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CAN REALISTIC JOB DESCRIPTION INFORMATION AND PRACTICE ENABLE
NAIVE RATTERS TO PROVIDE POSITION ANALYSIS QUESTIONNAIRE (PAQ)
RATINGS COMPARABLE TO THOSE OF EXPERTS?

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BY

LEE FRIEDMAN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE

DOCTOR OF PHILOSOPHY

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March, 1986
Can Realistic Job Descriptive Information and Practice Enable Naive Raters to Provide Position Analysis Questionnaire (PAQ) Ratings Comparable to Those of Experts?

Lee Friedman

ABSTRACT

Jones, Main, Butler, and Johnson (1982) stated that job-naive raters provided with only narrative job descriptions can produce valid and reliable Position Analysis Questionnaire (PAQ) ratings. This implies that traditional time- and labor-intensive methods of collecting job analysis information (e.g., interviews, direct observation) are not necessary in order to accurately complete the PAQ. However, PAQ ratings in the Jones et al. study were not validated against an external standard, thereby making the unambiguous interpretation of their results impossible. To determine the convergent validity of the Jones et al. approach, we provided job-naive raters with varying amounts of job descriptive information and, in some cases, prior practice rating the job with another job analysis instrument; PAQ ratings were validated against those of job analysts who were also job content experts. None of the reduced job descriptive
information conditions, or practice, enabled job naive raters to obtain either acceptable levels of convergent validity with experts or high interrater reliability.
ACKNOWLEDGEMENTS

I would like to thank Dr. Robert J. Harvey, my dissertation advisor, for his guidance throughout this project. I would also like to express appreciation to the dissertation committee consisting of Dr. Robert L. Dipboye, Dr. William C. Howell, Dr. Richard J. Stoll, and Dr. Michael J. Watkins.
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Can Realistic Job Descriptive Information and Practice Enable Naive Raters to Provide Position Analysis Questionnaire (PAQ) Ratings Comparable to Those of Experts?

INTRODUCTION

The Problem.

The Position Analysis Questionnaire (PAQ; McCormick, Jeanneret, & Mecham, 1972; McCormick, Mecham, & Jeanneret, 1977b) is a scientifically designed, rigorously researched, structured job analysis instrument. The PAQ developers (McCormick, Mecham, & Jeanneret, 1977a) state that due to the highly sensitive nature of the PAQ, a job analyst should first conduct interviews with incumbents and supervisors, collect written records about the job, and if feasible, directly observe the incumbent before actually rating the job with the PAQ. Typically, the personnel expert does engage in such preparation before rating a job with the PAQ. Several studies (e.g., Cornelius, DeNisi, & Blencoe, 1984; Jones, Main, Butler, & Johnson, 1982; Smith & Hakel, 1979) attempted to see if this costly, tedious, and intrusive procedure could be replaced with one in which a naive rater (e.g., an employee not directly familiar with the job) could
provide an analysis of a given job that was comparable to that provided by the expert. This issue has direct implications regarding assumptions made about the sensitivity of the PAQ. If a job naive person, provided with a mere job title or brief description, can produce PAQ ratings comparable to a rater who has engaged in extensive preparation to become familiar with the job, then the PAQ may not be the sensitive instrument it has been assumed to be. Either (1) job analysts do not use the extensive information they gather from interviews, written records, and observation, or (2) the PAQ is too insensitive to measure this information. The above-mentioned studies produced conflicting results due to methodological or external validity problems. Some of the studies merely posed a simplistic question -- can job naive raters replace professional analysts? Not surprisingly, these studies produced conflicting results. I argue that a more important question is under what conditions can naive raters produce ratings that are highly correlated with those obtained from professional analysts. The present study attempts to discover what some of these conditions might be. Both the questions raised and the design of this study come from a careful assessment of
the strengths and limitations of the above-mentioned studies.

This study proposes to address several questions regarding a job naive person's ability to accurately complete a PAQ job analysis. As a goal, I hope to provide a better understanding of the circumstances in which a naive rater can provide ratings comparable to the professional analyst. First, can providing job-relevant, descriptive information increase the naive rater's PAQ rating accuracy to the level of a professional job analyst? If so, how much information is necessary? Is it helpful for the naive rater to have had some practice in using that information (e.g., previously using that information to rate the job on a different job analysis instrument)? If job information is indeed helpful, how is it helpful? Does it enable the naive rater to discern the extent to which PAQ items are applicable to the job (i.e., provide the rater with "interval data" knowledge of the job)? Or does it merely enable the rater to discern which PAQ items are applicable to the job (i.e., provide the rater with "nominal data" knowledge of the job)? How does the presence of items in the instrument that are clearly not applicable to the job (DNA, or "Does Not
Apply" items) affect naive raters' convergent validity with experts, and interrater reliability? If the naive raters have prior familiarity with the jobs they are rating, how does that familiarity contribute to increasing accuracy?

In this Introduction section the following matters will be addressed. First, job analysis, the personnel function with which this research is concerned, will be defined. Second, I will discuss approaches taken toward reducing the cost of performing job analyses. The current study is related to one of these approaches: finding ways of enabling lay persons to provide accurate job analyses. Third, the nature, background, and development of the PAQ, the job analysis instrument that is the focus of this study, will be examined. I will also briefly discuss another job analysis instrument, the Professional and Managerial Position Questionnaire (PMPQ; Mitchell & McCormick, 1979). Although experimental subjects also completed the PMPQ, the focus of the current study is PAQ rating performance. The PMPQ simply served as a means of implementing an independent variable (i.e., prior rating practice). Fourth, some indices of rating accuracy that are employed in this study will be
defined. Fifth, I will review the studies that have addressed the issue of whether the lay person (e.g., an incumbent) or a job naive rater can accurately complete the PAQ. Finally, I will discuss strengths and limitations regarding the scope of this study.

**A Definition of Job Analysis.**

Job analysis is any systematic procedure in which one obtains information about how a job is performed, the tasks that constitute a job, or the skills and abilities necessary to perform the job. A thorough job analysis serves as the foundation for five essential personnel functions: (1) selecting a person to occupy the job, (2) judging the job's worth to the organization (job evaluation), (3) appraising a person's performance of the job, (4) assessing training needs for the job, and (5) classifying the job and other jobs in the organization into job families, in order to expedite the development of tools that are used to execute the first four personnel functions.

**Reduced-Effort Job Analysis Approaches.**

The primary issue under investigation in this study, under what conditions can job naive raters produce accurate job analyses, is part of a larger domain of research concerned with reducing the costs of
performing job analyses, in terms of time, effort, and money. This domain has been referred to as "reduced effort job analysis" (Harvey & Wilson, 1985). Three approaches have been taken to find ways to reduce the costs of conducting job analyses. One approach has been to simplify the rating process, such as the decisions one makes, when analyzing a job (Cornelius, Schmidt, & Carron, 1984; Harvey, Wilson, & Blunt, 1985; Sackett, Cornelius, & Carron, 1981). In this line of research, investigators examine whether simply making rational holistic decisions about jobs (e.g., sorting them into categories or rating how similar all possible pairs of jobs are) leads to similar job classifications (Cornelius, Schmidt, & Carron, 1984; Sackett, Cornelius, & Carron, 1981) or the same underlying dimensions (Harvey, Wilson, & Blunt, 1985) as derived from statistical analyses (e.g., factor or cluster analysis) of hundreds of atomistic ratings of each job (the traditional method). A second approach, which has not led to much published research yet, is to use artificial intelligence (i.e., computer software, automation) to perform the tedious job of generating precise task statements from incumbents and supervisors. Such sophisticated software would
preclude the need for the personnel specialist to conduct extensive interviews with incumbents or supervisors. Sophisticated computer networks would enable records of task functions of a job to be updated easily. Furthermore, new job information obtained by means of other personnel functions, such as performance appraisals, could easily be transferred to the "storage bank" of tasks, processes, or requirements that constitute the job. The third approach to reducing the costs of job analyses is one to which the current study is related -- finding ways to enable a lay person to provide accurate job analyses. The aim of this approach is to take the function of accurately describing the jobs in an organization out of the hands of a few personnel specialists and put it in the hands of a broader base of employees (e.g., incumbents or supervisors). If employees can take over this responsibility, then there will be tremendous savings in time and effort.

The lay raters in this study were not incumbents or supervisors, though. The raters were naive with respect to the job as well as the job analysis instrument. The purpose for using job naive raters was to examine the claim of other investigators that
persons unfamiliar with a job could provide PAQ ratings comparable to those of professional job analysts. Hence, the potential benefits of this study concerned clarifying methodological problems with previous research addressing this issue.

**Background of the Position Analysis Questionnaire.**

The Position Analysis Questionnaire (PAQ; McCormick, Jeanneret, and Mecham, 1972; McCormick, Mecham, and Jeanneret, 1977b) is a scientifically designed, rigorously researched, structured job analysis instrument. It is the successor of the Worker Activity Profile (WAP; McCormick, Cunningham, and Thornton, 1967). The PAQ provides a common metric for comparing different jobs -- a necessary prerequisite for evaluating or classifying a set of jobs. The instrument has 194 "worker-oriented" items that are supposed to represent the common processes that underlie all jobs. The 194 items are classified into six major divisions: information input, mental processes, work output, interpersonal activities, job context, and miscellaneous aspects. In most cases, the respondent rates the extent to which the item applies to the job being rated on a six-point scale. In certain cases, the item is rated on a dichotomous
(Applies/Does Not Apply) scale. The items are considered "worker-oriented" because they focus on the processes in which the worker engages in order to accomplish the tasks that constitute the job (e.g., estimating quantity, analyzing information, manually modifying). The items do not constitute tasks per se (e.g., cuts dough into pieces with handcutter -- see Morsh, 1964, for a discussion of a task-oriented approach to job analysis). Nor do the items constitute abilities the person must possess to perform the job (e.g., explosive strength, memorization ability -- see Theologus, Romashko, and Fleishman, 1970, for a discussion of an abilities-oriented approach to job analysis).

The PAQ provides scores on 45 work dimensions (see Table 1 for listing) presumed to be common to a great variety of, if not all, jobs. These dimensions are derived from principal components analyses of 190 items (resulting in 13 factors) and the six divisions (resulting in 32 factors) mentioned earlier. The data for these statistical analyses were obtained from PAQ profiles of a sample of 2,200 jobs. These 45 dimensions constitute the current System II PAQ dimension profile (McCormick, Mecham, and Jeanneret,
1977b). The first PAQ dimension profile (called System I, McCormick, Jeanneret, and Mecham, 1972) had 32 dimensions, based on principal components analyses of 536 jobs. McCormick, Jeanneret, and Mecham (1972) provided findings demonstrating satisfactory interrater reliability (among expert job analysts) and predictive validity (for salaries and aptitude requirements) of the PAQ.

As mentioned earlier, McCormick et al. (1977a) believe that a job analyst should first conduct interviews with incumbents and supervisors, collect available written records about the job, and if feasible, directly observe the incumbent performing the job before attempting to rate the job with the PAQ. The Professional and Managerial Position Questionnaire.

Recently, another "worker-oriented" job analysis instrument has been developed: the Professional and Managerial Position Questionnaire (PMPQ; Mitchell & McCormick, 1979). This "worker-oriented," structured instrument is primarily suited for professional and managerial jobs. To date, there has not been much research on the PMPQ.

There are two reasons McCormick et al. decided to develop a job analysis instrument specifically for
higher level jobs. First, when Mecham and McCormick (cited in Mitchell and McCormick, 1979, p. 4) used PAQ dimension scores to predict salary levels with a sample of 340 jobs, they found that the range of misprediction was wider for higher level jobs than lower level jobs. McCormick, DeNisi, and Marquardt (cited in Mitchell and McCormick, 1979, p. 4) obtained similar results with a sample of 3,700 jobs. Second, Mitchell and McCormick (1979) were concerned that there may have been a ceiling effect for some PAQ items regarding professional and managerial jobs. In other words, the item scales were restricted at the upper range. Such a ceiling effect would blur distinctions between different professional and managerial jobs. Recently, Cornelius, DeNisi, and Blencoe (1984) have also argued that the PAQ may be better suited for blue-collar than white-collar jobs. In support of this conclusion, Cornelius et al. found that incumbents and professional analysts rated more PAQ items as "Does Not Apply" for white-collar than blue-collar jobs.

Mitchell and McCormick studied the literature that attempted to identify the variables and constructs that characterized professional, managerial, and executive positions (e. g., Campbell, Dunnette, Lawler, & Weick,
1970; Hemphill, 1959, 1960; Mahoney, Jerdee, and Carol, 1963, 1964). Based on the literature review, they constructed 86 items that were classified into nine dimensions:

(1) Planning/Scheduling
(2) Processing of Information and Ideas
(3) Making Judgments
(4) Communicating
(5) Interpersonal Activities and Relationships
(6) Technical Activities
(7) Responsibilities
(8) Personal Development
(9) Personal Qualities

Twelve other items concerned miscellaneous issues such as compensation, licensing requirements, and length of work week. A principal components analysis of the 98 items (Mitchell and McCormick, 1979) indicated that 10 dimensions characterize professional and managerial positions (see Table 2 for listing).

PMPQ items are rated on a nine-point scale, with the first point being "Does Not Apply." There are four types of nine-point scales: (1) the extent to which the item is "part-of-the-job," resembling the PAQ scale, (2) the degree of complexity the job possesses in
regard to the particular item, (3) the degree of responsibility the job possesses in regard to the particular item, and (4) the degree of impact that inadequate performance of the job has in regard to the particular item.

Job Analysis Accuracy.

A key concern in this study is improving job analysis accuracy. The most important index of accuracy is the extent of the naive rater's convergent validity with the expert on the PAQ. Convergent validity is expressed as a correlation coefficient indicating the correspondence (covariation) between the expert's and naive rater's PAQ profiles. The logic here is that there should be some external standard (true score) with which to compare the experimental subject's ratings. In the present study, the experts providing that external standard were professional job analysts who had extensive personnel experience with the organization from which the jobs to be rated came.

An indirect indicator of accuracy is interrater reliability. A high degree of interrater reliability is generally considered to be a necessary but not sufficient indicator of accuracy. Reliability means repeatability. Interrater reliability is expressed as a
correlation coefficient indicating the correspondence among PAQ profiles of two or more "homogeneous" raters; that is, raters in the same experimental condition or with the same background. Therefore, in this study reliability coefficients were computed for each experimental group, as well as one computed for experts. In the case of interrater reliability, there is no external standard to which one group is being compared. Hence, there may be a high degree of interrater reliability among a group of experimental subjects; yet their ratings may not be comparable to those of experts. Jeanneret (1985) has reported that experts who are familiar both with the job and with the PAQ typically obtain interrater reliabilities in the .80's and .90's. McCormick and Jeanneret (in press) have suggested that a minimum allowable level of interrater reliability is .75.

Finally, each experimental subject's total rating score (the sum of all item ratings for the job) was computed and compared to the experts' total rating score for the job. It is clearly possible that a lay rater could obtain a high level of convergent validity with the expert, yet still do a poor rating job because s/he has under- or over-rated most PAQ items. This has
important personnel implications. For example, a personnel specialist may need to decide which General Aptitude Test Battery (GATB) tests should be used as selection tools for a particular job. S/he would apply certain regression weights (for each GATB test) to PAQ dimension scores for the job, compute summative products, and choose those GATB tests with the highest summative products ("use in select" score; see McCormick, Mecham, & Jeanneret, 1977b, p. 40 and p. 127 for further discussion). Of course, PAQ item ratings are the basis of PAQ dimension scores. Therefore, mean score differences on PAQ items would likely lead to different decisions regarding which GATB tests to use for selection. A similar problem could arise in job evaluation. For example, the personnel specialist may be trying to estimate compensation values for several jobs. S/he may decide to use those PAQ elements (and their respective regression weights) that Mecham and McCormick (cited in Smith and Hakel, 1979) found to be useful predictors of salary. Differences in the mean rating scores on these certain items could lead to drastic differences in estimates of job evaluation points. Of course, there is an obvious limitation to using the mean or total rating score as the sole
indicator of accuracy: Two persons could arrive at the same total rating score without there being the slightest bit of correspondence in the shapes of their PAQ profiles. Nevertheless, inspection of mean differences provides useful supplementary information beyond that given in correlations alone.

Who Can Accurately Use the PAQ?—Previous Research Findings.

Research has been conducted concerning the issue of who can validly and reliably use the PAQ. Robinson, Wahlstrom, and Mecham (1974) found that PAQ ratings made by job incumbents were not as accurate as those provided by professional job analysts, especially when blue-collar jobs were being rated. Job incumbents had larger sums of squared errors across dimension scores, especially for dimensions that had the strongest relationship to compensation rates. Smith and Hakel (1979) examined PAQ rating accuracy (convergent and/or predictive validity) of incumbents, supervisors, professional job analysts, and two groups of college students. One group of students was provided with "job specifications" about the job which they were going to rate. The other group of students was provided with only a job title. The authors were interested in predictive validity (predicting actual salaries) and
convergent validity (using the ratings of professional analysts as the external standard of accuracy). Regarding predictive validity, neither college students, incumbents, nor supervisors provided ratings as predictive of actual salaries (across 25 jobs) as did professional analysts. Smith and Hakel claimed that the ratings of students, incumbents, and supervisors all yielded impressive convergent validity coefficients \( r > .88 \) for all groups. How could college students with only a job title provide PAQ ratings that correlated highly with those of job experts familiar with the job? One explanation offered by Smith and Hakel (p. 686) was that job experts and job naive students had "shared stereotypes" (inherent presumptions) about what constituted the job. Based on this explanation one would infer that (a) job experts do not utilize their in-depth knowledge of the job, or (b) the PAQ is too insensitive to measure this knowledge. This point is rendered moot, though, because of a data analysis error. The validity coefficients were computed inappropriately (see Cornelius, DeNisi, and Blencoe, 1984). Smith and Hakel computed mean ratings of PAQ elements for each rating group, taken across all jobs. Then pairwise
correlations of these mean ratings for the different groups were obtained. A more appropriate procedure would have been to compute correlations of mean ratings of the elements between two groups within each job, and then compute the mean of the correlations between the two groups across jobs. Cornelius et al. (1984) attempted to replicate one part of the Smith and Hakel study. College students were presented with mere job titles before rating one of nine different jobs on the PAQ. The "expert" raters that were used as an external standard for computing convergent validity were comprised of both incumbents and professional analysts. The convergent validity coefficients of the nine jobs were not nearly as large as those incorrectly computed by Smith and Hakel. The mean validity coefficient for all nine jobs was $r = .58$ and ranged from $r = .46$ to $r = .77$. But Cornelius et al. believed that even these modest validity coefficients were inflated because many items clearly were not applicable (DNA -- "Does Not Apply") to several, if not all nine, jobs. For example, it is doubtful that the job of college professor involves operating powered water vehicles, sweeping, mopping, raking, or singing and dancing. Cornelius et al. recomputed convergent validities for the student
raters, omitting PAQ items that were not applicable to each job. Items were considered DNA for a given job if a majority of expert raters (or all experts in some cases) agreed that the items were DNA. The number of DNA items varied from 29 for maintenance foreman to 89 for college faculty member. The convergent validities dropped for almost all jobs when DNA items were omitted. The mean validity coefficient for all nine jobs was now $r = .41$ and ranged from $r = .29$ to $r = .64$. The validity coefficients appeared to drop more for white-collar jobs than blue-collar jobs. Cornelius et al. concluded:

The magnitude of these correlations (expert--student, when no DNA items are omitted) appears to be an artifact of the large number of items which did not apply to the jobs in the present study. This last point deserves further discussion. The PAQ was designed to characterize jobs in worker-oriented terms and as such, "lends itself to use in the analysis of a wide variety of jobs" (McCormick, 1979, p. 144). But the PAQ may not be equally appropriate for all jobs. In fact, the authors of the PAQ have designed an
alternative instrument to be used for the analysis of professional and managerial jobs (Mitchell and McCormick, Note 1). In our view, much of the content of the PAQ is more suited for use with blue-collar manufacturing jobs, than with professional, managerial, or some technical jobs. (p. 463)

An important limitation of the Cornelius et al. study was that there was only one experimental condition -- naive raters receiving a mere job title before rating a job. The investigators did not address the current concern: Is there a relatively quick, cost-effective way (i.e., not having to provide formal job analysis training) of enabling job naive raters to provide PAQ profiles comparable to those of experts? One other point should be noted. Cornelius et al. assessed convergent validity for the entire PAQ profile (all PAQ items) and the "apply-only" profile (only those PAQ items that experts deemed applicable to the job). The validity coefficients from the latter profile indicated how well naive raters understood the extent to which applicable items constituted part of the job. It also would have been informative to dichotomize all PAQ items as "applies" or "does not
apply". The resulting convergent validity coefficients would have indicated how well naive raters and experts agreed on which items were applicable or not applicable to the job.

Inspired by the Smith and Hakel (1979) results, Jones, Main, Butler, and Johnson (1982) also claimed that job naive analysts can provide PAQ ratings that are as valid and reliable as those from professionals for many purposes. Unfortunately, as with the Smith and Hakel findings, Jones et al.'s. interpretation of their findings may be suspect. The investigators had industrial psychology graduate students who were trained PAQ experts complete PAQs for 121 different jobs. The PAQ experts were unfamiliar with the jobs they were to rate. Prior to completing a PAQ for a given job, each rater read a 2 - 3 page narrative job description (obtained from generic descriptions in a U. S. Civil Service Commission report). This study was important because it featured raters who were expert with the instrument but naive with respect to the jobs. Had this condition been implemented in the Smith and Hakel (1979) study, it would have yielded information indicating whether expertise with a rating instrument could contribute to accuracy in ratings. The Jones
paradigm is analogous to having a personnel specialist from one type of company produce PAQ profiles for jobs in a completely different company, simply based on job descriptions provided to him or her. Jones et al. concluded that providing job naive PAQ experts with written job descriptions enabled them to provide valid and reliable ratings. There are two reasons to question these conclusions. First, their graduate students' ratings were never validated against an external standard (e.g., PAQ scores from trained analysts who were also job content experts). Rather, validity was inferred from examining (a) the job family groupings that resulted from a hierarchical cluster analysis of the PAQ dimensions and (b) correlations of the trained graduate students' dimension scores with worker trait ratings, across jobs, obtained from the Dictionary of Occupational Titles (U.S. Department of Labor, 1965). One cannot assess how accurately trained raters analyze jobs by discerning the meaningfulness of job clusters. Regarding the second line of evidence, it is interesting that linear combinations of PAQ dimension scores are correlated with worker trait ratings; however, these findings do not indicate how accurately trained raters analyze jobs.
Interrater reliability coefficients in the Jones et al. study were only modest, at best. For the PAQ items, the median reliability correlation was $r = .48$. Further, the concerns that Cornelius et al. (1984) raised about DNA items, which were also raised by Mecham, McCormick, and Jeanneret (1977, p. 17), become germane here. In the Jones et al. study, there were probably PAQ items that obviously were DNA in each of the 121 job cases. Hence, these modest interrater reliabilities were probably artifactually inflated. To estimate the possible degree of such inflation, Harvey and Hayes (1985) performed a Monte Carlo study that estimated the extent to which PAQ reliability coefficients could become larger due to DNA "agreements." They varied the number of items (0 - 170) that from 2 to 5 raters would agree were not applicable to a given job. To provide a baseline of "worst-case" reliability for a given number of DNA items, the remaining non-DNA items were random numbers. Harvey and Hayes demonstrated that with as few as 30 PAQ items designated DNA and ratings of the other 164 items being completely random, one would obtain a reliability coefficient of $r = .48$, as high as Jones et al's. median reliability correlation.
Thus, it still has not been demonstrated convincingly that a naive rater can provide as accurate a PAQ profile as a professional analyst. Therefore, it seems worthwhile to investigate whether providing systematic job information prior to rating a job would help eliminate the "naivete" of the naive rater, thereby resulting in increased similarity to expert ratings.

Harvey and Lozada-Larsen (1985) had college students rate 11 insurance jobs on a 36-dimension questionnaire. The questionnaire was derived from an extensive 521-item task inventory administered to incumbents. The external standard to which the student ratings were compared was the ratings given by the incumbents. Before completing the rating instruments, the student raters were presented with varying levels of information about the job they were to rate: (a) a title only, (b) a title with an extensive, task-based description of the job (derived from a task analysis), or (c) the task-based description without title. Accuracy variance was partitioned into the four accuracy components outlined by Cronbach (1955) -- elevation, differential elevation, stereotype accuracy, and differential accuracy. The authors found that for
the differential accuracy component (the ability to discern differences, averaged across dimensions, between jobs on individual dimensions), students had significantly more accurate ratings if they were provided with prior task-based information, regardless of whether or not this information was accompanied by a title. (Hahn, 1985, has obtained similar findings with a 13-item questionnaire.) It would be worthwhile to examine whether extensive, task-based information improves job analysis accuracy when the PAQ, a lengthier and more complicated instrument than the Harvey and Lozada-Larsen one, is used for the job analysis.

There are questions that should be raised about how far one can generalize Harvey and Lozada-Larsen's results beyond the paradigm in which they were obtained. First, how much can be generalized about the beneficial effects of prior job information? It is interesting that when provided with extensive, task-based information naive raters give more accurate ratings than when they are provided with only a title. But in a realistic job setting an incumbent or non-professional would not be provided with an extensive, task-based analysis as information to use in completing
the job analysis questionnaire. If this extensive task information was already available, one could presume that professional task and job analyses had already been conducted. Therefore, there would be no need for the lay rater to complete the questionnaire. It would be much more practical and realistic to examine whether a less detailed piece of information could improve lay rating performance. A short narrative summary, similar to one that would appear as a brief description on a job opening notice would be more realistic. A second point concerns the differences between Harvey and Lozada-Larsen's job analysis instrument and the PAQ. The dimensions that make up their questionnaire items were derived from a task analysis of the same jobs that were subsequently rated by the instrument. It is likely that there was a much better "fit" between the instrument and the jobs it was being used to rate than there would be with the PAQ and those same 11 jobs. It is doubtful that DNA items posed nearly as much threat in the Harvey and Lozada-Larsen study as 11 randomly selected jobs would to the PAQ. On the other hand, the PAQ may be more applicable to a greater variety of jobs. Finally, the expert raters in the Harvey and Lozada-Larsen study were not professional job analysts;
they were incumbents. Would the authors have obtained the same results if professional job analysts provided the true scores? It may be more appropriate to obtain true scores from professional analysts than incumbents. As noted before, Robinson, Wahlstrom, and Mecham (1974), using the PAQ, showed that incumbent ratings were not necessarily as accurate as professional analyst ratings. Further, Smith and Hakel (1979) found that both incumbents and supervisors tend to overrate the incumbent's job on the PAQ. In addition, some concerns have been raised that a post-college graduate reading level (Ash and Edgell, 1975) is necessary to be able to clearly comprehend PAQ items. Because of these concerns, professional job analysts will serve as expert raters in the proposed study.

The differential accuracy results obtained by the Cronbach method (as used by Harvey & Lozada-Larsen) do indicate that job descriptive information helps naive raters discern differences, averaged across dimensions, between jobs on individual dimensions. These results suggest that it is possible that job descriptive information might enable a naive rater to produce a job analysis profile that correlates highly with an expert's, and that naive raters might be able to
produce such a profile repeatedly. Convergent validity coefficients (between experts and naive raters) and interrater reliability coefficients (for each of these two groups) would be informative in this regard. In the current study, it would be helpful to obtain validity and reliability results for three different cases: (1) the entire PAQ profile of items, (2) apply-only items, and (3) all PAQ items coded dichotomously as applies or does not apply. The Cronbach method would not be practical for this particular study. Each subject would have to complete a PAQ and PMPQ for all six jobs: This would take about twelve hours.

No investigators have examined whether giving the naive rater practice using job descriptive information on a preliminary job analysis instrument would help improve the rater's accuracy on the actual instrument. If the naive rater spends an hour examining and using job information, it seems reasonable that s/he could later make better use of that material than someone who reads it for the first time immediately before performing the job analysis. Therefore, it seems like it would be cost-effective to allow a naive rater an hour to "warm up" rating the job on a different instrument. Of course, it would be inappropriate to
have the naive rater practice using this information on the PAQ and then re-rate it "officially" on the PAQ. Most likely, whatever ratings s/he made on the "practice" PAQ would strongly affect the ratings on the "real" PAQ. The rater would probably give ratings nearly identical to the practice ratings, in order not to appear illogical or inconsistent. After all, s/he is rating the same job again, on the same instrument, using the same job information. It would also be inadvisable to have the rater practice by rating a different job on the PAQ. By rating a different job, one could not test our particular hypothesis regarding practice with job descriptive information. Further, there could be potential contrast or assimilation effect problems (see Jones & Goethals, 1971; Murphy, Balzer, Lockhart, & Eisenman, 1985, for a discussion of these concepts). These effects would occur if ratings of one job biased the ratings of a subsequent job. Ratings of the latter job would appear less like the ratings of the former job (contrast) or more like the former ratings (assimilation) as judged against an objective standard. For these reasons, it is best to use another job analysis instrument and the same job descriptive information in order to test our practice
hypothesis.

**Strengths and Limitations Regarding the Scope of This Study.**

The paradigm employed in the current study would not be used in an actual organizational setting. If an organization tried to cut costs by transferring the job analysis function from a few personnel specialists, this function most likely would be transferred to incumbents who would analyze their own jobs or to supervisors who would analyze subordinates' jobs. In either case, an employee would not be responsible for analyzing a job with which s/he was not directly familiar -- a situation analogous to that presented in this study. Also, the PAQ would not be the instrument to be used by many incumbents and supervisors because of its complexity. Rather, a less complicated, more readable instrument, such as the Job Element Inventory (Cornelius & Hakel, 1978), would be more appropriate. The paradigm implemented in this study was designed to address shortcomings of the previous studies in this area. Job naive raters were used in this study to address two issues: (1) the extent to which someone unfamiliar with a job could produce accurate ratings when provided with realistic job descriptive information and practice using that information, and
(2) if information does help improve rating performance, in what ways does it help? Jones et al. (1982) claimed that job naive raters could provide valid and reliable PAQ profiles if they were simply provided with a job description. Smith and Hakel (1979) claimed that job information was not even needed to enable the job naive rater to provide valid and reliable PAQ ratings. Problems with drawing firm conclusions from these studies and other studies (e.g., Cornelius, DeNisi, & Blencoe, 1984; Harvey & Lozada-Larsen, 1985) were cited previously. The paradigm employed here was aimed at these shortcomings rather than at being directly transferable to an organizational setting.

A few related points should be made about the job descriptive information condition. Obviously, if "enough" extensive information is provided in a form very similar to the instrument on which the person is rating the job, information will be helpful. As an extreme example, one could provide a job naive subject with a PAQ completed by an expert for the job the subject is to rate. The subject simply would need to transcribe the information. The extensive information condition in this study was chosen because it was
similar to those used in previous studies (e. g., Harvey & Lozada-Larsen, 1985; Jones et al., 1982). The short narrative summary was chosen because it provided an intermediate level of information. Additionally, a short narrative summary (such as a job opening notice) typifies the amount of formal written information regarding jobs in many organizations. The information conditions in this study provided accurate, realistic information about the jobs to be rated. This was done in order to test a hypothesis about the potentially beneficial effects of job information on rating performance. In an actual organization, one could not assume that the available job information was current and accurate. Hence, there could be situations in which it might be detrimental to provide raters with whatever job information happened to be available.

Summary.

In the present study, the effects of (a) prior amounts of job descriptive information and (b) practice on PAQ rating accuracy of naive raters, across and among six jobs at a southwestern municipal government organization, were examined. Jobs that had similar numbers of DNA items on the PAQ were selected for analysis. Therefore, validity and reliability
differences obtained among jobs would not be direct artifacts of the fit of the PAQ to the specific jobs; i.e., they should be comparably inflated by DNA agreements. Variability in the nature of the jobs was assured by selecting both blue-collar and white-collar titles. The exact nature of jobs and the number of DNA items for each job will be discussed in the Method section. Convergent validities (between subjects and experts) and interrater reliabilities were computed for subjects' PAQ profiles when DNA items were omitted and also when they were not omitted from analyses. Also, convergent validities and interrater reliabilities were computed when item ratings were coded dichotomously into items that the rater thought applied or did not apply to the job. Finally, the experimental subject's total rating score (the sum of all item ratings for the job) was computed and compared to the experts' total rating score.

Experimental subjects' previous familiarity with the jobs they were to rate was also examined. Cornelius, DeNisi, and Blencoe (1984) found that familiarity and convergent validity are positively correlated ($r = .48$). If there seemed to be some degree of variability in naive raters' familiarity with the job (no
restriction of range), then the relationship between the raters' familiarity with the job and their rating accuracy would be assessed.

METHOD

Subjects.

One hundred eighty Rice University students were recruited from undergraduate psychology courses. Students received a two-hour credit for participating in the experiment.

Jobs.

Six jobs were selected from a larger set of jobs that are currently performed in a southwestern municipal government organization. The six jobs are listed below:

1) Heavy Equipment Operator -- Solid Waste Department
2) Streets and Traffic Laborer -- Streets and Traffic Department
3) Warrant Officer -- Police Department
4) Court Clerk -- Municipal Courts Department
5) Executive Secretary -- General and Administrative Services Department
6) Data Processing Coordinator -- Finance Department

A title, short summary paragraph, and extensive task list for each job appear in the appendix. Three of the
jobs are typically considered blue-collar jobs: streets and traffic laborer, heavy equipment operator, and warrant officer. The other three jobs are considered white-collar jobs: executive secretary, court clerk, and data processing coordinator. The jobs were chosen so as to provide variability in the nature of the jobs while holding constant the number of DNA items on the PAQ. The six jobs selected varied from 101 to 116 DNA items, with an average of about 108 DNA items (see Table 3). While the range of DNA items among the six jobs (15) was not large, it should be noted that the three white-collar jobs had an average of about 111 DNA items while the three blue-collar jobs had an average of about 106 DNA items.

None of the six jobs can be considered executive, managerial, or highly technical jobs. A personnel specialist typically would not use the PMPQ to rate these jobs. The importance of this latter point will be elaborated on later in the Method section.

Experts.

The expert raters were three professional job analysts. They had extensive personnel experience with the organization from which the jobs to be rated came. In fact, they were responsible for interviewing
incumbents and supervisors and then generating the extensive task lists that appear for each job in the appendix. Only two job analysts rated each job with the PAQ. Therefore, the same two analysts did not rate all six jobs.

Experimental Design.

The experimental design was a 3 (information) X 2 (practice) X 6 (jobs) completely-crossed factorial, with five subjects in each cell. This was the design implemented when convergent validity coefficients and (absolute value) total rating score differences served as dependent measures. With each of these dependent measures, the subject contributed his or her own piece of data (i.e., one validity coefficient and one total rating score difference). However, the case of interrater reliability is somewhat different. For this dependent measure, each experimental group, not subject, contributed one piece of data (i.e., the interrater reliability coefficient). In order to have enough statistical power to conduct inferential statistical tests (i.e., have 6 pieces of data rather than 1 in each cell), it was essential to collapse over jobs. Therefore, job was not an independent variable in statistical tests of interrater reliability. The
experimental design became a 3 (information) X 2 (practice) completely-crossed factorial, with six reliability coefficients in each cell.

Although subjects' prior familiarity with the job they were to rate was assessed, familiarity was not systematically varied.

**Procedure.**

First, subjects rated their familiarity with one of six jobs on a scale of "1" (Completely Familiar) to "5" (Not Familiar at All), with a midpoint of "3" (Quite Familiar). Intermediate rating points were anchored ("2" = Extremely Familiar, "4" = Somewhat Familiar). Bass, Cascio, and O'Conner (1974) developed this 5-point scale with a ratio scaling method. Subjects also indicated whether they (a) had worked at the particular job, and (b) knew someone who had held that job.

Before completing the job analysis instruments, subjects were provided with written information about the job they were to rate. The amount of information, an independent variable, varied from a mere job title to an extensive task-based description of the job (derived from a job analysis) along with the job title. The subjects received one of the following three levels
of job information:

1) job title only
2) a short narrative job summary plus title
3) an extensive task-based description plus title

Subjects were then required to complete a PAQ for the job (and in some cases a PMPQ beforehand). The subjects read a standard set of instructions about each instrument before completing it. For the PAQ, subjects completed 183 of the 194 items. They did not complete four fill-in items (44, 60, 127, and 181) or items 188 through 194 which covered salary. All items were completed on the PMPQ.

Subjects in the Practice condition completed the PMPQ first and then the PAQ. Subjects in the No Practice condition only completed the PAQ. Subjects were randomly assigned to all treatment conditions.

Computation of the Dependent Variables.

Convergent validities (between subjects and experts) and interrater reliabilities were computed for subjects' PAQ profiles when DNA items were omitted and also when they were not omitted from analyses. A PAQ item was considered DNA if the experts' mean rating of that item was 0.50 or less. Also, convergent validities and interrater reliabilities were computed when item
ratings were coded dichotomously into items that the rater thought applied or did not apply to the job.

Each convergent validity estimate was obtained by correlating ratings of an experimental subject with those (mean ratings) of experts, then converting the resulting correlation to Fisher's z-scores. Therefore, a convergent validity estimate was provided for each subject.

Each interrater reliability estimate was obtained by correlating ratings across all pairs of raters in a given experimental condition, converting these pairwise correlations to z-scores and averaging. These mean z-scores were then converted back to correlation coefficients. Therefore, an interrater reliability coefficient was provided for each experimental condition.

Validity and reliability coefficients were converted to z-scores because the sampling distribution of correlations when the true mean is nonzero is generally not normal. Therefore, means of raw correlation coefficients can be misleading indices of central tendency. The Fisher transformation provides experimental condition means that are more consistent with the assumptions regarding measures of central
tendency.

In sum, the reported convergent validity and reliability means were z-equivalents and rs, respectively. This does not affect results from statistical analyses or conclusions to be drawn from statistical analyses.

Finally, each experimental subject's total rating score (the sum of all item ratings for the job) was computed and compared to the experts' (averaged) total rating score for the job. Specifically, the absolute value difference between each subject's total rating score and that of experts constituted the data that were used in statistical analyses.

Why PMPQ Data Were Not Analyzed.

As noted previously, none of the six jobs selected could be considered executive, managerial, or highly technical jobs. A personnel specialist typically would not analyze these jobs with the PMPQ. Originally, it had been hoped that short job summaries, extensive task-based descriptions, and expert ratings could be obtained for executive-level jobs at the southwestern municipal government organization. However, the organization did not provide this information for executive, managerial, or highly technical jobs. Nor
did the organization provide PMPQ expert ratings of the six jobs selected. Therefore, it would be impossible to compute convergent validity results for PMPQ data. Additionally, analyzing PMPQ data for the six jobs selected would be uninformative. This is because almost every PMPQ item should be rated DNA for several, if not all, six jobs. Validity and reliability coefficients are simply product moment correlations -- \( r = \frac{\sum (x - \overline{x})(y - \overline{y})}{\sqrt{\sum (x - \overline{x})^2 (y - \overline{y})^2}} \), where \( \overline{x} \) and \( \overline{y} \) are the sample means of raters \( x \) and \( y \). If all items are DNA, then the numerator of this equation would equal zero. If there is little or no variability in the values of the items, then neither set of ratings has linear predictive ability for the other. Two raters could agree that all items are DNA, yet emerge with a correlation of \( r = 0 \). The same problem would occur with dichotomously coded items that were either all applicable or all DNA to the job.

**Post Hoc Tests.**

The Newman-Keuls multiple range test was used to indicate statistically significant differences among job descriptive information and job main-effect means. The level of significance for all post hoc tests was set at alpha = .05. Therefore, in the Results section,
the significance level for each comparison is not stated repeatedly. However, the degrees of freedom (df) for each comparison are stated since they varied from one comparison to another.

Validity and Reliability Coefficient Ranges.

Validity and reliability coefficient ranges for each of the three job descriptive information conditions are reported. Each of these ranges includes twelve mean coefficients (from the 6 job x 2 practice condition cells).

RESULTS

True Scores

Interrater Reliability Among Experts.

Across the six jobs, average interrater reliability was quite high (r = .96), and ranged from r = .94 to r = .98 among the six jobs. These reliability coefficients were computed the same way as for experimental groups (and as previously described in the Method section).

Absolute Value Differences in Total Rating Scores.

The average absolute value difference among experts across the six jobs was 20.5 points, and ranged from 3 to 32 points among the jobs.

Familiarity
The familiarity results appear in Table 4. The results indicate that subjects were unfamiliar with the jobs they were to rate. Only 11 out of 180 persons (7.78\%) indicated that they were either quite, extremely, or completely familiar with the job. Only 3 persons (1.67\%) were completely or extremely familiar with the job. Only 3 persons (1.67\%) had actually worked at the job. More than 75\% of the subjects did not even know someone who ever worked at the job they were to analyze. (The familiarity data for individual jobs indicated that subjects were unfamiliar with all six jobs.)

It appears that the college students in this study constituted a sample of job naive raters. Statistical analyses concerning the predictive influence of familiarity on rating performance would not be informative. There was not enough variability in familiarity to preclude restriction of range problems.

Validity and Reliability Analyses,

Based on Actual Ratings of All PAQ Items

Convergent Validity Across Jobs.

Table 5 shows the analysis of variance (ANOVA) summary when the ANOVA was conducted across jobs. Job descriptive information improved convergent validity, F
(2, 144) = 7.40, p < .001. The mean convergent validities for the three information groups were as follows: for the title-only group, $r = .56$ (ranging from $r = .44$ to $r = .72$); for the short summary group, $r = .63$ (ranging from $r = .44$ to $r = .75$); for the extensive information group, $r = .64$ (ranging from $r = .52$ to $r = .76$). The Newman-Keuls multiple range test $(df = 144)$ indicated that the short summary and extensive information groups had higher validity coefficients than the title-only group but were not significantly different from each other. Prior practice did not affect convergent validity $(F < 1)$. The job which subjects rated affected their ability to provide PAQ profiles comparable to experts, $F (5, 144) = 7.20, p < .001$. Table 6 shows the mean convergent validity coefficients for the different jobs. The Newman-Keuls test $(df = 144)$ indicated that two of the "white-collar" jobs (data processing coordinator and court clerk) appeared to yield higher validity coefficients than the "blue-collar" jobs (heavy equipment operator, streets and traffic laborer, and warrant officer). I believe this difference may be due to the fact that even though I tried to equate jobs for DNA items, the three blue collar jobs had fewer DNA items $(M = 105.67)$
than the two white collar jobs (M = 112.50). As Cornelius et al. (1984) suggested, DNA items inflate the level of agreement between experts and subjects.

There was a significant job X information interaction, F (10, 144) = 2.66, p < .01. The reasons for this interaction were probably that (a) job descriptive information did not help improve performance for the streets & traffic laborer job, and (b) a short summary was not more helpful than a mere title for the heavy equipment operator job. I will discuss the findings of these and other individual jobs subsequently. Practice did not interact significantly with information (F < 1), or the job (F < 1). Nor was there a significant job X information X practice interaction, F (10, 144) = 1.10, p > .30.

Interrater Reliability.

The ANOVA summary statistics appear in Table 7. These results essentially parallel the convergent validity findings. Of course, as discussed before, reliability means were pooled across jobs; hence, the job does not appear as an independent variable in this analysis. Job descriptive information helped improve interrater reliability, F (2, 30) = 5.58, p < .02. Reliability coefficients for the three groups were as
follows: for the title-only group, $r = .47$ (ranging from $r = .32$ to $r = .59$); for the short summary group, $r = .55$ (ranging from $r = .36$ to $r = .67$); and for the extensive information group, $r = .57$ (ranging from $r = .43$ to $r = .65$). The Newman-Keuls test ($df = 30$) indicated that both short summary and extensive information groups obtained more reliable ratings than the title-only group but were not significantly different from each other. Practice did not affect interrater reliability ($F < 1$). Nor was there a significant information $\times$ practice interaction, $F(2, 30) = 1.51, p > .20$.

**Convergent Validity Among Individual Jobs.**

Tables 8-13 show the ANOVA summary statistics, descriptive information group means, and post hoc test results regarding differences among these means, for the six individual jobs. Job descriptive information had a significant effect on improving convergent validity in four of the six jobs. Actually, the streets and traffic laborer job was the only one for which there seemed to be no benefit from job descriptive information: title-only group, $r = .62$; short summary group, $r = .58$; extensive information group, $r = .54$. These three means were not
significantly different. While there was no significant information effect for the data processing coordinator job, the means were in the expected direction -- for the title-only group, $r = .66$; for the short summary group, $r = .71$; for the extensive information group, $r = .72$. The Newman-Keuls test ($df = 24$) indicated that there were two jobs for which extensive information led to significantly higher convergent validity than a mere title. These jobs were court clerk and executive secretary. The court clerk means were as follows: title-only group, $r = .56$; short summary group, $r = .71$; extensive information group, $r = .73$. The executive secretary means were as follows: title-only group, $r = .52$; short summary group, $r = .64$; extensive information group, $r = .70$. The Newman-Keuls test also detected a significant difference between the short summary group and the title-only group for the court clerk job. For the heavy equipment operator job, the extensive information group ($r = .63$) had non-significantly higher convergent validity than the title-only group ($r = .55$), but significantly higher validity than the short summary group ($r = .50$). The title-only group and short summary group means were not significantly different. For the warrant officer job,
the short summary group ($r = .65$) had a significantly higher mean validity coefficient than the title-only group ($r = .44$), and the extensive information group ($r = .52$) had non-significantly higher validity than the title-only group. There was not a significant difference between the extensive information and short summary conditions. Practice had no significant effect on validity for any of the six jobs. Nor did practice interact with information for any of the jobs.

Validity and Reliability Analyses, Based on Only Items That Experts Thought Applied to the Job
(Apply Only Items)

**Convergent Validity Across Jobs.**

The ANOVA summary statistics appear in Table 14. The most important finding is that job descriptive information no longer affected convergent validity ($F < 1$), as it did when analyses were based on all PAQ items. The mean validity coefficients for the three information groups were as follows: for the title-only group, $r = .44$ (ranging from $r = .26$ to $r = .60$); for the short summary group, $r = .45$ (ranging from $r = .34$ to $r = .58$); for the extensive information group, $r = .46$ (ranging from $r = .30$ to $r = .66$). These means are considerably lower than those of the three information
groups when all PAQ items constituted the PAQ profile: title-only, \( r = .56 \); short summary, \( r = .63 \); extensive information, \( r = .64 \). This is especially apparent for the short summary and extensive information groups, whose combined mean was \( r = .64 \) with all items, and \( r = .46 \) with Apply Only items. Prior practice had no effect on convergent validity (\( F < 1 \)). There was a significant main effect for the job variable, \( F (5, 144) = 9.54, p < .001 \). Job means and Newman-Keuls results appear in Table 15. It is interesting that white-collar and blue-collar job means no longer separate into two clusters. The white-collar jobs no longer have higher validity coefficients than all blue-collar jobs. This is probably because DNA items have been deleted from the set of PAQ items that was analyzed.

There was a job \( X \) information interaction, \( F (10, 144) = 1.95, p < .05 \); a job \( X \) practice interaction, \( F (5, 155) = 2.28, p < .05 \); and a job \( X \) information \( X \) practice interaction, \( F (10, 144) = 1.95, p < .05 \). The means of these three interactions appear in Tables 16, 17, and 18, respectively. Examination of these tables indicates that the primary basis for these interactions is that job descriptive information is helpful (although to a non-significant extent) for the
executive secretary job but not for the others. Prior practice was helpful for some jobs, ineffective for others, and detrimental in the case of the executive secretary job. A discussion of the effects of information and practice on the individual jobs will appear later in this paper.

**Interrater Reliability.**

Job descriptive information had no effect on interrater reliability (\( F < 1 \)). The means for the three information groups were as follows: title-only, \( r = .41 \) (ranging from \( r = .26 \) to \( r = .53 \)); short summary, \( r = .44 \) (ranging from \( r = .26 \) to \( r = .57 \)); extensive information, \( r = .45 \) (ranging from \( r = .32 \) to \( r = .62 \)). These means are considerably lower than those of the three information groups when all PAQ items constituted the PAQ profile: title-only, \( r = .47 \); short summary, \( r = .55 \); extensive information, \( r = .57 \). This is especially apparent for the short summary and extensive information groups, whose combined mean was \( r = .56 \) with all items, and \( r = .44 \) with Apply Only items. This finding corroborates Cornelius et al.'s. (1984) comment about the inflationary effect of DNA items on reliability. Practice had no effect on reliability (\( F < 1 \)). Nor was there a significant information X
practice interaction, $F(2, 30) = 2.21, p > .13$.

Convergent Validity Among Individual Jobs.

The ANOVA summary statistics for each of the six jobs appear in Tables 19-24. There was no main effect for job descriptive information for any of the six jobs. There were significant main effects for practice in the case of two jobs, but in opposite directions. Subjects who rated the data processing coordinator job had a higher mean validity coefficient with practice ($r = .56$) than without practice ($r = .46$), $F(1, 24) = 4.92, p < .05$. Subjects who rated the executive secretary job had a higher mean validity coefficient without practice ($r = .50$) than with practice ($r = .38$), $F(1, 24) = 7.77, p < .02$. There was a significant information $\times$ practice interaction in the case of the executive secretary job, $F(2, 24) = 5.37, p < .02$. Table 25 has the six information $\times$ practice means for this job. The table clearly indicates the nature of the interaction. Extensive information groups performed better with practice, while short summary and title-only groups performed better without practice.

Validity and Reliability Analyses, Based on Items Coded Dichotomously as Applies or Does Not Apply

Convergent Validity Across Jobs.
The ANOVA statistics appear in Table 26. Whereas job descriptive information did not improve validity in the case of Apply Only items, information did improve convergent validity when items were dichotomously coded, $F(2, 144) = 4.73, p < .02$. The mean validity coefficients for the three information groups were as follows: $r = .41$ for the title-only group (ranging from $r = .32$ to $r = .60$); $r = .46$ for the short summary group (ranging from $r = .23$ to $r = .60$); $r = .48$ for the extensive information group (ranging from $r = .31$ to $r = .63$). The Newman-Keuls test ($df = 144$) indicated that the short summary group and extensive information groups both had higher validity coefficients than the title-only group but were not significantly different from each other. Practice helped improve convergent validity, $F(1, 144) = 9.32, p < .01$. The means of the practice and no-practice groups were $r = .48$ and $r = .42$, respectively. There was a main effect for jobs on convergent validity, $F(5, 144) = 8.25, p < .001$.

Table 27 shows the mean validity coefficients for each of the six jobs and which means are significantly different from each other, based on the Newman-Keuls test ($df = 144$). A pattern emerges that was observed earlier when analyses were based on all PAQ items.
Namely, the white-collar jobs have higher validity coefficients than the blue-collar jobs. As was mentioned before, this was probably because the three white-collar jobs had more DNA items than the three blue-collar jobs. There were no significant two-way or three-way interactions.

**Interrater Reliability.**

The analysis of variance summary statistics appear in Table 28. Job descriptive information had a significant effect on interrater reliability, $F(2, 30) = 4.16, p < .05$. The Newman-Keuls test ($df = 30$) indicated that the extensive information group ($r = .44$, ranging from $r = .36$ to $r = .58$) had a significantly higher mean coefficient than the title-only group ($r = .34$, ranging from $r = .22$ to $r = .58$). Neither of these two groups were significantly different from the short summary group ($r = .40$, ranging from $r = .15$ to $r = .52$). Also, practice significantly improved interrater reliability, $F(1, 30) = 4.97, p < .05$. The means of the practice group and no practice group were $r = .43$ and $r = .36$, respectively. There was no significant information $X$ practice interaction ($F < 1$).

**Convergent Validity Among Individual Jobs.**
ANOVA summary statistics for each of the six jobs appear in Tables 29-34. These tables also list the mean validity coefficients of the three information groups and designate which means are significantly different from each other according to post hoc tests.

For the executive secretary position, the Newman-Keuls test ($df = 24$) indicated that the extensive information group ($r = .55$) performed non-significantly better than the title-only group ($r = .41$). For the court clerk position, the Newman-Keuls test ($df = 24$) indicated that both the extensive information group ($r = .58$) and short summary group ($r = .57$) performed non-significantly better than the title-only group ($r = .42$). For the heavy equipment operator job, the Newman-Keuls test ($df = 24$) indicated that the extensive information group ($r = .44$) performed significantly better than the short summary group ($r = .32$) but not than the title-only group ($r = .38$).

There were no significant differences between means of the short summary and title-only groups. For the warrant officer and data processing coordinator jobs, the extensive information and short summary groups had non-significantly greater validity coefficients than the title-only group. The streets and traffic laborer
job was the only one in which the short summary and/or extensive information did not appear to improve validity. For this job, the mean convergent validity coefficients were as follows: title-only group, $r = .39$; short summary group, $r = .37$; extensive information group, $r = .38$.

Practice improved convergent validity for the heavy equipment operator job and the data processing coordinator job. For the heavy equipment operator job, practice subjects obtained a higher mean validity coefficient ($r = .42$) than those who did not have prior practice ($r = .33$). Also, for the data processing coordinator job, practice subjects obtained a higher mean validity coefficient ($r = .58$) than those who did not have prior practice ($r = .47$). There was a significant information $X$ practice interaction, $F(2, 24) = 3.43, p < .05$, for the warrant officer job. Table 35 indicates that the key reason for this interaction was that the short summary group performed better without practice ($r = .54$) than with practice, ($r = .39$), while the title-only and extensive information groups performed better with practice.

**Total Rating Scores**

(The Sum of All Item Ratings For the Job)
Descriptive Statistics.

Table 36 shows the subjects' averaged total rating scores for each of the six jobs. Below each of these means are the averaged true scores (the mean total rating scores from experts). Subjects grossly overrated all six jobs. In fact all 36 experimental groups (6 jobs $\times$ 3 information levels $\times$ 2 practice levels) overrated the jobs from 26.1 - 228.6 points. Experimental groups overrated the jobs on average by 126.39 points.

Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts Across Jobs.

The ANOVA summary statistics appear in Table 37. There were no significant differences among the three information groups ($F < 1$). The mean absolute value differences for the title-only, short summary, and extensive information groups were 124.63, 131.93, and 129.42, respectively. Practice, on the other hand, was successful in decreasing absolute value differences between subjects and experts, $F (1, 144) = 21.90$, $p < .001$. The mean absolute value difference for those with practice was 102.83, while the absolute value difference for those without practice was 154.49. There
was a main effect for the job, $F(5, 144) = 7.23, p < .001$. The job means and the results of the Newman-Keuls test ($df = 144$) on these means appear in Table 38. As seen before, the white-collar and blue-collar jobs are significantly different from each other. Specifically, absolute value differences are lower for white-collar than blue-collar jobs. This probably reflects the fact that there were more DNA items with the white-collar jobs. The DNA items were easier to rate than the Apply Only items. Hence, once again, as noted by Cornelius et al., the DNA items inflated PAQ accuracy of naive subjects. There were no significant two-way or three-way interactions.

Among Individual Jobs.

The ANOVA summary statistics for the six jobs appear in Tables 39-44. There was no significant main effect of information on absolute value differences for any of the six jobs. Practice reduced absolute value differences between subjects and experts for the executive secretary job, $F(1, 24) = 3.62, p < .07$, streets and traffic laborer job, $F(1, 24) = 3.94, p < .06$, heavy equipment operator job, $F(1, 24) = 7.34, p < .025$, and data processing coordinator job, $F(1, 24) = 10.24, p < .01$. The means for these four jobs appear
in Table 45. There was no significant information X practice interaction for any of the six jobs.

DISCUSSION

Conclusions About the Results.

In this study, I attempted to see if there was a simple, expeditious way of eliminating the naivete of the naive job analyst. Job naive raters were provided with realistic, job descriptive information and in some cases, practice using that information. All raters read standard instructions on how to complete the PAQ. I examined whether these tools would enable the job naive rater to supplement the expert, in the sense of being able to produce ratings that were highly correlated with those of the expert. Based on findings by Smith and Hakel (1979) and Jones et al. (1982), it seemed that these manipulations would be effective. However, the results of this study indicate that the naive rater could not provide PAQ ratings comparable to the expert, even if s/he was provided with realistic job information and practice. Convergent validity coefficients were highest for groups provided with job descriptive information, especially those receiving extensive information. However, convergent validity of extensive information groups was only modest (r = .64),
as was interrater reliability ($r = .57$, as opposed to $r = .96$ among experts). Practice decreased absolute value differences between subjects' and experts' total rating scores. However, practice groups and experts still differed on average by 103 points (as opposed to 21 points among experts) on each job.

Practice and job descriptive information did improve certain aspects of rating performance. Practice appeared to reduce leniency rating problems (e.g., overrating the jobs). Job descriptive information improved convergent validity and interrater reliability. Job descriptive information did not prevent student raters from overrating each of the jobs. These job descriptive information findings replicate those of Harvey and Lozada-Larsen (1985) using the Cronbach method. Harvey and Lozada-Larsen found that job information significantly improved the differential accuracy component. A rater must be able to accurately rate the items within each job in order to (a) discern differences, averaged across items, between jobs on individual items, and (b) attain a high degree of convergent validity with an expert for each job. Therefore, differential accuracy corresponds closely with convergent validity. Harvey and Lozada-
Larsen also found that information did not affect the elevation component of accuracy. Elevation refers to the degree of leniency/severity of ratings across items. Hence, elevation and (absolute value) total rating score differences correspond closely.

Across jobs, based on actual ratings of all PAQ items (except the 11 previously noted as being disregarded), short summary and extensive information groups obtained higher convergent validity and interrater reliability coefficients than the title-only group. For four, arguably five, of the six jobs, information improved convergent validity. For two of these jobs, the extensive information groups had significantly greater validity coefficients than the title-only groups. For one job, the extensive information group had significantly higher validity coefficients than the short summary group. In one job, the short summary group had significantly higher validity coefficients than the title-only group. For one job, extensive information and short summary groups had non-significantly larger validity coefficients than the title-only group. There were no jobs in which the short summary or title-only groups had significantly larger validity coefficients than the extensive
information group. Hence, statistical analyses across jobs suggest that a short job summary is as effective as an extensive task-based list (although neither is very effective, as noted earlier). Based on individual job analyses, one could conclude that there may be some advantage to providing extensive information instead of a short summary. One could conclude that a short job summary (e.g., a job opening notice) would be helpful in situations in which it would not be feasible to collect or provide extensive information. The findings that title-only raters performed worse than informed raters replicates Harvey and Lozada-Larsen's (1985) findings with uninformed and informed groups. These findings repudiate Smith and Hakel's (1979, p. 686) suggestion that a completely job naive rater can provide PAQ ratings as accurate as the expert since both groups have "shared stereotypes" of what constitutes the job. Further, the low reliabilities of title-only groups indicate that job naive raters do not necessarily share identical stereotypes about the nature of the job.

Analyses of "apply only" and dichotomously coded PAQ items indicate the reason improvement occurred with job information: Informed subjects had a better idea which
PAQ items were applicable to the job, but not the extent to which applicable items made up the job. Specifically, when only job-applicable items constituted the PAQ profile, job information no longer affected convergent validity, across or among jobs. Yet when all items were dichotomously coded as Applies/Does Not Apply, job information improved convergent validity and interrater reliability. Job descriptive information appears to be helpful because it enables the rater to discern which PAQ items are applicable to the job (i.e., provides the rater with "nominal data" knowledge of the job). Job information does not enable the naive rater to discern the extent that PAQ items are applicable to the job (i.e., provide the rater with "interval data" knowledge of the job). The fact that job information was ineffective in dissipating raters' leniency problems corroborates this latter point.

I hypothesized that if a naive rater spent an hour working with germane job information, s/he could make better use of that material than someone presented with it immediately before performing the job analysis. This was not the case. Statistical analyses (based on actual ratings of all PAQ items) indicated that
practice had no effect on convergent validity or interrater reliability. It is not clear why practice helped dissipate the leniency problem across jobs. One could surmise that switching from a 9-point scale on an ill-fitting job analysis instrument (PMPQ) to a 6-point scale on a better fitting instrument affected this elevation difference. Unfortunately, any guess concerning how this occurred would be pure conjecture. This point may be moot since, as noted before, (a) all practice groups overrated the job, and (b) practice groups differed from experts by an average of 103 points (as opposed to 21 points among experts) on each job.

Changes That Could Be Made in Future Replications.

Based on the findings of this study, it is concluded that the naive rater can not provide a PAQ job analysis comparable to that of the expert. However, four issues should be addressed regarding changes that could be made in future replications of this study.

First, would different results have been obtained if the naive raters were trained PAQ experts instead of college students? Jones et al. (1982) found that job naive PAQ experts did not produce highly reliable ratings ($r = .48$) when provided with job descriptive
information. In the present study interrater reliability among students provided with job descriptive information (\( r = .56 \)) was not much different than that obtained by Jones. A high degree of interrater reliability is a necessary though not sufficient condition for high convergent validity. Test theory formulae (e. g., \( r_{xy} \leq \sqrt{r_{xx} r_{yy}} \)) indicate that the highest possible convergent validity correlation that could have been obtained in the Jones study would only have been in the .60's. Therefore, I doubt that job naive PAQ experts would have obtained higher levels of convergent validity than the college students in this study. However, this issue will not be completely resolved until this study is replicated with job naive PAQ experts.

Second, perhaps if the wording of the PAQ items was simplified, the student raters in this study would have had more success using the PAQ. Ash and Edgell (1975) claimed that a post-college graduate reading level may be necessary to clearly comprehend PAQ items. The raters in the current study were Rice University students, primarily freshmen. One would assume, based on Rice's strict admission standards, that these students had strong verbal ability skills. However, it
is possible that a simplified PAQ may have been more comprehensible. Cornelius and Hakel (1978) have developed a simplified (tenth-grade reading level) version of the PAQ called the Job Element Inventory (JEI). Cognizant of Ash and Edgell's (1975) concerns about the readability of the PAQ, the authors developed the JEI for U. S. Coast Guard personnel to complete. Harvey, Friedman, Hakel, and Cornelius (1985) recently computed overall, division, and second-order factor analyses of the Coast Guard JEI ratings. The results were encouraging. The JEI factors closely paralleled those of its parent instrument, the PAQ.

Third, one could analyze the PAQ differently. Specifically, investigators could compute PAQ convergent validity and interrater reliability coefficients based on composites of items (i. e., dimension scores) rather than individual items. Taylor (1978) assessed interrater agreement on the PAQ after aggregating items into the (System I) 27 component and 5 overall dimension scores. In the current study it was not financially possible to have PAQ Services, Incorporated compute dimension scores on the student raters' PAQ profiles. Typically, one can expect that indices of interrater agreement based on composites of
items will be higher than those based on individual items. This is because random errors that the rater might make in rating each item will "cancel out" on average when the items are aggregated into a composite. For example, for a given dimension, those items which were inadvertently underrated will "average out" those items that were overrated. However, it does not seem appropriate to base interrater agreement indices on composites of items rather than individual items. The PAQ has 194 items that are supposed to represent the common processes that underlie all jobs. These elements represent the minimum number of essential processes necessary for constructing a metric for comparing jobs. Perhaps, this is why McCormick et al. have always reported interrater indices of agreement based on analyses of individual items. This is also probably why PAQ Services, Incorporated (see Mecham, McCormick, & Jeanneret, 1977) reports interrater agreement indices based on individual items. Of course, PAQ dimension scores are often used in job classification cluster analyses. But assessing whether a rater is accurately indicating what processes constitute a job, and the extent to which they do, is not the concern of job classification.
It would be worthwhile to see if direct ratings of PAQ dimensions (e.g., perceptual interpretation, decision making, personally demanding situations) correlated highly with PAQ dimension scores statistically derived from items ratings (as is typically done). This comparison would address the issue of whether item-level "precision" was actually more beneficial than making "global judgments" about composites of items. Such a study has not been conducted. Nor has a study been conducted in which personnel decisions based on all PAQ items were compared with those based on a subset of items. Such a study would aid in determining whether a shortened form of the PAQ could be used in some cases.

Finally, it is possible that there are jobs which a job naive rater, provided with no information other than his or her own stereotype, could rate as accurately as the job content expert. The results of this study and that by Cornelius, DeNisi, and Blencoe (1984) suggest that it would not be judicious to have a job naive person provide ratings for a variety of jobs that exist in many organizations. Yet, it would be worthwhile to investigate whether there are jobs for which a rater's stereotypes would be sufficient for
providing an accurate job rating.

The Utility of "Semi-Accurate" PAQ Ratings.

In sum, it appears that the naive rater cannot provide PAQ ratings comparable to the expert, even if s/he is provided with realistic job descriptive information and practice. Yet, the following question should still be raised: Were the naive raters' ratings accurate enough to serve a useful function? Perhaps, it would be worthwhile to sacrifice rating precision in order to accrue potential cost savings. While the solution to this issue is beyond the domain of this study, there are some matters to consider when making this choice. If the personnel decisions that were made based on PAQ ratings (e.g., setting wages, choosing or designing selection tools) did not differ whether ratings were provided by naive raters or experts, it would seem more efficient to sacrifice precision. Although no studies of this sort have been conducted, for psychometric reasons, I believe lower PAQ accuracy would drastically affect any eventual personnel decisions. Personnel decisions are often based on the 45 (System II) PAQ dimension scores rather than the 194 individual item ratings. Of course individual item ratings constitute the basis of the resulting dimension
scores. On average there are less than 5 items for each dimension (i.e., 194 items and 45 dimensions). Therefore, inaccurate item ratings would probably drastically alter the dimension scores. This would invariably distort the decisions personnel practitioners made. Further, when considering sacrificing rating accuracy, one should keep in mind that Harvey and Hayes (1985) found that with as few as 30 items "automatically agreed upon" as being DNA and all other ratings being completely random, interrater agreement was still $r = .48$. 
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Table 1
The 45 PAQ Dimensions

<table>
<thead>
<tr>
<th>Division 1: Information Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Perceptual interpretation</td>
</tr>
<tr>
<td>2. Input from representational sources</td>
</tr>
<tr>
<td>3. Visual input from devices/materials</td>
</tr>
<tr>
<td>4. Evaluating/judging sensory input</td>
</tr>
<tr>
<td>5. Environmental awareness</td>
</tr>
<tr>
<td>6. Use of various senses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division 2: Mental Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Decision making</td>
</tr>
<tr>
<td>8. Information processing</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Division 3: Work Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Using machines/tools/equipment</td>
</tr>
<tr>
<td>10. General body vs. sedentary activities</td>
</tr>
<tr>
<td>11. Control and related physical coordination</td>
</tr>
<tr>
<td>12. Skilled/technical activities</td>
</tr>
<tr>
<td>13. Controlled manual/related activities</td>
</tr>
<tr>
<td>14. Use of miscellaneous equipment/devices</td>
</tr>
<tr>
<td>15. Handling/manipulating/related activities</td>
</tr>
<tr>
<td>16. Physical coordination</td>
</tr>
</tbody>
</table>
Division 4: Relationships With Other Persons

17. Interchange of judgmental/related information
18. General personal contact
19. Supervisory/coordination/related activities
20. Job-related communications
21. Public/related personal contacts

Division 5: Job Context

22. Potentially stressful/unpleasant environment
23. Personally demanding situations
24. Potentially hazardous job situations

Division 6: Other Job Characteristics

25. Non-typical vs. typical day work schedule
26. Businesslike situations
27. Optional vs. specified apparel
28. Variable vs. salary compensation
29. Regular vs. irregular work schedule
30. Job demanding responsibilities
31. Structured vs. unstructured job activities
32. Vigilant/discriminating work activities

Overall Dimensions

33. Decision/communication/general responsibilities
34. Machine/equipment operation
35. Clerical/related activities
36. Technical/related activities
37. Service/related activities
38. Regular day schedule vs. other work schedules
39. Routine/repetitive work activities
40. Environmental awareness
41. General physical activities
42. Supervising/coordinating other personnel
43. Public/customer/related contact activities
44. Unpleasant/hazardous/demanding environment
45. Unnamed
Table 2

**The 10 PMPQ Dimensions**

1. Personal job requirements
2. Planning and decision making
3. Complex analysis and communication
4. Technical activities
5. Processing of information/data
6. Relevant experience
7. Interpersonal activities
8. Special training
9. Communicating/instructing
10. Second language usage
Table 3

Number of Does Not Apply vs. Applicable PAQ

<table>
<thead>
<tr>
<th>Items For Each Job</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Does Not Apply</td>
</tr>
<tr>
<td>Executive Secretary</td>
<td>107</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>109</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>101</td>
</tr>
<tr>
<td>Heavy Equipment Operator</td>
<td>111</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>105</td>
</tr>
<tr>
<td>Data Processing Coordinator</td>
<td>116</td>
</tr>
</tbody>
</table>
Table 4
Subject Responses to Familiarity Questions

(1) How familiar are you with the job you are about to analyze?

<table>
<thead>
<tr>
<th></th>
<th>Number of Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Completely familiar</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(b) Extremely familiar</td>
<td>3</td>
<td>1.67</td>
</tr>
<tr>
<td>(c) Quite familiar</td>
<td>11</td>
<td>6.11</td>
</tr>
<tr>
<td>(d) Somewhat familiar</td>
<td>67</td>
<td>37.22</td>
</tr>
<tr>
<td>(e) Not familiar at all</td>
<td>99</td>
<td>55.00</td>
</tr>
</tbody>
</table>

(2) Have you ever worked at this job?

<table>
<thead>
<tr>
<th></th>
<th>Number of Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Yes</td>
<td>3</td>
<td>1.67</td>
</tr>
<tr>
<td>(b) No</td>
<td>177</td>
<td>98.33</td>
</tr>
</tbody>
</table>

(3) Have you ever known someone who has worked at this job?

<table>
<thead>
<tr>
<th></th>
<th>Number of Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Yes</td>
<td>43</td>
<td>23.89</td>
</tr>
<tr>
<td>(b) No</td>
<td>137</td>
<td>76.11</td>
</tr>
</tbody>
</table>
Table 5

Analysis of Variance Summary Table: Convergent Validity Across Jobs (Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.1224</td>
<td>7.40 **</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0031</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Job (J)</td>
<td>5</td>
<td>.1191</td>
<td>7.20 **</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0038</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X J</td>
<td>10</td>
<td>.0440</td>
<td>2.66 *</td>
</tr>
<tr>
<td>P X J</td>
<td>5</td>
<td>.0141</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P X J</td>
<td>10</td>
<td>.0182</td>
<td>1.10</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
<td>.0165</td>
<td></td>
</tr>
</tbody>
</table>

** p < .001
* p < .01
Table 6
Convergent Validity Means For Each Job
(Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Job</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Processing Coordinator</td>
<td>.70</td>
<td>A</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>.67</td>
<td>A</td>
</tr>
<tr>
<td>Executive Secretary</td>
<td>.62</td>
<td>A, B</td>
</tr>
<tr>
<td>Heavy Equipment Operator</td>
<td>.56</td>
<td>B</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>.54</td>
<td>B</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>.58</td>
<td>B</td>
</tr>
</tbody>
</table>

Alpha = .05, DF = 144, MSE = .0165
Table 7

Analysis of Variance Summary Table: Interrater Reliability
(Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0355</td>
<td>5.58 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0000</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0096</td>
<td>1.51</td>
</tr>
<tr>
<td>Error</td>
<td>30</td>
<td>.0064</td>
<td></td>
</tr>
</tbody>
</table>

* p < .02
Table 8

Convergent Validity For the Executive Secretary Job:
Analysis of Variance Summary Table and Information
Group Means (Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0837</td>
<td>3.76 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0062</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0174</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0222</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

<table>
<thead>
<tr>
<th>Information Group Means</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>.52</td>
<td>B</td>
</tr>
<tr>
<td>Short Summary</td>
<td>.64</td>
<td>A B</td>
</tr>
<tr>
<td>Extensive Information</td>
<td>.70</td>
<td>A</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different.

Alpha = .05, DF = 24, MSE = .0222
Table 9
Convergent Validity For the Court Clerk Job:
Analysis of Variance Summary Table and Information
Group Means (Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>0.0828</td>
<td>4.31 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>0.0012</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>0.0153</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>0.0192</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Information Group Means

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>.56</td>
<td>B</td>
</tr>
<tr>
<td>Short Summary</td>
<td>.71</td>
<td>A</td>
</tr>
<tr>
<td>Extensive Information</td>
<td>.73</td>
<td>A</td>
</tr>
</tbody>
</table>

Alpha = .05, DF = 24, MSE = .0192
Table 10
Convergent Validity For the Streets and Laborer Job: Analysis of Variance Summary Table and Information Group Means (Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0144</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0006</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0371</td>
<td>1.91</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0194</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

- Title-Only: .62
- Short Summary: .58
- Extensive Information: .54

The Newman-Keuls test indicated no significant differences among the information group means.
Table 11
Convergent Validity For the Heavy Equipment Operator Job: Analysis of Variance Summary Table and Information Group Means (Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0418</td>
<td>3.92 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0211</td>
<td>1.98</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0092</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0107</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Information Group Means

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>.55</td>
<td>A B</td>
</tr>
<tr>
<td>Short Summary</td>
<td>.50</td>
<td>B</td>
</tr>
<tr>
<td>Extensive Information</td>
<td>.63</td>
<td>A</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different.

Alpha = .05, DF = 24, MSE = .0107
Table 12

Convergent Validity For the Warrant Officer Job:

Analysis of Variance Summary Table and Information

Group Means (Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.1058</td>
<td>8.54</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0105</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0104</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0124</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01

Information Group Means

<table>
<thead>
<tr>
<th>Title</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>.44</td>
<td>B</td>
</tr>
<tr>
<td>Short Summary</td>
<td>.65</td>
<td>A</td>
</tr>
<tr>
<td>Extensive Info</td>
<td>.52</td>
<td>A B</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different.

Alpha = .05, DF = 24, MSE = .0124
Table 13

Convergent Validity For the Data Processing Coordinator Job: Analysis of Variance Summary

Table and Information Group Means (Based on Actual Ratings of All PAQ Items)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0138</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0342</td>
<td>2.23</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0056</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0153</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

Mean

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>.66</td>
</tr>
<tr>
<td>Short Summary</td>
<td>.71</td>
</tr>
<tr>
<td>Extensive Information</td>
<td>.72</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the information group means.
Table 14
Analysis of Variance Summary Table: Convergent Validity Across Jobs (Based on Only Items That Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0052</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0011</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Job (J)</td>
<td>5</td>
<td>.1773</td>
<td>9.54 **</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0021</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X J</td>
<td>10</td>
<td>.0363</td>
<td>1.95 *</td>
</tr>
<tr>
<td>P X J</td>
<td>5</td>
<td>.0424</td>
<td>2.28 *</td>
</tr>
<tr>
<td>I X P X J</td>
<td>10</td>
<td>.0362</td>
<td>1.95 *</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
<td>.0186</td>
<td></td>
</tr>
</tbody>
</table>

** p < .001
* p < .05
Table 15
Convergent Validity Means For Each Job (Based on Only Items That Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th>Job</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Equipment Operator</td>
<td>.56</td>
<td>A</td>
</tr>
<tr>
<td>Data Processing Coordinator</td>
<td>.51</td>
<td>A B</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>.44</td>
<td>B C</td>
</tr>
<tr>
<td>Executive Secretary</td>
<td>.44</td>
<td>B C</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>.42</td>
<td>C</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>.34</td>
<td>D</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different.
Alpha = .05, DF = 144, MSE = .0186
Table 16

Convergent Validity Means of the Job X Information Interaction
(Based on Only Items That Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th>Job</th>
<th>Title-Only</th>
<th>Short Summary</th>
<th>Extensive Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Secretary</td>
<td>.37</td>
<td>.45</td>
<td>.50</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>.38</td>
<td>.41</td>
<td>.47</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>.54</td>
<td>.43</td>
<td>.36</td>
</tr>
<tr>
<td>Heavy Equipment Operator</td>
<td>.57</td>
<td>.50</td>
<td>.60</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>.31</td>
<td>.38</td>
<td>.32</td>
</tr>
<tr>
<td>Data Processing Coordinator</td>
<td>.49</td>
<td>.53</td>
<td>.52</td>
</tr>
</tbody>
</table>
Table 17
Convergent Validity Means of the Job X Practice Interaction (Based on Only Items That Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th>Job</th>
<th>No Practice</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Secretary</td>
<td>.50</td>
<td>.38</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>.42</td>
<td>.42</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>.47</td>
<td>.42</td>
</tr>
<tr>
<td>Heavy Equipment Operator</td>
<td>.54</td>
<td>.57</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>.33</td>
<td>.34</td>
</tr>
<tr>
<td>Data Processing Coordinator</td>
<td>.46</td>
<td>.56</td>
</tr>
</tbody>
</table>
Table 18
Convergent Validity Means of the Job X Information X Practice Interaction (Based on Only Items That Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th></th>
<th>Title-Only</th>
<th>Short Summary</th>
<th>Extensive Information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No-P</td>
<td>P</td>
<td>No-P</td>
</tr>
<tr>
<td>Exec</td>
<td>.48</td>
<td>.26</td>
<td>.56</td>
</tr>
<tr>
<td>Court</td>
<td>.42</td>
<td>.35</td>
<td>.34</td>
</tr>
<tr>
<td>Street</td>
<td>.58</td>
<td>.50</td>
<td>.42</td>
</tr>
<tr>
<td>Hvy Eq</td>
<td>.55</td>
<td>.58</td>
<td>.42</td>
</tr>
<tr>
<td>Warrant</td>
<td>.29</td>
<td>.33</td>
<td>.40</td>
</tr>
<tr>
<td>DPC</td>
<td>.39</td>
<td>.60</td>
<td>.52</td>
</tr>
</tbody>
</table>

Abbreviations
Exec - Executive Secretary
Court - Court Clerk
Street - Streets and Traffic Laborer
Hvy Eq - Heavy Equipment Operator
Warrant - Warrant Officer
DPC - Data Processing Coordinator
No-P - No Practice
P - Practice
Table 19

Convergent Validity For the Executive Secretary Job:
Analysis of Variance Summary Table and Information
Group Means (Based on Only Items That Experts Thought
Applied to the Job)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0423</td>
<td>3.10 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.1061</td>
<td>7.77 **</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0734</td>
<td>5.37 **</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0137</td>
<td></td>
</tr>
</tbody>
</table>

** p < .02
* p = .06

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>.37</td>
</tr>
<tr>
<td>Short Summary</td>
<td>.45</td>
</tr>
<tr>
<td>Extensive Information</td>
<td>.50</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the information group means.
Table 20

Convergent Validity For the Court Clerk Job:

Analysis of Variance Summary Table and Information

Group Means (Based on Only Items That Experts Thought
Applied to the Job)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0196</td>
<td>1.29</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0003</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0309</td>
<td>2.04</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

Mean

Title-Only      .38
Short Summary   .41
Extensive Information  .47

The Newman-Keuls test indicated no significant differences among the three information group means.
Table 21
Convergent Validity For the Streets and Traffic Laborer Job: Analysis of Variance Summary Table and Information Group Means (Based On Only Items That Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0795</td>
<td>3.02</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0187</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0066</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0263</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

Title-Only       .54
Short Summary    .43
Extensive Information .37

The Newman-Keuls test indicated no significant differences among the three information group means.
Table 22

Convergent Validity For the Heavy Equipment Operator
Job: Analysis of Variance Summary Table and
Information Group Means (Based on Only Items
That Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0258</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0063</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0428</td>
<td>1.64</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0261</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
</tr>
<tr>
<td>Short Summary</td>
</tr>
<tr>
<td>Extensive Information</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the three information group means.
Table 23
Convergent Validity For the Warrant Officer Job:
Analysis of Variance Summary Table and Information
Group Means (Based on Only Items Experts Thought
Applied to the Job)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0159</td>
<td>1.15</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0012</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0037</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0138</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

Title-Only       .31
Short Summary    .38
Extensive Information .32

The Newman-Keuls test indicated no significant differences among the information group means.
Table 24

Convergent Validity For the Data Processing Coordinator Job: Analysis of Variance Summary Table and Information Group Means (Based on Only Items Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0033</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0808</td>
<td>4.92 *</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0258</td>
<td>1.57</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0164</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
</tr>
<tr>
<td>Short Summary</td>
</tr>
<tr>
<td>Extensive Information</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among information group means.
Table 25
The Executive Secretary Job: Convergent Validity Means of the Information X Practice Interaction
(Based on Only Items Experts Thought Applied to the Job)

<table>
<thead>
<tr>
<th></th>
<th>Extensive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Title-Only</td>
</tr>
<tr>
<td>No Practice</td>
<td>.48</td>
</tr>
<tr>
<td>Practice</td>
<td>.26</td>
</tr>
<tr>
<td>Source</td>
<td>df</td>
</tr>
<tr>
<td>--------------------</td>
<td>----</td>
</tr>
<tr>
<td>Information (I)</td>
<td>2</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
</tr>
<tr>
<td>Job (J)</td>
<td>5</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
</tr>
<tr>
<td>I X J</td>
<td>10</td>
</tr>
<tr>
<td>P X J</td>
<td>5</td>
</tr>
<tr>
<td>I X P X J</td>
<td>10</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
</tr>
</tbody>
</table>

** p < .01
* p < .02
Table 27
Convergent Validity Means For Each Job
(Based on Items Coded Dichotomously as
Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Job</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Secretary</td>
<td>.50</td>
<td>A</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>.52</td>
<td>A</td>
</tr>
<tr>
<td>Data Processing Coordinator</td>
<td>.53</td>
<td>A</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>.38</td>
<td>B</td>
</tr>
<tr>
<td>Heavy Equipment Operator</td>
<td>.38</td>
<td>B</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>.40</td>
<td>B</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different.

Alpha = .05, DF = 144, MSE = .0192
Table 28

Analysis of Variance Summary Table: Interrater Reliability (Based on Items Coded Dichotomously as Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0341</td>
<td>4.16 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0407</td>
<td>4.97 *</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0002</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>30</td>
<td>.0082</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
Table 29

Convergent Validity For the Executive Secretary Job:
Analysis of Variance Summary Table and Information
Group Means (Based on Items Dichotomously Coded as
Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0578</td>
<td>2.71 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0138</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0008</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0214</td>
<td></td>
</tr>
</tbody>
</table>

* p = .09

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
</tr>
<tr>
<td>Short Summary</td>
</tr>
<tr>
<td>Extensive Information</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the information group means.
Table 30

Convergent Validity For the Court Clerk Job:

Analysis of Variance Summary Table and Information

Group Means (Based on Items Dichotomously Coded as Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0743</td>
<td>3.30 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0105</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I x P</td>
<td>2</td>
<td>.0043</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0225</td>
<td></td>
</tr>
</tbody>
</table>

* p = .05

Information Group Means

Title-Only    .42
Short Summary .57
Extensive Information .58

The Newman-Keuls test indicated no significant differences among the information group means.
Table 31

Convergent Validity For the Streets and Traffic Laborer Job: Analysis of Variance Summary Table and Information Group Means (Based on Items Dichotomously Coded as Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0016</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0492</td>
<td>1.89</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0758</td>
<td>2.91</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0261</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
</tr>
<tr>
<td>Short Summary</td>
</tr>
<tr>
<td>Extensive Information</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the information group means.
Table 32
Convergent Validity For the Heavy Equipment Operator Job: Analysis of Variance Summary Table and Information Group Means (Based on Items Dichotomously Coded as Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0384</td>
<td>5.24 *</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0589</td>
<td>8.03 *</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0110</td>
<td>1.49</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0073</td>
<td></td>
</tr>
</tbody>
</table>

* p < .02

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>.38</td>
</tr>
<tr>
<td>Short Summary</td>
<td>.32</td>
</tr>
<tr>
<td>Extensive Information</td>
<td>.44</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different. Alpha = .05, DF = 24, MSE = .0073
Table 33

Convergent Validity For the Warrant Officer Job: Analysis of Variance Summary Table and Information Group Means (Based on Items Dichotomously Coded as Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0351</td>
<td>2.00</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0018</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0601</td>
<td>3.43 *</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0175</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Information Group Means

Title-Only .35
Short Summary .46
Extensive Information .39

The Newman-Keuls test indicated no significant differences among information group means.
Table 34
Convergent Validity For the Data Processing Coordinator Job: Analysis of Variance Summary
Table and Information Group Means (Based on Items Dichotomously Coded as Applies or Does Not Apply)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>.0146</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>.0962</td>
<td>4.64 *</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>.0262</td>
<td>1.26</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>.0207</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
</tr>
<tr>
<td>Short Summary</td>
</tr>
<tr>
<td>Extensive Information</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among information group means.
Table 35

The Warrant Officer Job: Convergent Validity Means of the Information X Practice Interaction
(Based on Items Dichotomously Coded as Applies or Does Not Apply)

<table>
<thead>
<tr>
<th></th>
<th>Extensive Information</th>
<th>Title-Only</th>
<th>Short Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Practice</td>
<td></td>
<td>.32</td>
<td>.53</td>
</tr>
<tr>
<td>Practice</td>
<td></td>
<td>.38</td>
<td>.39</td>
</tr>
</tbody>
</table>
Table 36

Subjects' and Experts' Averaged Total Rating
Scores For Each of the Six Jobs

<table>
<thead>
<tr>
<th>Job</th>
<th>Subjects</th>
<th>Experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Secretary</td>
<td>277.33</td>
<td>172.00</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>253.67</td>
<td>181.50</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>326.47</td>
<td>170.00</td>
</tr>
<tr>
<td>Heavy Equipment Operator</td>
<td>315.33</td>
<td>160.00</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>334.70</td>
<td>171.50</td>
</tr>
<tr>
<td>Data Processing Coordinator</td>
<td>274.23</td>
<td>168.00</td>
</tr>
</tbody>
</table>
Table 37

Absolute Value Differences Between Total Rating Scores
of Experimental Groups and Experts -- Analysis of
Variance Table

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>825.04</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>120073.34</td>
<td>21.90 *</td>
</tr>
<tr>
<td>Job (J)</td>
<td>5</td>
<td>39648.95</td>
<td>7.23 *</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>1376.27</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X J</td>
<td>10</td>
<td>6708.16</td>
<td>1.22</td>
</tr>
<tr>
<td>P X J</td>
<td>5</td>
<td>3720.78</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P X J</td>
<td>10</td>
<td>5791.07</td>
<td>1.06</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
<td>5482.72</td>
<td></td>
</tr>
</tbody>
</table>

* p < .001
Table 38

**Absolute Value Differences Between Total Rating Scores**

of Experimental Groups and Experts -- Job Means

<table>
<thead>
<tr>
<th>Job</th>
<th>Mean</th>
<th>Newman-Keuls Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrant Officer</td>
<td>165.23</td>
<td>A</td>
</tr>
<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>157.93</td>
<td>A</td>
</tr>
<tr>
<td>Heavy Equipment Operator</td>
<td>156.13</td>
<td>A</td>
</tr>
<tr>
<td>Executive Secretary</td>
<td>108.80</td>
<td>B</td>
</tr>
<tr>
<td>Data Processing Coordinator</td>
<td>108.77</td>
<td>B</td>
</tr>
<tr>
<td>Court Clerk</td>
<td>75.10</td>
<td>B</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different.

Alpha = .05, DF = 144, MSE = 5482.72
Table 39

**Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts -- Analysis of Variance Summary Table and Information**

**Group Means For the Executive Secretary Job**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>1938.70</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>22086.53</td>
<td>3.62</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>1467.24</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>6106.68</td>
<td></td>
</tr>
</tbody>
</table>

**Information Group Means**

<table>
<thead>
<tr>
<th>Title</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
<td>120.50</td>
</tr>
<tr>
<td>Short Summary</td>
<td>93.40</td>
</tr>
<tr>
<td>Extensive Information</td>
<td>112.50</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the information group means.
Table 40

Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts -- Analysis of Variance Summary Table and Information

Group Means For the Court Clerk Job

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>73.30</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>5174.53</td>
<td>1.60</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>3029.24</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>3231.07</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

<table>
<thead>
<tr>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only</td>
</tr>
<tr>
<td>Short Summary</td>
</tr>
<tr>
<td>Extensive Information</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the information group means.
Table 41

Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts -- Analysis of Variance Summary Table and Information Group Means For the Streets and Traffic Laborer Job

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>17564.64</td>
<td>2.42</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>28582.53</td>
<td>3.94 *</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>11543.64</td>
<td>1.59</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>7256.37</td>
<td></td>
</tr>
</tbody>
</table>

* p < .06

Information Group Means

<table>
<thead>
<tr>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title-Only 115.50</td>
</tr>
<tr>
<td>Short Summary 159.00</td>
</tr>
<tr>
<td>Extensive Information 199.30</td>
</tr>
</tbody>
</table>

The Newman-Keuls test indicated no significant differences among the information group means.
Table 42
Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts — Analysis of Variance Summary Table and Information Group Means For the Heavy Equipment Operator Job

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>10096.14</td>
<td>1.69</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>43777.20</td>
<td>7.34 *</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>1633.60</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>5963.78</td>
<td></td>
</tr>
</tbody>
</table>

* p < .02

Information Group Means

Title-Only 141.40
Short Summary 192.60
Extensive Information 134.40

The Newman-Keuls test indicated no significant differences among information group means.
Table 43

Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts -- Analysis of Variance Summary Table and Information Group Means For the Warrant Officer Job

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information (I)</td>
<td>2</td>
<td>1751.64</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Practice (P)</td>
<td>1</td>
<td>3898.80</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>I X P</td>
<td>2</td>
<td>10482.70</td>
<td>1.52</td>
</tr>
<tr>
<td>Error</td>
<td>24</td>
<td>6904.60</td>
<td></td>
</tr>
</tbody>
</table>

Information Group Means

| Title-Only   | 176.80 |
| Short Summary| 150.80 |
| Extensive Information | 168.10 |

The Newman-Keuls test indicated no significant differences among the information group means.
Table 44

Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts —
Analysis of Variance Summary Table and Information Group Means For the Data Processing Coordinator Job

<table>
<thead>
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<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
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<tr>
<td>Information (I)</td>
<td>2</td>
<td>2941.44</td>
<td>&lt; 1</td>
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<tr>
<td>Practice (P)</td>
<td>11</td>
<td>35157.63</td>
<td>10.24 *</td>
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<tr>
<td>I X P</td>
<td>2</td>
<td>2175.24</td>
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<tr>
<td>Error</td>
<td>24</td>
<td>3433.85</td>
<td></td>
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</tbody>
</table>

* p < .01

Information Group Means

Title-Only 119.70
Short Summary 117.60
Extensive Information 89.00

The Newman-Keuls test indicated no significant differences among the information group means.
Table 45

Absolute Value Differences Between Total Rating Scores of Experimental Groups and Experts
-- Practice Condition Means of the Executive Secretary, Streets & Traffic Laborer, Heavy Equipment Operator, and Data Processing Coordinator Jobs

<table>
<thead>
<tr>
<th>Job</th>
<th>No Practice</th>
<th>Practice</th>
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</thead>
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<tr>
<td>Executive Secretary</td>
<td>135.93</td>
<td>81.67</td>
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<tr>
<td>Streets &amp; Traffic Laborer</td>
<td>188.80</td>
<td>127.07</td>
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<tr>
<td>Heavy Equipment Operator</td>
<td>194.33</td>
<td>117.93</td>
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<tr>
<td>Data Processing Coordinator</td>
<td>143.00</td>
<td>74.53</td>
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</tbody>
</table>
APPENDIX
JOB TITLE -- STREETS AND TRAFFIC LABORER

Streets and Traffic Department
JOB TITLE -- STREETS AND TRAFFIC LABORER

Streets and Traffic Department

The Streets and Traffic laborer performs a variety of maintenance and repair tasks. All work equipment must be cleaned and maintained. This position requires the use of a variety of tools and the operation of light and heavy equipment. Such equipment includes light trucks, jetting machines, air hammers, compressors, chain saws, and water pumps. The Streets and Traffic Laborer performs crack sealing work and repairs streets. This laborer must be skilled in equipment use and maintenance, driving techniques, and safety procedures. The laborer is expected to maintain appropriate licenses if required, and conduct courteous and professional public relations. This position requires a working knowledge of departmental policies and procedures, city facilities and geographic make-up of the city.
JOB TITLE -- STREETS AND TRAFFIC LABORER

Streets and Traffic Department

TASK STATEMENTS

I. Safety Procedures
1. Directs the tasks of other employees doing work related to the equipment that employees operate.
2. Sets up barriers around work areas.
3. Directs traffic around work areas on busy streets.
4. Utilizes tools and safety equipment (for example, goggles, gloves, etc.) properly.
5. Inspects safety equipment to ensure working order.
6. Establishes safe work area.

II. Public Relations
7. Responds to complaints/inquiries received in the field from the public.
8. Notifies supervisor in regard to requests/situations which requires his attention, action, or decision.
9. Keeps up-to-date on resident's special needs for changing situations (for example, unfriendly dogs).
10. Responds to service calls.

III. Maintenance Duties
11. Ensures tools and equipment are clean and serviceable.
12. Performs needed preventive maintenance of equipment (at operator's level).
13. Checks equipment daily for needed maintenance and ensures that regular maintenance has been performed.
14. Reports need for additional repair/maintenance of machinery, equipment, and vehicles.
15. Ensures tools and equipment are returned after use.

IV. Crack Sealing Work
17. Applies cover (for example, sand) to sealed cracks.
18. Leave work area clean.

V. Street Repair Work
19. Prepares area to be repaired.
20. Lays asphalt.
22. Sets up frames for cement (for example, sidewalks).
23. Pours, trowels, and finishes cement.
24. Leaves work area clean.
VI. Operating Equipment
25. Operates light trucks.
26. Operates jetting machine to clear storm inlets and manholes.
27. Operates air hammer/compressor.
29. Operates other miscellaneous light equipment (water pumps).
JOB TITLE -- WARRANT OFFICER

Police Department
JOB TITLE -- WARRANT OFFICER

Police Department

The primary duty of the Warrant Officer is to serve warrants by phone or physical arrest when necessary. This duty requires gathering information on wanted individuals. The warrants must be carefully filed and documented. Effective completion of the primary duty of this position requires that the Warrant Officer be proficient in officer skills, such as driving techniques, radio communications, citizen relations, and criminal investigation. As all police officers, the Warrant Officer must be knowledgable in the use of officer safety traits, officer safety prisoner traits, and duty and off-duty weapons. This position requires the use of professional telephone procedures. The Warrant Officer is required to complete forms and reports, and maintain departmental equipment. A working knowledge of departmental policies and procedures, city ordinances, the Penal Code, and the Code of Criminal Procedure is required. Each Warrant Officer is expected to maintain and further professional police standards and conduct courteous, empathetic and professional relations
with citizens.
JOB TITLE -- WARRANT OFFICER

Police Department

TASK STATEMENTS

I. Field and Warrant Activities

1. Responds to coded calls.
2. Handcuffs prisoners.
3. Searches prisoner or vehicle.
4. Serves warrants.
5. Contacts all wanted individuals on all outstanding warrants.
6. Contacts place of employment of wanted individuals.
7. Goes to residence or place of employment to gather information.
8. Notifies patrol personnel of wanted individuals to be aware of.
9. Serves warrant by physical arrest when phone contact is not successful.
10. Applies the Penal Code to normal and criminal activity.
11. Applies the Code of Criminal Procedure to normal and criminal activity.

II. Radio Duties

12. Uses radio in accordance with set policy.
15. Makes written record of radio transmissions.

III. Public Relations

16. Behaves in a courteous and empathetic manner to citizens.
17. Communicates in a professional manner.

IV. Use of Weapons

18. Avoids exposing weapons (baton, handgun) to suspects and prisoners.
20. Keeps potential weapons out of prisoner's reach.

V. Safety Duties and Precautions

22. Controls suspect's and prisoner's movements.
23. Checks out of car.
24. Avoids standing too close to vehicular traffic.
25. Avoids standing in front of door of residence when knocking.
26. Maintains sight and/or control of multiple suspects.
27. Wears identifying clothing during search, arrest, or raid.
28. Advises other units of location, identity, or activity.
29. Prevents prisoner attack or escape.
30. Understands and adheres to principles of officer safety.

VI. Telephone Duties
31. Answers phone.
32. Explains warrant procedure to callers.
33. Places incoming calls in priority sequence.
34. Interprets and routes calls.

VII. Filing Documentation and Miscellaneous Duties
35. Files and documents warrants.
36. Types warrant cards.
37. Completes routine and detailed forms.
38. Provides preventive maintenance for equipment assigned to Warrant Office.
39. Keeps an inventory of all equipment assigned to Warrant Office.
40. Keeps maintenance records for all equipment.
41. Researches and implements new systems for orderly filing.
42. Documents new filing systems.
JOB TITLE -- EXECUTIVE SECRETARY

General and Administrative Services Department
JOB TITLE -- EXECUTIVE SECRETARY

General and Administrative Services Department

The position of Executive Secretary involves primarily the performance of administrative, service, and secretarial work. The Executive Secretary prepares information packets for council members and budget packets for General & Administrative and Legal budgets. The Executive Secretary is responsible for knowing proper purchasing procedures, accounting procedures governing the payment of bills and signing of checks, the city's administrative structure, and procedures for obtaining information and reporting claims to the city's insurance agent. Knowledge of the laws governing the calling and conduct of public meetings, the requirements for publishing legal notices for public meetings, and the procedures for the preparation of meeting agendas is an important part of the Executive Secretary's position. The secretarial tasks involve typing correspondence, letters, reports, documents, and notices according to standard format, and composing and typing letters for supervisor's approval. The Executive Secretary is responsible for posting
agendas and legal notices, reviewing purchase orders, answering and screening telephone calls, taking messages, and responding to complaints and inquiries. The Executive Secretary must become proficient in the use of the city's computer system.
JOB TITLE -- EXECUTIVE SECRETARY

General and Administrative Services Department

TASK STATEMENTS

I. Handling Communications

1. Open and date mail and distribute it.
2. Ensure that outgoing mail enters circulation regularly.
3. Screen phone calls and visitors for supervisor.
4. Take messages for supervisor and other employees.
5. Answer inquiries from other city departments, outside organizations, and the public.

II. Keeping Records of Operations

6. Make xerox copies of necessary documents, records, and correspondence.
7. Set up files of information, completed matters, and matters in progress.
8. File documents, records, and correspondence as they accumulate.
9. Maintain vehicle list.

III. Preparing and Typing Forms and Documents

10. Type and mail recurring notices.
11. Type correspondence and reports from supervisor's draft copy.
12. Compose and type routine letters for supervisor's approval.
13. Collect information and type employee forms.
14. Format and type regular reports according to standard procedure.
15. Prepare quarterly activity report.
16. Take and transcribe shorthand dictation.
17. Type documents, records, and correspondence from dictaphone.
18. Type budget submittal forms.

IV. Preparing For and Documenting Public Gatherings

19. Post agendas and legal notices.
20. Deliver legal notices to official newspaper for publication.
21. Mail copies of legal notices to affected parties.

V. Maintaining Supplies and Equipment

22. Maintain inventory of office supplies available
through Purchasing Agent.
23. Maintain inventory of special supplies not available through Purchasing Agent.
25. Oversee operation of the copier.

VI. Performing Accounting Duties
26. Issue receipts for all cash and checks received.

VII. Relating to the Public
27. Respond to complaints.
28. Direct complainant to proper person for handling if you are not the proper person.
29. Monitor and file "Request for Service."

VIII. Performing Miscellaneous Duties
30. Schedule appointments and meetings for supervisor.
31. Make travel arrangements for supervisor and others.
32. Collect and organize data from files and records as requested by supervisor.
33. Provide information to insurance company concerning city vehicle accidents.
34. Assign routine typing or filing to others as appropriate.
35. Carry out special assignments for supervisor as requested.

VIII. Performing City Manager's Office Duties
36. Prepare weekly packets of information for Council members.
37. Process requests for public hearings.
38. Accept payment for sale of city ordinances, codes, and maps.
40. Sign city checks for City Manager.
41. Open and stamp all city bills.
42. Estimate revenues and expenditures and prepare budget packages for General and Administrative and Legal budget.
43. Submit request to purchase.
JOB TITLE -- DATA PROCESSING COORDINATOR

Finance Department
JOB TITLE -- DATA PROCESSING COORDINATOR

Finance Department

The Data Processing Coordinator has a number of primary duties. These tasks include supervision of work in the accounting section, management of city cash, maintenance and distribution of accounting records through terminals, and supervision of data processing activities. This latter duty involves the operation of the department's centralized data processing equipment, training of departmental personnel in the use of data processing equipment, and responsibility for adequate maintenance of equipment. Maintenance of the city's accounting records involves the development of systems to enter, and the storage and retrieval of data through the data processing equipment. Management of city cash entails ensuring adequate supply of funds and investment of idle cash. Supervision of the accounting section includes the review of purchase orders, payroll vouchers, and invoices; the posting and balancing of general and subsidiary ledgers through the terminal system; and preparation of monthly printouts of departmental revenues and expenditures. The Data Processing
Coordinator responds to complaints and inquiries, or directs complaints and inquiries to the appropriate individual. Miscellaneous duties, such as running checks through the signature graph machine, signing checks, and setting the payment schedules for each contractor working on city projects, are the responsibility of the Data Processing Coordinator. The position requires a working knowledge of municipal accounting procedures and departmental policies and procedures.
JOB TITLE -- DATA PROCESSING COORDINATOR

Finance Department

TASK STATEMENTS

I. Supervising Work of Accounting Section
   1. Check coding of purchase orders and approve them.
   2. Check calculations and coding of bookkeepers in paying vendor bills.
   3. Review all vouchers.
   4. Identify appropriations requiring council approval.
   5. Review invoices.
   6. Review reports of payroll withholdings and deductions.

II. Performing Financial Transactions
   7. Deposit receipts with bank.
   8. Ensure that adequate cash is available to cover checks drawn on city account.
   9. Keep adequate balance at required level to avoid service charge.
  10. Invest idle cash in certificates of deposit, t-bills, and repurchase agreements to earn maximum interest revenue.
  11. Transfer money to and from funds as necessary.

III. Performing Accounting Duties
   12. Post revenues and expenditures through terminal.
   13. Post and balance general and subsidiary ledgers on computer.
   14. Write monthly journal entries.
   15. Prepare monthly printouts of departmental revenues and expenditures.
   16. Reconcile bank statement and bank records to correct balance for each fund.
   17. Prepare various reports, such as revenue sharing grants.

IV. Relating to the Public
   18. Answer inquiries from other city departments, outside organizations, and the public.
   19. Respond to complaints.
   20. Refer complainant to the proper person for handling if you are not the proper person.
   21. Compose routine correspondence to vendors or utility customers.

V. Supervising Data Processing Activities
22. Will manage and operate the department's centralized data processing equipment.
23. Shall develop and enter formats to ensure that all necessary departmental information is entered and stored.
24. Shall sufficiently train all departmental personnel that will on a regular basis need to enter and retrieve information from the data processing equipment.
25. Shall represent the department with vendors and service contractors to ensure that adequate maintenance and necessary modifications are undertaken.

VI. Performing Miscellaneous Duties
26. Maintains filing system.
27. Research and investigation of assignments, and development of supporting documentation when applicable.
28. Submission of reports and recommendations after research.
29. Run checks through signature graph machine.
30. Sign vendor checks.
31. Set up payment schedule for each contractor working on city projects.
JOB TITLE -- HEAVY EQUIPMENT OPERATOR

Solid Waste Department
JOB TITLE -- HEAVY EQUIPMENT OPERATOR
Solid Waste Department

The Heavy Equipment Operator is primarily responsible for the operation and maintenance of heavy city equipment. The operation and maintenance of some light equipment, power tools, and hand tools is also a responsibility of the Heavy Equipment Operator. The Heavy Equipment Operator in the Solid Waste Department is responsible for burying solid waste. This task requires a knowledge of the geographic boundaries of the landfill site, as well as of the location of buried garbage, trash, debris, and brush. The position of Heavy Equipment Operator requires a working knowledge of departmental task procedures, equipment operation and maintenance, the geographical make-up of the city, safety procedures, departmental policies and procedures, and federal, state, and local rules and regulations.
JOB TITLE -- HEAVY EQUIPMENT OPERATOR

Solid Waste Department

TASK STATEMENTS

I. Heavy Equipment Use

1. Operates bulldozer.
2. Operates backhoe.
3. Operates front-end loader.
4. Operates tractor/dozer.
5. Operates heavy trucks.
6. Operates drag line.
7. Operates asphalt roller (steel wheel).

II. Light Equipment and Tool Use

8. Operates light trucks.
9. Operates tractor mower.
10. Operates water pumps.
11. Operates jetting machine to clear storm inlets and manholes.
12. Operates air hammer/compressor.
13. Operates chain saw (for example, to clear fallen trees and limbs from street).
15. Operates other miscellaneous light equipment (for example, water pumps, motor driven chain).
16. Operates tools (shovels, grease gun, hand tools)

III. Equipment Maintenance Duties

17. Ensure vehicle, tools, and equipment are clean and serviceable.
18. Perform needed preventive maintenance of equipment (at operator's level).
19. Check equipment daily for needed maintenance and ensure that regular maintenance has been performed.
20. Report need for additional repair/maintenance of machinery, equipment, and vehicles.
21. Ensure tools and equipment are returned after use.

IV. Safety Duties

22. Directs the tasks of other employees doing
work related to the equipment being operated.

23. Establishes safe work area (for example, set up barriers).
24. Directs and control traffic around work area on busy streets.
25. Uses proper safety equipment (for example, goggles, gloves, etc.)
26. Follows established safety procedures.
27. Ensures that safety equipment is maintained and functioning properly.

V. Public Relations
28. Presents a favorable image when dealing with the public.
29. Responds to complaints/inquiries received in the field from the public.
30. Notifies supervisor in regards to requests/situations which require his attention, action, or decision.
31. Keeps up-to-date on residents' special needs or changing situations.

VI. Solid Waste
32. Collect, bury, and covers solid waste according to proper burial procedures.
33. Dig trenches, holes to deposit solid waste.
34. Maintains service roads, trenches and drainage areas in clean and passable condition.
35. Keeps operating areas clean.
36. Directs trucks to location of dumping areas.
37. Keeps proper tools on vehicles (for example, shovels, grease gun, hand tool, etc.).
JOB TITLE -- COURT CLERK

Municipal Courts Department
JOB TITLE -- COURT CLERK

Municipal Courts Department

The Court Clerk has two primary tasks. The first task involves performing a variety of clerical duties in connection with the procedures and record keeping of a court of law. Supervising, training, and directing subordinates in court clerical work is the second primary task of the Court Clerk. Court clerical work involves keeping the financial records of court fees and fines, preparing the court dockets and schedules, and completing the paperwork for each court case. Officers and witnesses must be present in court as required. The Court Clerk is responsible for setting up and maintaining the Municipal Court filing system, typing various reports and documents, and preparing routine reports when necessary. The Court Clerk must be proficient in the use and care of office equipment and the computer system. This position requires a working knowledge of municipal court procedures, the geographic make-up of the city, the code of criminal procedure, the penal code, traffic laws, and city ordinances. Each Court Clerk is
responsible for the maintenance and furthering of the professional standards of the Municipal Court.
JOB TITLE -- COURT CLERK

Municipal Courts Department

TASK STATEMENTS

I. Court Scheduling Duties

1. Schedules court dockets.
2. Subpoenas officers for court.
4. Assigns officers to dockets.
6. Assigns cases to dockets.
7. Schedules trials.
8. Uses computer to schedule courts.

II. Record Keeping Duties

10. Completes receipts.
12. Keeps records of amounts collected.
13. Provides for security of cash deposits.
14. Collects court fees or fines.
15. Files and processes records.
17. Records dispositions.
18. Files court records.

III. Routine Form Duties

19. Completes routine forms.
20. Completes time sheets correctly and on time.
22. Completes detailed forms.
23. Works out subordinates' schedule.

IV. Telephone Duties

24. Answers the telephone promptly, properly, and speaks clearly and distinctly.
25. Explains Municipal Court procedures.
26. Places incoming calls in a professional manner, speaking clearly and distinctly.
27. Interprets routine calls.

V. Supervisory Duties

28. Communicates with subordinates.
29. Explains directives and policies.
30. Corrects subordinates in deficient areas.
31. Trains subordinates in completing forms.
32. Corrects subordinates for recordkeeping mistakes.
33. Trains subordinates in proper recordkeeping.
34. Trains co-workers and subordinates in operation of equipment.

VI. Public Relations and Miscellaneous Duties
35. Conducts courteous, friendly, and empathetic relations with citizens.
36. Communicates in a professional manner.
37. Researches policies and procedures.
38. Provides maintenance for equipment.
39. Attends schools using personal time and resources.
40. Uses personal time to conduct research in new procedures and legal opinions.
41. Trains others in new procedures.
42. Applies the Code of Criminal Procedure to normal and criminal activity.
43. Applies the Penal Code to normal and criminal activity.