker Functions and in selecting the most specific worker action verbs.

3) When preparing the description of tasks, the analyst should avoid using Worker Function verbs assigned to one hierarchy to describe actions taking place in another, for example: "Manipulates electronic research data. . . " The word "manipulates" exists in the "Things" category and refers to a worker's relationship to a tool. It may not be used to describe a relationship to "data" as in the above example because of the confusion which it creates.

4) The assignment of Worker Functions cannot be justified unless there is sufficient information in the description of tasks to support the rating. This information can be expressed directly in the form of tasks or can be implied by the content of the job description. For example, such functions as Operating-Controlling or Computing cannot be assigned unless they are justified by information that the worker has a relationship to a machine at the operating level or is involved with adding, subtracting, or another type of mathematics.

c. Work Fields. These are specific methods characteristic of either MTEWA or techniques designed to fulfill special purposes. Work Fields are broader in scope than the intermediate objectives of specific worker actions. The sum total of all intermediate objectives contained in a description, however, should lead the reader to an understanding of the rated Work Field(s).

1) Rate the job for its most pertinent Work Field(s) before preparing the description of duties. After the description has been completed, evaluate it against the Work Field(s) to ensure that the rating and description reflect one another.

2) Work Fields assist in establishing the method of achieving the overall objective of a job and are related to the actions involved. For example: ". . . operates. . . *to machine* metal parts. . . " The method involved is "machining" and it is related to the function "operates."

d. Worker Characteristics. These refer to the ratings for Physical Demands, Environmental Conditions, GOE Subgroup, Temperaments, and Aptitudes discussed earlier in the HAJ. The reflection of this type of data in a job description provides a sharper focus on the type of work involved and nature of the individual worker concerned.

1) Rate the job for Worker Characteristics before preparing the description of duties. After the description has been completed, evaluate it against the ratings to ensure that each reflects and justifies the other.

2) A balance must be maintained between the ratings and the description of job duties. If Temperament factor J was rated as present, some indication should appear in the description that describes the nature of the worker's use of judgment and decision making. If Numerical Aptitude was rated at the 2 level, a computational element that justifies that level must appear in the description. If the job was rated for Atmospheric Conditions, some implication as to the nature of the condition should appear in the description.

3) In the event that a particular rating cannot be justified in the job duties, an explanation should be made in the General Comments section of the JAR.

6. Criteria for Acceptable Work. Most jobs have standards or measures by which the worker knows when work performed is acceptable. In the preceding job of Drill-Press Operator, the finished holes are tested with plug gauges. The worker knows when work is acceptable if it passes this test of accuracy.

a. Other criteria: These include performance tests of a product or a worker's self-evaluation of work performed.

b. Not always readily-discernible: Criteria of successful performance are frequently integral parts of and implied by the job objective. For example:

Observes operation of conveyor used to transport. . . and. . . to prevent jamming. . .

The ultimate objective is *to transport*, while an intermediate objective is to *prevent jamming*. The worker knows that work performance is qualitatively acceptable when a minimum amount of delay results from jamming.

c. Not always significant: Frequently the worker is not concerned with the criteria because they are applied at some later stage in the production process or because they are built into the machine itself.

d. Criteria rule: THE ANALYST MUST MAKE AN EFFORT TO DETERMINE THE CRITERIA AND TO INCLUDE THEM IN THE JOB DESCRIPTION IF THEY ARE OCCUPATIONALLY SIGNIFICANT.

NOTE: These guidelines are not to be construed as an attempt to force every sentence into a rigid mold or to specify a particular sequence of categories to which the analyst must adhere. Insofar as practical, however, work elements should begin with worker actions since job descriptions basically describe jobs in terms of what the worker is doing. Beyond that, the analyst should express the work performed in a natural manner, maintaining at all times standards of accuracy and good English.

STYLE CONVENTIONS FOR RECORDING DESCRIPTIONS OF TASKS

The style to be followed in recording task descriptions should conform to the following basic rules:

1. A terse, direct style should be used.
2. The present tense, third person singular should be used throughout.
3. Each sentence should begin with an action verb.
4. Each sentence must reflect a specifically stated objective or an objective implied in such manner as to be obvious to the reader. A single verb may sometimes reflect both objective and worker action.
5. 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.
6. The description of tasks should reflect the assigned Work Performed and Worker Characteristics ratings.
7. Avoid excessive, technical language. The analyst's job is to make a technical subject understandable to persons unfamiliar with the subject. Where technical words are universally used throughout an industry, they become usable occupational data. In such instances, however, a definition of the term should be prepared for Item 17 of the JAR or a parenthetical phrase should be added immediately following the item.
8. Avoid being pompous. Use a one-syllable word rather than a four-syllable word if both convey the same meaning.

   "A superfluity of culinary assistance is apt to exercise a detrimental effect upon the consomme." A sentence such as "Too many cooks spoil the broth" is sufficient.
9. Avoid the use of slang and colloquialisms. The meanings of such terms are usually obscure. If they are universally understood throughout the industry, however, they may be included in the description of tasks with an explanatory phrase.
10. The use of poetic license is a barrier to precise communication and should be avoided.

    "This stroke requires great incubus of judgment in elevation and strength and betrays the hand of the master when successful." An incubus is a form of demon and no person was betrayed.
11. The word used must reflect exactly what is intended.

    "The engineer wrote a *partial* account. . . " (incomplete or prejudiced?)

    "Although the *proportions* of all males and females in ages 16-45 are essentially the same. . . " Does the analyst mean percentage?

    ". . . cattle usually and commonly *embraced* in dairying. . . "
12. Select the word that best reflects the thought.

    Judgment is held in suspense; a chemical is held in suspension.

    A problem is unsolvable; an ore is insoluble.

    Steam was discovered; the radio was invented.
13. Do not compress more than one or two thoughts into a single sentence. Such compression is usually accomplished at the expense of clarity and readability.

    "Mixes, blends, purifies, screens, and extrudes smokeless and plastic propellant powders, cast propellant charges, and high explosive powders on a small lot basis, including manual and machine operations for nickel mercury amalgam."

"Trims flash from rubber gaskets, rings, swim fins and goggles, handlebar grips, and other molded rubber products, using scissors, knives, and cutting die and mallet, by holding product against revolving abrasive wheel or trimming knives, or by means of a tumbling barrel in which flash is made brittle with dry ice."

14. Make active and positive statements rather than passive, negative, or conditional ones.

    "An outline. . . may *be of* help to. . . " (Delete underlined words.)

    "The ore is *not un*common in. . . " (The ore is common in. . .)

    "*Makes* analysis of. . . " (Analyzes. . .)

15. Avoid superlatives and certain types of adverbs. Superlatives give a false emphasis and certain adverbs weaken the verb they modify.

    Avoid "most", "best", and similar superlatives.

    "*Very* straight" doesn't make the object any straighter.

    "*Perfectly* perpendicular" fits the same category.

16. Do not use the definite or indefinite articles, "the", "a", or "an". Clarity and readability are not lost when they are not used.

    "Inserts tubes into designated sockets of tube tester and observes meter readings. . . "

17. Never use "etc." or "and so forth." If there are no additional examples to be included, end the sentence at the last example. However, to denote an incomplete list, the analyst can use the expression "such as."

    "Examines watch dials for defects, such as scratches, finger marks, dirt, and uncentered cannon and fourth wheel pinions, using loupe."

18. Avoid using attributes.

    "*Complex* controls, *intimate* knowledge, *large* billet, *heavy* tool, *small* spring. . . "

    The precise meanings of such attributes are a matter of individual interpretation. One cannot expect the reader to interpret them in the same manner as the writer. The job description itself must convey the desired impression.

    "Transfers watch parts from. . . to holding fixture, using tweezers and magnifying lens."

    The impression left here is that the watch parts must be "minute."

19. Pretend that such words as "necessary, proper, and appropriate" do not exist.

    "Selects *proper* cutting tool to. . . "

    The reader cannot be expected to understand what is "proper" or the extent of judgment that enters into the selection process. These must be explained; as soon as the explanation is made, there is no longer any need for the word "proper."

    "Selects cutting tool depending on depth and diameter of hole to be drilled. . . "

20. Linking certain prepositions with certain verbs sometimes results in a looseness of language. Yet, certain prepositions idiomatically follow certain words.

account for	aware of	adhere to	differ from (quality)
differ with (opinion)	parallel with	preference for	perpendicular to

21. Word sequence can be important.

    "These ladles *only* were filled with molten steel."

    "These ladles were filled *only* with molten steel."

22. The word ''may'' is not considered synonymous with ''occasionally'' and is never used in a JAR. If a work element is performed occasionally or infrequently, it may be written as a regular work element which begins with the words ''occasionally'' or ''periodically.''

23. The Job Summary or Description of Tasks on the JAR, as opposed to an occupational definition, should not contain the phrase ''Performs any combination of the following duties''.

24. Do *not* hyphenate before these words when they are the last word in a title:

    Helper; Laborer; Maker; Mechanic; Operator; Tender; Worker; etc.

25. *Do* hyphenate before OPERATOR when HELPER is the last word in the title.

    Example: DRYING-UNIT-FELTING-MACHINE-OPERATOR HELPER

26. Always use a comma before ''utilizing'' and ''using'' in the body of a definition.

27. A comma is usually used before phrases beginning with ''such as''.

It is important that the style conventions for writing described in this chapter be followed in order that JAR's reflect accurately, factually, objectively, and in a reasonably standardized way the nature and content of jobs. Adherence to these conventions should help to achieve this objective for the benefit of the user of the data.

DETERMINING DETAIL NEEDED IN JOB TASK DESCRIPTIONS

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, it may be stated that an inspector of small parts ''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 machine part and moving the arm slowly sideways about six inches, feels with fingertips for snags or pricks that are indicative of surface irregularities.'' For a detailed explanation of determining the detail needed in Job Task Descriptions see Appendix B.

LIST OF FREQUENTLY USED AND MISSPELLED WORDS

acid bath
airbag
airbrush
air-condition (all forms)
air duct
airflow
air gun
airhammer
airhole
airhose
air line (line for air)
airline (aviation)
align
armband
armhole
armrack
armrest

ball mill
bandcutter
bandsaw
barrelhead
bathhouse
bathroom
bench work
boiler room
boxcar
brake light
Btu
burr (deburred, deburrs)

caulk
c.o.d.
coworker
cutout (n,um)
cut out (v)
cutterhead

data base
date stamp
diecutter
diehead
die holder
die maker
die mold
diesetter
disk
dragsaw
drawbench
drophammer
drumhead
dustpan

ensure (guarantee)
envelop (v)
envelope (n)

faceplate
feedbin
feed line
feedrack
feed roll
fiberglass
forklift

gauge
gasline (auto)
gas line (people queue)
gas well
gearbox
gearshift
go-not-go
guardrail
guideline

handbrush
handcart
hand drill
handgun
hand held
handhold
handsaw
hand shears
handtool
handtruck
handwheel
heat-treating (um)
heattreat (v)

insure (protect)

judgment

layout (n,um)
lay out (v)
logbook
logsheet

makeup (n,um)
make up (v)
mathematics
movable
multi (all one word)
multiple-purpose

non (as prefix, one word)

off bear
off bearer
off bears
oilcan
oilcloth
oilcup
oil field
oilhole
oil line
oil well
over-the-counter (um)

panel board
photo mask
photoresist
photosensitive
pickup (n,um)
pipe line (in industry)
pipeline (in definition)
plaster of paris
power hammer
powerhouse
power line
power saw
power shears
power shovel
power tool
programmed
programmer
programming
pre (all one word)

railcar
railroad
rest room
right-of-way

sandpaper
screwdriver
setup (n,um)
set up (v)
sheet metal
smooths
staff hour
staff year
stockpile
stockroom
straightedge
straight-edged (um)

tabletop
takeup (n,um)
take up (v)
teamwork
time book
timecard
timesheet
touchup (n,um)
touch up (v)
trademark
trade name
TV (television)

water hose
waterproof
whiskey
whiskeys
woodstock
woodworking
workbench
workday
workflow
work load
work order
workpiece
worksheet
workshop
work site
workspace
worktable

x ray (n)
x-ray (um)

zigzag

(n) = noun

(um) = unit modifier

(v) = verb

THIS PAGE IS INTENTIONALLY BLANK.