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A VALIDITY STUDY OF POLICE OFFICER SELECTION, TRAINING AND PROMOTION

VOLUME IV

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PREFACE

This report describes a comprehensive study of the City of Houston Police Department's selection, training, and promotional procedures. The report is divided into nine volumes as follows:

Volume I	Research Overview, Summary and Bibliography for the Validity Study of Selection, Training and Promotion within the Houston Police Department
Volume II	Analysis of the Labor Force Composition within the Recruiting Area of the Houston Police Department
Volume III	Adverse Impact Analyses of the Selection, Training, Assignment and Promotion Procedures of the Houston Police Department
Volume IV	Job Analysis of Positions within the Houston Police Department
Volume V	Evaluation of the Selection Requirements of the Houston Police Department
Volume VI	Validation of the Physical Requirements for the Selection of Police Officers
Volume VII	Validation of the Personal Background Requirements for the Selection of Police Officers
Volume VIII	Evaluation and Validation of the Houston Police Department Academy and Probationary Training Period
Volume IX	Validation of the Houston Police Department Promotional Process

While each volume is intended to stand alone as a unified component of the study, much of the data is referred to in several volumes, but presented in detail in only one volume. For example, the job analysis data reported in Volume IV

served as a foundation for the research described in Volumes V through IX. Consequently, at times the reader will need to refer to two or more volumes to obtain a comprehensive understanding of a specific component of the research.

It is expected that this report will be read by individuals who have a wide range of familiarity with the technical nature of the research study. Consequently, the authors have attempted to provide sufficient explanations of research methodology, statistical analyses, etc., to facilitate understanding by readers who do not have formal training or experience in the applied demographic and psychological research disciplines. At the same time, however, the authors have included appropriate technical information in the report, whereby professionals experienced in demographic and validation research can review the work of the research team.

Appendix A of Volume I is a comprehensive bibliography. The bibliography also contains detailed descriptions of reference materials cited or quoted (referred to by author and date) throughout <u>all</u> volumes of the report.

VOLUME IV

JOB ANALYSES OF POSITIONS

WITHIN THE HOUSTON POLICE DEPARTMENT

studied in the validity analysis portion of this project are directly associated with this one position. The study of the validity of the promotional process within the Houston Police Department (see Volume IX of this report), of course, required use of the job analysis data obtained for the non-entry level positions.

The remainder of this volume is organized so that the reader may obtain an understanding of each of the major job analysis methodologies utilized in this study, and the results associated with each of the techniques. The one exception is the job analysis conducted specifically for determining the physical requirements for the entry and police officer job. (This job analysis is reported in Volume VI.) Chapter 2 describes the importance of job analysis to validation research, and Chapter 3 presents an overview of the job analysis methods used in this study. Chapter 4 gives a brief review of the role of the police officer, and Chapter 5 is a brief summary of all the job analysis results obtained in this study. Chapters 6 through 11 describe job analysis data relevant to Class A positions, while Chapter 12 presents the results of the job analysis of the Class B and C jobs within the Department.

Because of the size of this volume, the appendices that accompany the main body of the text have been printed under a separate cover, entitled Appendices to Volume IV.

CHAPTER 2

THE IMPORTANCE OF JOB ANALYSIS

While the job analysis process always has been a fundamental and initial step to any validation study throughout the history of applied psychological research, it was of extreme importance to the present study. A major reason for the extensive emphasis placed on job analysis in this project has been the result of recent court action and legislation. For example, in Moody et al v Albermarle Paper Company, the United States Supreme Court in June, 1975 (commenting on the work of Albermarle's industrial psychologist engaged to validate the job relatedness of Albermarle's selection process), stated that, "no attempt was made to analyze jobs in terms of the particular skills they might require." (Also, see the article by Sharf, 1975.)

The importance of job analysis also has had considerable impact in other recent court decisions. In Officers For Justice et al v Civil Service Commission of the City and County of San Francisco et al (May 2, 1975) the District Court found that, "In light of the problems with the job analysis performed and the inconclusive evidence on the extent to which the skills measured by the test are related to patrol performance, this court is of the opinion that the validity of the selection device has not been established." Similarly, failure to complete a thorough job analysis of maintenance department jobs was a major reason cited by the U.S. Court of Appeals (Fifth Circuit, New Orleans,

CHAPTER 1

INTRODUCTION

The foundation for the studies of the validity of the Houston Police Department's selection, training and promotional procedures was the job analysis phase of this research project. Job analysis is the analytical process of determining and documenting the essential components of a job in terms of the duties, tasks, behaviors and activities (i.e., the job content domain) that are performed by the job incumbents. [A comprehensive discussion of job analysis may be found in the text, Industrial Psychology (Tiffin and McCormick, 1970).] In turn, the results of the job analysis phase of the study have been used to document the job-relatedness of various selection, training and promotional procedures, as well as establish the parameters for all of the validity studies undertaken in the research program described in Volumes VI - IX of this report.

This volume of the research report describes the various job analysis procedures and results related to the documentation of the job content domains of all the commissioned positions within the Houston Police Department. The most important job analysis results are those related to the entry level uniformed police officer job, since the majority of the validity studies completed in this research program were oriented toward validating the selection and training standards for this position (see Volumes V, VI, VII and VIII of this report).

However, all commissioned positions, with the exception of the Assistant Chief and Chief of Police jobs, were analyzed and are discussed in this volume of the report.

Within the Civil Service classification system for commissioned officers in the Houston Police Department, there are three classes of personnel: Classes A, B and C. These classes were established by City of Houston Ordinance No. 4167 passed on August 16, 1949 and are defined in the minutes of the City of Houston Civil Service Commission meeting of August 8, 1949. The definition for each class as specified by the Commission's minutes are reproduced below:

Class A. "Uniformed and Detective Class. Embracing positions in the active branches of the Police Department and which include all those positions in the Headquarters, Uniformed and Detective Divisions of the Police Department, the duties of which involve directing the efficient operations of the Police Department and the enforcement of laws and ordinances, prevention of crimes, apprehension and guarding of criminals, controlling of traffic, conducting investigations, booking of prisoners and the maintenance of police records and similar and related duties which might be assigned.

Class B. "Technical Class. Embracing positions the duties of which require scientific and technical skill or

training for the efficient operation of the Identification Bureau, the duties of which involve preparation and maintenance of criminal identification records, fingerprinting, photography, microscopic and criminal analyses, ballistic measurements, fingerprint reproductions and comparison, handwriting comparisons, and general clerical duties."

Class C. "Communication Class. Embracing positions in the Radio Communications Division of the Police Department, the duties of which involve the efficient operation, maintenance and repair of the police radio station and receiving and transmitting sets, transmitting radio messages to other stations, and the dispatching of orders and announcements to all police officers."

Jobs in all of the above three classifications were analyzed during the study but attention was focused on the Class A positions.

Although there was a large number of different jobs analyzed as part of this study, the major emphasis of this volume of the report will be directed toward the job analysis results for the beginning level, Class A police officer position. This position was held by 2,026 individuals or 81 percent of all Class A personnel within the Department as of December 1, 1976. Additionally, the selection and training standards and procedures

studied in the validity analysis portion of this project are directly associated with this one position. The study of the validity of the promotional process within the Houston Police Department (see Volume IX of this report), of course, required use of the job analysis data obtained for the non-entry level positions.

The remainder of this volume is organized so that the reader may obtain an understanding of each of the major job analysis methodologies utilized in this study, and the results associated with each of the techniques. The one exception is the job analysis conducted specifically for determining the physical requirements for the entry and police officer job. (This job analysis is reported in Volume VI.) Chapter 2 describes the importance of job analysis to validation research, and Chapter 3 presents an overview of the job analysis methods used in this study. Chapter 4 gives a brief review of the role of the police officer, and Chapter 5 is a brief summary of all the job analysis results obtained in this study. Chapters 6 through 11 describe job analysis data relevant to Class A positions, while Chapter 12 presents the results of the job analysis of the Class B and C jobs within the Department.

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April 29, 1976) for concluding in Watkins et al v Scott Paper Company et al that the defendants had not shown that, "all maintenance crafts require the same job skills and that a test significant or valid for one craft is valid for another." Finally, the United States Supreme Court in Washington et al v Davis et al (June 7, 1976) cited job analysis data in concluding that a police department entrance test (Test 21) was a reasonable and valid selection device when the employer was, "seeking through Test 21 modestly to upgrade the communicative abilities of its employees rather than to be satisfied with some lower level of competence, particularly where the job requires special abilities to communicate orally and in writing."

The most recent legislative guidelines on the standards for validation research specify that a job analysis should be the foundation for all forms of validity (i.e., criterion-related, content and construct). Specifically, the job analysis should specify:

> "(a) the important duties performed on the job and the basis on which such duties were determined to be important, such as the proportion of time spent on the respective duties, their level of difficulty, their frequency of performance, the consequences of error or other appropriate factors; or (b) the knowledge, skills, abilities and/or other worker characteristics

and the bases on which they were determined to be important for job performance (ESSENTIAL)." (EEOCC, Employee Selection Procedures, Uniform Guidelines, Federal Register, July 14, 1976.)

The above guidelines further state that when criterion-related validity studies are undertaken as in the current research project:

"There should be a review of job information to determine measures of work behaviors or performance that are relevant to the job in question. The measures or criteria are relevant to the extent that they represent critical or important job duties, work behaviors or work outcomes as developed from the review of job information." (EEOCC, Employee Selection Procedures, Uniform Guidelines, Federal Register, July 14, 1976.)

With respect to content validity approaches, which also were employed in this research project, the guidelines specify:

"There should be a definition of a performance domain or the performance domains with respect to the job in question. Performance domains may be defined through job analysis, analysis of the work behaviors or activities, or by the

> pooled judgments of persons having knowledge of the job. Performance domains should be defined on the basis of competent information about job tasks and responsibilities. Performance domains include critical or important work behaviors, work products, work activities, job duties, or the knowledges, skills or abilities shown to be necessary for performance of the duties, behaviors, activities or the production of work." (EEOCC, Employee Selection Procedures, Uniform Guidelines, Federal Register, July 14, 1976.)

Finally, with respect to construct validity, also utilized in this research project, the Guidelines state:

> "There should be a job analysis. This job analysis should result in a determination of the constructs that underlie successful performance of the important or critical duties of the job." (EEOCC, Employee Selection Procedures, Uniform Guidelines, Federal Register, July 14, 1976.)

The Principles for the Validation and Use of Personnel Selection Procedures (1975) issued by the Division of Industrial-Organizational Psychology of the American Psychological Association also emphasizes the importance of job analysis, particularly in the

conduct of any validity study.

Considering the above, the extensive research effort directed toward the analysis of the police officer job in this research project was made in order to meet the requirements of professional practice and legislative guidelines, as well as to reflect the importance of job analysis established by recent court decisions. Additionally, job analysis is the key to the establishment of the job-relatedness of any employment-related practice. Consequently the job analysis results have considerable impact on one of the basic research objectives of this study.

CHAPTER 3

OVERVIEW OF JOB ANALYSIS PROCEDURES

Given the critical nature of job analysis to this research project, it is important to recognize that there are a variety of job analysis procedures that have application to this study. However, different procedures lead to different kinds of results. For example, the job analysis procedure of task analysis allows the researcher to document a job in terms of specific duties or tasks. However, such a procedure does not directly specify important job behaviors. On the other hand, a job analysis instrument known as the Position Analysis Questionnaire (PAQ), describes a job in terms of human behaviors, but does not focus on specific tasks. In practice, all forms of job analysis are acceptable under the most recent legislative guidelines, and they can provide valuable information about a job and its associated requirements. In this regard, task analysis data is most relevant for establishing job relatedness, developing criteria and demonstrating content validity. On the other hand, behavioral job analysis data can be most beneficial to establishing job requirements, determining the job-relatedness of certain personal/attitudinal characteristics, and identifying predictors and criteria for construct and criterion-related validity studies.

Because of the comprehensiveness of this research project and the various needs for job analysis data, there is no one job analysis method that could meet all the requirements of the

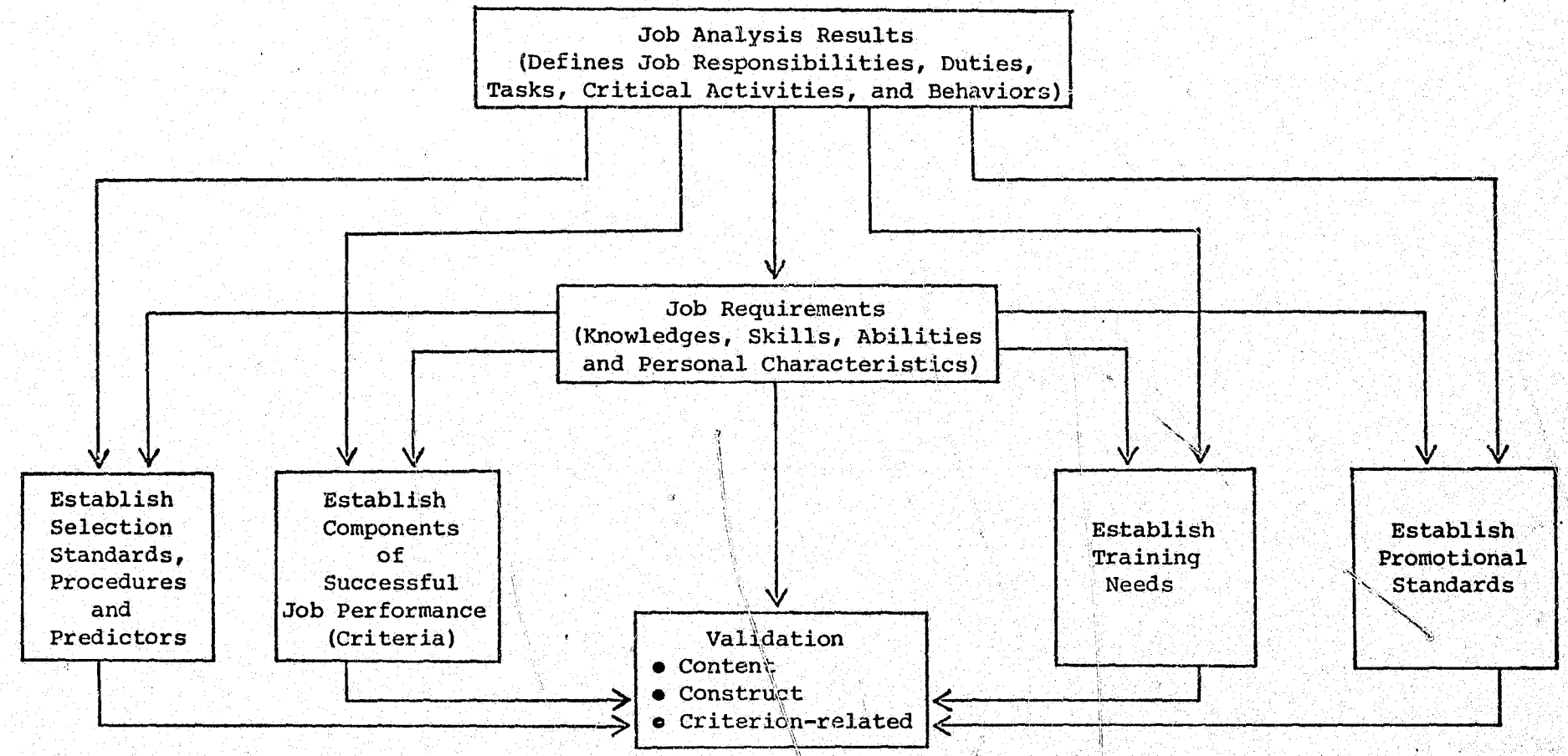
study. Further, when several job analysis methodologies are utilized to develop and document the content of a job, the results are considerably stronger and more reliable in support of very specific job requirements and selection standards. Consequently, several complimentary job analysis procedures were used in the conduct of this research project.

Job Analysis in Validation Research

As previously mentioned, job analysis data is the foundation for all validation research. The importance of the job analysis results as utilized in this study are described in Figure 1. As indicated, the job analysis results served as the basis for establishing the necessary knowledges, skills, abilities and personal characteristics required of individuals in the job. Once the job tasks, behaviors and requirements were known, it was possible to study the job relatedness and validity of various Houston Police Department personnel administration practices including the selection, training and promotion of officers. Thus, the job analysis results were used to determine what police officer applicant selection standards are appropriate, as well as to identify the important components of police officer performance. In turn, a validity analysis was completed to show the relationship between the selection standards and successful job performance. Similarly, job analysis results were needed to document the training that should be given to new officers in order for these individuals to perform effect-

Figure 1

ROLE OF JOB ANALYSIS IN THE VALIDATION RESEARCH



ively. In turn, the validity of the training was analyzed by showing its relationship to both job content and police officer job performance.

Job Analysis Procedures

Brief descriptions of the job analysis procedures utilized in this research project are given below:

Review of Source Materials: A large variety of written materials pertaining to various job assignments and activities within the Houston Police Department were reviewed by the researchers. These materials included departmental rules and regulations, training curricula and documents, organizational charts, job instructions, operating procedures manuals, personnel file data and similar information.

Review of Published Research: An extensive review was made of available published research on other job analyses of law enforcement positions.

Personal Interviews: Personal interviews were held with job incumbents and supervisors throughout the entire Houston Police Department. Many of these interviews were guided by a structured data collection format to organize the interview process and insure consistency across interviewers.

Direct Observations: Seven industrial psychologists who were members of the research team personally observed a large sample of police officers in the performance of their jobs during regular work shifts. Structured data collection forms were used by the psychologists to organize the observations and insure consistency across all observers.

Task Analysis: This procedure provided for the development of a questionnaire or inventory that included a detailed listing of all the duties and tasks that comprise the various law enforcement positions in the Houston Police Department. In turn, the task inventory was completed by a large sample of officers and supervisors. The task data subsequently was anlyzed by CODAP (Computerized Occupational Data Analysis Procedure) originally developed by the U. S. Air Force. A comprehensive description of the task analysis procedure is given in Morsh, et al (1961).

Critical Incident Technique: The critical incident technique developed by J. C. Flanagan (1954) was utilized particularly in the analysis of the Police Officer, Sergeant and Detective positions. Critical incidents are job behaviors that are considered to be "critical" to job performance. They include both

"positive" incidents which are indicative of exceptionally good job performance, as well as "negative" incidents that indicate unsatisfactory performance. The principle objective in using such incidents is in the determination of critical job requirements and performance criteria which have made the difference between success and failure in carrying out an important part of a job.

Position Analysis Questionnaire: The Position Analysis Questionnaire (PAQ) is a job analysis technique oriented toward identifying job behaviors rather than duties or tasks. The PAQ was utilized to provide supporting data to document important job requirements for most of the law enforcement positions within the Houston Police Department. A discussion of the PAQ is provided in McCormick, Jeanneret and Mecham (1972) and in Jeanneret and McCormick (1969).

Physical Task Inventory: A special questionnaire was developed to collect information on the physical activities of a large sample of individuals in the entry level police officer position. This inventory, known as the PTI, also provided for the collection of critical incidents associated with the physical components of the entry level police officer job (See Volume VI).

Work Diary: This procedure required officers in the entry level position to keep daily records regarding the physical activities involved in detaining or arresting individuals, as well as the characteristics (i.e., height, weight, etc.) of these individuals. The diaries were kept for one work week, and provided for the recording of data on an incident by incident basis (See Volume VI).

The job analysis procedures described above were implemented in a sequence whereby the research team was able to utilize the information gained from one analysis method in the conduct of another method. Specifically, reviews of source materials and published research were completed first, followed by the conduct of personal interviews and direct observations which were generally held during the same time period (i.e., from November 1975 through January 1976). The information obtained from the above job analysis methods was then used to construct a task analysis inventory which was administered during February and March of 1976.

As the job analyses methods were implemented, various members of the research team "specialized" in learning about particular types of police work that occur within the various divisions of the Houston Police Department. Thus, some job analysts concentrated on studying the jobs of officers working in the Patrol Division; others focused on the jobs of officers serving in

various criminal investigation divisions (i.e., Vice, Narcotics); etc. By the time the personal interview and direct observation job analysis methods had been completed, each member of the research team had become very familiar with the work of several different "types" of police officers throughout all ranks (i.e., Officer through Assistant Chief).

Those job analysts with a "specialized" knowledge about a particular type and level of work in the Department then participated in the construction of the task statements that were incorporated in the Task Analysis Inventory. These "specialized" analysts also participated in the analysis of the critical incident data and analyzed, with the PAQ, those jobs with which they were most familiar.

The Physical Task Inventory was constructed after the above methods (except for the PAQ analyses) were completed, and this inventory was administered during May and June 1976. Finally the specialized work diary was implemented in October 1976 to obtain information needed to complete the analysis of the physical job requirements.

A more comprehensive description of each of the job analysis procedures as implemented in this project are provided in the appropriate chapters of this volume of the report. Because the task analysis method was the most comprehensive procedure employed during this study, the task analysis process and results

CHAPTER 4

THE ROLE OF THE POLICE OFFICER

While the primary emphasis of this part of the study has been directed toward defining the police officer job content domain from objective job analysis data, it is also important to consider the job and its associated functions in terms of public expectations. That is to say, the police officer primarily serves the public and the other components of the criminal justice system; consequently, the police officer job must reflect and be carried out in a manner consistent with the needs and expectations of the people served by law enforcement personnel. While this particular study did not focus on obtaining data about law enforcement jobs from the public or other components of the criminal justice system, other significant research studies have been conducted from this perspective. Furthermore, results from such studies can provide a broader frame of reference for understanding the various facets and complexities of the police officer job. Accordingly, before presenting the job analysis results from the research team's study of positions within the Police Department, a brief review will be made of certain research findings from Project STAR (1976).

Project STAR was a research study "designed to assist in developing attitudes and behavior by the public and key operational criminal justice personnel that would enable achievement of the objectives of the criminal justice system in a more

effective manner." The study was conducted in four states including Texas. Two of the products of the study were definitions of the "roles" and "tasks" of a police officer. A role was defined "as the personal characteristics and behavior expected in a specific situation of an individual ..." A task was defined "as an activity to be accomplished within a role and which usually involves a sequence of steps and which can be measured in relation to time."

Thirteen roles were identified by Project STAR as being important for the police officer position.

- assisting criminal justice system and other appropriate agency personnel
- building respect for law and the criminal justice system
- providing public assistance
- seeking and disseminating knowledge and understanding
- collecting, analyzing, and communicating information
- managing cases
- assisting personnel and social development
- displaying objectivity and professional ethics
- protecting rights and dignity of individuals
- providing humane treatment
- enforcing law impartially
- enforcing law situationally
- maintaining order.

These roles are defined in detail in Appendix A.

Additionally, 33 tasks were identified as appropriate for the police officer position by Project STAR.

- advising
- booking and receiving inmates
- collecting and preserving evidence
- communicating
- conferring about cases

- contacting families of suspects and clients
- controlling crowds
- defending self and others
- deterring crime
- engaging in legal research
- engaging in professional development
- interacting with other agencies
- interviewing
- investigating
- making arrests
- managing interpersonal conflict
- moving inmates
- participating in community relations and educational programs
- participating in trial preparation conferences
- patrolling/observing
- preparing reports
- preparing search warrant requests
- recovering property
- referring
- regulating traffic
- responding to offender requests
- reviewing case materials
- searching and examining
- searching for fugitives
- testifying as a witness
- testing for drug and alcohol use
- training
- using and maintaining equipment

These tasks are defined in detail in Appendix B.

In addition to defining and reporting the role and task expectations for police officers, one component of the Project STAR study focused on the attitudes of the public regarding the desirability of selected police officer actions and behaviors. A demographically representative sample of 749 Texas adults (98 residing in the Houston Metropolitan area) were asked to rate the desirability of 27 selected police actions in various situations. The rating was completed on a 1 (very undesirable) to 5 (very desirable) scale. Reported in Table 1 are the situations and

actions that received an average desirability rating of 3.75 or higher among the survey respondents.

To briefly summarize, the Project STAR findings cited above define the job content of the police officer job in terms of public expectations. The primary themes that consistently emerged from the Project STAR results summarized in Table 1 are public expectations that police officers will deter crime, maintain order and provide reasonable and impartial enforcement of the laws. Further, in the performance of their duties, police officers are expected to conduct themselves in a highly objective, ethical and professional manner; communicate effectively; analyze situations quickly and fairly; provide positive guidance and assistance; and treat everyone humanely and with dignity. Thus, consistent with the findings of the President's Commission on Law Enforcement and the Administration of Justice (1967) in today's society, the police officer is expected to be concerned with both law enforcement and the social welfare of the public. Clearly, the police officer job has become one of the most sensitive public service positions of our time.

TABLE 1

DESIRABILITY OF SELECTED POLICE BEHAVIORS/ACTIONS AS REPORTED IN PROJECT STAR - PUBLIC OPINION OF CRIMINAL JUSTICE IN TEXAS

POLICE OFFICER SITUATION AND BEHAVIOR/ACTION	AVERAGE DESIRABILITY RATING[1]
In the general performance of their duties, police officers:	
Take every opportunity to prevent the occurrence of crimes	4.48
Are capable of recognizing and handling persons with emotional disorders	4.18
When performing duties involving large crowds such as sporting events, parades, and civic functions, police officers:	
Deter crimes such as picking pockets, snatching purses, and theft of autos	3.89
In regulating vehicle and pedestrian traffic, police officers:	
Observe all traffic regulations except when in an emergency or in pursuit status with proper warning devices operating	4.39
Listen to a violator's story before deciding whether to issue a citation or just a warning	4.30
Treat all violators equally regardless of the type of car, car decorations, and regardless of the appearance of passengers in the car	3.99
When responding to a request for assistance related to a family disturbance, police officers:	
Help resolve the problem in a way that will stregthen rather than weaken the family	4.22
When responding to requests for public service assistance, police officers:	
Treat each request seriously	4.34

POLICE OFFICER SITUATION AND BEHAVIOR/ACTION	AVERAGE DESIRABILITY RATING
When assigned to control civil disorders, police officers:	
Maintain disciplined behavior in confrontations with demonstrators	4.22
Make arrests with minimum use of physical force	4.22
When making an arrest, police officers:	
Instill an attitude of respect rather than fear	4.28
When holding a person accused of an offense, police officers:	
Treat the accused as if he were innocent	3.75
Explain to the accused exactly why actions are taken	4.31
When booking prisoners into a jail, police officers:	
Respect the dignity of the person being booked by treating him courteously	4.08
When participating in community relations and education programs, police officers:	
Stimulate citizen participation in crime prevention activities	4.22
Communicate effectively with citizen groups	4.15
Establish a friendly, helpful image	4.40

(1) Average rating on a five-point scale on which very desirable = 5 and very undesirable = 1. Number of respondents = 354 to 372 per item.

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CHAPTER 5

SUMMARY OF JOB ANALYSIS RESULTS

The chapters that follow provide an extensive discussion of the job analysis methodologies and findings associated with the study of the Class A, B and C positions within the Department. A brief summary of all findings is given in this chapter.

The Task Analysis process (Chapters 6 and 7) was the most extensive job analysis procedure employed in this study. The results obtained from the task analysis data are given in Chapter 8. Of prime importance was the identification of the principal tasks associated with each Class A position in the Department, and the documentation of the similarities and differences between and among positions. This process resulted in the identification of 26 functional "job types" throughout the Class A ranks of police officers, excluding the positions of Deputy Chief, Assistant Chief and Chief of Police. Among the various job types, one "type" was defined as the entry level job. This job type is composed of the basic police officer job as performed in the Patrol and Traffic Bureaus of the Houston Police Department. The majority of other "job types" which are comprised of incumbents with the classified rank of police officer are specialized in nature and include work in such areas as school safety, helicopter patrol, prisoner control, polygraph, dispatching, training, juvenile delinquency and criminal investigations (e.g., narcotics).

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Results obtained from the researchers' direct observation of police officers at work are discussed in Chapter 9. The observations were made early in the study, and the knowledge gained by the researchers was beneficial to the development and implementation of all other phases of this research project. The data collected during the observation period was grouped into eight broad categories which described 106 major police officer activities and behaviors observed by the job analysts. The eight broad categories are listed below:

- Physical Activities and Behaviors
- Skilled Psychomotor Activities and Behaviors
- Public Relations
- Investigative Activities and Behaviors
- Arrest Activities and Behaviors
- Traffic Control Activities and Behaviors
- Reporting/Communicating
- Activities and Behaviors Requiring Interpersonal Skills

The critical incident technique of job analysis, and the behavioral job dimensions developed from the critical incident data, are described in Chapter 10. Thirteen major behavioral job dimensions and 42 sub-categories of dimensions that reflect the critical behavioral components of the police officer job were identified by the researchers. The 13 major behavioral dimensions are listed below:

- Personal Character and Responsibility

- Emotional Stability/Control and Psychological Adjustment
- Judgment and Decision Making
- Investigative Thoroughness
- Investigative Vigilance
- Job Knowledge
- Conscientiousness to Duty
- Interpersonal Effectiveness
- Interest in Helping Others/Public Relations
- Relationships with Peers
- Leadership/Self Reliance
- Psychomotor Skills
- Physical Ability

In comparing the above behavioral dimensions with dimensions considered important and identified in other research studies, the results obtained in the present study were found to be very similar and as comprehensive as those developed by independent investigators.

Chapter 11 describes the results of the job analysis of all Class A positions with the Position Analysis Questionnaire (PAQ). Results from the PAQ defined all positions in terms of a standardized set of 32 job dimensions which have been found to underlie all jobs regardless of specific occupational category. The results confirmed the findings of the task analysis, whereby the police officer job as performed within the Patrol and Traffic Bureaus was sufficiently different from all other

positions to be classified as the entry-level job. The PAQ procedure also provides a means for identifying the "attribute" requirement profiles of jobs in terms of 76 mental, perceptual, physical and psychomotor, temperament and interest requirements. These profiles were developed for each Class A position analyzed with the PAQ.

The combined results from the various job analysis methodologies give a comprehensive description of the job content domain of the Class A positions within the Houston Police Department. In turn, this data has been used to document the job relatedness of the Department's selection requirements as discussed in Volume V. Results from the identification and analysis of the entry-level Class A job served as the foundation for the conduct of the selection requirement validation studies reported in Volumes VI and VII. Similar results were used to evaluate the Houston Police Department Academy as reported in Volume VIII. Finally, job analysis findings were used in the validity study of the promotional system as described in Volume IX.

The final chapter of this Volume (Chapter 12) describes the job analysis of the Class B and C positions within the Department. This job analysis was performed utilizing the task analysis methodology. At the conclusion of Chapter 12 guidelines are presented for the construction of future promotional examinations used to select individuals for promotion to non-entry level Class B and C positions in the Technical and

Special Services Bureaus. Similar guidelines have been developed for the construction of promotional exams for Class A officers, and these guidelines are presented in Volume IX, which describes the validity study of the promotion system.

CHAPTER 6

TASK ANALYSIS OF THE CLASS A POSITIONS WITHIN THE HOUSTON POLICE DEPARTMENT

Introduction

A major goal of the present study was the achievement of a complete and comprehensive task analysis of all positions within the Houston Police Department. As previously mentioned, the research plan provided for the use of multiple job analysis methodologies, since any single job analysis method is limited and specific in both purpose and outcome or result. Thus, while a variety of methods of job analysis were employed in the present study, the major and most comprehensive method was that of task analysis.

Task analysis is a job analysis technique which relies upon a "breakdown" of organizational work into steps or parts of jobs. Once jobs are analyzed into their component activities or work steps, a variety of analytical possibilities are available for describing and defining their content domain.

Task analysis relates to "what" workers do on the job in terms of tasks. The degree of specificity of the task statements used in analyzing a job is the key to the value of any given task analysis. For example, "Uses mathematical formulae to estimate automobile turning radii from tire marks"

is a more usable and valuable task statement than "Reconstructs accidents", from the point of view of specificity and subsequent objective analyses.

Results from a task analysis are some of the most valuable data sources to be used in the preparation of written job descriptions that define the content domain of jobs. In turn, the job descriptions and task analysis results become the starting point for later selection, training and promotional research studies. In other words, the tasks carried out by incumbents in a given job are identified and described, before defining the skills, knowledges, and abilities required of individuals who perform the job. Task analysis results also are the best type of job analysis data to be utilized in defining from a variety of jobs, the content domain of an entry level job. The use of this capability and the identification of the entry level police officer job was a major objective of this phase of the job analysis research.

The U. S. Air Force Job Analysis Method

The most complete and rigorous method of task analysis is the "Job Inventory" approach developed by the U. S. Air Force. (Morsh, et. al., 1961; U. S. Air Force, 1968). The Air Force method combines the advantages of several job analysis procedures, and also allows for the quantification and computerization of the basic job analysis data. Advantages of records research, direct observation, interview, checklist,

and open-ended questionnaire job analysis methods are all incorporated in the Air Force method. The basic steps found in the Air Force task analysis procedure are outlined below:

1) First, relevant literature describing the job or job-related functions is reviewed by the researcher. Such literature generally would include recent job descriptions, training manuals, regulations, descriptions of organizational functions, etc. From the review, the researcher develops preliminary lists of task statements that describe the jobs to be analyzed.

2) Next, interviews with both job incumbents and supervisors are conducted at which time these individuals are asked to review, and then add, delete or change the preliminary task statements. Individuals are chosen for interview who are considered knowledgable in the jobs under study, or who have specific knowledge of specialty areas within the occupational field undergoing analysis.

3) A semi-final task list (arranged by duty categories) then is constructed incorporating the changes suggested during step 2 above. Background and special interest questions are written and included in the semi-final form, which is administered to a sample of journeymen and supervisors for "field" review and further

deletions, changes or additions.

4) The results of the "field" review are analyzed and used to construct a final job inventory composed of task statements of approximately the same level of specificity arranged under general duty categories. Provisions are made for individuals to "write-in" other tasks that are part of their job, but which do not appear in the finalized task list. Additionally, rating scales are developed and placed beside the task statements on the questionnaire so that job incumbents may rate the various tasks on a "time spent", "part of job", or similar dimension (i.e., rating scale). Written instructions are prepared to guide the rating process.

5) A large, representative sample of incumbents is selected at random within departments, ranks, or other organizational segments, and they are asked to complete the final task inventory.

6) Completed task inventories are reviewed for the collection of "written-in" statements, and all task ratings and background information is prepared by electronic data processing.

7) The task inventory responses are analyzed by application of the Air Force's data analysis system known

as CODAP (Computerized Occupational Data Analysis Procedure). CODAP is composed of over forty computer programs which are interactive and highly efficient. Some examples of the output from these programs include the following: hierarchical clustering of individual positions into "job types"; consolidation of descriptions of the work performed by members of a "job type" or members of a special group such as "Sergeants", or personnel with "more than 48 months job tenure", etc.; summaries of the percentages of incumbents who perform specific tasks included in the task inventory. In addition to these examples, numerous other analyses can be performed on the data bank of task information.

The Air Force task analysis method is especially suited to studying jobs with large numbers of incumbents. It is so comprehensive both in terms of technique and sampling strategy that most investigators have not considered it necessary to study the validity of the procedures. However, one validity study clearly indicated that Air Force career development specialists strongly agreed with the specific results from several task analysis inventories (Mayo, et. al., 1975).

Task analysis, and, more specifically, the U. S. Air Force Job Inventory method of task analysis, was chosen as the major job analysis method for the current research project

in order to accomplish the following:

1) To quantitatively define the job content domain of work performed by uniformed personnel within the Houston Police Department, and to be the tool for generating objective job descriptions depicting work performed in reliable and quantitative detail.

2) To provide a link between all other methods of job analysis used during the project with the actual behavioral outcomes of the jobs (tasks).

3) In combination with a special "personnel tracking analysis", to objectively define the basic entry level position for Class A personnel within the Houston Police Department. The matter of defining the "entry level job" is a complex issue, but one that is important in order to insure that the selection requirements validation study (reported in Volumes VI and VII of this report) was both (a) directed at the long-term needs of the Department and (b) in compliance with standards set forth in various equal employment opportunity and validation guidelines.

4) To serve as a basic research tool in the evaluation of the Houston Police Department Academy and the on-the-job training program for probationary officers (Volume VIII of this report).

5) To help determine the validity of the Houston Police Department's promotional process by defining the job content of Detective and supervisory positions at a high level of specificity (Volume IX of this report).

6) To aid in the development of performance evaluation dimensions (criteria) used in various phases of the overall research study, whereby performance evaluation scales were based upon actual job behaviors rather than "performance" in the abstract.

CHAPTER 7

CONSTRUCTION AND ADMINISTRATION OF THE HOUSTON POLICE DEPARTMENT TASK INVENTORY

As an overall research strategy all Class A positions (except the Chief, Assistant Chief, and Deputy Chief jobs) within the Houston Police Department were analyzed via the task analysis method. The standard U. S. Air Force method of task inventory construction and administration was followed with a few modifications. These modifications were in the direction of including extra steps and procedures, rather than excluding steps or procedures. The process used by the research team is described on a step by step basis below.

Task Inventory Construction

Step 1 Review of relevant published material: The research team job analysts reviewed books on police science, books on patrol duty, local job descriptions, and published lists of police tasks[1] to receive guidance in the construction of a preliminary task list. The published and written material tends to be comprehensive in such duties as routine patrol, investigation, and accident investigation. However, areas such as use of special weapons, jail duties and dispatch room activities were not covered comprehensively in other

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[1]Of particular relevance are the police officer task lists developed in studies completed by the Texas Transportation Institute (1974), Pennsylvania State Police (1974) and Barrett, et. al. (1975).

published materials. Therefore, it was determined that comprehensive and representative interviewing of members of the Houston Police Department would be necessary to attain coverage of all job functions, as well as to collect information on all local Houston variations of standard police tasks for incorporation into a task inventory.

Step 2 Conduct of Interviews: An operating plan was developed whereby job incumbents were interviewed about their jobs in an open-ended manner (see interview form, Appendix C) and at the same time asked to add, delete, or appropriately modify task statements contained in a preliminary task list developed by the researchers. A sampling plan was prepared for conducting the interviews based upon the Houston Police Department's strength report of September, 1975. The purpose of the sampling plan was to insure coverage of all officer ranks in all divisions and bureaus, rather than to achieve a scientific random sample. Some of the interviews were performed in groups and some were performed individually. Table 2 shows the September strength report indicating the number of officers by rank within each bureau, and the number actually interviewed by the job analysts. Appendix D presents the same information according to division as well as bureau.

Individual officers selected for interview were chosen and scheduled for the interviews by their immediate supervisors

In choosing individual participants, the supervisors were asked to keep the following considerations in mind: 1) the officers scheduled were to be experienced; 2) the officers were to be selected to reflect obvious or known differences in tasks performed (e.g., in the Traffic Bureau, a motorcycle officer performs somewhat different tasks from one assigned to duty in an automobile; within the Recruiting Division, there are differences in task content between the "recruiting" section and the "investigation" section, etc.); 3) the officers selected were to be from all ethnic groups and both sexes whenever relevant; and 4) different shifts were to be represented among officers in the interview sample.

Most of the interviews with police officers and Detectives were conducted in groups of size of two to three. Interviews with supervisors were conducted in individual settings. Deputy Chiefs were considered a separate subsample in the project. Each Deputy Chief was interviewed by the Principal-In-Charge of the study, and the results were used directly to prepare job descriptions and specifications, rather than to design task inventory items. The Assistant Chief position was not filled at the time of the job analysis study, and no data was obtained for the position. Over an eight week period, 214 incumbents participated in interview sessions conducted by six project job analysts (industrial psychologists).

Step 3 Construction of the Intermediate Task Inventory: After the results of all interviews were compiled and

analyzed, an intermediate task inventory was constructed of task statements organized into duty or functional areas. The researchers also used the knowledge they had gained from directly observing police officers at work to prepare the task statements for this version of the inventory. Incumbent-oriented background and biographical questions also were included in the intermediate form of the inventory.

Step 4 Field Review: The intermediate task inventory then was sent for review to a total of 29 Detectives, Sergeants, Lieutenants and Captains in positions throughout the Department. Included with the task inventory was a cover letter explaining the review procedures and purpose. These individuals were asked to review the task inventory to insure that it was as accurate and complete as possible. The reviewers were to make sure that all the main duties and tasks of police officers had been included; that the duties and tasks were stated in such a manner that they could be understood by officers responding to the inventory; and that the duties and tasks were phrased so as to be technically correct and in accord with Department policies. The reviewers also were asked to make any deletions, additions, or changes they felt were appropriate and necessary, and to examine the appropriateness of the background questions.

Of the 29 inventories sent out for review, 22, or 76 percent, were returned. Suggested additions, deletions, and changes

were incorporated into the final Houston Police Department Task Inventory. The inventory consists of four parts as follows: 1) a cover letter explaining the use and purpose of the task inventory; 2) instructions for completing the inventory; 3) background questions; and 4) a listing of 536 tasks, organized into 24 duty or functional areas. Respondents were instructed to complete the background information section, to check the tasks they performed in the task list section, and to rate the tasks they performed on the following seven point "Relative Time Spent" scale:

TIME SPENT

1. Very much below average
2. Below average
3. Slightly below average
4. About average
5. Slightly above average
6. Above average
7. Very much above average

The final task inventory, which was used to analyze all Class A personnel positions except for the Chief, Assistant Chief, and Deputy Chiefs jobs, is included as Appendix E of this report.

Administration of the Task Inventory

Step 5 Development of the Sampling Plan and Administration: Three considerations were prominent in determining the size of the sample of job incumbents asked to complete the finalized

task inventory. 1) First, the Air Force method of task analysis required large samples since career fields are categorized into job clusters and job types by the hierarchical grouping procedure. (Hierarchical grouping is discussed later and is explained in Appendix G.) In order for the parts or pieces of a career field to be analyzed with precision, there must be substantial numbers of units or individuals in the sample. 2) Secondly, it was desirable to meet the requirements of sampling theory. For example, if there is interest in estimating the number of tasks performed by the average individual in a population, and if it is assumed that the mean number is about 100 and the standard deviation is about 50, then it can be shown that a sample of 200 would give an estimate of the mean that would lie within 7 percent of the actual mean in 95 such samples out of 100. In order to cut this relative error in half, (or make it less than 4 percent) a sample of approximately 800 would be required. Inasmuch as a high degree of precision was essential to the task analysis, and since prior experience indicated that successful job analysis can be performed when between one-quarter and one-third of all incumbents sampled, it was decided to sample 800 of the 2,500 Class A personnel in the Houston Police Department. The actual final sample size was 809. 3) Thirdly, it was advantageous to obtain an even higher degree of sample precision by stratifying the sample across divisions, bureaus, and ranks. Additionally, there were some bureaus and divisions with only a few personnel for a given rank, and it was desirable that such atypical personnel be sampled even though

the inclusion of one or two such personnel immediately constitutes an oversample. For example, there are only nine patrol officers in the K-9 Corps. All nine were included in the sampling plan even though such a sample constitutes 100 percent of all patrol officers in the K-9 Corps as opposed to, say, the sampling of only 27 percent of the patrol officers in the Central Patrol Division. Also taken into consideration during the sampling process was the shift factor. Day, evening, and night shifts were represented proportionally whenever possible.

In summary, the sample defined for administration of the task analysis inventory was large, comprehensive, and designed to meet high precision requirements. Table 3 describes the sampling plan for all divisions, bureaus, and ranks. For each column in Table 3 under a rank designation, the left hand numbers are actual frequencies or numbers of incumbents to whom a job inventory was planned to be sent, and the right hand numbers indicate the percentages of incumbents each frequency represents of the total personnel within the division. For example, 18 officers in the Special Services Bureau, Dispatcher Division, were asked to complete the task inventory. The number 18 represents 31 percent of all the officers within the Dispatcher Division.

While it was intended that all the task inventories would be distributed in accordance with the sampling plan, the number distributed to each rank and division did not always perfectly match the plan because of persons on vacation, recent transfers, promotions, changes in manpower allocation, etc. In some

TABLE 2

DISTRIBUTION OF PRELIMINARY JOB ANALYSIS INTERVIEWS AS COMPARED TO THE HOUSTON POLICE DEPARTMENT STRENGTH REPORT

BUREAU	HOUSTON POLICE DEPARTMENT CLASS A STRENGTH REPORT (1) (SEPTEMBER 1975) RANKS					NUMBER OF OFFICERS INTERVIEWED AS A PRELIMINARY STEP IN THE TASK ANALYSIS PROJECT RANKS				
	Officers (2)	Detectives	Sergeants	Lieutenants	Captains	Officers	Detectives	Sergeants	Lieutenants	Captains
Administrative	27	1	4	1	1	6	0	4	1	1
Special Investigations	127	3	14	6	3	10	0	5	4	2
Patrol	902	0	81	18	5	19	0	14	5	5
Special Services	193	0	20	6	2	11	0	8	5	3
Staff Services	70	3	7	5	3	10	1	7	3	3
Technical Services	29	5	7	3	2	10	0	4	2	2
Traffic	467	0	43	8	5	15	0	12	4	5
Criminal Investigations	90	265	7	21	6	7	12	2	7	5
TOTAL	1905	277	183	68	27	88	13	56	31	26

TABLE 3

SAMPLING PLAN FOR TASK

INVENTORY ADMINISTRATION

Bureau/ Division	Officer N	Officer %	Detective N	Detective %	Sergeant N	Sergeant %	Lieutenant N	Lieutenant %	Captain N	Captain %	Total N	Total %
Administrative:												
Personnel	2	100	-	-	1	100	-	-	1	100	4	100
Bomb Squad	2	100	-	-	-	-	-	-	-	-	2	100
Community Relations	10	43	1	100	1	33	1	100	-	-	13	46
Special Investigations:												
Organized Crime	2	100	2	67	-	-	1	100	-	-	5	83
Intelligence	10	56	-	-	2	50	1	100	1	100	14	58
Narcotics	21	40	-	-	2	40	1	50	1	100	25	42
Vice	17	46	-	-	2	40	1	50	1	100	21	47
Patrol:												
Central	61	27	1	100	3	14	1	20	1	100	67	26
I and V	54	31	-	-	3	20	1	25	1	100	59	30
II	60	34	-	-	3	20	1	33	-	0	64	33
III	46	31	-	-	3	20	1	33	1	100	51	30
IV	45	31	-	-	3	20	1	33	-	0	49	30
K-9	9	100	-	-	-	-	-	-	-	-	9	100
SWAT	12	57	-	-	-	-	-	-	-	-	12	57
Special Services:												
Communications	-	-	-	-	-	-	-	-	-	-	-	-
Dispatcher	18	31	-	-	2	40	1	100	1	100	22	33
Garage	12	55	-	-	1	33	1	100	-	-	14	54
Jail	31	30	-	-	3	30	1	33	1	100	36	31
Uniform Supply	8	100	-	-	1	50	1	100	-	-	10	91

TABLE 3 (Con't.)

Bureau/ Division	Officer N	Officer %	Detective N	Detective %	Sergeant N	Sergeant %	Lieutenant N	Lieutenant %	Captain N	Captain %	Total N	Total %
Staff Services:												
Planning/Research	9	100	2	67	1	100	1	100	1	100	14	93
Recruiting	12	26	-	-	3	100	2	100	1	100	18	34
Training	10	71	-	-	3	100	2	100	1	100	16	80
Technical Services:												
Bike Detail	5	100	-	-	1	100	1	100	-	-	7	100
Crime Lab	-	-	-	-	-	-	-	-	-	-	-	-
HCIC	1	100	-	-	1	100	-	-	1	100	3	100
Identification	3	100	-	-	-	-	-	-	-	-	3	100
Polygraph	4	100	1	33	-	-	-	-	-	-	5	71
Property	10	100	1	50	-	-	1	100	-	-	12	92
Records	6	100	-	-	1	20	1	100	1	100	9	69
Traffic:												
Accident	45	31	-	-	3	23	2	67	1	100	51	32
Enforcement	46	30	-	-	3	25	1	50	1	100	51	31
Helicopters	12	50	-	-	3	60	1	100	1	100	17	55
Traffic Control	38	32	-	-	3	33	1	50	1	100	43	33
Safety	12	46	-	-	1	33	-	-	1	100	14	47
Ticket Supply/ Statistics	4	100	-	-	1	100	-	-	-	-	5	100
Criminal Investigations:												
Auto Dealers	4	100	1	25	-	-	1	100	-	-	6	67
Auto Theft	-	-	10	25	-	-	1	33	1	100	12	27
Juvenile	24	28	1	100	2	29	1	33	1	100	29	30
Burglary and Theft	-	-	25	25	-	-	2	33	1	100	28	26
Robbery	1	100	11	24	-	-	1	33	1	100	14	28
Forgery	-	-	4	29	-	-	-	-	1	100	5	33
Homicide	-	-	18	30	-	-	2	40	1	100	21	31
TOTAL:	666	36	78	28	56	31	35	51	25	93	860	36

cases, a few more inventories were distributed than planned; and in a few other cases slightly fewer inventories were distributed than planned. The inventories were hand delivered to the different divisions and were contained in an envelope to be returned via departmental mail to the research team.

Table 4 indicates the actual number of inventories distributed to each division, the number returned, percentage returned, and the number that were returned but not usable for some reason (the individual had not finished the probationary period of employment, the inventory was not filled out properly, the inventory was not returned by the deadline date, etc.). As is apparent, the return was generally very high (90 percent or better) throughout most divisions of the Houston Police Department. Table 5 presents similar information by rank instead of division. Again the return rate was very high across all ranks.

As indicated by the information in Tables 4 and 5 the number of task inventories that were distributed to the various divisions and ranks corresponded very closely to the number specified in the sampling plan. Overall, task inventories were completed and returned by approximately 35 percent of all Class A personnel within the Houston Police Department.

The completed task inventories were returned within four weeks after distribution. Then the inventories were examined by the research team to insure that they had been completed

TABLE 4

DISTRIBUTION AND RETURN
OF TASK INVENTORIES
BY DIVISION

Bureau/ Division	Number Distributed	Number Returned	Percent Returned
Administrative:			
Personnel	4	4	100
Bomb Squad	-	-	-
Community Relations	13	13	100
Special Investigations:			
Organized Crime	4	4	100
Intelligence	15	15	100
Narcotics	25	18	72
Vice	21	20	95
Patrol:			
Central	71	71	100
I and V	63	61	96
II	65	65	100
III	51	50	98
IV	49	49	100
K-9	9	7	77
SWAT	18	18	100
Special Services:			
Communications	-	-	-
Dispatcher	23	22	95
Garage	14	13	92
Jail	38	34	89
Uniform Supply	11	10	90

TABLE 4 (Con't.)

Bureau/ Division	Number Distribution	Number Returned	Percent Returned	Number Not Used
Staff Services:				
Planning/Research	14	14	100	-
Recruiting	19	17	89	-
Training	16	16	100	1
Technical Services:				
Bike Detail	6	6	100	-
Crime Lab	-	-	-	-
HCIC	4	3	75	-
Identification	2	2	100	-
Polygraph	6	6	100	-
Property	13	12	92	-
Records	10	10	100	-
Traffic:				
Accident	51	44	86	1
Enforcement	52	51	98	3
Helicopters	19	19	100	-
Traffic Control	44	43	97	1
Safety	20	20	100	1
Ticket Supply/ Statistics	-	-	-	-
Criminal Investigations:				
Auto Dealers	7	7	100	-
Auto Theft	15	14	93	-
Juvenile	31	31	100	-
Burglary & Theft	35	33	94	1
Robbery	18	9	50	-
Forgery	5	2	40	-
Career Offenders	3	3	100	-
Homicide	21	21	100	-
TOTAL	905	857	94	38

TABLE 5

DISTRIBUTION AND RETURN
OF TASK INVENTORIES
BY RANK

Rank	Number Distributed	Number Returned	Percentage Returned	Numbe: Not Us:
Captain	27	26	96	2
Lieutenant	44	42	95	1
Detective	92	74	80	0
Sergeant	73	65	89	1
Police Officer	669	650	97	34
TOTAL	905	857	94	38

correctly. Thirty eight, or 4 percent of the inventories, were excluded from further analyses because of incorrect completion.

As required by the U. S. Air Force method, "write-ins", or additional task statements written-in by respondents in blank spaces provided in the inventories were examined for duplication or overlap with task statements already in the published task list. Seven "write-in" task statements were judged to be new, non-duplicative additions to the published task list. Seven additional tasks added to an original list of 536 items represents a percentage increase of 1.3 percent. Other studies utilizing the U. S. Air Force method have shown an average increase in task statements from write-ins collected during field administration to be approximately 15 percent (Mayo, 1968). The low percentage of additional tasks obtained from field administration in the present study can be explained by the fact that the number of "front-end" interviews used for task list construction was more than twice the normal Air Force method requirement. The number of "write-ins" was, in fact, so low and the actual tasks "written in" so rarely performed, that the "write-in" portion of the task analysis virtually had no impact upon the total process.

Character of the Respondent Sample

The characteristics of the sample of officers completing the task inventories are described in Table 6. While the majority of the sample was male, the inventory administration actually resulted in an oversample of female respondents. Thus, while about 5 percent of all Department officers are female, 9 percent of the returns were from female officers. Similarly, 4 percent of the Department's detectives are females, but 10 percent of the detective respondents were females.

The ethnic composition of the respondent sample matched identically the Department's composition for the rank of officer. However, ethnic minorities, while represented, did not return inventories in proportion to their representation in the ranks of Detective, Sergeant or Lieutenant. (See Volume III for the ethnic composition of the Department's work force.)

As indicated by the tenure data reported in Table 6, the respondent sample was well experienced in terms of time with the Department and time served in the position being analyzed.

While not reported in Table 6, it should be noted that the education level of the officer respondent sample was very high. Among those officers completing an inventory, 22 percent had one year of college, and 42 percent had finished two or more years of college level education or beyond.

TABLE 6

CHARACTERISTICS OF THE SAMPLE OF OFFICERS COMPLETING THE TASK ANALYSIS INVENTORY

	RANKS				
	Officer	Detective	Sergeant	Lieutenant	Captain
Percent Male	91	90	100	100	100
Percent Female	9	10	-	-	-
Percent White	90	99	99	95	100
Percent Black	4	-	-	-	-
Percent Hispanic	6	1	1	5	-
Percent Day Shift	44	55	55	64	100
Percent Evening Shift	32	21	26	26	-
Percent Night Shift	21	8	15	5	-
Percent Relief Shift	3	17	3	5	-
Avg. Number Months with H.P.D.	92	180	165	228	267
Avg. Number Months in Current Position	40	65	24	41	54
Type Current Assignment					
Solo Patrol Car	24	-	-	-	-
Two Officer Patrol Car	32	-	-	-	-
Three Wheel Motorcycle	3	-	-	-	-
Foot Patrol	1	-	-	-	-
Other or Not Applicable	40	100	100	100	100

CHAPTER 8

TASK ANALYSIS RESULTS

The statistical analysis of the task analysis data obtained from the 819 job incumbents was a lengthy and complex process. Various programs from the CODAP system were applied to the raw data in order to accomplish the three following major objectives:

1) To document the job characteristics of the various ranks within the Department including Police Officer, Detective, Sergeant, Lieutenant and Captain.

2) To identify and document the characteristics of the functional job groupings or job types to be found within the police department across all ranks and levels of tenure.

3) To identify and document the characteristics of the "entry level" police officer position.

Table 7 describes the duty-category organization of the task inventory format used to analyze all positions except for those o Chief, Assistant Chief, and Deputy Chief. The duty-categories ar summary of all work and functional areas within the Houston Police Department.

TABLE 7

PERCENT OF TIME SPENT BY DUTY AREAS

FOR FIVE POLICE OFFICER RANKS

Task/Duty Area	RANK				
	Officer	Detective	Sergeant	Lieutenant	Captain
PERFORMING ROUTINE ENFORCEMENT	15	7	9	5	2
ENGAGING IN TRAFFIC CONTROL	11	2	5	2	1
INVESTIGATING TRAFFIC ACCIDENTS	5		2		1
RESPONDING TO CALLS FOR SERVICE	7	4	4	2	1
APPREHENDING AND/OR ARRESTING ACTORS	7	7	2	1	-
PERFORMING GROUP/CROWD CONTROL	1	1	1	1	-
INVESTIGATING (ROUTINE)	8	14	3	3	1
INVESTIGATING (IN DEPTH)	8	27	3	6	2
MAINTAINING SURVEILLANCE	1	2	1	1	-
PROCESSING AND CONTROLLING PRISONERS	6	4	3	2	-
PERFORMING EMERGENCY CONTROL AND SPECIAL FUNCTIONS	2	1	1	-	-
PILOTING AND OBSERVING FROM HELICOPTER	1	-	1	-	-
PERFORMING DIRECT PUBLIC SERVICE AND PUBLIC CONTACT FUNCTIONS	7	5	6	8	7
PERFORMING COURT AND COURT-RELATED FUNCTIONS	3	8	3	1	-
MAINTAINING RADIO COMMUNICATIONS	2	1	1	-	-
PROCESSING AND CONTROLLING PROPERTY, AUTOMOBILES, SUPPLIES AND RECORDS	5	7	5	3	2
PROCESSING AND INVESTIGATING JOB AND LICENSE APPLICANTS	1	-	1	-	1
TRAINING	2	-	4	2	4
PERFORMING MISCELLANEOUS OFFICE AND TECHNICAL FUNCTIONS	3	3	5	5	4
DIRECTING AND ORGANIZING	1	2	7	9	11
PERFORMING PERSONNEL ADMINISTRATION	-	-	13	18	21
MONITORING AND EVALUATING PERFORMANCE	-	-	11	15	18
PERFORMING OPERATIONAL, ADMINISTRATIVE AND BUDGETARY PLANNING AND CONTROL	1	1	4	9	16
ENGAGING IN CONTINUING EDUCATION ACTIVITIES	3	4	4	7	8

Differences Due To Rank

Table 7 presents data showing the differences between the amount of time spent in the broad job-duty areas for the various police officer ranks below Deputy Chief. The data in Table 7 is not intended to document final job types, since natural job groupings do not necessarily follow officer rank. However, the results given in Table 7 are instructive from the point of view of job analysis in documenting changes in activity (duties) which are associated with rank. The results given in Table 7, for example, show that the frequency of performing "routine patrol" activities drops off as rank increases. On the other hand, while Detectives spend the most time in criminal investigation, police officers also spend a significant amount of time investigating criminal activity. As expected, the higher ranking police officers spend most of their time performing administrative and management functions.

Full job descriptions for the various ranks developed from the responses to the task inventory are presented in Appendix F. The Deputy Chief job description, which was developed from interview data only, also is presented in Appendix F. No descriptions were prepared for the Assistant Chief or Chief of Police positions.

Identification of Functional Job Types

The statistical techniques of hierarchical grouping (see Appendix G and Ward and Hook, 1963) was applied to responses to the task inventory in order to determine the number and nature of "job types" within the Houston Police Department. In the hierarchical grouping procedure, the responses of each job incumbent in the sample are compared with the responses of every other job incumbent in the sample. Those job incumbents which are most similar on the basis of percent time spent on tasks performed are grouped together into functional job types. Stated in another way, job types have been identified by statistically comparing the similarity of tasks performed among all officers (of all ranks) responding to the task analysis, and grouping together those incumbents who perform essentially the same tasks regardless of their classified departmental rank. Then information on the tasks performed by a specific job type can be summarized to define the task content domain of the job type.

Based on the above procedures, 26 functional job types were identified among all Class A personnel (excluding the Chief, Assistant Chief, and Deputy Chiefs) within the Department. The 26 specific job types have been categorized into three general job groups as follow:

Group A. Line Police Officers and Detectives

Group B. Staff Police Officers Serving in Support Functions

Group C. Supervisors

Job descriptions for and background characteristics of incumbents in the 26 job types are presented in Appendix H in the following order:

Group A. Line Police Officers and Detectives

1) Patrol and Traffic Officer
2) SWAT Officer
3) Investigator (II)
4) Investigator (I)
5) Helicopter Officer
6) Jail Officer
7) Traffic Foot Patrol Officer

Group B. Staff Police Officers Serving in Support Functions

8) Polygraph Officer
9) Supply and Subpoena Control Officer
10) Records Officer
11) Planning and Research Officer
12) Safety and Public Relations Officer
13) Community Relations Officer
14) Dispatcher
15) Training Officer
16) Recruiting Officer

17) Administrative Support Officer

18) Garage, Supply, and Equipment Officer

19) Property Officer

20) School Safety Officer

21) Fleet Control Officer

Group C. Supervisors

22) Supervisor of Investigations

23) Patrol and Traffic Field Supervisor

24) Jail Supervisor

25) Helicopter Supervisor

26) Administrative Supervisor

Table 8 presents data on the distribution of the average percent time spent in each of the job-duty areas by the members of Group A (Line Police Officers and Detectives). These data provide an overview of the job content of the various line officer job types.

According to the results given in Table 8, the Patrol and Traffic Officer (later to be documented as the "entry level" position within the Houston Police Department) group members perform in all areas of law enforcement except for helicopter piloting, supervision, and various administrative functions. This "type" of officer is involved in routine patrol, traffic control, accident investigation, criminal investigation, apprehending and arresting, public service, court-related functions, crowd control, and other important work areas.

TABLE 8

PERCENT AVERAGE TIME SPENT IN VARIOUS
JOB-DUTY AREAS FOR
LINE POLICE OFFICERS AND DETECTIVES

DUTY	JOB TYPE: PATROL & TRAFFIC OFFICER	SWAT OFFICER	INVESTIGATOR (II)	INVESTIGATOR (I)	HELICOPTER OFFICER	JAIL OFFICER	TRAFFIC & FOOT PATROL OFFICER
A Performing Routine Enforcement	17	15	8	6	25	6	24
B Engaging in Traffic Control	15	9	2	1	8	1	37
C Investigating Traffic Accidents	9	--	--	--	--	2	6
D Responding to Calls for Service	9	6	4	3	13	--	4
E Apprehending and/or Arresting Actors	9	11	9	6	1	4	9
F Performing Group/Crowd Control	1	5	--	--	3	--	1
G Investigating (Routine)	10	9	14	14	4	1	5
H Investigating (In Depth)	8	15	24	29	1	1	1
I Maintaining Surveillance	1	5	3	--	7	--	1
J Processing and Controlling Prisoners	4	4	5	10	1	57	--
K Performing Emergency Control and Special Functions	2	5	5	--	4	--	1
L Piloting and Observing from Helicopter	--	--	--	--	17	--	--
M Performing Direct Public Service and Public Contact Functions	6	4	6	14	3	7	6
N Performing Court and Court-Related Functions	4	4	8	4	--	2	1
O Maintaining Radio Communications	1	1	1	1	4	--	--
P Processing and Controlling Property, Automobiles, Supplies and Records	2	1	5	6	1	9	1
Q Processing and Investigating Job and License Applicants	--	--	--	--	--	--	--
R Training	--	1	--	--	--	1	--
S Performing Miscellaneous Office and Technical Functions	--	1	2	3	2	5	--
T Directing and Organizing	1	1	1	1	2	2	--
U Performing Personnel Administration	--	--	--	--	--	--	--
V Monitoring and Evaluating Performance	--	--	--	--	--	--	--
W Performing Operational, Administrative and Budgetary Planning and Control	--	--	--	--	--	--	--
X Engaging in Continuing Education Activities	1	3	3	2	4	2	3
	100%	100%	100%	100%	100%	100%	100%

The SWAT officer also performs a diversity of functions except that the job involves very little accident investigation. On the other hand, the SWAT officer is more heavily involved than most other types in apprehending and/or arresting actors, maintaining surveillance, group/crowd control and performing various special functions.

Two types of investigators emerged as a result of the statistical analysis of the task inventory data. Entitled Investigator II for the convenience of describing the results of the present job analysis, this investigator "type" is inclusive of most Detectives and all special purpose investigative police officers within the Department. In terms of actual tasks performed, the Investigator II job type is basically the same regardless of division of assignment. A police officer assigned to the Vice Division performs essentially the same tasks as a Detective assigned to Burglary and Theft or a Detective in the Robbery Division. All of these officers and Detectives according to the results of the hierarchical analysis were grouped into the Investigator II job type.

The Investigator I job type is composed of police officers and Detectives who perform more public service and prisoner control functions in comparison to the Investigator II job type. Members of the Investigator I group perform a more limited number of fairly specialized tasks. For example,

officers assigned to the Juvenile Division who spend extra time in communication with the families of juvenile actors are members of the Investigator I group.

Helicopter Officers pilot and observe from rotary-winged aircraft. These officers perform many tasks in the areas of routine enforcement, answering calls, traffic control, and surveillance. Because their enforcement duties are performed from the air, these officers do not usually directly arrest actors or perform prisoner control work.

The Jail Officer is a prisoner control specialist. Similarly, the Traffic and Foot Patrol Officer is a traffic control specialist who also performs a great deal of routine enforcement.

Table 9 describes the distributions of percent time spent across job-duty areas for the Staff or Support Officers. The data in Table 9 highlights the specialty areas for each type of Staff Officer. For example, the Safety and Public Relations, the Community Relations, and the School Safety officers spend significant amounts of time in the public service area or duty. The Training Officer is a training specialist. The reader is directed to Appendix H and Table 9 for further detailed information on the wide variety of support job types that have been identified within the Houston Police Department from the task analysis results.

TABLE 9

PERCENT AVERAGE TIME SPENT IN VARIOUS JOB-DUTY AREAS FOR STAFF POLICE OFFICERS SERVING IN SUPPORT FUNCTIONS

DUTY	Polygraph Officer	Supply & Subpoena Control Officer	Records Officer	Planning & Research Officer	Safety & Public Relations Officer	Community Relations Officer	Dispatcher	Training Officer	Recruiting Officer	Administrative Support Officer	Garage, Supply & Equipment Officer	Property Officer	School Safety Officer	Fleet Control Officer
A Performing Routine Enforcement	7	--	6	--	19	13	11	--	--	5	--	--	19	--
B Engaging in Traffic Control	--	--	--	--	13	--	--	--	--	--	--	--	16	--
C Investigating Traffic Accidents	--	--	--	--	--	--	--	--	--	--	--	--	3	--
D Responding to Calls for Service	4	--	--	--	8	--	3	--	--	--	--	--	6	--
E Apprehending and/or Arresting Actors	2	--	--	--	--	--	--	--	--	--	--	--	4	--
F Performing Group/Crowd Control	--	--	--	--	--	--	--	--	--	--	--	--	--	--
G Investigating (Routine)	12	--	--	--	--	--	--	--	--	--	--	--	2	--
H Investigating (In Depth)	36	--	--	--	--	--	--	--	--	3	--	--	--	--
I Maintaining Surveillance	--	--	--	--	--	--	--	--	--	--	--	--	--	--
J Processing and Controlling Prisoners	1	--	--	--	--	--	--	--	--	--	--	--	--	--
K Performing Emergency Control and Special Functions	--	--	--	--	--	--	--	--	--	--	--	--	--	--
L Piloting and Observing from Helicopter	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M Performing Direct Public Service and Public Contact Functions	4	--	--	--	40	62	5	2	--	--	--	--	22	--
N Performing Court and Court-Related Functions	3	8	8	2	--	--	--	--	--	--	--	--	--	--
O Maintaining Radio Communications	--	--	2	--	--	--	70	--	--	--	--	--	--	--
P Processing and Controlling Property, Automobiles, Supplies and Records	4	42	36	4	--	--	--	--	--	--	85	90	--	25
Q Processing and Investigating Job License Applicants	2	--	--	--	--	--	--	--	95	--	--	--	4	--
R Training	2	--	2	--	--	--	--	96	--	--	--	--	3	--
S Performing Miscellaneous Office and Technical Functions	5	28	9	54	5	10	4	--	2	90	7	10	9	25
T Directing and Organizing	--	1	--	2	--	--	--	--	--	--	--	--	--	--
U Performing Personnel Administration	--	5	6	--	--	--	--	--	--	--	--	--	3	23
V Monitoring and Evaluating Performance	--	--	19	--	--	--	--	--	--	2	--	--	3	--
W Performing Operational, Administrative and Budgetary Planning and Control	--	--	--	20	--	--	--	--	--	--	8	--	--	22
X Engaging in Continuing Education Activities	18	16	12	18	15	15	7	2	3	--	--	--	6	5
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Time-spent data for the Supervisory job types is presented in Table 10. According to the tasks performed, there are basically five types of Supervisors below the rank of Deputy Chief within the Houston Police Department. The Patrol and Traffic Field Supervisor is perhaps the most general of the five since members of this type perform activities in a wide range of job-duty areas. Composed of 85 percent Sergeants, this job type contains the standard police supervisor who is the first line "back-up" to the police officer in the field. This Supervisor responds to calls for service on occasion, is directly present in crowd control situations, and has many public contact functions. In addition, the Patrol and Traffic Field Supervisor has direct supervisory, personnel administration, and performance evaluation duties. Finally, members of this job type are involved in investigations of a serious nature, whether they be in the accident or the criminal area.

The Administrative Supervisor job type is more detached from field operations than is the Patrol and Traffic Supervisor. Only 30 percent of the members of this job type are Sergeants while the remainder are Captains and Lieutenants. Approximately 80 percent of the time spent by members of this job type is distributed among the classical management areas of directing, organizing, personnel administration, performance evaluation, planning, control, etc. Administrative Supervisors are located

TABLE 10

PERCENT TIME SPENT IN VARIOUS
JOB-DUTY AREAS FOR
HOUSTON POLICE DEPARTMENT SUPERVISORS

DUTY	PATROL/TRAFFIC FIELD SUPERVISOR	ADMINISTRATIVE SUPERVISOR	HELICOPTER SUPERVISOR	SUPERVISOR OF INVESTIGATIONS	JAIL SUPERVISOR
A Performing Routine Enforcement	12	4	14	5	2
B Engaging in Traffic Control	8	2	3	--	1
C Investigating Traffic Accidents	5	--	3	--	--
D Responding to Calls for Service	6	1	8	3	1
E Apprehending and/or Arresting Actors	3	--	2	3	1
F Performing Group/Crowd Control	2	1	1	--	--
G Investigating (Routine)	4	1	1	7	1
H Investigating (In Depth)	4	1	--	13	4
I Maintaining Surveillance	1	--	2	9	--
J Processing and Controlling Prisoners	4	1	--	4	17
K Performing Emergency Control and Special Functions	2	1	2	--	1
L Piloting and Observing from Helicopter	--	--	12	--	--
M Performing Direct Public Service and Public Contact Functions	8	6	3	10	10
N Performing Court and Court-Related Functions	1	--	1	--	2
O Maintaining Radio Communications	1	--	1	--	1
P Processing and Controlling Property, Automobiles, Supplies and Records	3	--	2	3	5
Q Processing and Investigating Job and License Applicants	--	1	--	--	1
R Training	--	5	5	--	1
S Performing Miscellaneous Office and Technical Functions	4	5	5	4	5
T Directing and Organizing	8	10	6	9	11
U Performing Personnel Administration	11	22	11	11	15
V Monitoring and Evaluating Performance	8	18	7	10	11
W Performing Operational, Administrative and Budgetary Planning and Control	1	13	6	4	4
X Engaging in Continuing Education Activities	4	8	5	5	6
	100%	100%	100%	100%	100%

in most of the different Houston Police Department divisions.

The Helicopter Supervisor is a specialized job type which has evolved as the Department acquired its rotary-winged aircraft. This Supervisor pilots an aircraft and performs many of the same functions as the officer pilots. However, the job type also has a heavy administrative workload.

As most officer investigators fall within a single job type, most or all of the Investigative Supervisors also fall within a single type. The Supervisor of Investigations group is composed of 55 percent Lieutenants, 36 percent Sergeants, and 9 percent Captains. It is distributed over most investigative divisions in the Department. Members spend approximately 20 percent of their time in direct criminal investigative activity. About 30 percent of the time of individuals in this job type is spent in administrative and management areas. The remainder of time is spent in a variety of activities ranging from surveillance to public service.

The Jail Supervisor is a specialized job type that has administrative, supervisory and some prisoner contact functions within the Jail Division of the Department.

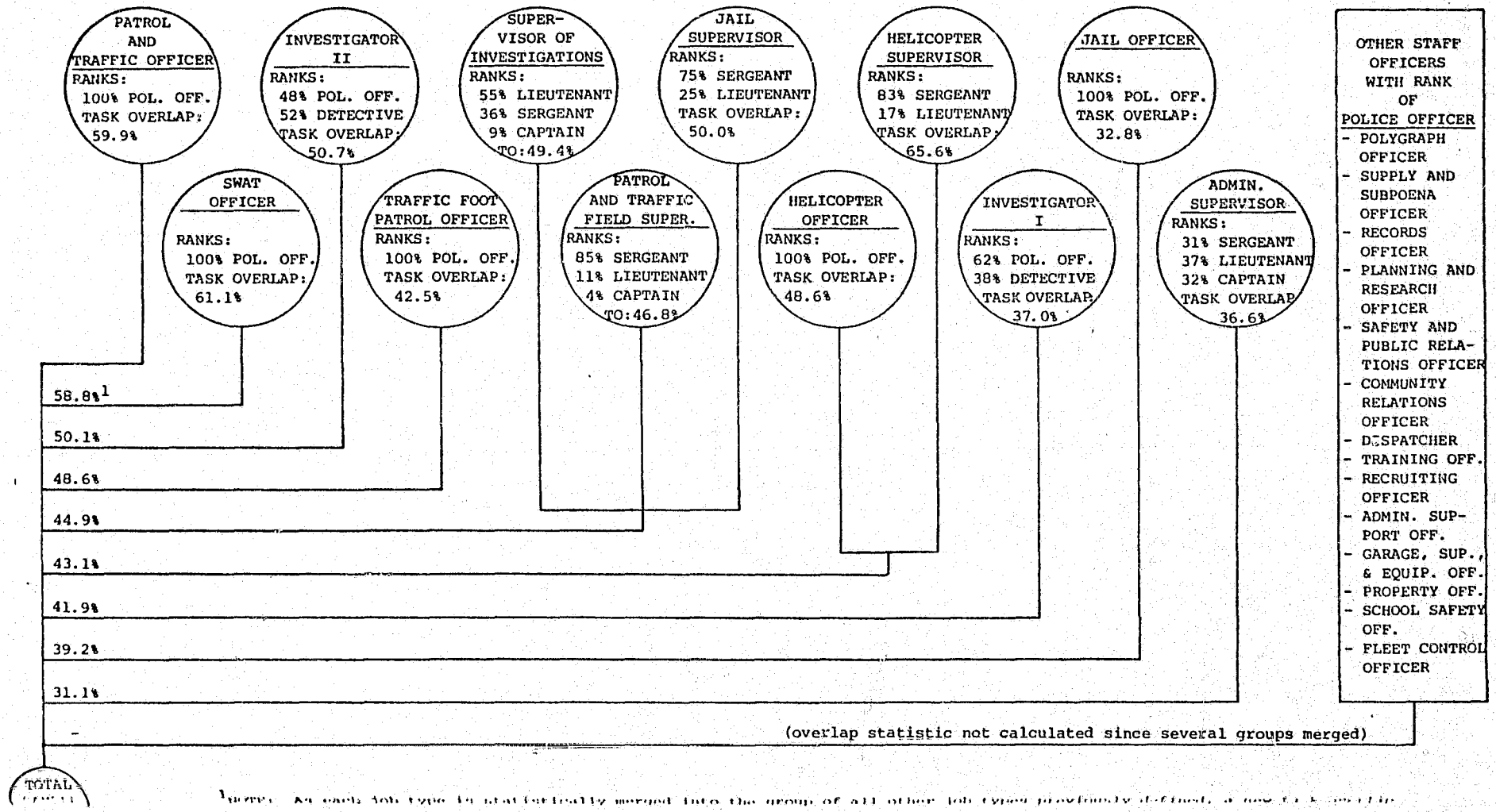
Overlap of the Job Types

The most effective way to determine the extent to which the task domain (i.e., job content) of one job type is similar to

the content of another job type is to analyze the order in which various job types are merged in the application of the hierarchical grouping procedure. Chart 1 is a summary diagram depicting the various job types developed by the procedure, and the order in which the job type groups merged as the hierarchical grouping procedure continued to its final stage of combining all jobs into one final group. As indicated in Chart 1, the first major job type to emerge from the procedure is the Traffic and Patrol Officer job type. Virtually all officers assigned to the Patrol and Traffic Bureaus (except for Foot Patrol and Traffic Safety Officers) fit tightly into this major job type. The SWAT group was the next to enter, followed by the Investigator II group. When considering the degree of similarity between the various job types diagrammed in Chart 1, it is apparent that some of the officer job types are less similar to the Patrol and Traffic Officer type than are certain of the supervisory positions. The Supervisor of Investigations, Jail Supervisor, and Traffic Field Supervisor types, for example, merge with the combined "Patrol and Traffic Officer", "SWAT Officer", "Investigator II" and "Traffic Foot Patrol Officer" group, before the Jail Officer job type joins the group. Therefore, the "Jail Officer", "Helicopter Officer", and various "Staff Officer" positions are unique job types in that they are less similar to the Patrol and Traffic Officer than are jobs known to be different

CHART 1

GROUPING ORDER OF HOUSTON POLICE DEPARTMENT JOB TYPES



[1]Note: As each job type is statistically merged into the group of all other job types previously defined, a new task overlap

from the Traffic and Patrol Officer group such as "Supervisor of Investigations" or "Field Supervisor". Said in another way, the task contents of the Investigator II, and many of the field supervisor job types are more similar to the content of the Patrol and Traffic Officer job type, than are the task contents of the Helicopter, Jail or Staff Officers.

Identification of the Entry Level Police Officer Job

As mentioned earlier, a major objective of the task analysis phase of the job analysis research was the identification of the entry level police officer job. According to the results reported in the previous section, the content domain of the Police and Traffic Officer job type is most closely matched first by the SWAT Officer and Investigator II job types and next by the Supervisors of Investigations and the Supervisors of the Patrol, Traffic, and Jail Officers. However, the job content of Helicopter Officer, Jail Officer and several kinds of Staff Officers, is quite dissimilar from the Patrol and Traffic Officer. Thus, individuals with the rank of officer are not all serving in positions with similar job content.

The above conclusion is further supported by comparing the "Patrol and Traffic Officer" job type with the other "Officer" job types in terms of the scope of work performed. A summary of this comparison is reported in Table 11. In terms of the diversity of activities accomplished, members of the Patrol and Traffic Officer job type perform many more tasks and in

AVERAGE NUMBER OF TASKS PERFORMED
BY MEMBERS OF VARIOUS
OFFICER JOB TYPES

	AVERAGE NUMBER OF TASKS PERFORMED BY JOB INCUMBENTS WITH THE RANK OF OFFICER
Patrol & Traffic Officer	182
SWAT Officer	141
Investigator II	139
School Safety Officer	84
Helicopter Officer	80
Traffic Foot Patrol Officer	72
Investigator I	64
Community Relations Officer	38
Jail Officer	35
Fleet Control Officer	32
Safety & Public Relations Officer	31
Planning & Research Officer	29
Supply & Subpoena Control Officer	29
Polygraph Officer	29
Dispatcher	25
Records Officer	23
Training Officer	21
Property Officer	15
Recruiting Officer	13
Administrative Support Officer	11
Garage, Supply, & Equipment Officer	10

many more duty areas than do members of various other job types. For example, Patrol and Traffic Officers perform an average of 182 different tasks, while the Investigator I officer only performs 64 different tasks. If the job descriptions (Appendix H) for the various "Officer" job types are closely examined, it is apparent that the "Patrol and Traffic Officer" job type encompasses most of the tasks performed by members of the other "Officer" job types listed in Table 11. For example, "Patrol and Traffic Officers" perform most of the tasks in the "processing and controlling prisoners" duty area, which is the major duty area (in terms of time spent) for the "Jail Officer". Most of the tasks performed by the "Community Relations Officer" also are performed by the "Patrol and Traffic Officer", especially in the duty area of "performing direct public service and public contact functions".

The specialty job types such as "Dispatcher", "Jail Officer", or "Community Relations Officer" require special on-the-job and/or formal training for a select group of tasks. The "Dispatcher" must learn to operate a special multiple console "send and receive" unit. The "Community Relations Officer" must learn how to set up the Police Mobile Exhibit Trailer, etc.

In addition to task analysis data, the results of a special divisional "tracking analysis" also were available for

determining and defining the entry level position.

The tracking study was performed utilizing a records research method which identified and recorded divisional assignments at the time of officer performance appraisal. The tracking research was conducted for all Class A officers commissioned since July 1, 1970. The goals of the tracking research were as follows:

1) To define the divisional assignments of officers after their probationary periods.

2) To estimate mobility between or among divisions for officers in their initial post-probationary assignments.

Table 12 presents a distribution of frequencies of police officers' assignments during the first eighteen months of their careers after the six month probation period. The data are presented jointly and then separately for males and females. The data in Table 12 indicate that 1,125 (or 129 percent of the total number of officers available) assignments were made since July 1970. Approximately 30 percent more assignments were made than there were slots available. Thus, there has been some mobility (approximately 1.3 assignments per officer) during the first eighteen months of duty as an officer. Females show slightly more mobility (1.4 assignments per officer) than males. The majority of male

TABLE 12

ALL JOB ASSIGNMENTS UP TO FIRST 18 MONTHS AFTER PROBATION
FOR OFFICERS HIRED FROM 7/1/70 THROUGH 8/31/75

Division	All Officers		Male Officers		Female Officers	
	No. Ever in Assignment	Percent	No. Ever in Assignment	Percent	No. Ever in Assignment	Percent
Patrol	804	71	803	78	1	1
Traffic Control	105	9	100	10	5	6
Accident Investigation	198	18	179	17	19	21
Juvenile	70	6	24	2	46	52
Jail	129	11	91	9	38	43
Communications	8	1	8	1	0	--
Dispatcher	71	6	71	7	0	--
Crime Lab	1	--	1	--	0	--
Narcotics	12	1	12	1	0	--
Vice	12	1	11	1	1	1
Homicide	2	--	1	--	1	1
HCIC	2	--	0	--	2	2
Intelligence	5	--	1	--	4	4
Personnel	13	1	8	1	5	2
Community Relations	6	1	4	--	2	2
Planning & Research	2	--	2	--	0	--
Identification	10	1	9	1	1	1
Total Active	1125	129	1035	128	89	140
No. Assignments Per Officer (Up to 18 months after probation)	1.3		1.3		1.4	

assignments have been in the Patrol and Accident Investigation Divisions; the majority of female assignments have been in the Juvenile, Jail, and Accident Investigation divisions.

Table 13 presents a similar analysis for officers completing the six month probationary period since January 1, 1973. Similar results to those presented in Table 12 were obtained, although the average number of assignments per officer was slightly higher (1.35).

In summary, there is some degree of mobility across the various departmental divisions during the first eighteen months of assignment as a police officer. However, most assignments occur in Patrol (71 percent), and the next most frequent division of assignment is Accident Investigation (18 percent). Consequently, when the area of assignment during the first year and one half of service is considered as one of the criteria for defining the entry level job, then clearly a majority (89 percent) of all officers serve in either the Patrol, Traffic Control or Accident Investigation Divisions. Thus, the content of the jobs in these divisions as defined by the task analysis results (or other job analysis procedures) comprises the primary content domain of the entry level job.

The above conclusion also is supported from an analysis of the background data collected from officers completing the Task Inventory. Among the final sample of 819 Class A

TABLE 13

ALL JOB ASSIGNMENTS UP TO FIRST 18 MONTHS AFTER PROBATION
FOR OFFICERS HIRED FROM 1/1/73 THROUGH 8/31/75

Division	All Officers		Male Officers		Female Officers	
	No. Ever in Assignment	Percent	No. Ever in Assignment	Percent	No. Ever in Assignment	Percent
Patrol	359	71	358	82	1	1
Traffic Control	38	8	33	8	5	7
Accident Investigation	86	17	68	15	18	26
Juvenile	40	8	11	3	29	42
Jail	74	15	48	11	26	38
Communications	6	1	6	1	0	--
Dispatcher	45	9	45	10	0	--
Crime Lab	1	--	1	--	0	--
Narcotics	7	1	7	2	0	--
Vice	7	1	6	1	1	1
Homicide	1	--	0	--	1	1
HCIC	2	--	0	--	2	3
Intelligence	2	--	0	--	2	3
Personnel	8	2	4	1	4	6
Community Relations	5	1	3	1	2	3
Planning & Research	2	--	2	--	0	--
Identification	3	1	3	1	0	--
Total Active	508	135	439	136	69	132
No. Assignments Per Officer (Up to 18 months after probation)	1.35		1.36		1.32	

personnel, 67 officers had less than one full year of post-probationary job experience. These 67 officers were distributed across the job types as follows:

Job Type	Number	Percent
Patrol & Traffic Officer	45	68
Traffic Foot Patrol Officer	4	6
Jail Officer	4	6
Investigator I	3	4
Community Relations Officer	3	4
Dispatcher	3	4
Training Officer	2	3
Recruiting Officer	1	2
Other	2	3
	67	100

Thus, over two thirds of the relatively new officers had been assigned to the "Patrol and Traffic Officer" job type.

Additional information of a "tenure nature" (obtained from officers completing the Task Inventory) that relates to the identification of the entry level job is presented in Table 14. According to these data, the "Patrol and Traffic Officer" job type has the lowest average tenure except for the "Recruiting Officer". Thus, for the most part relatively new officers have been assigned to the "Patrol and Traffic Officer" job type, since this type generally includes individuals with two or more years *less* tenure than officers in other job types.

TABLE 14

SAMPLE SIZE AND TENURE
CHARACTERISTICS OF VARIOUS
OFFICER JOB TYPES

	Size of Sample Completing the Task	Percentage of Total "Officer" Rank Surveyed	Average Tenure of Sample Members (months)
Patrol & Traffic Officer	353	59	73
Investigator II	59	10	145
Jail Officer	26	4	131
Community Relations Officer	11	2	86
Dispatcher	17	3	102
Training Officer	14	2	99
Recruiting Officer	8	1	70
Foot Patrol Officer	11	2	125
Other	99	17	-
TOTAL	598	100	

Concluding Definition of the Entry Level Job

The entry level job is defined as the "Patrol and Traffic Officer" position for the following reasons:

1) A majority (about 72 percent) of all individuals in the Houston Police Department with the rank of "Officer", are assigned to the Patrol and Traffic Bureaus.

2) A statistical grouping procedure clustered a large number of police officers together into a job type which was entitled "Patrol and Traffic Officer" based upon an analysis of tasks performed by all officers. The content of this job was considerably different from other officer jobs in terms of scope of duties and level of specialization.

3) A special "tracking analysis" indicated that there is some degree of mobility across divisions for police officers with one to eighteen months tenure. The presence of mobility across divisions means that there is mobility in assignments across job types. However, a large majority (89 percent) of the assignments have been to positions that comprise the "Patrol and Traffic Officer" job type.

4) The "Patrol and Traffic Officer" job type has the lowest average tenure per member when compared to all other officer job types (except for the "Recruiting Officer") within the Department. Thus officers are assigned more often to the "Patrol and Traffic Officer" job type than to any other type (except for Recruiting).

A final description of the entry level, "Patrol and Traffic Officer", in terms of the task analysis statements is presented in Appendix I. For each task performed by the "Patrol and Traffic Officer" is listed the average percent of time spent performing the task; the percent of the "Patrol and Traffic Officers" performing the task; and the "criticality" of each task performed by these officers. The "criticality" index, which ranges from one (low) to seven (high) was developed by having Sergeants rate each task in terms of the "consequences of inadequate performance". The instructions for this rating process are given in Appendix J.

CHAPTER 9

JOB ANALYSIS BY DIRECT OBSERVATION

Introduction

In conducting job analyses, it is often important that the analysts have an opportunity to observe incumbents performing their job duties in order to obtain an accurate and comprehensive understanding of the necessary job requirements. Observation is also important from the standpoint that it provides the analysts with opportunities to gain first hand knowledge, in this study referred to as "street sense", and thereby have a more comprehensive understanding of the various jobs when analyzing various types of job information. Thus, the first hand knowledge is an important aid to the conduct of job analysis interviews, in that the analysts can better understand and relate to what is being said in the interviews. Information obtained from direct observation is also valuable when preparing objective task analysis statements and when analyzing jobs with other types of job analysis questionnaires (e.g., the PAQ). Consequently, the direct observations of officers at work became an important part of the study and actually preceded or were conducted concurrently with the other methods of job analysis utilized in this study.

Methodology

Prior to the initiation of the direct observation process, a

CONTINUED

1 OF 3

"Direct Observation Guide" was developed to ensure consistency in the collection of information by the job analysts. This guide consisted of three major sections: 1) background information, 2) a checklist of job activities and conditions, and 3) narrative descriptions of the events and activities that were observed by the analysts. The second major section (the checklist of activities) was comprised of ten subcategories: (a) general duty being performed, (b) number of officers involved, (c) equipment or materials used, (d) data involved, (e) type of people dealing with, (f) physical conditions/milieu, (g) physical activity, (h) time constraints, (i) possible negative consequences of actions, and (j) degree of mental alertness required. A copy of the direct observation guide used by the job analysts is given in Appendix K.

When completing the direct observation guides, the job analysts "checked off" the applicable items in the second major section of the guide as these items occurred during the observation period. For example, if an officer were involved in the general duty of routine patrol during the first thirty minutes of a shift, a check mark was placed by the observing job analyst in column A next to "Routine Patrol". If, during that same time period, the officer came in contact with an inebriated person, a check mark also was placed in column A next to "Inebriated". In a like manner, all activities and conditions which were present during the first thirty-minute time period were checked in Column A. During the next thirty-minute

time period, the same procedure was followed, with the analyst placing the check marks for appropriate items in column B of the observation guide. This process was followed throughout the entire eight-hour work shift under observation.

In addition to completing the checklist, the job analysts also recorded in narrative fashion all events and activities that occurred during each thirty minute observation interval. The data from this section of the observation guide were used to complete a content analysis of the observations.

The observations were completed by seven job analysts between December 15, 1975 and January 31, 1976. All seven analysts hold doctoral degrees in Industrial Psychology and have both formal training and experience in job analysis. A total of 42 observations were conducted, totaling approximately 336 hours of observation time. During these times over 75 officers were observed performing their jobs. The information given in Table 15 describes the nature of each observation period. As indicated by this information, the job analysts observed the work of Class A personnel with the classified rank of Officer in most of the major divisions of the Department across all work shifts.

Results

The information given in the left column of Table 16 identifies the types of calls to which police officers are dispatched. In total, there are 25 major types of calls. In the right column

DESCRIPTION OF OBSERVATION PERIODS

BUREAU	DIVISION	SHIFT	DISTRICT	NUMBER OF OFFICERS OBSERVED
Special Investigations	Organized Crime	Day	---	2
Special Investigations	Intelligence	Evening	---	1
Special Investigations	Narcotics	Day	---	Several
Special Investigations	Narcotics	Evening	---	Several
Special Investigations	Vice	Day	---	2
Special Investigations	Vice	Night	---	5
Patrol	Central	Evening	16	1
Patrol	Central	Evening	2	1
Patrol	Central	Evening	17	1
Patrol	Central	Evening	1	2
Patrol	Central	Evening/Night	16	3
Patrol	Central	Evening/Night	2	2
Patrol	Central	Day	1	1
Patrol	Central	Night	17	1
Patrol	Southwest	Evening	18	1
Patrol	Southwest	Evening	20	1
Patrol	Southwest	Evening	15	1
Patrol	Southwest	Night	19	1
Patrol	Park Place	Evening	13	2

TABLE 15 (CON'T.)

BUREAU	DIVISION	SHIFT	DISTRICT	NUMBER OF OFFICERS OBSERVED
Patrol	Park Place	Evening	14	2
Patrol	Park Place	Evening	12	2
Patrol	Park Place	Evening	11	1
Patrol	Park Place	Night	14	2
Patrol	Northeast	Evening	7	2
Patrol	Northeast	Evening	9	2
Patrol	Northeast	Evening	8	2
Patrol	Northeast	Evening	10	2
Patrol	Northeast	Day	7	1
Patrol	Northeast	Night	10	1
Patrol	SWAT	Day	---	1
Special Services	Dispatch	Evening	---	2
Special Services	Jail	Night	---	Several
Special Services	Jail	Evening	---	Several
Traffic	Accident	Evening	---	2
Traffic	Accident	Day	---	1
Traffic	Enforcement	Evening	---	2
Traffic	Enforcement	Day	---	1
Traffic	Helicopters	Day	---	1

BUREAU	DIVISION	SHIFT	DISTRICT	NUMBER OF OFFICERS OBSERVED
Traffic	Point Control	Day	---	2
Traffic	Point Control	Evening	---	2
Criminal Investigations	Juvenile	Evening	---	2
Criminal Investigations	Juvenile	Day	---	1

of Table 16 are listed the types or calls or investigations that the job analysts were dispatched to with the officers and/or observed during the course of the observation period. Of the 25 types of major calls, the analysts were dispatched to or observed 21, or 84 percent, of these calls. In most instances, a given type of call was observed more than once and by more than one job analyst. Consequently, the analysts had the opportunity to observe the most important aspects of an officer's work, and the analysts received comprehensive, first-hand knowledge of the duties, tasks, behaviors and activities involved in many of the Houston Police Department's "first-line" jobs.

As previously mentioned, the knowledge gained from the observation periods was especially valuable to the research team in the implementation and interpretation of other types of job analysis methods and results. Table 17 lists the various types of activities and behaviors that the job analysts observed. These activities and behaviors have been categorized into the following areas: (a) physical activities and behaviors, (b) skilled psychomotor activities and behaviors, (c) public relations, (d) investigative activities and behaviors, (e) arrest activities and behaviors, (f) traffic control activities and behaviors, (g) reporting/communicating, and (h) activities and behaviors requiring interpersonal skills.

Given the variety of activities and behaviors observed, and

TABLE 16

TYPES OF CALLS AND CALLS DISPATCHED

TO AND OBSERVED BY JOB ANALYSTS

Types of Calls:[1]	Calls Dispatched to and Observed by the Job Analysts:
1. Accidents a. major b. major/minor injuries c. unknown major or minor d. minor	1. Accidents a. major b. hit and run c. pedestrian hit d. minor
2. Ambulance Call a. shooting or cutting b. suicide c. overdose d. beating e. DOA f. etc.	2. Ambulance Call a. shooting b. attempted suicide c. overdose d. beating e. DOA (natural) f. homicide
3. Assist the Officer	3. Assist the Officer
4. Auto Theft	4. Auto Theft
5. Bomb Threat	5. Bomb Threat
6. Burglary a. in progress, just occurred b. burglar alarm c. all other burglaries	6. Burglary a. burglary in progress b. burglar alarm (local and silent) c. residential burglary d. business burglary
7. Citizen Holding Prisoner	7. Citizen Holding Prisoner
8. Criminal Mischief	8. Criminal Mischief
9. Dead Person a. natural b. homicide	9. Dead Person a. natural b. homicide

[1]Source: Houston Police Department, Dispatchers Division, Telephone Complaint Manual for Dispatcher I. Issued September 29, 1975 by H. D. Caldwell, Deputy Chief, Special Services Bureau.

TABLE 16 (CON'T.)

Types of Calls:	Calls Dispatched to and Observed by the Job Analysts:
10. Disturbance	10. Disturbance a. business b. family c. attempted assault with firearms d. discharge of firearms e. labor dispute
11. Drunk	11. Drunk
12. Found Property	12. Not Observed
13. Hazards	13. Hazards
14. Man or Woman Down	14. Not Observed
15. Mental Case	15. Mental Case
16. Narcotics a. being used b. being sold or stored	16. Narcotics a. being used b. being sold or stored
17. Officer Holding Prisoner (Wagon Call)	17. Several Observed
18. Officer Needs Help/Backup	18. Officer Needs Help/Backup
19. Prowler	19. Prowler
20. Rape a. in progress or just occurred b. old report	20. Not observed
21. Robbery a. in progress or just occurred b. alarm hold up	21. Robbery a. just occurred
22. See Complainant	22. See Complainant a. threatening phone calls b. civil disputes c. miscellaneous
23. Shoplifter	23. Shoplifter

TABLE 16 (CON'T.)

Types of Calls:	Calls Dispatched to and Observed by the Job Analysts:
24. Theft	24. Theft
a. in progress	a. in progress
b. regular theft report	b. regular theft report
c. theft of license plates	
25. Code 1 Calls	25. Code 1 Calls
a. call: office, home, some division, etc.	a. call: home, office, other division
b. work traffic	b. blocked drive
c. blocked drive	c. meet officer
d. meet officer	d. report to
e. report to ...	e. abandoned car
f. abandoned car	f. cars speeding
g. illegal parking	g. see party
h. cars speeding	
i. see party	

TABLE 17

TYPES OF ACTIVITIES AND BEHAVIORS

OBSERVED BY THE JOB ANALYSTS[1]

A. Physical Activities and Behaviors

1. Pushing a stalled automobile off the street (alone) (with assistance)
2. Breaking through a door to gain forcible entry (with assistance)
3. Handcuffing prisoners (alone) (with assistance)
4. Climbing over a five-foot fence to enter property (alone)
5. Controlling several intoxicated persons (alone)
6. Subduing and controlling a struggling actor/intoxicated actor (alone) (with assistance)
7. Lifting and carrying a resisting actor into the patrol car (with assistance)
8. Running approximately 100 yards and catching a fleeing actor (alone)
9. Lifting and carrying portable scales (alone)
10. Lifting injured person from automobile onto a stretcher (with assistance)
11. Forcing a resisting actor to the patrol car (alone) (with assistance)
12. Pulling self up through attic entrance and hanging there with flashlight in one hand (alone)

B. Skilled Psychomotor Activities and Behaviors

1. High-speed driving
2. Pursuit driving
3. Flying helicopter

C. Public Relations

1. Advising citizens of the law
2. Giving verbal warnings to traffic violators
3. Escorting a distressed citizen home
4. Helping a stalled motorist
5. Giving directions to lost motorists
6. Talking/counseling with juveniles
7. Checking on motorists who are sleeping, ill, etc.
8. Taking an injured person to the hospital
9. Consoling victims
10. Checking persons for possible injuries

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[1]Some activities and behaviors are listed in more than one category.

TABLE 17 (CON'T.)

D. Investigative Activities and Behaviors

1. Checking vehicle registrations
2. Investigating traffic accidents
3. Preparing offense reports
4. Questióning victims, witnesses, and suspects
5. Checking buildings for means of entry (after burglary)
6. Lifting fingerprints
7. Checking on abandoned vehicles
8. Searching for prowlers
9. Stopping suspicious looking persons
10. Taking pictures of crime scenes
11. Securing the scene of a crime
12. Examining bodies for evidence of foul play
13. Searching large areas for wanted actors
14. Developing informants
15. Searching residences, cars, etc., for contraband
16. Gathering information from written materials
17. Conducting undercover meetings
18. Maintaining surveillance
19. Using electronic surveillance equipment, cameras, etc.
20. Receiving information from informants
21. Conducting preliminary tests on suspected drugs
22. Showing mug shots
23. Weighing trucks with portable scales
24. Measuring dimensions of loads on trucks
25. Measuring distances at the scene of an accident
26. Advising victims of their rights and procedures for filing charges
27. Routine patrol and observation

E. Arrest Activities and Behaviors

1. Tagging property
2. Issuing tickets for traffic violations
3. Searching actors, suspects, and prisoners
4. Handcuffing prisoners
5. Transporting prisoners to jail
6. Completing arrest reports
7. Filing charges
8. Processing DWI
9. Apprehending actors (see Physical Activities category)
10. Administering breathalyzer test
11. Drawing weapons to have ready for use
12. Obtaining and serving warrants
13. Conducting raids and busts
14. Booking prisoners

TABLE 17 (CON'T.)

15. Putting prisoners in cells
16. Taking pictures of prisoners

F. Traffic Control Activities and Behaviors

1. Giving verbal warnings to traffic violators
2. Issuing tickets for traffic violations
3. Directing traffic at intersections
4. Directing traffic at the scene of an accident
5. Operating radar unit
6. Having illegally parked cars towed away

G. Reporting/Communicating

1. Preparing traffic tickets
2. Preparing accident reports
3. Preparing offense reports
4. Preparing arrest reports
5. Filing charges
6. Communicating with other law enforcement agencies
7. Operating TCIC/NCIC terminals
8. Discussing status of cases/investigations
9. Testifying in court
10. Dispatching officers to calls
11. Maintaining radio contact and reporting relevant information
12. Preparing call slips
13. Recording confiscated property
14. Preparing daily activity reports
15. Recording of prisoners' activities
16. Sketching pictures for offense reports
17. Performing calculations for reports
18. Roll call meetings
19. Informing prisoners of what they should do to get out of jail
20. Recording prisoners' property

H. Activities and Behaviors Requiring Interpersonal Skills

1. Counseling with juveniles
2. Questioning victims, witnesses, suspects and prisoners
3. Calming down distressed individuals
4. Communicating with a deaf and dumb person
5. Reasoning with emotionally upset individuals
6. Ignoring verbal abuse

TABLE 17 (CON'T.)

7. Developing informants
8. Controlling crowds and preventing violence
9. Resolving conflicts between individuals
10. Calming down mentally ill persons
11. Being patient and polite to hostile people or prisoners
12. Translating from one language to another

having observed that different officers perform different activities or are required to behave differently depending upon the division to which they are assigned, the job analysts concurred with and substantiated the previously described findings of the task analysis with regard to the content of the entry-level job.

CHAPTER 10

CRITICAL INCIDENT ANALYSIS

Introduction

As previously indicated, a number of job analysis techniques have been utilized to obtain an integrated and comprehensive picture of Class A jobs within the Houston Police Department. A prior chapter has described the analysis of the jobs in terms of the tasks performed by police officers. This chapter describes a job analysis procedure that focuses on critical behaviors.

The Critical Incident technique, developed by Flanagan (1954), provides information about the critical aspects of a job by having incumbents and immediate supervisors (Sergeants in this study) describe examples of exceptionally good or exceptionally poor on-the-job behavior. The incidents so described were actual situations in which a job incumbent's behavior made the difference between a successful or an unsuccessful outcome of a work situation. Rather than a general description of job behaviors that result from many job analysis methods, the Critical Incident technique defines behaviors and events that actually occurred at a definite time and place. In turn, all events are content-analyzed and placed into meaningful categories of relevant (job-related) behavioral job dimensions.

Critical Incident Methodology

In this study, critical incidents were collected by asking

police officers and Sergeants from most of the Houston Police Department divisions and details to describe orally to an interviewer (job analyst) or in writing a certain number of incidents in which both effective and ineffective job performance resulted from the actions taken by a police officer.

Tables 18 and 19 list the number of interviews and questionnair scheduled and obtained from officers and Sergeants in the varic divisions and details of the Department. The schedule for the number of incidents to be obtained from each division was roughly proportionate to the distribution of officers throughout the entire Houston Police Department. A total of 2,248 incidents were scheduled to be collected, anticipating 1,000 to 1,500 usable critical incidents.

Respondents first were asked to relate critical incidents about officers from the division or detail in which they (the respondents) currently worked. If respondents could not think of enough incidents from their own division, they were asked to describe officer incidents that had occurred in another divisio in which they had worked earlier in their careers. It should be noted that most of the respondents with "office-type" jobs could not think of enough incidents occurring within their present divisions, and they often related incidents that happene in the Patrol or Traffic Bureaus in which they had worked previously. Therefore, a large majority of the incidents actually described the behavior of officers assigned to the

TABLE 18

CRITICAL INCIDENTS OBTAINED FROM OFFICERS

BY DIVISION AND DETAIL

Current Division or Detail of Individual Relating Critical Incident	Number of observation/ interviews for collecting critical incidents*	Number of questionnaires distributed	Number of critical incidents to be obtained from questionnaire	Number of questionnaires returned	Percent of questionnaires returned	Number of critical incidents collected by observation/ interview	Number of critical incidents collected by questionnaire
Administration							
Personnel	0	2	12	0	0%	-	0
Community Relations	0	5	20	2	40%	-	8
Staff Services							
Training	0	5	20	4	80%	-	10
Recruiting	0	10	40	6	60%	-	22
Special Investigation							
Narcotics	2	10	40	8	80%	10	31
Vice	2	10	40	6	60%	10	21
Juvenile	2	10	40	10	100%	14	37
Patrol							
Central	6	20	80	19	95%	3	67
NW - 1 and 5	4	15	60	14	93%	5	45
NE - 2	6	15	60	15	100%	12	58

TABLE 18 (CON'T.)

Current Division or Detail of Individual Relating Critical Incident	Number of observation/ interviews for collecting critical incidents*	Number of questionnaires distributed	Number of critical incidents to be obtained from questionnaire	Number of questionnaires returned	Percent of questionnaires returned	Number of critical incidents collected by observation/ interview	Number of critical incidents collected by [illegible]
SE - 3	6	15	60	14	93%	6	42
SW - 4	6	15	60	8	53%	8	24
K-9	0	5	20	5	100%	-	19
Desk	1	5	20	0	0%	3	0
Traffic							
Enforcement	2	15	60	10	67%	1	37
Safety	0	5	20	4	80%	-	10
Accident	2	15	60	7	47%	15	26
Point Control	0	15	60	11	73%	-	37
Helicopter	1	5	20	0	0%	11	0
Ticket Supply & Stat.	0	2	12	2	100%	-	12
Criminal Investigation							
Robbery	1	1	10	0	0%	8	0
Auto Dealers	0	2	12	1	50%	-	6
SWAT	1	5	20	5	100%	2	20
Bomb Squad	0	2	12	0	0%	-	0

TABLE 18 (CON'T.)

Current Division or Detail of Individual Relating Critical Incident	Number of observation/ interviews for collecting critical incidents*	Number of questionnaires distributed	Number of critical incidents to be obtained from questionnaire	Number of questionnaires returned	Percent of questionnaires returned	Number of critical incidents collected by observation/ interview	Number of critical incidents collected by questionnaire
Inspection							
Planning and Research	0	5	20	2	40%	-	8
Criminal Intelligence	2	5	20	0	0%	0	0
Organized Crime	1	1	10	0	0%	0	0
Technical Service							
Records	0	4	16	1	25%	-	7
Polygraph	0	2	12	2	100%	-	12
H.C.I.C.	0	1	10	1	100%	-	0
Identification	0	3	18	0	0%	-	0
Property Room	0	5	20	2	40%	-	11
Bike Detail	0	3	18	3	100%	-	18
Special Services							
Dispatchers	2	10	40	5	50%	5	18
Garage	0	6	24	6	100%	-	22
Jail	2	10	40	3	30%	2	12
Uniform Supply	0	6	24	2	33%	0	5
Total	49	270	1130	178	66%	115	645

*1 or 2 officers per observation/interview with 10 critical incidents collected per interview.

TABLE 19

CRITICAL INCIDENTS OBTAINED FROM SERGEANTS

BY DIVISION AND DETAIL

Current Division or Detail of Individual Relating Critical Incident	Number of interviews for collecting critical incidents*	Number of questionnaires distributed	Number of critical incidents to be obtained from questionnaire	Number of questionnaires returned	Percent of questionnaires returned	Number of critical incidents collected by interview	Number of critical incidents collected by
Administration							
Personnel	1**	0	-	-	-	0	-
Community Relations	1	0	-	-	-	4	-
Staff Services							
Training	1	0	-	-	-	9	-
Recruiting	1	0	-	-	-	6	-
Special Investigation							
Narcotics	1	0	-	-	-	0	-
Vice	1	0	-	-	-	0	-
Juvenile	1	5	20	5	100%	7	18
Patrol							
Central	1	10	40	9	90%	16	35
NW - 1 and 5	1	10	40	10	100%	10	36
NE - 2	1	10	40	9	90%	8	31

TABLE 19 (CON'T.)

Current Division or Detail of Individual Relating Critical Incident	Number of interviews for collecting critical * incidents	Number of questionnaires distributed	Number of critical incidents to be obtained from questionnaire	Number of questionnaires returned	Percent of questionnaires returned	Number of critical incidents collected by interview	Number of critical incidents collected by questionnaire
SE - 3	1	10	40	8	80%	12	26
SW - 4	1	10	40	10	100%	10	39
Traffic							
Enforcement	1	10	40	6	60%	10	21
Safety	1	0	-	-	-	0	-
Accident	1	10	40	6	60%	19	20
Point Control	3	6	24	4	67%	14	13
Helicopter	1	0	-	-	-	0	-
Ticket Supply & Stat.	1**	0	-	-	-	0	-
Criminal Investigation							
Auto Dealers	1***	0	-	-	-	8	-
SWAT	1	1	4	1	100%	10	3

TABLE 19 (CON'T.)

Current Division or Detail of Individual Relating Critical Incident	Number of interviews for collecting critical * incidents	Number of questionnaires distributed	Number of critical incidents to be obtained from questionnaire	Number of questionnaires returned	Percent of questionnaires returned	Number of critical incidents collected by interview	Number of critical incidents collected by
Inspection							
Planning and Research	1**	0	-	-	-	4	-
Criminal Intelligence	1	0	-	-	-	10	-
Technical Service							
Records	1	0	-	-	-	4	-
H.C.I.C.	1**	0	-	-	-	10	0
Bike Detail	1**	0	-	-	-	8	-
Special Service							
Dispatchers	1	0	-	-	-	14	-
Garage	1	0	-	-	-	0	-
Jail	1	5	20	2	40%	9	8
Uniform Supply	1	0	-	-	-	0	-
Total	31	87	348	70	80%	202	250

* 1, 2, or 3 supervisors per interview

** 10 critical incidents were to be collected per interview except for those with an asterisk (**) where only 4 were to be collected.

***Two detectives and one lieutenant were interviewed rather than a sergeant

Traffic or Patrol Bureaus.

Interviews with officers also were held by members of the research team during direct observation periods (see Chapter 9), and ten critical incidents were requested (five positive and five negative) during each observation/interview. Critical incidents for the officer position were obtained from Sergeants after an interview discussing their own (i.e., Sergeant) job duties. If only one individual was interviewed, four critical incidents were requested (two positive and two negative). When two or more sergeants were interviewed simultaneously, ten critical incidents were requested by the job analyst. Appendix L contains the critical incident questionnaires used by the job analysts during the officer and Sergeant interviews. Questionnaires to be completed by both officers and Sergeants (Appendices M and N) were given to division Captains for distribution. Most individuals were asked to describe four incidents (two positive and two negative). However, if the division or detail was small and only a few questionnaires were distributed, the respondents were asked to describe six or ten incidents. Recipients of the questionnaires were asked to complete the forms within ten days and return them to the researchers in self-addressed envelopes.

Critical Incident Results

Of the 2,248 critical incidents requested, 1,328 were obtained from the interview and questionnaire procedures. One hundred,

sixteen of these incident descriptions were not usable, primarily because they were either illegible or the example was not a "true" critical incident. Of the 1,212 usable incidents, 760 were submitted by officers and 452 were from Sergeants describing police officer job performance.

Each incident was read by one of two research team Industrial Psychologists and categorized into a behavioral job dimension. After all incidents were reviewed separately, the psychologists discussed the behavioral categories each had obtained through independent analysis. There was considerable overlap between the independently-derived behavioral dimensions, and the two sets of dimensions were combined into a single set of behavioral job dimensions. All 1,212 incidents were then reanalyzed and categorized into the final set of behavioral dimensions by the same two psychologists, each reading approximately one-half of the incidents.

Table 20 lists the 13 major behavioral job dimensions and the 42 sub-categories of the various dimensions. Additionally, the numbers of positive and negative critical incidents associated with each dimension are reported in Table 20. There were many ways of combining the incidents into behavioral dimensions. As a guideline for this study, dimensions were selected which would be most meaningful and descriptive of a Houston police officer's job in the opinion of the researchers. Dimension categories were not designed necessarily to be

TABLE 20

CATEGORIZATION OF CRITICAL INCIDENTS

FOR SUPERVISORS AND POLICE OFFICERS

Behavioral Dimensions and Categories	Number Positive	Number Negative	Total	Percentage of incidents in category**
1. Personal Character and Responsibility			(86)*	(7%)
a. Honesty	10	33	43	4%
b. Abiding by the Law	1	3	4	0%
c. Objectivity, Fairness and Prejudice	4	18	22	2%
d. Proper Use of Authority	2	15	17	1%
2. Emotional Stability/Control and Psych. Adj.			(325)	(27%)
a. Sexual Conduct	0	8	8	1%
b. Use of Alcohol and Drugs	0	8	8	1%
c. Separating Personal Life from Prof. Oblig.	0	3	3	0%
d. Physical Aggressiveness	24	47	71	6%
e. Verbal Aggressiveness	3	31	34	3%
f. Taking Abuse and Self Restraint	21	29	50	4%
g. Maintaining Control in Emergency or Stressful Situation	76	22	98	8%
h. Willingness to Risk Personal Safety; Courage	35	18	53	4%
3. Judgment and Decision Making			(310)	*** (26%)
a. Exercising Caution when Dealing with Actor	20	86	106	9%
b. Concern for the Safety of Others	9	7	16	1%
c. Flexibility to Situations and Circumstances	21	3	24	2%

TABLE 20 (CON'T.)

Behavioral Dimensions and Categories	Number Positive	Number Negative	Total	Percentage of incidents in
d. Handling and Use of Weapons	25	44	69	6%
e. Decision Making	16	35	51	4%
f. Planning Ability	23	4	27	2%
g. Establishing Communicative Networks	6	11	17	1%
4. Investigative Thoroughness	116	64	180	15%
5. Investigative Vigilance			(153)	(13%)
a. Memory for Details	23	0	23	2%
b. Perceptual Vigilance, Observant	119	11	130	11%
6. Job Knowledge			(54)	(4%)
a. Knowledge of the Law	0	9	9	1%
b. Knowledge of Procedures	10	9	19	2%
c. Knowledge of Geographic Areas	3	2	5	0%
d. Knowledge of First Aid Technique	19	2	21	2%
7. Conscientiousness to Duty			(161)	(13%)
a. Responsibility for Assignment	3	25	28	2%
b. Following Departmental Procedures	19	27	46	4%
c. Following Orders	0	8	8	1%
d. Interest in Work; Initiative	37	25	62	5%
e. Accuracy and Thoroughness in Reporting	3	14	17	1%
8. Interpersonal Effectiveness			(121)	(10%
a. Ability to Assume an Undercover Role	7	6	13	1%

TABLE 20 (CON'T.)

Behavioral Dimensions and Categories	Number Positive	Number Negative	Total	Percentage of incidents in category**
b. Establishing Rapport with Actor to Obtain Information	35	3	38	3%
c. Developing and Gaining Trust of Informants	15	1	16	1%
d. Influencing Behavior of Distressed or Disturbed Individuals	48	0	48	4%
e. Talking People out of Fighting, Rioting, etc.	5	1	6	0%
9. Interest in Helping Others/Public Relations			(124)	(10%)
a. Interest in Helping Others	29	11	40	3%
b. Attitude in Dealing with Others	14	38	52	4%
c. Sympathy or Concern for Victims or Distressed Individuals	24	8	32	3%
10. Relationship with Peers	33	23	56	5%
11. Leadership/Self Reliance			(29)	(2%)
a. Directing and Assigning Tasks to Other Officers	4	3	7	1%
b. Controlling a Scene Independently; Self Reliance	17	5	22	2%
12. Psychomotor Skills			(99)	(8%)
a. Ability to Shoot Firearms Accurately	29	4	33	3%
b. Pursuit and High-Speed Driving Ability	42	24	66	5%
13. Physical Ability	113	44	157	13%
Grand Total			1855	

* Subcategory totals
** Will total more than 100% because some incidents were placed in 2 or more categories
***Subcategory total percent will not always equal category percent because of rounding off decimals.

independent and, in fact, many overlap. If one part of a dimension was important enough to stand by itself, a new category was created. For example, "honesty" and "sexual conduct" critical incidents could have been listed under "abiding by the law", but were considered important enough to be cited in separate categories. In addition, "sexual conduct" could have been listed under "personal character and responsibility" rather than "emotional stability/control and psychological adjustment", but was considered to be more representative of the latter than the former.

The frequencies of incidents by dimension category as reported in Table 20 are not related necessarily to their criticality or even their frequencies of on-the-job behavior. For example, honesty is an extremely important requirement for police officer Every time an officer confiscates property or examines a burglarized home or place of business, the opportunity exists for the officer to steal. However, a critical incident only was categorized under "honesty" if honest or dishonest behavior was specifically mentioned by the individual describing the incident. When considering the nature of an officer's job, honest behavior is assumed and usually not mentioned unless something dishonest occurs. Likewise, positive behavior for categories such as "sexual conduct" and "responsibility of assignment" are the norm and are seldom mentioned unless as a negative incident. Therefore, frequency of job behavior and "criticality" are obtained most accurately from another method

of job analysis, such as the task list inventory approach (see Chapters 6 and 7 of this volume).

Very often a critical incident was categorized by the researchers in more than one dimension, which accounts for the grand total of 1,855 incidents reported in Table 20. For example, if an incident involved both a high-speed chase and a fight to apprehend an actor, the incident was cited in both categories 12b and 13 in Table 20.

Appendix O describes in detail each of the 13 major behavioral job dimensions, and Appendix P lists positive and negative examples of all categories and subcategories for each dimension. In addition to the dimensions reported in Appendix O, two other dimensions were described by police officers which are related to the public image of the police officer rather than the officer's actual on-the-job behavior. For this reason, these two dimensions are not included in the Appendices with the other behavioral dimensions. The first dimension considered important was maintaining a neat and clean appearance. The second dimension was a good credit rating. An officer who did not pay his bills was described as reflecting very poorly on the Department. Further, it was noted by the officers interviewed that if one did not pay or make reasonable provisions for the payment of just debts, the officer was subject to removal from service or suspension.

Table 21 is a detailed listing and frequency count of the various physical activities described in the critical incidents. The total frequency count is greater than the 157 physical ability incidents listed in Table 21 because any one incident may have involved several physical activities (e.g., climbing a ladder and subduing an actor). Table 22 summarizes the data reported in Table 21 into general physical behaviors. Frequency counts include both negative and positive incidents. For example, "subdue" contains incidents where an officer successfully subdued an actor, as well as those where he/she tried to subdue an actor but failed.

Discussion of Results

The critical incident dimensions were used in conjunction with other job analysis results to define the job content domain, and to ascertain the knowledge, skills, and abilities necessary to perform the job of the Houston Police Officer. These behavioral dimensions then were used to define the behavioral constructs important for successful or unsuccessful police officer job performance. (These behavioral constructs are described in detail in Volume VII of this report.) In addition, the constructs were used to develop job performance evaluation scales that served as criteria in the validation studies (see Volumes V and VII).

A number of other independent research studies of the police officer job also have identified several behavioral dimensions

TABLE 21

SPECIFIC PHYSICAL ACTIVITY CATEGORIES

AS SUMMARIZED FROM CRITICAL INCIDENTS

Physical Activity	Number of Incidents Involving this Behavior
Several officers subdued several attackers	1
Four officers subdued one actor	5
Three officers subdued one actor	8
Three officers formed train by grabbing waists and end officer pulled man back from ledge	1
Two officers chased, caught and apprehended three actors	1
Two officers chased, caught and apprehended one actor	11
Two officers fought and subdued one actor	21
One officer held onto actor and defended self from bystanders' assault	4
One officer fought two or three actors and was unable to apprehend any of the actors	3
One officer fought two actors, apprehended one but was unable to apprehend the second	1
One officer chased, caught and apprehended two actors	1
One officer apprehended two actors	2
One officer chased, caught and apprehended one actor	25
One officer chased, caught but could not apprehend actor	3
One officer chased actor, actor was shot in chase	3
One officer chased actor, but could not catch actor	11

TABLE 21 (CON'T.)

Physical Activity	Number of Incidents Involving this Behavior
One officer let actor run away and didn't try to catch him (officer was overweight)	1
One officer fought/apprehended/subdued/handcuffed resisting actor	37
One officer could not apprehend/subdue an actor (not enough strength)	17
One officer was beat up or pinned down by an actor	5
One officer "kicked in" a door	8
One officer carried people out of a burning building	3
One officer pulled person out of a car	2
One officer retrieved a body from the bayou	1
One officer climbed in the window of a house from the ground	1
One officer climbed a ladder	2
One officer climbed to the roof of a building	1
One officer climbed a tree and jumped to the roof of a building	1
One officer jumped from a window to the roof of a building next door	1
One officer lowered another officer into a building from a roof by rope or water hose	3
One officer was lowered into building from a roof by rope or water hose	3
One officer could not reach gas peddle in patrol car to drive it	1

Note: Chases included climbing six foot fences, jumping drainage ditches and running up stairs.

TABLE 22

GENERAL PHYSICAL BEHAVIOR CATEGORIES

AS SUMMARIZED FROM CRITICAL INCIDENTS

Physical Category	Number of Incidents Involving this Behavior
Subdue	145
Run	56
Carry/Drag/Lift	13
Kick	8
Climb	5
Jump	2

important to successful police officer performance. These independent studies have utilized a number of research techniques to identify the relevant dimensions including the job element approach, the Critical Incident technique, various job analysis questionnaires (including the Position Analysis Questionnaire which was also used in the job analysis phase of this project), peer ratings and interviews with officer incumbents and supervisors. The results from several of these studi are extremely similar in terms of the final set of behavioral dimensions that comprise a major portion of the police officer job content domain. A comparison of the results of many of these studies with those of the present study is given in Table 23. The left-hand column of Table 23 lists the behaviora dimensions identified by the Critical Incident technique as used in this phase of the job analysis research. Based on the definitions of the behavioral dimensions given by other authors, the dimensions from their independent studies have been "matched" with those for the Houston police officer. The behavioral dimensions identified in this study encompass all dimensions reported in the other studies except for one - the control of traffic. Thus, there appears to be a great deal of consistency across many independent studies as to the critic behavioral dimensions of the police officer job.

City of Houston Police Officers	City of Akron, Ohio Patrol Officers Barrett et. al. (1975)	Cities and Counties of California Police Officers Selection Consulting Center (1973)	New York State Police Officers New York State Police Department (1976)	City of Chicago Police Officers Bashr et. al. (1969)	Texas State Police Officers LWFW (1975)	Police Officers in General Heckman et. al. (1972)	Police Officers in General Landy et. al. (1976)	City of Atlanta Police Officers Atlanta Regional Commission (1974)
Personal Character and Responsibility	Integrity Demeanor	Integrity	-	Personal Integrity and Ethics Objectivity	Character Personal Responsibility Objectivity Interpersonal Dominance	Integrity and Professional Ethics	-	Professionalism
Emotional Stability/ Control and Psychological Adjustment	Using Force Appropriately Dependability	Willingness to Confront Problems	Dependability Act under Pressure Function in Danger	Tolerance for Stress Endure Verbal Abuse Courage	Avoiding Overuse of Authority Taking Verbal Abuse Appropriate Aggressiveness	Using Force Appropriately	-	Willingness to Work in Hazardous Environment Maintaining Self Control
Judgment and Decision Making	Judgment Public Safety	Judgment under Pressure Problem Solving	Good Judgment Make Decisions	Effective Judgment Flexibility Decision Making	Caution Social Intelligence Decision Making Personal Flexibility	Maintaining Public Safety	Judgment	Making Decisions Responsibility for Safety of Others
Investigative Thoroughness	Investigation	Dependability	Thoroughness	Investigative Questioning	Investigative Thoroughness	Investigating, Detecting and Follow Up	-	Attention to Detail
Investigative Vigilance	Crime Prevention	Observational Skills	-	Vigilance	Perceptual Vigilance	Crime Prevention	-	-
Job Knowledge	Job Knowledge Equipment	Learning Ability	Common Sense	Communication and Record Keeping	-	-	Use of Equipment Job Knowledge	Job Knowledge Life Saving and First Aid
Conscientiousness to Duty	Commitment Initiative Work Attitude Report Writing	Dependability Desire for Self Improvement	Motivation Taking Orders Job Enthusiasm	Take Orders	Conscientiousness Organization and Expression	Report Writing Commitment, Dedication and Conscientiousness	Reliability Work Attitude	Proper Mental Attitude Responsibility for Assigned Duties Follow Set Procedures Care and Use of Equipment
Interpersonal Effectiveness	Communications	Communications Skills	Communicate Well with Others	Restore Equilibrium to Social Groups	Verbal Persuasiveness Public Speaking Interviewing Skill	Dealing Constructively with the Public	Communication	-
Interest in Helping Others/Public Relations	Dealing with the Public Domestics	Interpersonal Sensitivity Interest in People	-	-	Courtesy Humanitarianism	Handling Domestic Disputes	Dealing with the Public	Interest in Helping Others Public Relations
Relationship with Peers	Relations with Others Teamwork	-	-	-	-	Teamwork	Compatability	Relations with Peers
Leadership/ Self Reliance	-	-	Assume Responsibility Work without Supervision	Take Charge of Situations	-	-	-	-
Psychomotor Skills	-	-	Personal Resources	Psychomotor Skills	Pursuit Driving	-	-	-
Physical Ability	-	Physical Ability	-	Endure Physical Abuse	Physical Ability	-	-	Physical Fitness
Public Image/ Appearance	Professional Appearance and Conduct	Appearance	-	Professional Appearance	-	-	Demeanor	Personal Appearance
-	Traffic	-	-	-	-	Traffic Maintenance and Control	-	-

CHAPTER 11

JOB ANALYSIS WITH THE POSITION ANALYSIS QUESTIONNAIRE

Introduction

The Position Analysis Questionnaire (PAQ), which has undergone almost 20 years of continuous research (summarized in McCormick, Jeanneret and Mecham, 1972; and McCormick, 1974) is a structured job analysis questionnaire designed to obtain and quantify job-related information in a standardized, systematic fashion. The PAQ provides for the analyses of jobs in terms of 187 job elements that reflect the basic human behaviors in a job, regardless of the specific "technological" area or level of the job. In turn the job elements are statistically combined to provide a behavioral description of a job in terms of a set of 32 job dimensions (Jeanneret and McCormick, 1969). Additionally, the results of a PAQ analyses can be used to develop an "attribute" profile for any job (Marquardt and McCormick, 1972, 1974). This attribute profile describes the mental, perceptual, physical and psychomotor abilities or aptitudes required of a job, as well as its temperament and interest requirements.

The PAQ has been utilized in several research and validation studies of the police officer position. A number of individual PAQ analyses of metropolitan police officers have been completed in studies for the cities of Dayton, Ohio; Boise City, Idaho; Boulder, Colorado; Montgomery, Alabama; Portland, Oregon;

Cleveland, Ohio; and Atlanta, Georgia. Additionally, the PAQ has been used to analyze the position of state law enforcement officers (i.e. highway patrol officers) in Georgia, North and South Carolina, Tennessee and Texas to name a few. Consequently, the PAQ has been recognized as a valuable method for analyzing law enforcement positions in a number of independent research studies.

PAQ Methodology

As the overall job analysis study progressed through direct observations, interviews, task analysis, and critical incidents, different members of the research team became "specialists" in analyzing certain positions in the Houston Police Department. Thus, some researchers concentrated on police officers working in the Patrol Bureau; others focused on officers in the Traffic Bureau; others studied detective positions, and so forth. Once all other methods of collecting job analysis data had been completed by the research team, the researchers then analyzed the jobs in which they had "specialized" using the PAQ. In all cases, except for the Dispatcher and Deputy Chief positions, at least two members of the research team independently analyzed any given job with the PAQ. Subsequently, the PAQ data was analyzed to develop position profiles in terms of 32 behavioral job dimensions and 76 attribute requirements.

PAQ RESULTS

Reliability

A total of 45 independent PAQ analyses were completed for 17 different positions throughout the Department. Fifteen of these positions were analyzed independently by two or more members of the research team. The reliability of these PAQ analyses was computed by statistically comparing the agreement among the researchers analyzing the same position. The average reliability for the 45 independent analyses of the 15 positions was .82, which is quite satisfactory and consistent with reliabilities obtained in other PAQ studies. A summary of the reliabilities by position is given in Appendix Q.

Job Dimensions - Police Officers

The results of an analysis of a job with the PAQ are expressed in terms of a profile across 32 job dimensions. This profile in effect compares the position being analyzed with a standardized set of jobs representative of all jobs found in the labor force. The profile is measured in terms of a Z score which has a mean of 0.0 and can be interpreted as being the average score for all jobs in the world of work. Thus, if a specific job receives a Z score of 0.0 on a given job dimension, then there is as much of that dimension in the job being studied as there is on the average in all other jobs. If a dimension Z score is

greater than 0.0, then the job being studied involves more of that dimension than is generally found across all jobs in the world of work; if a dimension Z score is less than 0.0, then less of that dimension is found in the position relative to the average of all other jobs. A comprehensive description of each job dimension can be found in the Users Manual for the Position Analysis Questionnaire (McCormick, Mecham and Jeanneret, 1973).

The PAQ dimension profiles were developed for several different officer positions including assignments in the Patrol, Traffic Enforcement, Accident Investigation, Jail, Juvenile, SWAT, Special Investigations and Dispatcher Divisions. The profiles for these positions are shown in Appendices R and S. Initial review of the data indicated that the SWAT, Special Investigations (i.e. Narcotics, Vice and Intelligence) and Dispatcher positions were very different from other assignments given to individuals with the rank of police officer and are reported on a separate graph in Appendix S. However, for purposes of identifying a homogeneous entry level job, the positions in Patrol, Traffic Enforcement, Accident Investigation, Jail and Juvenile were compared with each other, and their profiles are shown on one graph in Appendix R. Analyses of these profiles indicated that the police officer position in the Patrol, Traffic Enforcement and Accident Investigation Divisions are essentially identical and should be considered as one position. The profiles

for these positions are very similar to profiles for police officers obtained in other studies (see Cecil, 1975 for example). However, officers assigned to the Jail and Juvenile Divisions have profiles that, for certain dimensions, are significantly different from the "Patrol-Traffic Enforcement-Accident Investigation" profiles.

The officer position in the Jail Division differs as follows: The position includes less distant visual observation; watching of "things" for job related information; decision making; information processing; manual control/coordination; vehicle operation; physical activity; dealing with the general public; and alertness to changing conditions. Conversely, it includes more handling/manipulating activities and structured work relative to the other officer positions. The officer position in the Juvenile Division includes less evaluative interpretation of visual/auditory information; staff activities; dealing with the general public on a daily basis; and operating of equipment/vehicles. On the other hand, officers in the Juvenile Division have more decision-making and communication responsibilities; engage in more "business like" work situations; and have less structure in their job relative to the other officer positions in the "Patrol-Traffic Enforcement-Accident Investigation" Divisions.

To summarize, results of the PAQ analyses are quite consistent with the previously described job analyses results in that the

officer positions within the Patrol, Traffic Enforcement and Accident Investigation Divisions are very homogeneous, and essentially form one distinct law enforcement position; however, the officer positions in the other divisions vary considerably in terms of tasks and behavioral dimensions, and should be considered as separate and unique positions.

The PAQ profile for the combined Patrol-Traffic Enforcement-Accident Investigation police officer (or entry level) position is reported in Table 24. These data indicate that the officer job is quite different from a normative base line of jobs (i.e. a Z score different from 0.0) throughout the labor force on several dimensions. The job requires more information gathering activities of a perceptual nature than most jobs, especially in terms of distance vision and environmental awareness. The job also has several significant physical components in terms of patrol vehicle operation, physical agility and general physical activity. While the job does not require extensive decision making in the sense that managers and executives are decision makers, it does involve considerable information processing and some communication responsibilities. The job involves extensive public contact and frequently places officers in very personally demanding or stressful situations. Additionally, the nature of the job is such that there is very little continual immediate supervision and the work is quite unstructured (i.e. each situation or activity must be considered on its own merits).

TABLE 24

PAQ JOB DIMENSION PROFILE FOR THE
ENTRY LEVEL POLICE OFFICER POSITION

(Patrol-Traffic Enforcement-Accident Investigation Divisions)

PAQ JOB DIMENSIONS	COMPOSITE Z SCORE
Watching Devices/Materials for Information	-1.30
Interpreting Visual and Auditory Information	0.45
Using Information Originating With People	0.29
Visual Observation from a Distance	1.95
Evaluating Information from Things	0.26
Environmental Awareness	1.63
Physical Agility	1.26
Making Decisions	-0.67
Information Processing	1.25
Controlling Machines/Processes	-0.91
Manual Control/Coordination	0.35
Equipment (Vehicle) Operation	2.48
Physical Body Activity	1.23
Handling/Manipulating Activities	-1.24
Using Fingers vs. General Body Movement	-0.47
Performing Skilled/Technical Activities	0.37
Communicating Judgments, Decisions, Information	0.33
Exchanging Job Related Information	0.14
Performing Staff/Related Activities	1.31
Supervisory Relationships	-1.26
Dealing With the Public	1.85
Being in Unpleasant Environmental Conditions	-0.08
Engaging in Personally Demanding Situations	1.66
Engaging in Business-Like Situations	-0.66
Being Alert to Detail/Changing Conditions	0.44
Unstructured vs. Structured Work	-1.08
Variable vs. Regular Work Schedule	-0.60
OVERALL PAQ DIMENSIONS	
Having Decision-Making, Communication Responsibilities	0.64
Performing Skilled Activities	-0.85
Being Physically Active	1.00
Operating Equipment/Vehicles	2.51
Processing Information	0.98

Routine vs. Emergency Situations

When analyzing the officer job with the PAQ, the researcher or job analyst must view the job from one of two perspectives. On the one hand, the analyst can consider the "total" job including the "routine" components when an officer is simply patrolling an area in a vehicle and all is quiet; or the analyst could focus on only the more "active" components of the job when the officer is faced with some emergency situation such as a crime in progress, accident, public disturbance, etc. A similar problem is encountered in the analysis of the fireman position. Since firemen spend a considerable amount of time (and desirably all of their time) at the fire station performing "routine" activities, this component of their job is very different from their fire fighting activities. A job analysis procedure such as the PAQ requires the analyst to evaluate various job elements on a relative basis. Thus, the researcher must decide how much emphasis or weight to give the "emergency" situations relative to the "routine" activities. In the present study, the previously described PAQ job analyses were completed for the total officer job including both its "routine" and "non-routine" components on a relative basis. However, for comparative purposes, one PAQ analysis was completed from the perspective of the officer under "emergency" conditions. The dimension profile for the officer job in emergency situations was then compared with the profile of the officer job as carried out in the Patrol

Bureau. A graphic comparison of the two profiles is given in Appendix T. The two job analyses yield very similar results on most dimensions. The most significant differences are that under emergency situations the officer job requires more perceptual evaluation and environmental awareness; involves more skillful vehicle operation (i.e. pursuit driving); includes more physical activity; places greater personal demands on the job incumbents; and involves less information processing.

Job Dimensions - Sergeants

Six separate PAQ dimension profiles were developed for the various Sergeant positions throughout the Department. The positions included those found in the Patrol, Traffic, Jail, Special Investigations (i.e. Narcotics, Vice, and Intelligence), SWAT and a composite of the "staff/technical" services Divisions. The profiles are graphically reported in Appendix V. While there are a number of differences from one Sergeant position to the next, a general profile across all positions is given in Table 25. This profile is reported in terms of an estimated Z score based on the most frequently occurring level of activity on a given dimension. Thus, the Sergeant position on the SWAT team, which requires more physical activity than the other Serge positions, is not fully represented by the profile reported in Table 25.

TABLE 25

PAQ JOB DIMENSION PROFILE
FOR THE SERGEANT POSITION

PAQ JOB DIMENSIONS	ESTIMATED COMPOSITE Z SCORE
Watching Devices/Materials for Information	-0.80
Interpreting Visual and Auditory Information	-0.40
Using Information Originating With People	1.00
Visual Observation from a Distance	1.45
Evaluating Information from Things	0.10
Environmental Awareness	0.40
Physical Agility	0.70
Making Decisions	-0.60
Information Processing	0.70
Controlling Machines/Processes	-0.50
Manual Control/Coordination	-0.10
Equipment (Vehicle) Operation	1.80
Physical Body Activity	0.20
Handling/Manipulating Activities	-0.80
Using Fingers vs. General Body Movement	-0.10
Performing Skilled/Technical Activities	0.15
Communicating Judgments, Decisions, Information	0.80
Exchanging Job Related Information	0.40
Performing Staff/Related Activities	0.70
Supervisory Relationships	1.00
Dealing With the Public	0.30
Being in Unpleasant Environmental Conditions	-0.10
Engaging in Personally Demanding Situations	1.50
Engaging in Business-Like Situations	0.10
Being Alert to Detail/Changing Conditions	0.30
Unstructured vs. Structured Work	-1.20
Variable vs. Regular Work Schedule	-0.20
OVERALL PAQ DIMENSIONS	
Having Decision-Making, Communication Responsibilities	0.90
Performing Skilled Activities	-0.80
Being Physically Active	0.60
Operating Equipment/Vehicles	1.60
Processing Information	0.70

The Sergeant position is quite similar to the police officer position in many respects, with the primary exception of the Sergeants' supervisory responsibilities. Most of the Sergeants are in the field, and thus are operating vehicles to provide the necessary supervision (and enforcement when necessary) in their assigned areas. However, the Sergeants' are generally not the first level of contact for most enforcement activities and there are less physical demands and activities associated with the job. On the other hand, the Sergeant position has certain important communication responsibilities and the job involves a variety of information processing activities especially of a personnel administration nature.

Job Dimensions - Detectives

The PAQ job dimension profile for the Detective position is graphically presented in Appendix V and the composite Z score for the dimensions are reported in Table 26. The job is characterized by a high degree of investigative information gathering activities (i.e. visual observation, obtaining information from people and things, environmental awareness and being alert to details) and information processing. It also has a significant physical component in terms of general physical activity and the operation of motor vehicles. The job is similar to the other officer positions previously discussed in that it places a great deal of personal demands on incumbents, involves

TABLE 26

PAQ JOB DIMENSION PROFILE
FOR THE DETECTIVE POSITION

PAQ JOB DIMENSIONS	COMPOSITE Z SCORE
Watching Devices/Materials for Information	0.19
Interpreting Visual and Auditory Information	-1.03
Using Information Originating with People	1.19
Visual Observation from a Distance	1.16
Evaluating Information from Things	0.89
Environmental Awareness	3.06
Physical Agility	0.73
Making Decisions	-0.73
Information Processing	1.55
Controlling Machines/Processes	-1.13
Manual Control/Coordination	0.52
Equipment (Vehicle) Operation	0.71
Physical Body Activity	0.73
Handling/Manipulating Activities	-0.06
Using Fingers vs. General Body Movement	-0.76
Performing Skilled/Technical Activities	1.16
Communicating Judgments, Decisions, Information	0.51
Exchanging Job Related Information	0.50
Performing Staff/Related Activities	1.86
Supervisory Relationships	-1.18
Dealing With the Public	0.31
Being in Unpleasant Environmental Conditions	-0.06
Engaging in Personally Demanding Situations	2.12
Engaging in Business-Like Situations	0.08
Being Alert to Detail/Changing Conditions	1.27
Unstructured vs. Structured Work	-1.45
Variable vs. Regular Work Schedule	-0.35
OVERALL PAQ DIMENSIONS	
Having Decision-Making, Communication Responsibilities	0.99
Performing Skilled Activities	-0.17
Being Physically Active	1.26
Operating Equipment/Vehicles	0.83
Processing Information	1.87

a good deal of "unstructured" work, and is performed without continual immediate supervision.

Job Dimensions - Lieutenants

Several PAQ job dimension profiles were computed for the various Lieutenant positions and these profiles are graphically represented in Appendix W. Included are profiles for Lieutenants in Patrol, Traffic, SWAT, Jail, Special Investigations and a composite of staff and technical services assignments. There are a variety of differences in the profiles reflecting the various activities associated with the different assignments. For example, Lieutenants in SWAT have more physical activities than other Lieutenants; Patrol, Traffic and Special Investigations Lieutenants have more information processing activities than those in the Jail or Technical Services Divisions.

In order to develop a "generalized" PAQ profile for the Lieutenant position, a composite job dimension profile was developed in the same manner as the Sergeant composite. This composite is reported in Table 27. Overall, the Lieutenant position is reasonably similar to the Sergeant job. The position is characterized primarily by dimensions related to obtaining information from people, processing information, communicating with others and having supervisory and administrative responsibilities. Similar to other law enforcement positions, the job is relatively unstructured and personally demanding.

TABLE 27

PAQ JOB DIMENSION PROFILE
FOR THE LIEUTENANT POSITION

PAQ JOB DIMENSIONS	ESTIMATED COMPOSITE Z SCORE
Watching Devices/Materials for Information	-0.07
Interpreting Visual and Auditory Information	-0.50
Using Information Originating With People	1.20
Visual Observation from a Distance	0.60
Evaluating Information from Things	-0.70
Environmental Awareness	0.10
Physical Agility	-0.05
Making Decisions	-0.35
Information Processing	0.55
Controlling Machines/Processes	-0.40
Manual Control/Coordination	-0.10
Equipment (Vehicle) Operation	0.40
Physical Body Activity	-0.20
Handling/Manipulating Activities	-0.70
Using Fingers vs. General Body Movement	0.10
Performing Skilled/Technical Activities	0.20
Communicating Judgments, Decisions, Information	0.80
Exchanging Job Related Information	0.50
Performing Staff/Related Activities	0.40
Supervisory Relationships	1.20
Dealing With the Public	0.10
Being in Unpleasant Environmental Conditions	0.00
Engaging in Personally Demanding Situations	1.10
Engaging in Business-Like Situations	0.50
Being Alert to Detail/Changing Conditions	-0.80
Unstructured vs. Structured Work	-1.20
Variable vs. Regular Work Schedule	-0.15
OVERALL PAQ DIMENSIONS	
Having Decision-Making, Communication Responsibilities	0.80
Performing Skilled Activities	-0.70
Being Physically Active	0.20
Operating Equipment/Vehicles	0.50
Processing Information	0.45

Job Dimensions - Captain

PAQ job dimension profiles for various Captain assignments are graphically displayed in Appendix X. These profiles are very similar for all the various Captain positions analyzed across all job dimensions. A composite Z score profile for the position is given in Table 28. The position is characterized by its emphasis on dealing with people in an administrative and supervisory capacity. There are little physical, but considerable personal demands associated with the job.

Job Dimensions - Deputy Chief

The job dimension profile for the Deputy Chief position is graphically displayed in Appendix Y and described in terms of Z scores in Table 29. There is considerable similarity between the Captain and Deputy Chief positions, except that the Deputy Chief job includes even more decision making and communication responsibilities. Of the various positions analyzed with the PAQ in this study, the Deputy Chief position is less associated with direct law enforcement activities, and most characteristic of business administration and management responsibilities required for the effective operations of any organization.

PAQ ATTRIBUTE REQUIREMENTS

As previously mentioned, once a job has been analyzed by the PAQ it is possible to statistically develop an attribute profile

TABLE 28

PAQ JOB DIMENSION PROFILE
FOR THE CAPTAIN POSITION

PAQ JOB DIMENSIONS	ESTIMATED COMPOSITE Z SCORE
Watching Devices/Materials for Information	-0.70
Interpreting Visual and Auditory Information	-0.30
Using Information Originating With People	1.20
Visual Observation from a Distance	0.30
Evaluating Information from Things	-0.50
Environmental Awareness	0.10
Physical Agility	-0.30
Making Decisions	1.10
Information Processing	0.40
Controlling Machines/Processes	-0.40
Manual Control/Coordination	-0.20
Equipment (Vehicle) Operation	0.30
Physical Body Activity	-0.30
Handling/Manipulating Activities	-0.90
Using Fingers vs. General Body Movement	0.10
Performing Skilled/Technical Activities	0.15
Communicating Judgments, Decisions, Information	1.10
Exchanging Job Related Information	0.40
Performing Staff/Related Activities	0.10
Supervisory Relationships	1.30
Dealing With the Public	-0.10
Being in Unpleasant Environmental Conditions	-0.10
Engaging in Personally Demanding Situations	1.20
Engaging in Business-Like Situations	0.80
Being Alert to Detail/Changing Conditions	-0.40
Unstructured vs. Structured Work	-1.30
Variable vs. Regular Work Schedule	0.00
OVERALL PAQ DIMENSIONS	
Having Decision-Making, Communication Responsibilities	1.00
Performing Skilled Activities	-0.90
Being Physically Active	-0.40
Operating Equipment/Vehicles	0.10
Processing Information	0.20

TABLE 29

PAQ JOB DIMENSION PROFILE FOR THE DEPUTY CHIEF POSITION

PAQ JOB DIMENSIONS	Z SCORE
Watching Devices/Materials for Information	-0.03
Interpreting Visual and Auditory Information	-0.63
Using Information Originating With People	2.06
Visual Observation from a Distance	0.36
Evaluating Information from Things	-0.33
Environmental Awareness	0.29
Physical Agility	-0.26
Making Decisions	1.11
Information Processing	-0.23
Controlling Machines/Processes	-0.91
Manual Control/Coordination	-0.53
Equipment (Vehicle) Operation	0.11
Physical Body Activity	0.10
Handling/Manipulating Activities	-1.59
Using Fingers vs. General Body Movement	0.54
Performing Skilled/Technical Activities	0.66
Communicating Judgments, Decisions, Information	1.19
Exchanging Job Related Information	0.47
Performing Staff/Related Activities	-0.12
Supervisory Relationships	2.39
Dealing With the Public	0.14
Being in Unpleasant Environmental Conditions	-0.09
Engaging in Personally Demanding Situations	2.74
Engaging in Business-Like Situations	1.77
Being Alert to Detail/Changing Conditions	-1.80
Unstructured vs. Structured Work	-1.13
Variable vs. Regular Work Schedule	-0.02
OVERALL PAQ DIMENSIONS	
Having Decision-Making, Communication Responsibilities	1.34
Performing Skilled Activities	-1.18
Being Physically Active	0.21
Operating Equipment/Vehicles	-0.22
Processing Information	-0.16

for the position. This is accomplished by utilizing the data developed by Marquardt and McCormick (1972) which identifies the relevance of each of 76 human attributes to 187 job elements contained in the PAQ. The taxonomy of 76 human attributes consists of the following: 16 mental aptitudes; 16 perceptual abilities; 17 physical and psychomotor abilities; and 27 attributes of an interest or temperament nature. These attributes are defined in detail in Appendix Z.

The procedure utilized to compute an attribute profile for a job involved multiplying the PAQ job element score times each of the relevance ratings for the 76 attributes developed by Marquardt and McCormick (1972). Then by adding together all the cross product values for each attribute, a total relevance score was obtained for every attribute. Finally, this total relevance score was weighted by the sum of the PAQ job element ratings in order to correct for the number of PAQ job elements used to analyze any given job. This procedure has been applied to a sample of 2,200 different jobs analyzed with the PAQ that are representative of the entire labor force according to U. S. Department of Labor employment statistics. In turn, a distribution of attribute requirements has been developed for the labor force in general, and converted to percentiles. Subsequently, the attribute requirements for any given job can be evaluated in terms of how the attribute requirements for the job in question compare with the world of work. The attribute requirements

for a specific job are expressed in terms of percentiles, whereby if a specific attribute score for a job is at the 50th percentile, then the attribute requirement is equivalent to the average required by jobs in general. In other words, 50 percent of all jobs will require more of the attribute, and 50 percent of all jobs will require less of the attribute. Other attribute percentile scores can be interpreted in similar fashion.

Attribute Profiles - Officers

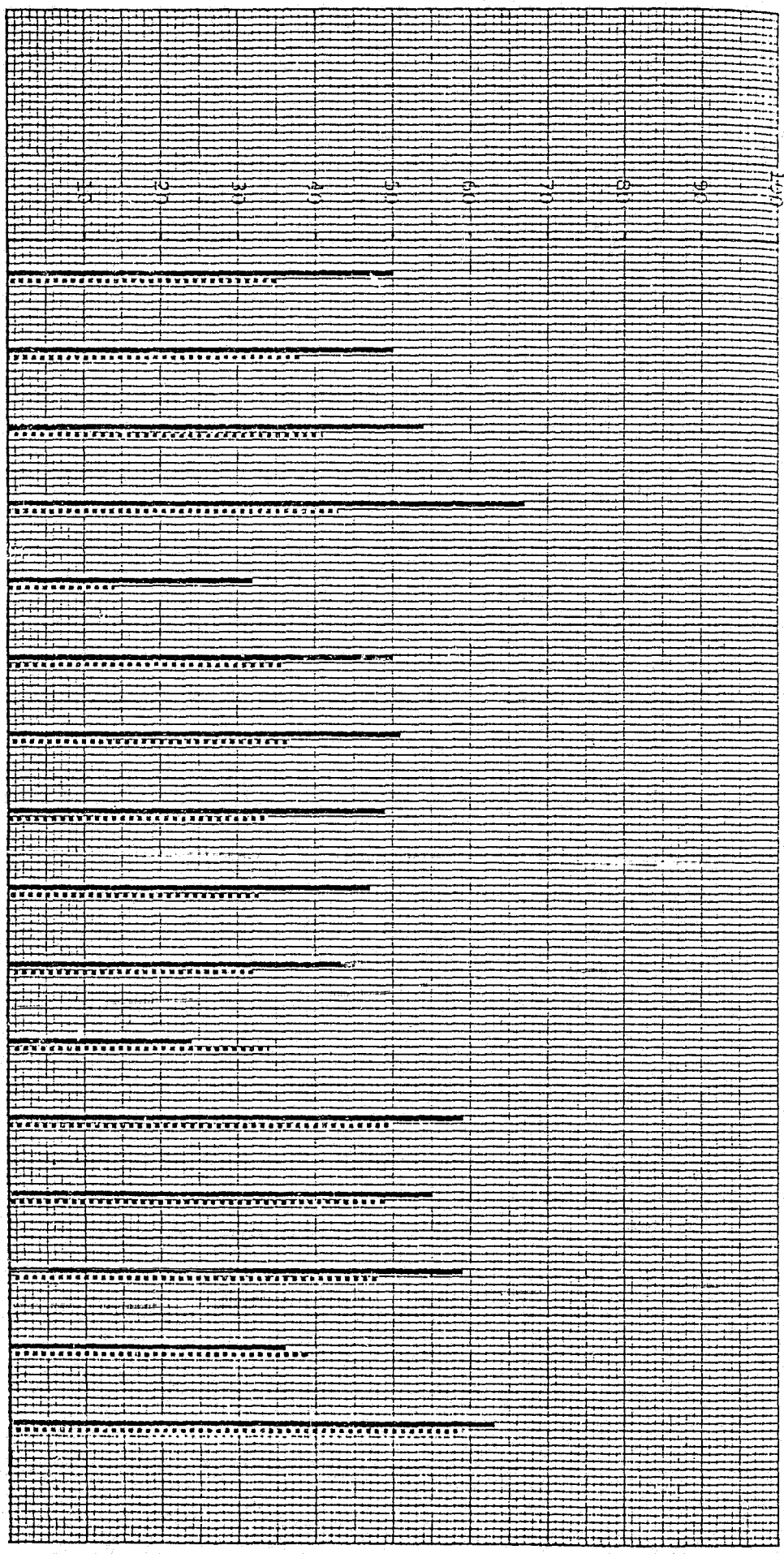
Separate attribute profiles were developed for the various officer positions analyzed with the PAQ. The profiles for the officer jobs in the Patrol, Traffic Enforcement, Accident Investigation, Jail and Juvenile Divisions are reported in Appendix AA. As previously reported, the PAQ job dimensions for these jobs are different, and it would be expected that the attribute profiles also would vary across types of assignments.

The primary differences in the attribute profiles among the five officer positions reported in Appendix AA are that the Juvenile and Jail Division positions require less perceptual, physical and psychomotor aptitudes. Accordingly, a separate attribute profile was developed by combining the three individual profiles for the Patrol, Traffic Enforcement and Accident Investigation positions. This combined profile is presented in Graphs 1 through 4 and represents the attribute requirements

of the entry level police officer position as defined by the results of the previously described job analyses (i.e. task and PAQ analyses). Also included in Graphs 1 through 4 is the attribute profile of the officer position under emergency conditions as defined for the previously described PAQ job analysis.

The data in Graphs 1 through 4 indicate that the entry level police officer position, especially in emergency situations, has several physical and psychomotor requirements that exceed the average (i.e. 50th percentile) amounts of these requirements found in the world of work. These physical requirements are discussed in detail in Volume VI of this report. Similarly, there are a number of important sensory or perceptual requirements (Graph 3) associated with the entry level job including: general sensory alertness; closure (ability to perceptually organize a disorganized field into one perception); movement detection; depth perception (important to vehicle operation and pursuit driving); color discrimination; spatial orientation; and acuity (keenness) of the five senses. Thus, it is concluded that the entry level police officer position requires individuals to have many average to above average physical, sensory and perceptual abilities in order to effectively perform their jobs.

The mental aptitudes (Graph 1) required of the entry level police officer position are typically in the average range



MENTAL APTITUDES - ENTRY LEVEL POLICE OFFICERS

Position - Emergency Conditions

GRAPH 2

PHYSICAL AND PSYCHOMOTOR APTITUDES - ENTRY LEVEL POLICE OFFICERS

PAQ ATTRIBUTES

Percentile

Entry Level Police Officer Position - Routine Conditions

Entry Level Police Officer Position - Emergency Conditions

Aesthetic Judgment
Visual Form Perception
Closure
Movement Detection
Spatial Visualization
Near Visual Acuity
Far Visual Acuity
Depth Perception
Color Discrimination
Auditory Acuity
Olfactory Acuity
Gustatory Acuity
Tactual Acuity
Kinesthesis
Spatial Orientation
Perceptual Speed

GRAPH 4

INTEREST AND TEMPERAMENT - ENTRY LEVEL POLICE OFFICERS

PAQ ATTRIBUTES

Percentile

1 5 10 20 30 40 50 60 70 80 90 95 99

of Duties
ort-Cycle Oper.
with Things/Obj.
achines/Tech.
ific/Tech. Activ.
with People
Welfare
ncing People
ing/Contr./Plng.
al Risk
./Ambig. Info.
re of Time
y Alertness
ment of Set Stan.
g under Spec. Inst.
g Alone
from Family/Home
Presence
ge/Esteem fm. Oth.
ole/Phys. End-Prod.
y/Judg. Criteria
able/Ver. Criteria
p. fm. Pers. Viewpt.
p. to Fatigue
g w Concepts/Info.
ve Activities

—— Entry Level Police Officer Position - Routine Conditions

----- Entry Level Police Officer Position - Emergency Conditions

relative to other jobs in the world of work. While in emergency situations the officer frequently needs more perceptual and physical abilities than mental aptitudes, under routine conditions the entry job requires an average amount of verbal, numerical and general reasoning ability. In summary, the entry level position requires an average amount of intellectual ability according to the results presented in Graph 1.

The interest and temperament attributes (Graph 4) required of the entry level police officer position reflect certain of the personal characteristics that are required of individuals performing the job. Obviously, the job requires extensive public contact, and officers should have the interest in, and temperament for dealing with people. This "people interest" has a number of additional components including the requirements to direct or control, influence others, respond with empathy, and work with people for their own good (i.e. social welfare).

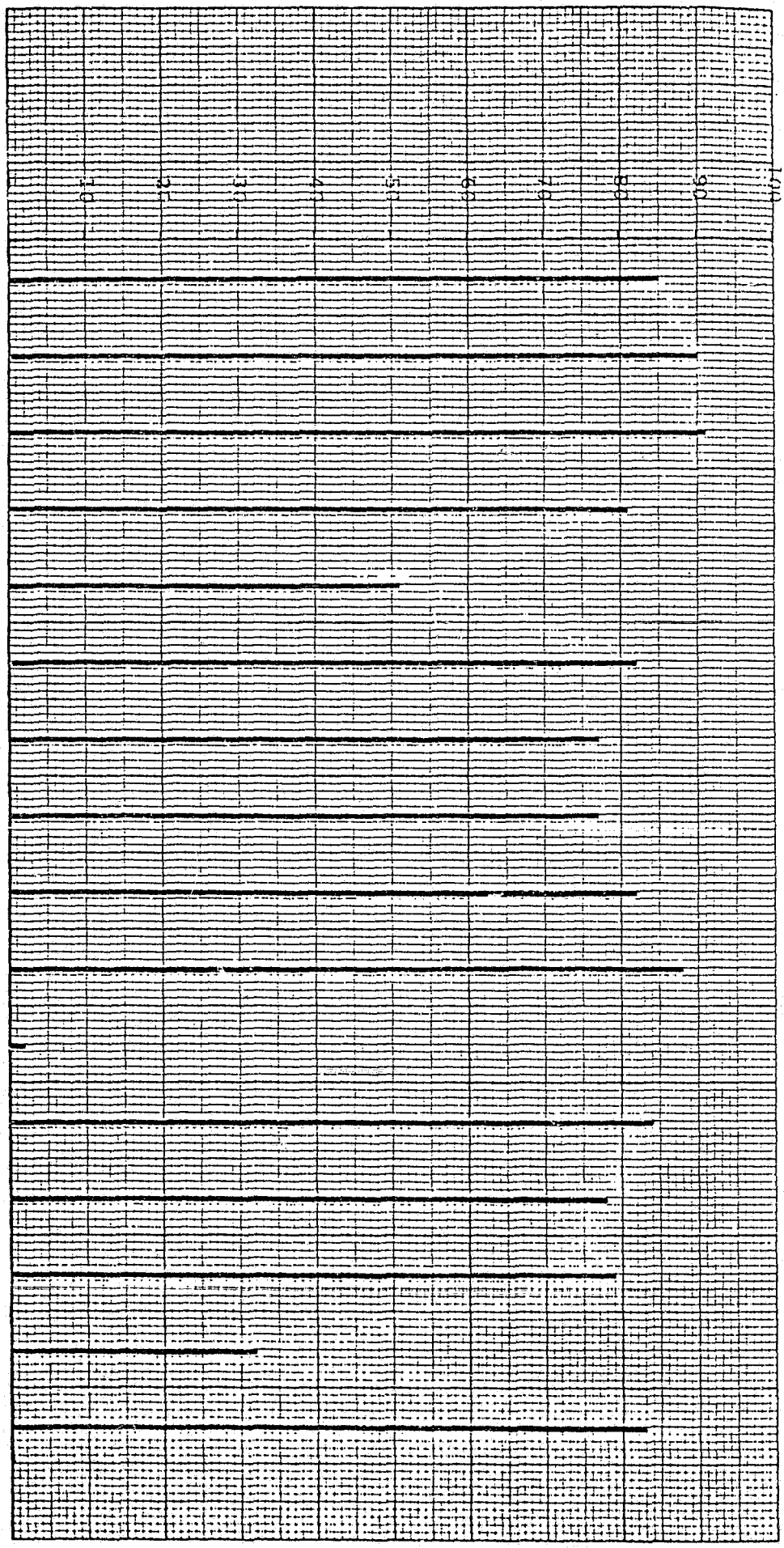
The entry level job also creates several personal demands on officers including the need to remain alert and resist fatique over long periods of time (sensory alertness and susceptibility to fatique); be separated from family and home because of work hours and extended shifts; deal with conflicting or ambiguous information; handle time pressures; and be subject to considerable personal risk. Other types of personal demands include the fact that the job frequently does not involve tangible or physical end-products (i.e. concrete results) and can not always

be carried out in terms of measurable criteria (standards). Instead, officers often are required to use their own best judgment and they must be sure to not let personal opinions or viewpoints bias a judgment or decision. Finally, the entry level job requires individuals to be willing to work with others (i.e. not work alone), and to be capable of independent action and judgment (i.e. do not require working under specific instructions to be effective).

Attribute Profile - Dispatchers

Because the Dispatcher position is so different from the other police officer jobs, a separate attribute profile was generated for the position and is reported in Graphs 5 through 8. The physical and psychomotor aptitudes (Graph 7) required of individuals are minimal, as are the perceptual abilities (Graph 6) with a few exceptions. Auditory acuity is the most critical requirement because of the "noise" associated with police radio communications, and the extensive variety of voice patterns of officers and citizens communicating with the Dispatchers.

The mental requirements of the Dispatcher job are higher than those of the other first line officer positions. These requirements are primarily a function of the communications, problem solving and coordinating responsibilities of the job which provide the primary link between field officers and citizens needing assistance from the Houston Police Department.



MENTAL APTITUDES - DISPATCHERS

GRAPH 6

PAQ ATTRIBUTES

PERCEPTUAL APTITUDES - DISPATCHERS

Percentile

10 20 30 40 50 60 70 80 90 100

tic Judgment

: Form Perception

:e

ent Detection

al Visualization

Visual Acuity

isual Acuity

: Perception

: Discrimination

tory Acuity

tory Acuity

tory Acuity

al Acuity

sthesis

al Orientation

eptual Speed

PAQ ATTRIBUTES

Percentile

10 20 30 40 50 60 70 80 90 100

Body Orientation

Rate of Arm Movement

Dynamic Strength

Static Strength

Explosive Strength

Stamina

Speed of Limb Movement

Finger Dexterity

Manual Dexterity

Arm/Hand Positioning

Arm/Hand Steadiness

Continuous Muscular Con.

Eye-Hand Coordination

Eye-Hand-Foot Coord.

Simple Reaction Time

Response Integration

Rate Control

GRAPH 8

PAQ ATTRIBUTES

INTEREST AND TEMPERAMENT - DISPATCHERS

While the previously described attribute requirements are considerably different when comparing the Dispatcher with other police officer positions, the interest and temperament attributes (Graph 8) are very similar. The Dispatcher position requires almost continual people contact by phone and radio, and the Dispatchers should be just as "sensitive" to these contacts as those officers personally interacting with the publi in the field. Additionally, the job requires incumbents to deal principally with conceptual information which must be "filtered" and "interpreted" subject to the personal viewpoints and past experiences of the Dispatchers.

Attribute Profiles - Detectives

The attribute profile for the detective position is presented in Graphs 9 through 12. When considering the distribution of Detective activities, it is reasonable to find that the most important attribute requirements are more investigative (i.e. perceptual and mental) than physical or psychomotor. Accordingly, the physical and psychomotor requirement levels (except for stamina) are around the 30th percentile as reported in Graph 11. On the other hand, the majority of the perceptual and mental attribute requirements (Graphs 9 and 10) equal or exceed the 50th percentile relative to the world of work. (Note the higher than average requirement for aesthetic judgment is a function of the need for Detectives to determine the *value* of objects, etc. that have been taken, damaged or recovered in

GRAPH 9

PAQ ATTRIBUTES

MENTAL APTITUDES - DETECTIVES

Percentile

10 20 30 40 50 60 70 80 90 100

al Comprehension

Fluency

Communications

rical Computation

hmetic Reasoning

ergent Thinking

rgent Thinking

lligence

Term Memory

t Term Memory

anical Ability

tional Fluency

inality

blem Sensitivity

ective Attention

Sharing

PERCEPTUAL APTITUDES - DETECTIVES

IAQ Attributes

Percentile

10 20 30 40 50 60 70 80 90 100

Aesthetic Judgment

Visual Form Perception

Closure

Movement Detection

Spatial Visualization

Near Visual Acuity

Far Visual Acuity

Depth Perception

Color Discrimination

Auditory Acuity

Olfactory Acuity

Gustatory Acuity

Tactual Acuity

Kinesthesis

Spatial Orientation

Perceptual Speed

GRAPH 11

PAQ ATTRIBUTES

PHYSICAL AND PSYCHOMOTOR APTITUDES - DETECTIVES

Percentile

10 20 30 40 50 60 70 80 90 100

ientation

Arm Movement

Strength

Strength

ive Strength

a

of Limb Movement

Dexterity

l Dexterity

and Positioning

and Steadiness

nuous Muscular Con.

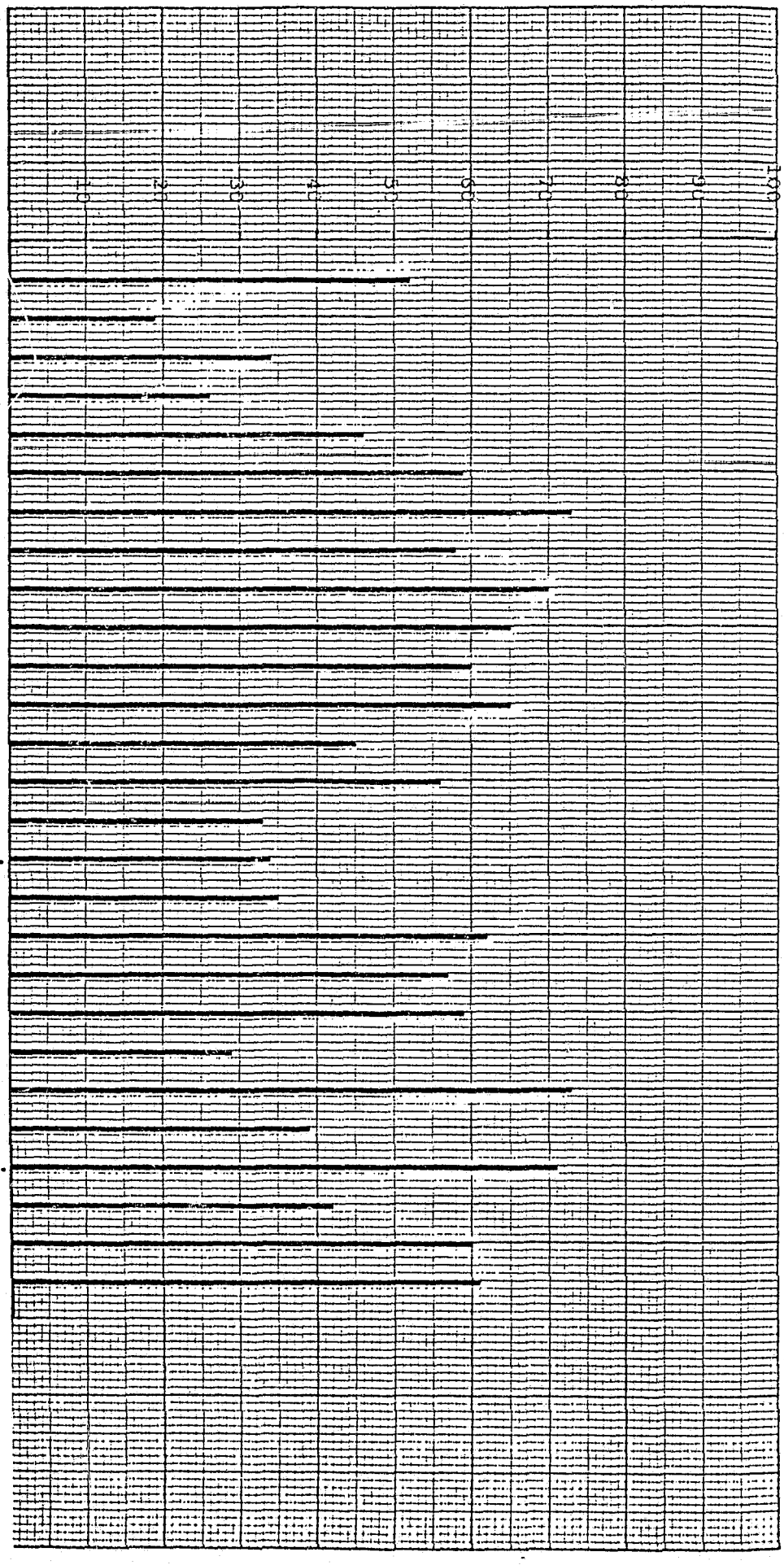
and Coordination

and-Foot Coord.

e Reaction Time

nse Integration

Control



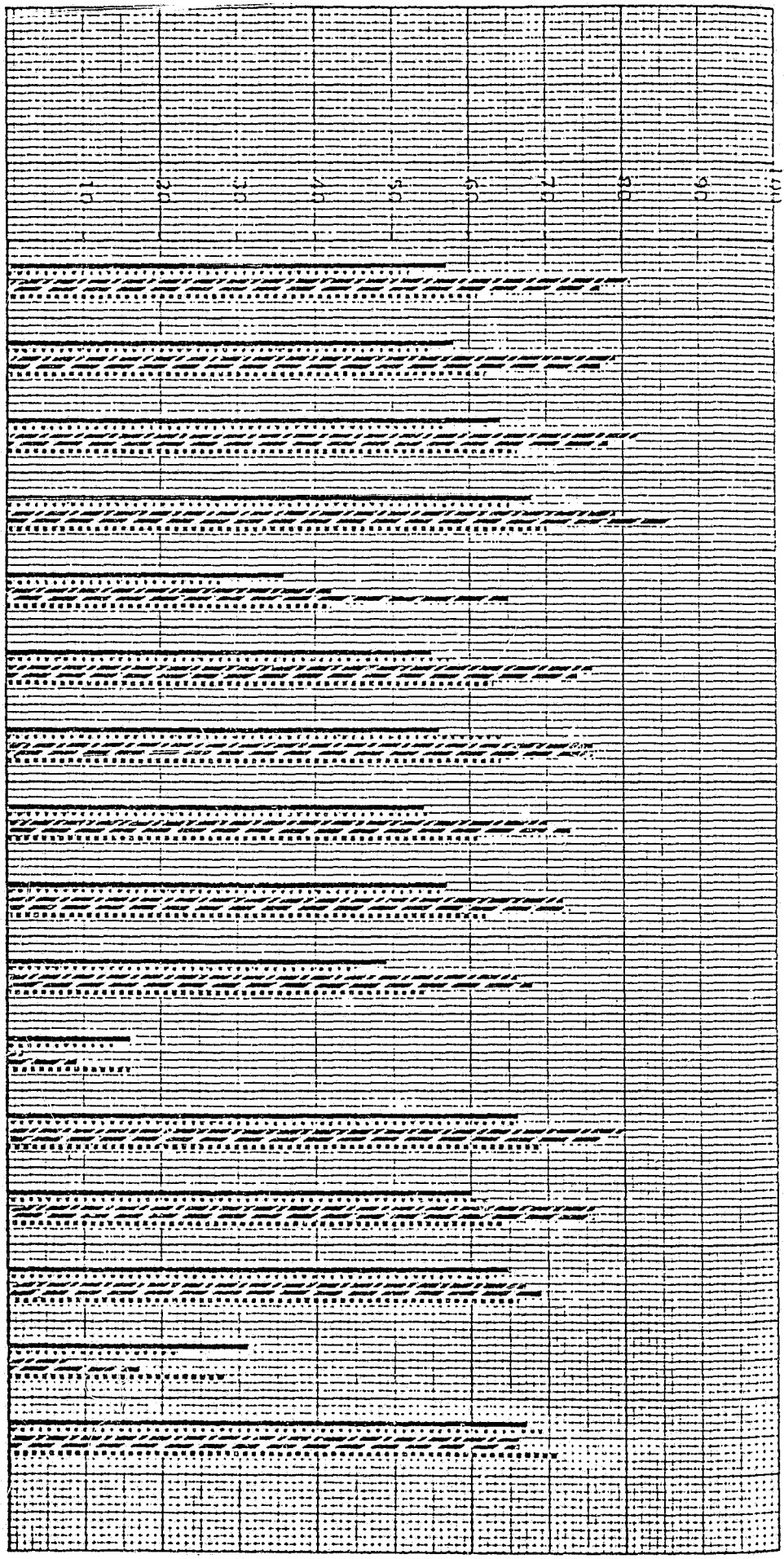
INTEREST AND TEMPERAMENT - DETECTIVES

robberies, burglaries and related crimes.)

The interest and temperament attributes (Graph 12) required of individuals serving in the Detective position are quite similar to those required of officers in the entry level police officer job. The Detective position requires individuals to have above average interest in and concern for people. Detectives also need to be able to work in an unbiased manner with judgments and conceptual information that are subject to interpretation from the viewpoint of the individual investigating officers.

Attribute Profiles - Sergeants

The attribute profiles for five Sergeant positions analyzed separately with the PAQ are reported in Graphs 13 through 16. In reviewing these profiles it is found that there are significant differences on certain attribute requirements depending on whether the Sergeant position is associated primarily with "field" versus "administrative" responsibilities. In particular, the Sergeant positions in the Patrol, Traffic and Special Investigations Bureaus (i.e. "field" bureaus) have essentially the same attribute requirements. On the other hand, Sergeant positions in the various staff, special services and technical bureaus -- which are more staff or "administrative" in nature -- have very similar attribute requirements, but are significantly different on several requirements in comparison to the profiles of the "field" positions.


Percentile
10
20
30
40
50
60
70
80
90
Verbal Comprehension
Word Fluency
Oral Communications
Numerical Computation
Arithmetic Reasoning
Convergent Thinking
Divergent Thinking
Intelligence
Long Term Memory
Short Term Memory
Mechanical Ability
Ideational Fluency
Originality
Problem Sensitivity
Selective Attention
Time Sharing

GRAPH 14

PAQ ATTRIBUTES

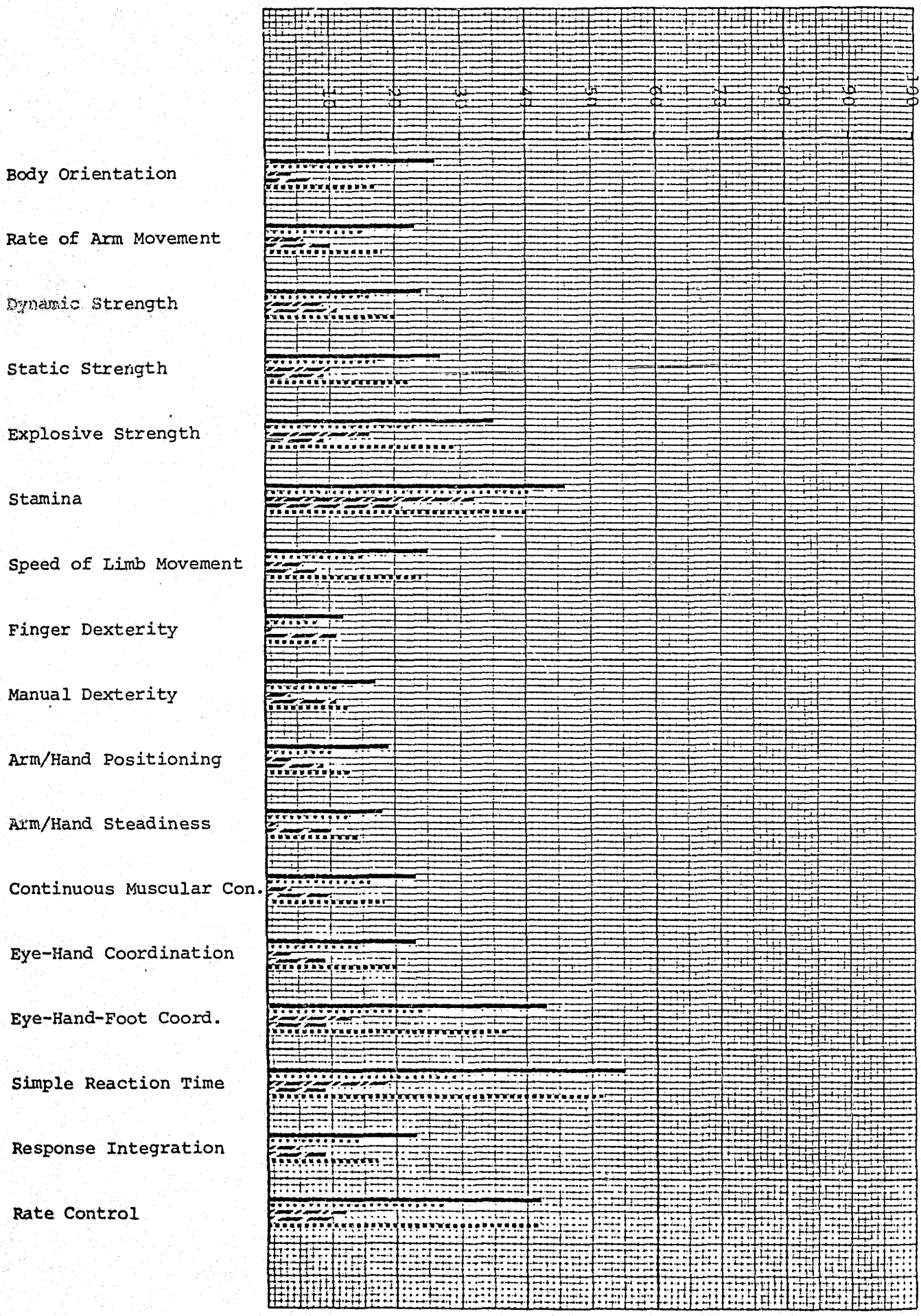
PERCEPTUAL APTITUDES - SERGEANTS

Percentile

100
90
80
70
60
50
40
30
20
10

Patrol Bureau
Special Investigations Bureau
Special Services Bureau
Staff/Technical Bureaus
Traffic Bureau

:hetic Judgment
:al Form Perception
sure
ment Detection
:ial Visualization
: Visual Acuity
Visual Acuity
:h Perception
or Discrimination
:tory Acuity
:ctory Acuity
:atory Acuity
:ual Acuity
esthesis
:ial Orientation
:eptual Speed


Percentile
1
10
20
30
40
50
60
70
80
90
99
Body Orientation
Rate of Arm Movement
Dynamic Strength
Static Strength
Explosive Strength
Stamina
Speed of Limb Movement
Finger Dexterity
Manual Dexterity
Arm/Hand Positioning
Arm/Hand Steadiness
Continuous Muscular Con.
Eye-Hand Coordination
Eye-Hand-Foot Coord.
Simple Reaction Time
Response Integration
Rate Control
PHYSICAL AND PSYCHOMOTOR APTITUDES - SERGEANTS
Traffic Bureau

GRAPH 16

PAQ ATTRIBUTES

INTEREST AND TEMPERAMENT - SERGEANTS

Percentile

10 20 30 40 50 60 70 80 90

Variety of Duties

Rep./Short-Cycle Oper.

Dealing with Things/Obj.

Proc./Machines/Tech.

Scientific/Tech. Activ.

Dealing with People

Social Welfare

Influencing People

Directing/Contr./Plng.

Empathy

Personal Risk

Confl./Ambig. Info.

Pressure of Time

Sensory Alertness

Attainment of Set Stan.

Working under Spec. Inst.

Working Alone

Sep. from Family/Home

Stage Presence

Prestige/Esteem fm. Oth.

Tangible/Phys. End-Prod.

Sensory/Judg. Criteria

Measurable/Ver. Criteria

Interp. fm. Pers. Viewpt.

Suscep. to Fatigue

Dealing w Concepts/Info.

Creative Activities

Patrol Bureau

Special Investigations Bureau

Special Services Bureau

Staff/Technical Bureaus

Traffic Bureau

The "field" Sergeant positions have greater physical, psychomotor and perceptual requirements (Graphs 14 and 15) than do the "staff" Sergeant jobs. Conversely, the "staff" type jobs have greater mental ability requirements (Graph 13) than the "field" positions. The interest and temperament attribute requirements (Graph 16) are very similar for all five Sergeant assignments, except for the ability to adapt to "personal risk" situations and the greater sensory alertness required of individuals in "field" Sergeant positions.

Attribute Profiles - Lieutenants

The attribute profiles for five separate Lieutenant assignments were developed in the same manner as the various Sergeant attribute profiles. These profiles are reported in Graphs 17 through 20. As evidenced by these data and the other job analyses results reported earlier, there is little difference in attribute requirements across "field" and "staff" assignment areas, as was the case with the various Sergeant responsibilities. The profile for the Lieutenant position is typical of the requirements associated with middle management positions in many larger organizations. The job is basically one that requires communications and coordination among and within various functional groups. Typically, the Lieutenant is responsible for providing the link between senior management policies and decisions, and the implementation of these policies and decisions by the first

GRAPH 17

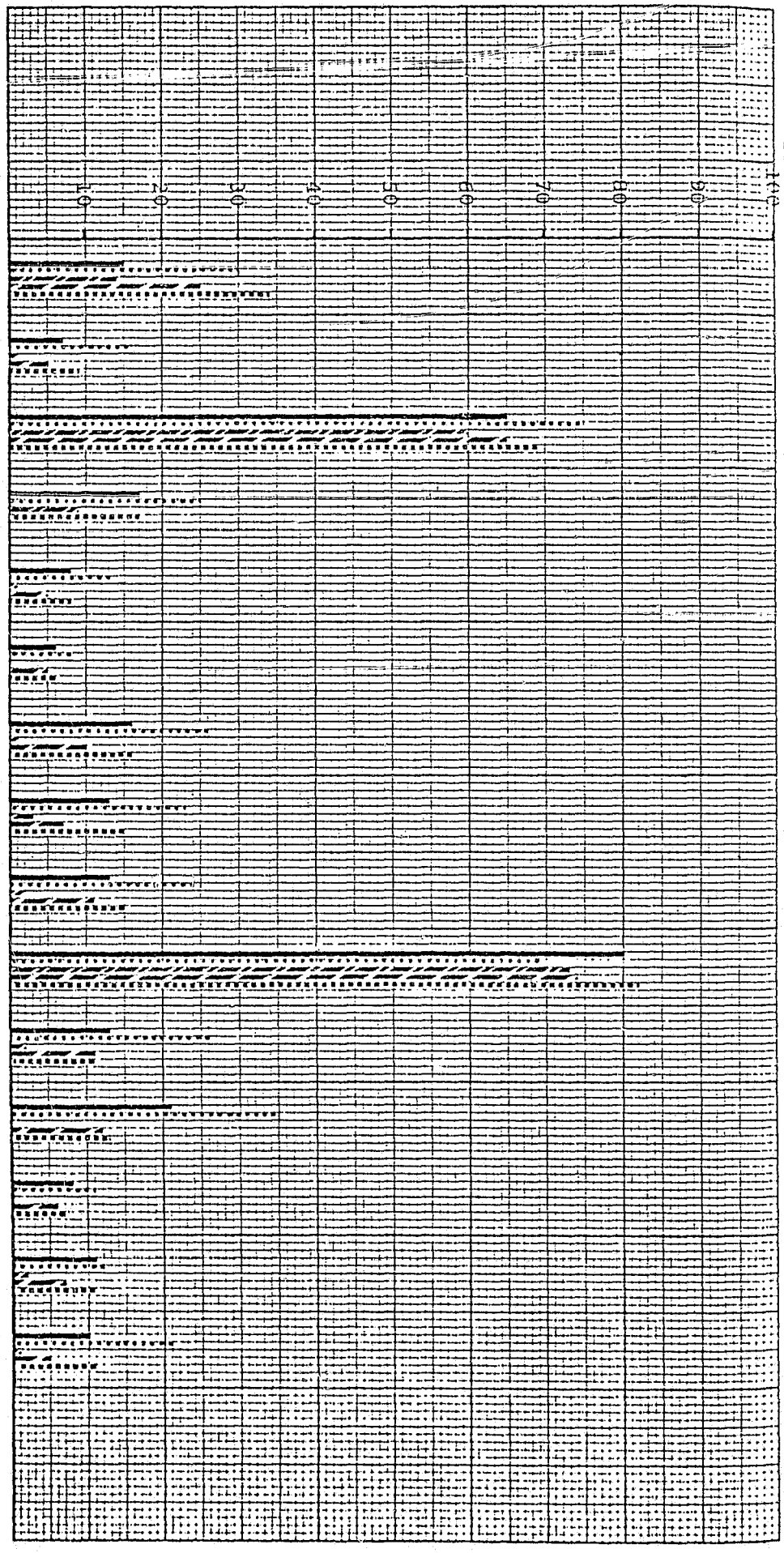
PAQ ATTRIBUTES

MENTAL APTITUDES - LIEUTENANTS

Percentile

10 20 30 40 50 60 70 80 90 100

- Patrol Bureau
- Special Investigations Bureau
- Special Services Bureau
- Staff/Technical Bureaus
- Traffic Bureau



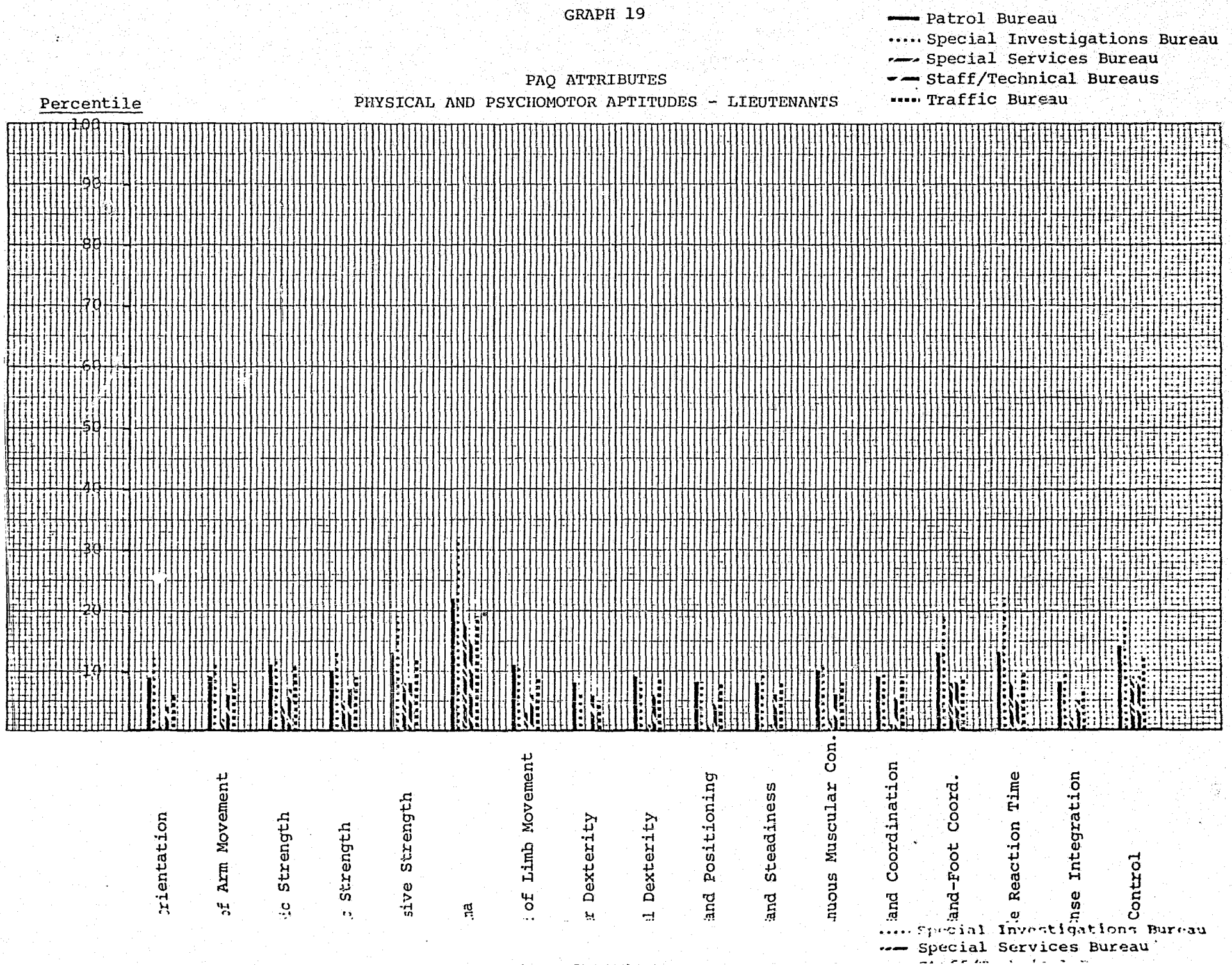
PERCEPTUAL APTITUDES - LIEUTENANTS

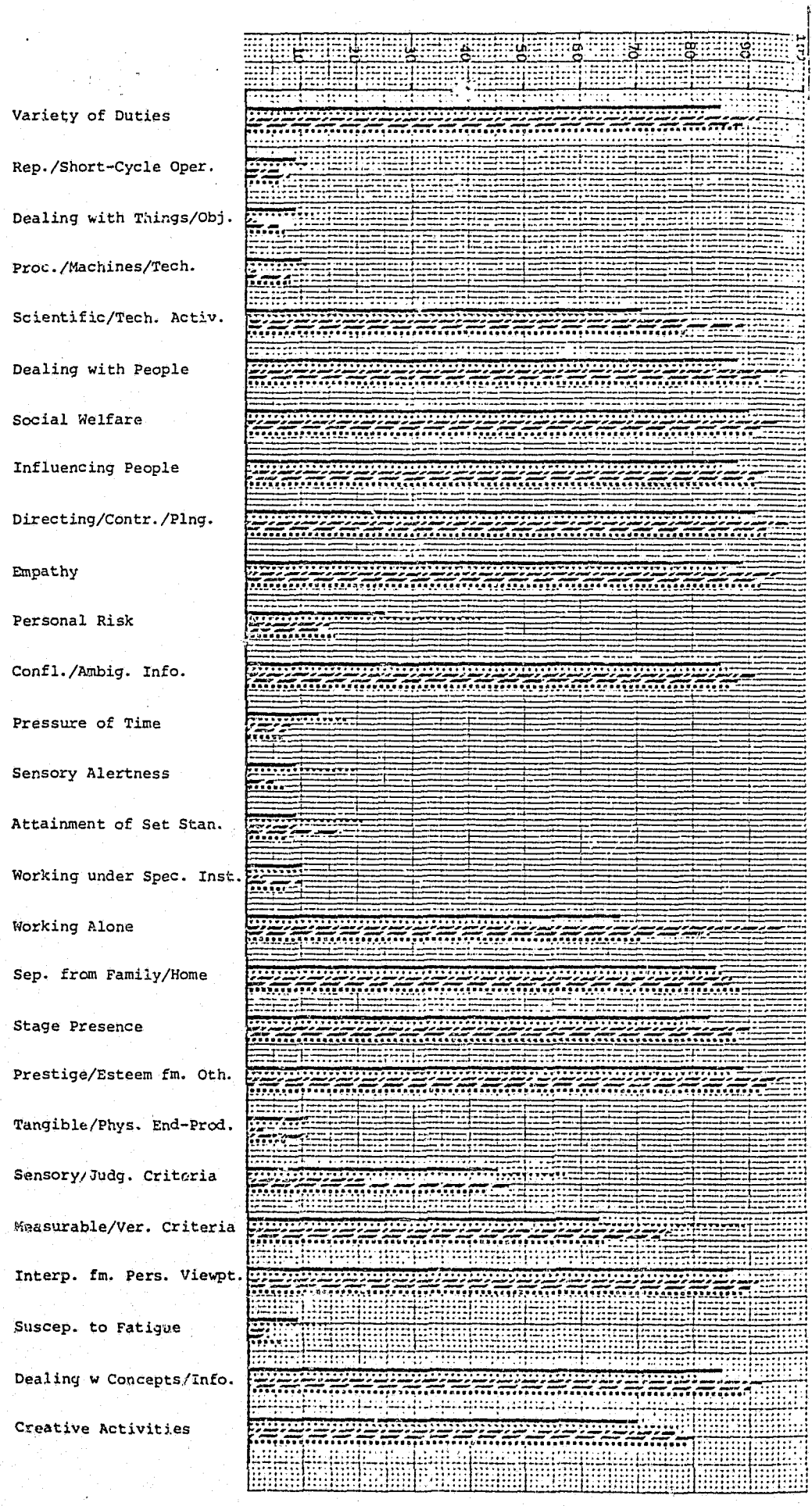
Traffic Bureau

GRAPH 19

PAQ ATTRIBUTES

PHYSICAL AND PSYCHOMOTOR APTITUDES - LIEUTENANTS




Variety of Duties
Rep./Short-Cycle Oper.
Dealing with Things/Obj.
Proc./Machines/Tech.
Scientific/Tech. Activ.
Dealing with People
Social Welfare
Influencing People
Directing/Contr./Plng.
Empathy
Personal Risk
Confl./Ambig. Info.
Pressure of Time
Sensory Alertness
Attainment of Set Stan.
Working under Spec. Inst.
Working Alone
Sep. from Family/Home
Stage Presence
Prestige/Esteem fm. Oth.
Tangible/Phys. End-Prod.
Sensory/Judg. Criteria
Measurable/Ver. Criteria
Interp. fm. Pers. Viewpt.
Suscep. to Fatigue
Dealing w Concepts/Info.
Creative Activities
10
20
30
40
50
60
70
80
90
Traffic Bureau

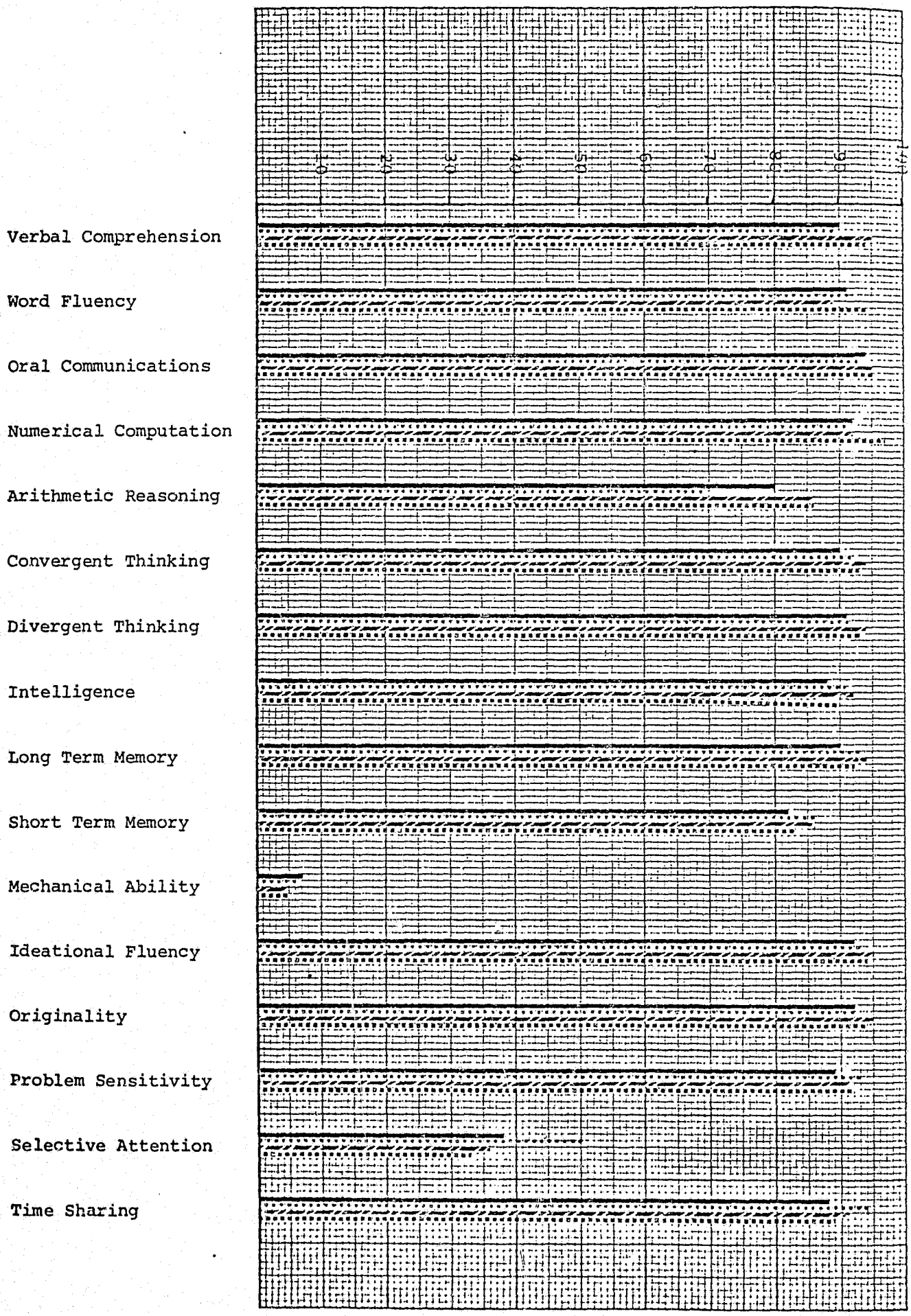
line supervisors (Sergeants) and officers.

While the Lieutenant position sometimes involves certain "field" activities, the physical, psychomotor and perceptual requirements (Graphs 18 and 19) are generally minimal. On the other hand, the mental ability requirements typically range from average to above average (50th to 75th percentiles) as would be expected from the "middle management" nature of the position.

Interest and temperament requirements (Graph 20) for the Lieutenant position are well defined by the PAQ attribute procedure. Individuals in the Lieutenant position should be adaptable to or effective in situations that have a considerable variety of duties that frequently have a "technical" component and are conceptual in nature. Additionally, the position requires individuals who are able to influence and manage, and have a true concern for other people. Finally, individuals serving as Lieutenants should be able to deal with conflicting or ambiguous information that is often subject to interpretation from one's personal viewpoint.

Attribute Profiles - Captains

Four separate Captain positions were initially analyzed with the PAQ, and the results of the job analyses were utilized to generate separate attribute profiles. These profiles are given in Graphs 21 through 24, and are almost completely identical across all four positions. The Captain position, of course,



MENTAL APTITUDES - CAPTAINS

Traffic Bureau

GRAPH 22

PAQ ATTRIBUTES
PERCEPTUAL APTITUDES - CAPTAINS

Percentile

100
90
80
70
60
50
40
30
20
10

Patrol Bureau
Special Investigations Bureau
Staff/Technical/Special Services Bureaus
Traffic Bureau

atic Judgment
l Form Perception
re
ant Detection
al Visualization
Visual Acuity
isual Acuity
: Perception
: Discrimination
ory Acuity
tory Acuity
tory Acuity
al Acuity
sthesis
al Orientation
ptual Speed

Patrol Bureau
Special Investigations Bureau
Staff/Technical/Special Services Bureaus

PAQ ATTRIBUTES

PHYSICAL AND PSYCHOMOTOR APTITUDES - CAPTAINS

FAQ ATTRIBUTES

Percentile

10 20 30 40 50 60 70 80 90 100

Body Orientation

Rate of Arm Movement

Dynamic Strength

Static Strength

Explosive Strength

Stamina

Speed of Limb Movement

Finger Dexterity

Manual Dexterity

Arm/Hand Positioning

Arm/Hand Steadiness

Continuous Muscular Con.

Eye-Hand Coordination

Eye-Hand-Foot Coord.

Simple Reaction Time

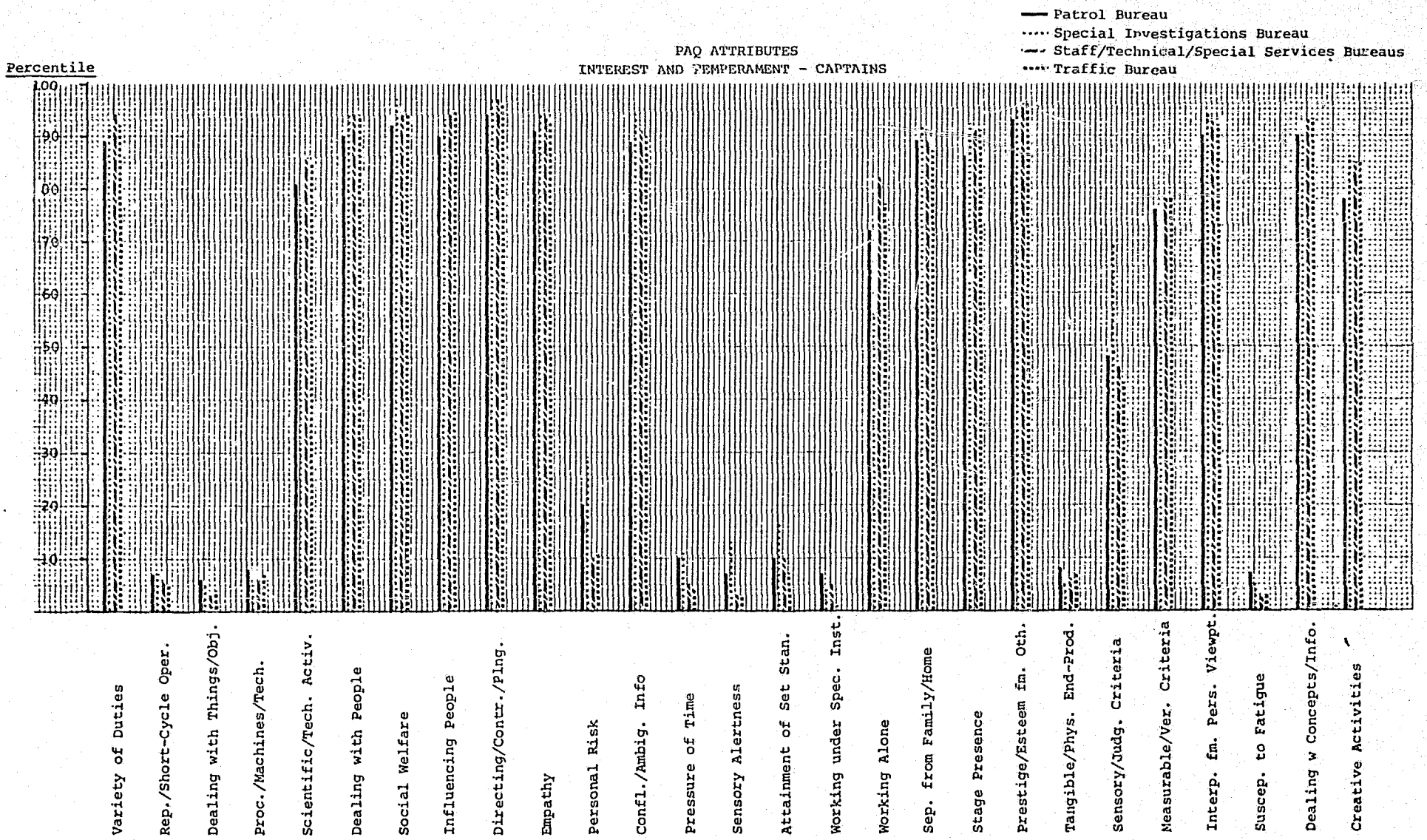
Response Integration

Rate Control

---- Staff/Technical/Special Services Bureaus

..... Traffic Bureau

GRAPH 24



GRAPH 24

Patrol Bureau

is a management job typically requiring the daily administration of a fairly large component of the Department. Consequently, there are minimal physical, psychomotor or perceptual aptitudes required of incumbents in the job (Graphs 22 and 23).

The above average mental requirements (Graph 21) are typical of the abilities demanded by Department management positions in most large organizations. The principal responsibilities of the Captain position include personnel administration, performance evaluation, budgeting, planning and organizing for a major component of the Houston Police Department consisting on the average of over 100 people. Consequently, above average abilities related to problem solving, communications and administration are required of individuals in the position.

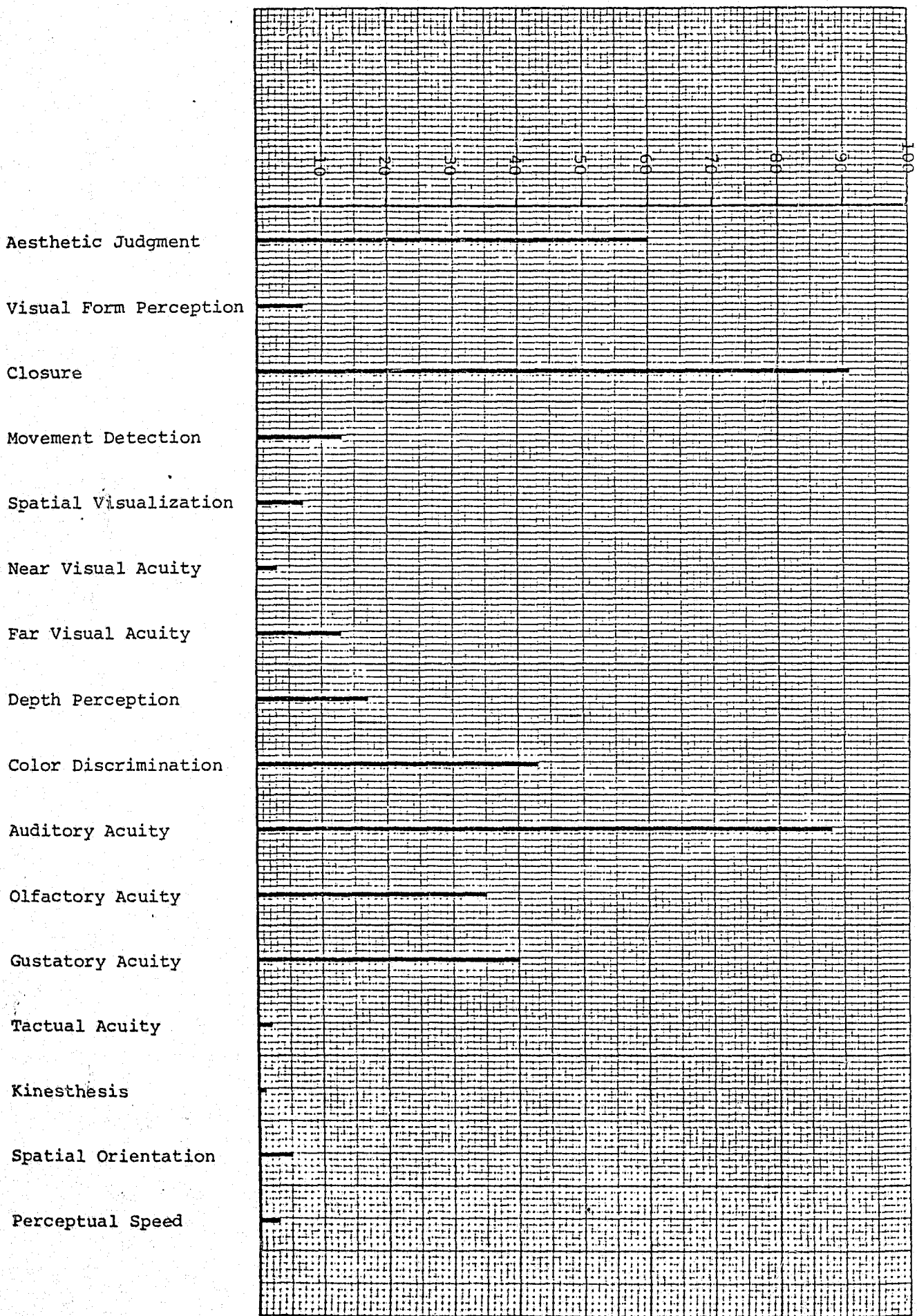
The interest and temperament requirements (Graph 24) of the Captain position are similar to but more amplified than those of the other law enforcement positions of a lower rank. Thus, heavy emphasis is placed on "people interrelationships" and the ability to work with conceptual information that may be subject to either judgmental or verifiable criteria.

Attribute Profile - Deputy Chief

Graphs 25 through 28 display the attribute profile for the Deputy Chief position. The profile is quite similar to that typically found for senior management jobs in larger organizations. Thus, there are virtually no physical, psychomotor or

GRAPH 25

PAQ ATTRIBUTES
MENTAL APTITUDES - DEPUTY CHIEFS



PERCEPTUAL APTITUDES - DEPUTY CHIEFS

GRAPH 27

PAQ ATTRIBUTES

PHYSICAL AND PSYCHOMOTOR APTITUDES - DEPUTY CHIEFS

Percentile

10 20 30 40 50 60 70 80 90 100

PAQ ATTRIBUTES

- Orientation
- of Arm Movement
- ic Strength
- c Strength
- sive Strength
- na
- of Limb Movement
- r Dexterity
- l Dexterity
- and Positioning
- and Steadiness
- nuous Muscular Con.
- and Coordination
- and-Foot Coord.
- e Reaction Time
- nse Instegration
- Control

Percentile

10 20 30 40 50 60 70 80 90 100

Variety of Duties
Rep./Short-Cycle Oper.
Dealing with Things/Obj.
Proc./Machines/Tech.
Scientific/Tech. Activ.
Dealing with People
Social Welfare
Influencing People
Directing/Contr./Plng.
Empathy
Personal Risk
Confl./Ambig. Info.
Pressure of Time
Sensory Alertness
Attainment of Set Stan.
Working under Spec. Inst.
Working Alone
Sep. from Family/Home
Stage Presence
Prestige/Esteem fm. Oth.
Tangible/Phys. End-Prod.
Sensory/Judg. Criteria
Measurable/Ver. Criteria
Interp. fm. Pers. Viewpt.
Suscep. to Fatigue
Dealing w Concepts/Info.
Creative Activities

perceptual demands (Graphs 26 and 27), but extensive mental aptitudes required of individuals in the position. The interest and temperament requirements are similar to those of the previously described police management/supervisory positions. Thus, there is a requirement for individuals in the Deputy Chief position to have strong aptitudes for "people interrelations" as well as the ability to be effective in dealing with conceptual information related to their operational management and administrative responsibilities.

CONTINUED

2 OF 3

CHAPTER 12

TASK ANALYSIS OF THE CLASS B AND C POSITIONS

Introduction

In addition to Class A commissioned police officers, the Houston Police Department also employs two classified categories of professional/technical personnel. Class B personnel are utilized in the Crime Laboratory and in the Identification Division of the Technical Services Bureau. These personnel provide assistance of a scientific and technical nature to other divisions in the Department. Class C personnel are employed in the Communications Division of the Special Services Bureau, and provide supportive communication services throughout the Police Department. Basic information about the organization of, and positions included in the B and C classifications is provided in Table 30.

Since Class B and C personnel number fewer than 60 incumbents at the time of this study, a computerized method of task analysis was not necessary for studying their jobs. Instead, a manual task analysis method was utilized which was identical in most respects to the U. S. Air Force method (see Chapter 6) except that overlap or homogeneity coefficients and statistical hierarchical grouping of task analysis data were not utilized as analytical tools.

CHAPTER 12

TASK ANALYSIS OF THE CLASS B AND C POSITIONS

Introduction

In addition to Class A commissioned police officers, the Houston Police Department also employs two classified categories of professional/technical personnel. Class B personnel are utilized in the Crime Laboratory and in the Identification Division of the Technical Services Bureau. These personnel provide assistance of a scientific and technical nature to other divisions in the Department. Class C personnel are employed in the Communications Division of the Special Services Bureau, and provide supportive communication services throughout the Police Department. Basic information about the organization of, and positions included in the B and C classifications is provided in Table 30.

Since Class B and C personnel number fewer than 60 incumbents at the time of this study, a computerized method of task analysis was not necessary for studying their jobs. Instead, a manual task analysis method was utilized which was identical in most respects to the U. S. Air Force method (see Chapter 6) except that overlap or homogeneity coefficients and statistical hierarchical grouping of task analysis data were not utilized as analytical tools.

CLASS B AND C POSITIONS

CLASS B

	Most Applicable D.O.T. Classification Number	Government Service Number	Number of HPD Personnel Assigned
Technical Services Bureau			
Crime Laboratory			
Chemist/Toxicologist	022.081/169.168	7	1
Assistant Chemist/Toxicologist	022.081	6	3
Identification Division			
Superintendent	169.168	7	1
Assitant Superintendent	169.168	6	1
Firearms Examiner	199.287	5	2
Latent Print Examiner	375.388	5	2
Office Supervisor	375.388/169.168	5	3
Print Classifier II	375.388	4	9
Print Classifier I	375.388	3	7
Supervisor of Photography	143.382	4	1
Photographer	143.382	3	4

CLASS C

Special Service Bureau			
Communications Division			
Supervising Technician	193.168	8	1
Assistant Supervising Technician	193.168	7	1
Radio Operator III	828.281	6	5
Radio Operator II	828.281	5	10
Radio Operator I	828.281	4	6

The research of the Class B and C positions focused extensively on identifying the correct "distribution" of activities for the entry and promotional positions. The Class B and C positions are mostly scientific and technical in nature. Therefore, investigation of the technical knowledge requirements of the various positions was a critical focal point for the present study.

DEVELOPMENT OF THE TASK LISTS

The development of a task list inventory was initiated by having at least one incumbent in each of the Class B and C positions list his/her duties, tasks, and responsibilities on an open-ended questionnaire. The responses to the questionnaires formed the basis for developing a complete listing of all the tasks performed by all Class B and C personnel. These preliminary lists (one for "B" and one for "C") then were reviewed by supervisory personnel for additions, deletions, and changes. The job titles of the six supervisors participating in the review process are listed below:

Chemist/Toxicologist
Superintendent of Identification
Assistant Superintendent of Identification
Supervisor of Photography
Identification Office Supervisor
Communications Assistant Supervising Technician

Once the review process was completed a finalized task list for B personnel was constructed which contained 210 task statements (Appendix BB). A similar list containing 206 task statements was constructed for C personnel (Appendix CC). The final task lists then were reviewed one more time for inclusiveness by the Deputy Chief in charge of the Technical and Special Services Bureaus. Tables 31 and 32 contain summaries of the Class B and C task lists, respectively.

Task List Administration

The task lists were administered to all incumbents of the Class B and C positions. The lists also were administered to the incumbents of the Criminalist I and Criminalist II positions in the crime laboratory. The two Criminalist positions are unclassified, yet they are in the progression path to the Crime Laboratory's classified positions and therefore relevant to the study.

All classified personnel were asked to check those tasks which they perform on their present job and then to rate each of the tasks they checked using two seven point scales - "Time Spent" and "When Learned". Results from the "Time Spent" scale ratings were used to weigh statements in the job descriptions (discussed below). Results from the "When Learned" scale ratings were used as "decision aids" in determining recommended items for inclusion in promotional exams.

TABLE 31

SUMMARY OF CONTENTS OF TASK LIST

FOR CLASS B POSITIONS

DUTY TITLE	NUMBER OF TASKS
Technical Duties	
Performing Fingerprint Identification and Classification Functions	40
Performing Firearms and Tool Mark Functions	20
Performing Photography Functions	24
Performing Chemical and Toxicological Functions	23
General Duties	
Performing General Technical and Support Functions	33
Participating in Continuing Education	5
Performing Administrative and Related Functions	25
Performing Technical Supervision	19
Performing General Supervision	21

TABLE 32

SUMMARY OF THE CONTENTS OF TASK LIST

FOR CLASS C POSITIONS

DUTY TITLE	NUMBER OF TASKS
Technical Duties	
Maintaining Police Communications Systems	113
General Duties	
Performing General Technical and Support Functions	23
Participating in Continuing Education	5
Performing Administrative and Related Functions	25
Performing Technical Supervision	19
Performing General Supervision	21

JOB DESCRIPTIONS AND POSITION REQUIREMENTS

From the task list responses and interviews with supervisors, job descriptions and requirements for the Class B and C positions were developed and are presented in Appendix DD. The descriptions also include a distribution of the time spend by incumbents performing the various duties described in Tables 31 and 32.

The positions are described in terms of summarized statements of the tasks performed by incumbents, grouped according to duty categories. For each position, the duty categories are ordered from the highest to lowest percentage of time spent on each duty.

Position requirement statements follow each job description and are given in a standardized format according to the following schema: education and technical training; licenses and certificates; testable knowledge, skills and abilities; and physical requirements.

Summarized listings of the percentages of time spent on each duty category for all classified positions of the Crime Laboratory and Identification Division (Class B), and the Communications Division (Class C) are provided in Tables 33, 34, and 35 respectively.

CONTENT OF PROMOTIONAL EXAMINATIONS

In a manner similar to that for Class A positions (see Volume

TABLE 33

SUMMARIZED TIME SPENT DISTRIBUTIONS IN VARIOUS DUTY CATEGORIES

FOR POSITIONS IN THE IDENTIFICATION DIVISION (CLASS B PERSONNEL)

Duty Category		Position Title: Photographer	Supervisor, Photographer	Firearms Examiner	Print Classifier I	Print Classifier II	Identification Office Supervisor	Latent Print Examiner	Assistant Superintendent	Superintendent
A 1	Technical Duties: Performing Fingerprint Identification and Classification Functions	-	-	-	59	62	31	48	13	15
A 2	Technical Duties: Performing Firearms and Tool Mark Examination Functions	-	-	34	-	-	-	5	2	2
A 3	Technical Duties: Performing Photography Functions	75	30	-	1	1	1	2	-	1
B	Performing General Technical and Support Functions	16	23	52	28	25	22	23	21	22
C	Participating in Continuing Education	8	5	4	11	7	7	6	8	6
D	Performing Administrative and Related Functions	1	12	10	1	5	7	8	15	15
E	Performing Technical Supervision	-	11	-	-	-	19	8	18	19
F	Performing General Supervision	-	19	-	-	-	13	-	23	20
TOTAL		100%	100%	100%	100%	100%	100%	100%	100%	100%

TABLE 34

SUMMARIZED TIME SPENT DISTRIBUTIONS IN

VARIOUS DUTY CATEGORIES FOR POSITIONS

IN THE CRIME LABORATORY (CLASS B PERSONNEL)

Duty Category		Position Title			
		Criminalist I	Criminalist II	Assistant Chemist	Chemist
A 1	Technical Duties: Performing Fingerprint Identification and Classification Functions	-	-	1	2
A 2	Technical Duties: Performing Firearms and Tool Mark Examination Functions	1	3	6	3
A 3	Technical Duties: Performing Photography Functions	-	1	2	1
A 4	Technical Duties: Performing Chemical and Toxicological Functions	52	42	35	18
B	Performing General Technical and Support Functions	32	44	30	28
C	Participating in Continuing Education	8	5	4	4
D	Performing Administrative and Related Functions	7	5	3	20
E	Performing Technical Supervision	-	-	12	13
F	Performing General Supervision	-	-	7	11
TOTAL		100%	100%	100%	100%

TABLE 35

SUMMARIZED TIME SPENT DISTRIBUTIONS

IN VARIOUS DUTY CATEGORIES FOR POSITIONS

IN THE COMMUNICATIONS DIVISION (CLASS C PERSONNEL)

Duty Category		Position Title: Radio Operator I	Radio Operator II	Radio Operator III	Assistant Supervising Technician	Supervising Technician
A	Technical Duties: Maintaining Police Communications Systems	88	79	49	19	20
B	Performing General Technical and Support Functions	5	15	13	18	16
C	Participating in Continuing Education	7	6	6	9	9
D	Performing Administrative and Related Functions	-	-	11	15	15
E	Performing Technical Supervision	-	-	12	22	18
F	Performing General Supervision	-	-	9	17	22
TOTAL		100%	100%	100%	100%	100%

IX) candidates for promotional openings in Class B and C positions are required to demonstrate job relevant knowledge on Houston Civil Service examinations specifically prepared for each promotional job. One objective of the present study was to provide information that would ensure that these examinations be inclusive, whereby test items sample *only* the content domain of the position in question, and at the same time sample the *full range* of job content.

The basic data source for determining the type of knowledge to be tested for by a promotional exam and the proportional representation of the items on the examination was the task lists. Supervisors of Class B and C personnel were asked to complete two types of ratings for the tasks that comprise the positions supervised. (Heads of each division and the head of the Crime Laboratory also completed ratings for their own positions.) Two types of ratings were made for each task comprising a specific B or C job -- "Difficulty" (Time to Learn) and "Probable Consequences of Inadequate Performance". These rating scales are defined in Appendicies BB and CC. The results from the two ratings plus the previously completed "Time Spent" ratings were used to determine the degree to which test questions about the various tasks should be represented on a promotional test. This procedure is discussed in detail below.

As a first step, the "When Learned" ratings were used to elimina

from test consideration those tasks which are primarily learned after a person has been placed on the job. Next, the researchers made a judgmental decision as to which additional tasks in each job could be eliminated from consideration in the construction of a promotional test due to their being "untestable" or more suitable for assessment by other means. For each of the remaining tasks for a given position, a representation weight was computed using the three ratings ("Time Spent", "Time to Learn", and "Probable Consequences of Inadequate Performance"). Each of the three ratings was given equal weight in calculating the overall "representation weight" for a task. The proportionality for each test item was then obtained by computing the ratio of each individual representation weight to the total weights for all tasks to be included in a promotional test for a specific position.

Appendix EE contains the suggested test item content and proportional representation of items for promotional tests for each of the Class B and C positions analyzed in this study. This information is presented according to duty categories. The percentages listed for each duty category are intended as guidelines to be considered by Houston Civil Service test constructors who finalize items on each promotional test.

A summarized listing of the relative representations of duty categories for promotional tests for the Class B and C positions are provided in Tables 36, 37, and 38 respectively.

TABLE 36

SUMMARIZED DISTRIBUTION OF WEIGHTS TO BE GIVEN VARIOUS DUTY CATEGORIES

FOR TEST ITEM SELECTION FOR POSITIONS IN THE IDENTIFICATION DIVISION

(CLASS B PERSONNEL)

Duty Category		Photographer	Supervisor, Photography	Firearms Examiner	Fingerprint Classifier I	Fingerprint Classifier II	Identification Office Supervisor	Latent Print Examiner	Assistant Superintendent	Superintendent
A 1	Performing Fingerprint Identification and Classification Functions	-	-	-	100	85	39	71	27	25
A 2	Performing Firearms and Tool Mark Examination Functions	-	-	76	-	-	-	6	11	8
A 3	Performing Photography Functions	100	49	-	-	-	-	7	-	3
B	Performing General Technical and Support Functions	-	8	24	-	15	8	-	7	-
D	Performing Administrative and Related Functions	-	-	-	-	-	-	-	-	6
E	Performing Technical Supervision	-	24	-	-	-	31	16	31	32
F	Performing General Supervision	-	19	-	-	-	22	-	24	26
TOTAL		100%	100%	100%	100%	100%	100%	100%	100%	100%

TABLE 37

SUMMARIZED DISTRIBUTION OF WEIGHTS TO BE GIVEN

DUTY CATEGORIES FOR TEST ITEM SELECTION

FOR POSITIONS IN THE CRIME LABORATORY (CLASS B PERSONNEL)

Duty Category		Position Title: Criminalist I	Criminalist II	Assistant Chemist	Chemist
A 1	Technical Duties: Performing Fingerprint Identification and Classification Functions	-	-	6	9
A 2	Technical Duties: Performing Firearms and Tool Mark Examination Functions	-	10	6	4
A 4	Technical Duties: Performing Chemical and Toxicological Functions	100	75	45	25
B	Performing General Technical and Support Functions	-	15	11	11
E	Performing Technical Supervision	-	-	22	31
F	Performing General Supervision	-	-	10	20
TOTAL		100%	100%	100%	100%

TABLE 38

SUMMARIZED DISTRIBUTION OF WEIGHTS TO BE GIVEN

DUTY CATEGORIES FOR TEST ITEM SELECTION

FOR POSITIONS IN THE COMMUNICATIONS DIVISION (CLASS C PERSONNEL)

Duty Category		Position Title				
		Radio Operator I	Radio Operator II	Radio Operator III	Assistant Supervising Technician	Supervising Technician
A	Technical Duties: Maintaining Police Communications Systems	100	100	65	18	20
E	Performing Technical Supervision	-	-	21	46	44
F	Performing General Supervision	-	-	14	36	36
TOTAL		100%	100%	100%	100%	100%

SUMMARY

In summary, the Class B and C positions within the Houston Police Department were analyzed using a task analysis approach. The results of the task analysis were combined with information obtained from incumbent and supervisory interviews in order to develop comprehensive job descriptions and requirements for each position. Additionally, the task analysis information was used to specify the types of job knowledge that should be included in promotional tests for the non-entry level Class B and C positions. Included in the test specifications are the proportions of test items that should be devoted to each of the various duty categories that comprise the promotional positions.

LIST OF REFERENCES

A comprehensive bibliography that includes all reference sources reviewed during the conduct of the study and cited in this volume is presented in Volume I of this report.

are discussed prior to the other job analysis procedures and findings.

END