

# The Job Task Analysis (JTA) Process

## The Job Task Analysis Process – A Primer

### Introduction

The Job Task Analysis (JTA) is the most widely accepted and nationally used process for determining valid job content and employment requirements.

It is used to:

- ◆ Construct accurate and valid Job Descriptions
- ◆ Define valid and defensible position duties and responsibilities
- ◆ Define necessary knowledge, skills and abilities, required for minimally competent job performance (KSA's)
- ◆ Determine valid entry level job requirements
- ◆ Determine legitimate medical and/or physical job requirements
- ◆ Support testing and other employment related issues (such as basic work requirements)
- ◆ Develop and/or validate training curricula

It is based on several basic concepts:

1. That anything which materially effects job selection and retention must be clearly based on valid job requirements (required qualifications, job testing of all sorts, performance expectations, etc.).
2. That anything which materially effects job selection and retention is subject to federal and state regulation under various acts such as Equal Employment Opportunity/ Affirmative Action (EEO/AA), and the Americans with Disabilities Act (ADA), and as such cannot be discriminatory in intent or impact, unless a clear job necessity can be proven for the requirement(s).
3. That the people who are actually doing and directly supervising a given job are in the best position to understand its requirements and to describe it.
4. That properly constructed scientific inquiry and the appropriate statistical analysis of inquiry results serves as the most reliable and accepted form of demonstrating the validity of the basis for setting job requirements.

While there is considerable variation in how actual JTAs are done, generally, there is a set structure that most analysts follow.

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## JTA Structure

### Subject Matter Experts (SME's):

A small group of SME's (typically 6-12) is formed as a representative sample within the profession under study. The group may either be strictly incumbents in the job under study, supervisors and managers who directly interact with job under consideration, or a combination of both. This group is facilitated by a neutral party in developing:

- A current job description for the position under consideration
- A list of desirable qualities and attributes for persons performing the job\*
- A list of the equipment and tools used by people performing the job.
- A list of environmental conditions in which the job is performed.
- A list of ALL of the tasks performed by incumbents divided into logical domains, called DUTIES

### The JTA Survey—Determining Which Tasks are Critical and Essential

Obviously, not all tasks performed within a job are suitable for use in determining employment and training requirements. In general, for something to become a job requirement, it has to be reasonably considered as “critical and essential.”

A given task may either be so infrequently performed, or of such low impact, it is not reasonable to consider it “essential.”

Generally, a task or job requirement must be either performed relatively frequently by the majority of incumbents, or competent performance of the task must be required because of the potentially serious consequences of NOT performing the task.

For example, most police officers frequently walk and climb stairs. This is a legitimate job requirement, because of this frequency of performance. Thankfully, very few police officers will ever draw and fire their weapon other than in training and practice situations. However, because the potential consequences of an officer not being able to use his or her weapon safely and effectively are so dire, regardless of frequency, it must be considered a “critical and essential” task. This means that it is a legitimate and valid requirement for police officers to be able to use their service weapon in a safe and effective manner ... critical and essential.

For this reason, the original task list generated by the SME group is used to construct a survey, where incumbents performing and supervising the job in question will be asked how often they perform a specific task (Frequency), and how critical competent performance of that task is to

Generally, a task or job requirement must be either performed relatively frequently by the majority of incumbents, or competent performance of the task must be required because of the potentially serious consequences of NOT performing the task



Statistical “rules” are used to determine what tasks are critical and essential

\* Optional

## The JTA Survey - Determining “Critical and Essential”

overall job performance (Consequences of Inadequate Performance—CIP).

Additionally, the survey may ask for specific data on the weights, times, and duration of physical tasks (how many stairs, how heavy a weight, how long do they stand, etc.).

Where part of the intended use of the JTA is to build training curricula, an additional dimension, **When Learned**, may also be used to help in pin pointing those KSA’s that are required on entry, those which must be taught either through formal training programs or on-the-job, or require specialized after-hire training to accomplish.

The work of the SME group is then translated into a survey and distributed to a pre-selected sample of incumbents and/or supervisors/managers who have direct responsibility for the job under consideration.

Please note the illustration to the right. You will notice there are two scales, frequency and CIP and a space to enter specific numbers.

The goal is for the survey to contain all of the task items developed by the SME group.

Because this can result in extremely lengthy surveys, often the process may be divided into phases or sections, such as surveying physical requirements separately from the balance of tasks.

As with any survey, the goal is to get returns that are sufficiently large in number and representational of the entire population under study so as to be valid.



Any testing or job requirement which has a material effect on employment is subject to federal and state laws, rules, and guidelines for Equal Employment Opportunity and The Americans with Disabilities act



Oregon Department of Public Safety Standards and Training

15. Sit continuously (car, desk, etc.)

Frequency

Never     Once or less in past year     Several times per year     Monthly     Weekly     Daily

Maximum Number of Hours

\_\_\_\_\_

Consequences of Inadequate Performance

None     Mild     Mild to Moderate     Moderate     Moderately High     Disastrous

16. Run up/down stairs

Frequency

Never

Once or less in past year

Several times per year

Monthly

Weekly

Daily

Maximum Number of Fights

\_\_\_\_\_

Consequences of Inadequate Performance

None

Mild

Mild to Moderate

Moderate

Moderately High

Disastrous

2006 - Entry-Level Corrections Officer - Job Task Analysis Survey - Physical Tasks

The goal is for the survey to contain all of the task items developed by the SME group.



The JTA Survey allows for a focused and useful analysis of any job

# The JTA Survey - Determining “Critical and Essential”

| Scale 2 - Consequences of Inadequate Performance |           |           |              |
|--|-----------|-----------|--------------|
| Response (n = 161)                               | Frequency | Percent   | Cumulation   |
| Moderately High                                  | 79        | 49.1%     | 49.1%        |
| Moderate   | 29        | 18.0%     | 67.1%        |
| Disastrous                                       | 25        | 15.5%     | 82.6%        |
| Mild to Moderate                                 | 16        | 9.9%      | 92.5%        |
| None   | 7         | 4.3%      | 96.9%        |
| Mild   | 2         | 1.2%      | 98.1%        |
| No Response                                      | 3         | 1.9%      | 100.0%       |
| Min  | 1         | Std. Dev. | 1.1756       |
| Max  | 6         | Variance  | 1.3821       |
| Range  | 5         | Skewness  | -1.3011      |
| Mode   | 5         | Kurtosis  | 1.7164       |
| Median   | 5.00      | 95% Conf. | 4.37 to 4.74 |
| Mean   | 4.56      |           |              |

| Scale 2 - Consequences of Inadequate Performance |           |           |              |
|--|-----------|-----------|--------------|
| Response (n = 161)                               | Frequency | Percent   | Cumulation   |
| Disastrous                                       | 91        | 56.5%     | 56.5%        |
| Moderately High                                  | 37        | 23.0%     | 79.5%        |
| None   | 18        | 11.2%     | 90.7%        |
| Moderate   | 3         | 1.9%      | 92.5%        |
| Mild   | 2         | 1.2%      | 93.8%        |
| Mild to Moderate                                 | 1         | 0.6%      | 94.4%        |
| No Response                                      | 9         | 5.6%      | 100.0%       |
| Min  | 1         | Std. Dev. | 1.6348       |
| Max  | 6         | Variance  | 2.6727       |
| Range  | 5         | Skewness  | -1.8033      |
| Mode   | 6         | Kurtosis  | 1.7505       |
| Median   | 6.00      | 95% Conf. | 4.79 to 5.31 |
| Mean   | 5.05      |           |              |

49. Being struck by, and/or striking inmates (physical altercations)

| Scale 1 - Frequency       |           |           |              |
|---------------------------|-----------|-----------|--------------|
| Response (n = 161)        | Frequency | Percent   | Cumulation   |
| Once or less in past year | 88        | 54.7%     | 54.7%        |
| Several times per year    | 34        | 21.1%     | 75.8%        |
| Never                     | 32        | 19.9%     | 95.7%        |
| Monthly                   | 3         | 1.9%      | 97.5%        |
| Weekly                    | 2         | 1.2%      | 98.8%        |
| Daily                     | 1         | 0.6%      | 99.4%        |
| No Response               | 1         | 0.6%      | 100.0%       |
| Min                       | 1         | Std. Dev. | 0.8317       |
| Max                       | 6         | Variance  | 0.6917       |
| Range                     | 5         | Skewness  | 1.1680       |
| Mode                      | 2         | Kurtosis  | 3.2518       |
| Median                    | 2.00      | 95% Conf. | 1.98 to 2.24 |
| Mean                      | 2.11      |           |              |

51. Falling/being knocked down in struggle or pursuit - recovering to feet - resuming struggle/pursuit

| Scale 1 - Frequency       |           |           |              |
|---------------------------|-----------|-----------|--------------|
| Response (n = 161)        | Frequency | Percent   | Cumulation   |
| Once or less in past year | 95        | 59.0%     | 59.0%        |
| Never                     | 54        | 33.5%     | 92.5%        |
| Several times per year    | 8         | 5.0%      | 97.5%        |
| Monthly                   | 3         | 1.9%      | 99.4%        |
| Weekly                    | 0         | 0.0%      | 99.4%        |
| Daily                     | 0         | 0.0%      | 99.4%        |
| No Response               | 1         | 0.6%      | 100.0%       |
| Min                       | 1         | Std. Dev. | 0.6344       |
| Max                       | 4         | Variance  | 0.4025       |
| Range                     | 3         | Skewness  | 0.7020       |
| Mode                      | 2         | Kurtosis  | 1.4216       |
| Median                    | 2.00      | 95% Conf. | 1.65 to 1.85 |
| Mean                      | 1.75      |           |              |

| Scale 2 - Consequences of Inadequate Performance |           |           |              |
|--|-----------|-----------|--------------|
| Response (n = 161)                               | Frequency | Percent   | Cumulation   |
| Disastrous                                       | 65        | 40.4%     | 40.4%        |
| Moderately High                                  | 62        | 38.5%     | 78.9%        |
| None   | 10        | 6.2%      | 85.1%        |
| Moderate   | 7         | 4.3%      | 89.4%        |
| Mild to Moderate                                 | 5         | 3.1%      | 92.5%        |
| Mild   | 3         | 1.9%      | 94.4%        |
| No Response                                      | 9         | 5.6%      | 100.0%       |
| Min  | 1         | Std. Dev. | 1.3593       |
| Max  | 6         | Variance  | 1.8476       |
| Range  | 5         | Skewness  | -1.8391      |
| Mode   | 6         | Kurtosis  | 2.6963       |
| Median   | 5.00      | 95% Conf. | 4.78 to 5.21 |
| Mean   | 4.99      |           |              |

| Scale 2 - Consequences of Inadequate Performance |           |           |              |
|--|-----------|-----------|--------------|
| Response (n = 161)                               | Frequency | Percent   | Cumulation   |
| Disastrous                                       | 79        | 49.1%     | 49.1%        |
| Moderately High                                  | 44        | 27.3%     | 76.4%        |
| None   | 17        | 10.6%     | 87.0%        |
| Moderate   | 8         | 5.0%      | 91.9%        |
| Mild to Moderate                                 | 3         | 1.9%      | 93.8%        |
| Mild   | 2         | 1.2%      | 95.0%        |
| No Response                                      | 8         | 5.0%      | 100.0%       |
| Min  | 1         | Std. Dev. | 1.5987       |
| Max  | 6         | Variance  | 2.5557       |
| Range  | 5         | Skewness  | -1.6527      |
| Mode   | 6         | Kurtosis  | 1.4309       |
| Median   | 6.00      | 95% Conf. | 4.69 to 5.19 |
| Mean   | 4.94      |           |              |

50. Physically struggling with multiple inmates

| Scale 1 - Frequency       |           |           |              |
|---------------------------|-----------|-----------|--------------|
| Response (n = 161)        | Frequency | Percent   | Cumulation   |
| Once or less in past year | 78        | 48.4%     | 48.4%        |
| Never                     | 67        | 41.6%     | 90.1%        |
| Several times per year    | 14        | 8.7%      | 98.8%        |
| Monthly                   | 1         | 0.6%      | 99.4%        |
| Weekly                    | 1         | 0.6%      | 100.0%       |
| Daily                     | 0         | 0.0%      | 100.0%       |
| No Response               | 0         | 0.0%      | 100.0%       |
| Min                       | 1         | Std. Dev. | 0.7058       |
| Max                       | 5         | Variance  | 0.4981       |
| Range                     | 4         | Skewness  | 1.0227       |
| Mode                      | 2         | Kurtosis  | 2.1087       |
| Median                    | 2.00      | 95% Conf. | 1.59 to 1.81 |
| Mean                      | 1.70      |           |              |

52. Operating, servicing and maintaining agricultural equipment and tools (powered and unpowered)

| Scale 1 - Frequency       |           |           |              |
|---------------------------|-----------|-----------|--------------|
| Response (n = 161)        | Frequency | Percent   | Cumulation   |
| Never                     | 103       | 64.0%     | 64.0%        |
| Once or less in past year | 31        | 19.3%     | 83.2%        |
| Daily                     | 9         | 5.6%      | 88.8%        |
| Several times per year    | 7         | 4.3%      | 93.2%        |
| Weekly                    | 6         | 3.7%      | 96.9%        |
| Monthly                   | 3         | 1.9%      | 98.8%        |
| No Response               | 2         | 1.2%      | 100.0%       |
| Min                       | 1         | Std. Dev. | 1.4049       |
| Max                       | 6         | Variance  | 1.9737       |
| Range                     | 5         | Skewness  | 2.0078       |
| Mode                      | 1         | Kurtosis  | 2.9272       |
| Median                    | 1.00      | 95% Conf. | 1.56 to 1.99 |
| Mean                      | 1.77      |           |              |

Survey results are then processed, first for typical statistical values. (note the illustration of a “typical” statistical analysis listed above).

Customarily, arithmetic “rules” are applied to determine cutoff points for inclusion into the category of “critical and essential.”

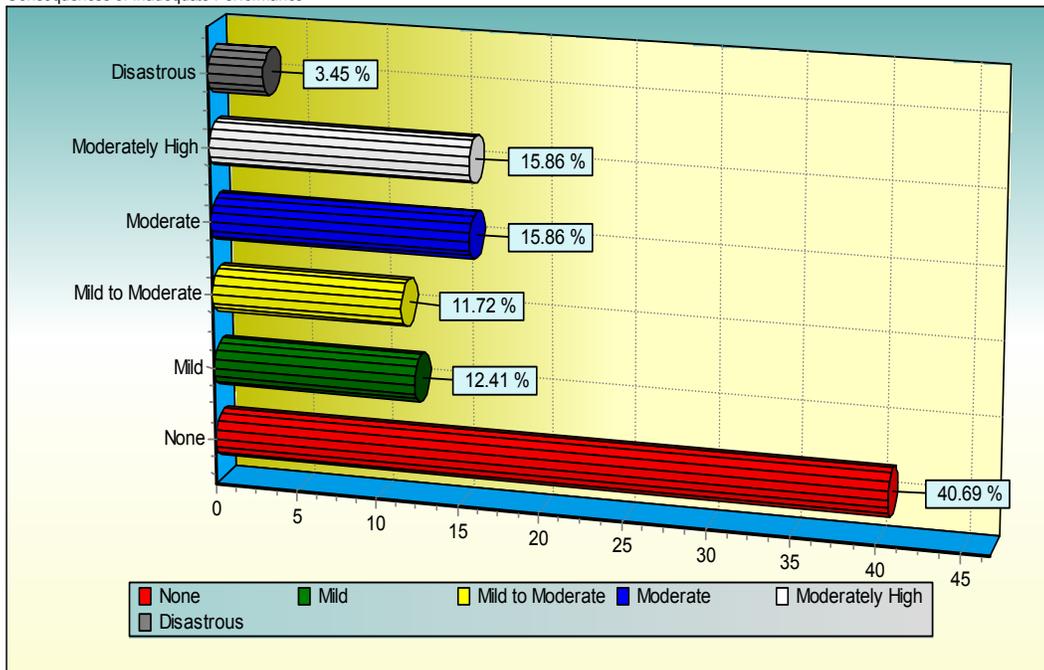
While the process for determining specific cut-off rules may be quite complicated in some cases, in general the rules are designed simply to determine which tasks are performed regularly by the majority of respondents, and or, where the respondents consider the inadequate performance of a given task to have negative consequences of moderate to high degrees of impact.

Generally, either frequency or CIP of sufficient value is adequate to make a task, “critical and essential.”

In this manner, the employer uses a highly objective process to determine job content requirements.

## The JTA Survey - Determining “Critical and Essential”

Climb or pull oneself over a vertical obstacle  
Consequences of Inadequate Performance



Both the content of the survey, and ultimately the decision as to which tasks are truly essential, come from the people doing and supervising the work.

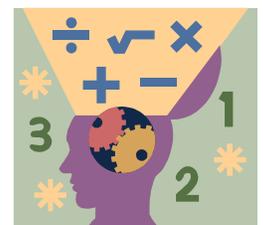
Ultimately, this process results in a list of critical and essential tasks. This list may be used for a number of different basic purposes.

1. **Basic Entry Level Requirements:** What knowledge, skills and abilities are required for prospective candidates.
2. **Medical Standards:** Some jobs are of sufficient risk and demand on physical skills, medical standards are necessary (airline pilot, police, officer, firefighter, etc). With the addition of a professional medical panel review of data from the JTA, organizations can maintain and defend job-related medical standards and physical capabilities requirements.
3. **Job Descriptions** (including basic necessary qualifications, desired attributes, and working conditions).
4. **Basic Work Requirements:** The fundamental, minimum performance standards for the job.
5. **Training Curricula:** Determining valid, job-related training content.



JTA survey participants  
(people doing or  
managing the job)  
determine which tasks are  
critical and essential  
through their survey  
responses

Current technology  
allows for JTA  
surveys to be  
administered via the  
Internet.



The JTA uses statisti-  
cal and mathematical  
rules for determining  
critical and essential  
tasks

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[http://  
www.oregon.gov/  
DPSST/index.shtml](http://www.oregon.gov/DPSST/index.shtml)



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## Conclusion:

The primary strength of the JTA process is that it is data-based, and reasonably objective. This makes the process of defending decisions much easier; data and facts, legitimately obtained, are simply more generally credible than anecdotal assertions.

A properly designed and executed JTA answers the question,

***“How do you know this is truly a legitimate requirement of this job?”***

## DACUM Description

### M-DACUM

#### Introduction

The DACUM (**Develop A Curriculum**) job analysis model originated at the Center on Education and Training for Employment, at Ohio State University and has seen wide application throughout public and private organizations of all types.

The primary use of the DACUM is to develop job descriptions and training curricula.

The M-DACUM used by DPSST is one of many variants of the classic DACUM process, selected primarily for its simplicity and ease of use, and for its novel integration with the more complex and formal Job Task Analysis (JTA).

The primary difference between the DACUM and the JTA is the JTA is more focused on collective hard data, while the DACUM is more process and involvement driven ...

more subjective. They are simply different, but related tools.

#### DACUM Assumptions

- ◆ A job can most effectively be described in terms of **job tasks** or competencies.
- ◆ The **expert worker** (SME, or Subject Matter Expert) is the best source for recognizing and describing actual job tasks.
- ◆ In order to be performed competently and safely, every task requires some combination of **Skills, Knowledge and Ability** (SKA's).
- ◆ Newly hired incumbents are expected to possess certain basic SKA's on entry.

However, there is broad recognition that many job tasks and skills will have to be

learned at some point subsequent to employment.

The most effective way of describing a job is by clearly describing what the job **DOES**. This assumption has proven to be especially important in light of increasing scrutiny under Equal Employment Opportunity and the American's with Disabilities Acts to require that any employment requirement is demonstrably related to what incumbents actually **do** on the job (in order to be valid, and non-discriminatory).

The assumption is that valid training, is training that is demonstrably job-related.

The DACUM process is less rigorous and objective in comparison with JTA's and is used when the primary goal is curriculum development/review.