HUMAN RESOURCES IN CRIMINAL JUSTICE

VOLUME I

METHODS FOR HUMAN RESOURCES IN THE CRIMINAL JUSTICE SYSTEM: A FEASIBILITY STUDY

CENTER FOR EVALUATION RESEARCH

HUMAN RESOURCES IN CRIMINAL JUSTICE

METHODS FOR HUMAN RESOURCES IN THE CRIMINAL JUSTICE SYSTEM: A FEASIBILITY STUDY

Volume I

of the

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Project Staff

Frank Sistrunk, Ph.D.	Principal Investigator
Philip L. Smith, M.S.W.	Principal Investigator
Edward L. Levine, Ph.D.	Research Coordinator
Ronald A. Ash, M.A.	Research Associate
Susan E. Hensley, M.A.	Research Associate
Steven B. Csanadi, M.S.	Research Assistant
Hilary R. Weiner, B.A.	Research Assistant
Jonathan M. Canger, M.A.	Research Assistant
Michael S. Raich, M.A.	Research Assistant
Hardy L. Hall, M.S.	Research Assistant
Harold D. Shaver, B.S.	Research Assistant
Robert J. Teare, Ph.D.	Consultant
Lewis Bowman, Ph.D.	Consultant
Herbert H. Meyer, Ph.D.	Consultant
D. Paul Johnson, Ph.D.	Consultant
Fredric W. Swierczek, Ph.D.	Consultant

PREFACE

As with all projects as ambitious as this one, a host of persons contributed to the conception, planning, and implementation of the studies. The initial acknowledgment must go to Price Foster. Perhaps ten years ago he recognized the need for this work and maintained an interest and commitment until he was in a position to put together resources from LEAA and three universities to attempt an intensive, multifaceted study of manpower and human resources in the criminal justice system. The support and coordination of Jean Moore of OCJET throughout the project is recognized and appreciated, as is the assistance of George Datesman in the initial stages of the project.

We would like to mention members of the two companion projects with whom we have worked closely: John Hudzik and Tim Bynum of Michigan State University; and Vic Strecher, Larry Johnson, and Larry Hoover of Sam Houston State University.

Finally, we would like to identify and cite the contributions of each member of the project staff. Inevitably, however, the individual contributions of 16 professional persons to conceptualizing, leading, planning, implementing, collecting data, analyzing, managing, writing, and editing have been appropriately lost in an amalgam representing a joint effort of many people. While the principal investigators must take ultimate responsibility for the final report, all members of the professional staff, to various

degrees, must share in whatever contribution the project may have made to human resources issues in criminal justice.

In terms of the final preparation of this volume, appreciation is expressed to Ed Levine and Ron Ash for their significant contributions to the organization and writing of several of the chapters.

EXECUTIVE SUMMARY

This is the Final Report for Grant 78-CD-AX-0003 funded by the Office of Criminal Justice Education and Training of the Law Enforcement Assistance Administration. The report is composed of four volumes.

HUMAN RESOURCES IN CRIMINAL JUSTICE:

VOLUME I. METHODS FOR HUMAN RESOURCES IN THE CRIMINAL JUSTICE SYSTEM: A FEASIBILITY STUDY

VOLUME II. CRITIQUES OF JOB ANALYSIS METHODS

VOLUME III. REVIEWS OF JOB-RELATED HUMAN RESOURCES PROCESSES

VOLUME IV. APPENDIX: SELECTED SUMMARIES OF HUMAN RESOURCES STUDIES IN CRIMINAL JUSTICE

The general purpose of this project was to assess the feasibility of transporting human resources methods developed in the private sector to problems in the criminal justice system. The principal methods and procedures of this project were:

1. review of technical literature on methods of human resources planning, development, and utilization;
2. review of studies on the use of human resources methods in criminal justice;
3. interviews with key criminal justice officials regarding current practice and issues and problems in human resources;
4. critical analysis of job-related human resources methods;
5. evaluation of contemporary job-analysis and job-related methods in the context of current human resources practices in criminal justice organizations.

Since this was a feasibility and developmental project, the major products are not general findings, but the detailed explications of the methods for human resources planning, development, and utilization and the considerations for their transfer to the criminal justice system. However, the following general findings may be stated:

1. It is feasible to transfer human resources methods constructed for use in various areas of the criminal justice system, provided that certain modifications are made and that rational choices of methods are made on criteria of use and practicality.

2. Criminal justice organizations need to increase their efforts and upgrade their sophistication in the use of human resources methods in order to keep pace with organizational and environmental changes and increasing pressures for public accountability and legal compliance.

3. It is appropriate to standardize human resources planning, development, and utilization methods, but not appropriate to standardize specific jobs and many organizational practices, unless consideration is given to organizational and environmental variations.

4. A multimethodological, hybrid job-analysis technique is needed to support job-related human resources activities in criminal justice organizations, which is flexible enough to accommodate the desired uses and practicalities of individual organizations.

This volume integrates the findings from the several activities of the project. As the only volume which represents the project overall, it presents an overview as well as the major conclusions and recommendations regarding human resources methods in criminal justice.

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Chapter 1

INTRODUCTION

The Project

This is the first volume in the Final Report for LEAA Grant Number 78-CD-AX-0003, "Methodologies for Manpower Analysis and Planning in the Criminal Justice System: A Feasibility Study." Volume I may stand alone in representing the project overall in that it summarizes the major activities and results; Volumes II and III present position papers, detailed results, and discussions; and Volume IV serves as an Appendix in containing a collection of supporting materials.

This project also was planned in close coordination with two other Office of Criminal Justice Education and Training (OCJET) projects: LEAA Grant Number 78-CD-AX-0004, "A Criminal Justice Manpower Planning Model: Feasibility Assessment and Design," awarded to Michigan State University; and LEAA Grant Number 78-MU-AX-0034, "Criminal Justice Manpower Planning Grant," awarded to Sam Houston State University. The roots of this three-university effort reach back for several years. The conception and early planning involved several persons from OCJET and the universities. The projects were sponsored by OCJET to accomplish a feasibility study related to future manpower analysis and planning activities in the criminal justice system and the development of a system planning model.

The task of the University of South Florida was essentially to assess the feasibility of transferring human resources methodologies to the criminal justice system. The primary procedures of the project were critical reviews of the literature on human resources methods, reviews of studies of human resources activities in criminal justice, interviews with selected criminal justice officials, analysis of key job-related methods, and evaluation of contemporary methods in the context of current practice in criminal justice organizations.

The major findings of the study reside in the complexity of the details of the critical reviews and integrative evaluations of the methods. Such explication and documentation cannot properly be placed in a simple list, however, certain major conclusions may be stated rather directly. First, it is feasible to transport human resources methods constructed for use in the private sector to the criminal justice arena, provided certain modifications are made and provided that rational choices are made on criteria of use and practicality. The kinds of modifications to be made will depend on specific organizational constraints and also on the particular problems or needs the methods are intended to meet. Secondly, criminal justice organizations in general as well as the planning components of the criminal justice system need to increase their efforts and upgrade their sophistication in the use of human resources planning, development, and utilization (HRPDU) methods in order to keep pace with organizational and environmental changes under increasing pressures for public accountability. Particularly compelling is

the increasing impact of legal requirements on human resources activities. Thirdly, human resources activities may appropriately be standardized or planned on the methodological level, but not effectively dictated on the level of specific jobs, operations, and decisions for all organizations without regard for their unique parameters. Whereas there are certainly common elements among, for example, job and organizational practices in criminal justice, there are elements from job to job and from organization to organization that are not common and those that change. Attempts to prescribe tasks and procedures too rigidly in the name of standardization may be premature and ineffective. The standardization of methods to generate dynamic information leading to specific activities in specific situations, though, is seen as appropriate. This does not mean that a system-wide planning model is not efficacious, but that such a model may have to take a different form than originally envisioned by OCJET and the three universities at the outset. Fourthly, it has been determined that a multi-methodological, hybrid job-analysis technique is needed for application in criminal justice organizations. The question is thereby raised, but not yet answered, as to whether the implication of this finding will obtain in other methodological areas.

Contributions other than general conclusions are the several written products of the project. Volume II contains intensive critiques of the major methods of job analysis, including the Position Analysis Questionnaire, the Critical Incident Technique, the Job

Element Method, the Ability Requirements Scale, Functional Job Analysis, and the Task Inventory. Volume III reviews job-related human resources processes such as role and task definition; job design, construction, and alteration; occupational classification, and job evaluation. Volume IV includes the report of the study of current human resources problems and issues in criminal justice conducted through interviews with selected criminal justice experts, a summary of Project STAR, a summary of the National Manpower Survey, and concludes with summaries of selected job analyses conducted in criminal justice organizations.

In Volume I following this introduction to the project is an introduction to the problem, after which are chapters on human resources planning, development, and utilization (HRPDU) in the criminal justice system, an exposition of HRPDU to form a basis for further evaluation, a classification of HRPDU methods and activities, critical discussions of job-based human resources methods, an integrative critique of the comparative utility of job analysis methods, and recommendations on the implementation of job-related methods in criminal justice.

The Problem

The Criminal Justice System has been faced with a number of critical social and technological issues during the past several years. Soaring crime rates, nontraditional enforcement problems, and new modalities of law enforcement have considerably complicated

the job of law enforcement personnel. In corrections, overcrowded detention facilities, new interpretation of prisoner rights, and numerous court decisions concerned with standards of treatment and rehabilitation have produced similar complications. The structure and function of the courts have been criticized recently and this has added further to the complexity of planning and development in criminal justice (Smith, Pehlke, and Weller, 1976). Even viewed from the simplified perspective of the separate criminal justice sectors--law enforcement, corrections, and the courts--the issues are complex. When placed in the context of the total Criminal Justice System, these issues interact to pose even more intricate problems. This has given impetus to the current emphasis on comprehensive planning and the "systemic" approach to criminal justice at both the federal and local levels. From this vantage point, problems arising from system inconsistencies and possible sector cross-purposes emerge even more clearly and demand more attention (Teare, 1978).

The single most significant attribute of the Criminal Justice System relating the issues highlighted above to HRPDU is the fact that the Criminal Justice System, in all three sectors, is a labor-intensive industry. In other words, it is a system of people, not things. Its processes and products are primarily the actions of its labor force, not the operations and outputs of machines. The current "hardware" emphasis notwithstanding, it has been and remains an industry with primary emphasis and expenditure on its workforce.

Consequently, the issues described earlier have major implications for human resources planning, development, and utilization in the Criminal Justice System (cf. NILECJ, 1978; Smith et al., 1976).

In criminal justice, as with other public sector programs, comprehensive human resources planning has been conspicuous by its absence. The techniques for human resources analyses were developed largely in industry and the military (cf. Burrack and Walker, 1972; Christal, 1974; McCormick, 1976). However, in the past ten years there has been an increased awareness of the need to transfer and/or adapt human resources planning technologies to the public sector. This has been particularly true in public sector industries such as health and social services. Prudent planners have quickly become aware of the pitfalls inherent in the mindless transfer of technology from one sector to another.

Despite the difficulties, it has become increasingly necessary to take systematic steps toward human resources planning in the criminal justice field. The decade of the 60's brought with it an emphasis on accountability--increased responsiveness to consumer groups and to the public at large. The marked increase in inflation during the latter part of the 1970's resulted in public outcries for "belt-tightening" in government agencies, as exemplified by California's "Proposition 13." Demands on the Criminal Justice System are continuing to increase at a time when the system is being asked to hold the line on spending. To meet these demands under current economic conditions, the Criminal Justice System must increase productivity

through more efficient utilization of its human resources.

In addition to the accountability and productivity issues, the past fifteen years also saw an increased emphasis on equal access and equal opportunity within the labor market--stimulated in large part by massive public employment programs such as PEP, CEP, and New Careers (Brown, 1972; Smith, 1978). The introduction of new cadres of human resources into public organizations with traditional methods of personnel management immediately raised critical questions about in-service training, job assignment, evaluation, promotion, and ultimately the redesign of career opportunity systems (cf. Patten, 1971; Pearl and Riessman, 1965). New guidelines on Equal Opportunity and Affirmative Action have had significant impact on various phases of the personnel process, especially recruitment, selection, evaluation, and promotion. Racial and ethnic bias plus the lack of job-valid indices have proven to be problems of growing seriousness within organizations.

At the same time, the need for increased professionalism has also been felt in many public sector service industries. Criminal justice provides an excellent example of this phenomenon in its attempts to upgrade and credential personnel at all levels, particularly in law enforcement and corrections (Smith et al., 1976). The creation of the Law Enforcement Assistance Administration stimulated, through its many grant programs, a new emphasis on preservice training and job readiness. This resulted in new interest in human resources planning for the purpose of identifying training needs and developing

curricula (Task Force on Criminal Justice Education and Training, 1976).

With emerging professionalism in criminal justice has come emerging unionism. The trend toward public sector collective bargaining, as more states have acted on enabling legislation, is apparent in criminal justice organizations. The impact of unionism on human resources utilization is significant relative to the data base used for decision-making in labor-management issue areas (Beal, Wickersham, and Kienast, 1976).

In short, the problems faced by the Criminal Justice System today call for increased effectiveness in the human resources area. Organizations at all levels and in all sectors of the Criminal Justice System are being called upon to make the best possible use of their human resources. To provide criminal justice organizations with the most cost-effective methodological tools necessary to meet the needs of today's society, the systematic assessment of the state of the art of methodologies for human resources planning, development, and utilization (HRPDU) is a logical and essential first step.

Chapter 2

HUMAN RESOURCES ACTIVITIES IN CRIMINAL JUSTICE

Contents

Introduction

The Criminal Justice System has recognized the need for effective management of its human resources, as evidenced by two large-scale studies in particular. Project STAR (System and Training Analysis of Requirements for Criminal Justice Participants) was a 39 month research effort which focused on role performance of criminal justice personnel and the Criminal Justice System. The National Manpower Survey of the Criminal Justice System was a multi-year research effort mounted in response to a Congressional mandate for a survey of existing and future personnel needs of the nation in the field of law enforcement and criminal justice, and the adequacy of federal, state, and local programs to meet such needs. Both of these research efforts are summarized in Volume IV of this report. Highly condensed summaries are provided here. Readers desiring more detail are referred to Volume IV, or the original research reports themselves--Project STAR (Smith, Pehlke, and Weller, 1976); National Manpower Survey (NILECJ, 1978).

Project STAR

The specific objectives of Project STAR included the following:

1. identification of roles, tasks, and performance objectives for key criminal justice positions;

2. development and testing of training programs for these criminal justice positions that would address needs not satisfied by existing training programs;

3. development of educational recommendations for these criminal justice positions that would address needs not satisfied by existing educational programs;

4. development of selection criteria and recruiting strategies related to knowledges, skills, and attitudes needed for these criminal justice positions and not currently in use;

5. development of a technique to assess the impact of social trends on the criminal justice system;

6. development of an implementation plan for all project end products.

Five basic research methods were used to collect information for Project STAR. These included literature search, observation of individual performance in the field, structured interviews with operational personnel, surveys of operational personnel and the public, and utilization of expert opinion. At the risk of over simplifying, the latter two methods were of primary importance in generating the project information.

Data collected in the various steps of the project were subjected to extensive analyses to identify roles, tasks, and performance objectives for six focal criminal justice positions (police officer, prosecuting attorney, defense attorney, judge, caseworker, and correctional worker).

A total of 17 roles was identified, with 13 designated as "system roles" because they applied to more than one position. Role was defined as the personal characteristics and behavior expected in a specific situation of an individual occupying a position.

A total of 52 tasks was identified, 35 of which were designated as "system tasks" applying to multiple positions. A task was defined as an activity to be accomplished within a role, which usually involves a sequence of steps, and which can be measured in relation to time.

A performance objective was defined as a statement of operational behavior required for satisfactory performance of a task under typical conditions. Performance objectives were developed for each of the six key positions whenever a direct relationship between a role and a task was identified.

The criminal justice personnel surveyed in four states did not differ greatly in their role perceptions, although there was variation in the perception of Criminal Justice System issues among operational personnel, the adult public, and the teenage public. There was considerable agreement as to the desirable criminal justice behavior in specific situations among the public and operational personnel. The roles, tasks, and performance objectives developed/identified in Project STAR are very broad and general in nature. Consequently, they may prove inadequate for specific purposes of individual criminal justice agencies.

Role training programs were developed and packaged for three components of the Criminal Justice System (viz., police, judiciary, and corrections). Two types of training modules are contained in each package. The system module is common to all three components and emphasizes the interrelationships among them. The component

module presents specific training for individual position roles. The training programs offer a reasonably good integration of the various training and educational approaches for conveying role information to trainees. They are well written and appear well conceived. However, little information is available to judge their impact, or the method/rationale of their development. There is insufficient explanation as to how the roles, tasks, and performance objectives were translated into the performance objectives and terminal behaviors expected of trainees as a result of training. Many of the performance objectives are somewhat nonspecific. Very little information is provided on fitting the role training programs to existing programs.

Educational recommendations other than the role training programs are quite broad, and include upgrading of both instructional techniques and instructors, in addition to increasing student involvement in the learning process. Curricula viewed as essential for all criminal justice personnel in the six key positions resemble those required for baccalaureate degrees.

The selection and recruitment strategy recommendations are very broad and general. A number of the constructs called for are rather abstract, as well as difficult to operationalize and measure (e.g., humility, courage, morality, sense of humor). There is no discussion of test validation or racial/sexual discrimination issues, and job-relatedness of the criteria would prove hard to demonstrate on the basis of the information provided.

The listing of social trends from Project STAR is quite interesting. The 10 identified trends and major issues associated with each reflect a consensus of expert opinion on the directions in which American society is moving for the period 1970-1990. The coverage of the trends and associated indicators is extensive. The trends are quite relevant to the Criminal Justice System as a whole and to the three sectors individually. For example, an increase in crime is predicted for the remainder of the twentieth century. Continuing population growth in the young adult category (which is responsible for most of the crime), urbanization, and residual poverty in the midst of economic affluence are the major factors leading to this prediction.

The emergence of a post-industrialized society is predicted. Education will increasingly provide access to employment and privilege in such a society. Increased prevalence of education is expected to lead to people becoming more aware of their legal rights, with a consequence being an increased demand for service from the Criminal Justice System. Police will have to know more about citizens' rights. Evidence in court cases will have to be properly gathered and presented. More jury trials will be requested, placing a burden on the courts for efficient organization and management of cases. Teamwork between prosecuting and defense attorneys and the judge will be necessary to uncover all facts relevant to a case. Sentencing will be done with the idea of providing necessary education and skills to the offender.

The emphasis for corrections will be increasingly on educating the offender and making him/her employable. (The reader is referred to Volume IV for discussion of additional social trends.)

National Manpower Survey

The major objectives of NMS were:

1. to assess the adequacy of current personnel resources of law enforcement and criminal justice agencies and to project future manpower needs;

2. to assess training and educational needs in law enforcement and criminal justice occupations and the adequacy of existing training and educational programs in relation to these needs;

3. to recommend priorities for allocation of LEAA funds for training and academic assistance;

4. to design procedures for use in criminal justice manpower planning, including manpower projection models and data collection models;

5. to identify any other needed changes in personnel policies and procedures to improve system performance.

Both quantitative and qualitative aspects of personnel needs and resources were to be studied with particular emphasis on selected key occupations in each sector of the Criminal Justice System.

The NMS incorporates findings based on an extensive data collection program including comprehensive questionnaire surveys of various state and local Criminal Justice System agencies and executive personnel, and analysis of the results of a 1975 census survey of nearly 50,000 employees of state and local criminal justice agencies, and

field visits to more than 250 agencies and training or educational institutions. While the data collection program was extensive, it was certainly not optimal in that the many practical problems and obstacles encountered led to a number of significant modifications in the original NMS data collection plan. For example, effectiveness data at the national level relevant to NMS study objectives proved to be virtually nonexistent, as did change and secondary data. Survey response rates from criminal justice agencies were typically low. Criminal justice agencies consistently claim to be over surveyed and besieged with requests to supply data to the detriment of their primary mission. The occupational classification procedure used in NMS admittedly was less than optimal. In addition, certain categories of agencies were systematically excluded from the populations surveyed. (See Volume IV for a more detailed discussion of the data collection program and related problems.) Despite these problems, the NMS researchers pointed out that in total, the data gathered constituted a benchmark in this type of research in that they represent the best data base available covering current criminal justice manpower concerns. However, it must be emphasized that the findings and recommendations of NMS should be regarded as suggestive since they are based on observations from a selective and probably nonrepresentative sample. Some findings and recommendations are highlighted here.

Task and knowledge profiles for 20 key criminal justice occupations were derived. According to NMS, these profiles are not expected

to change drastically in the near future, although tasks within positions and the necessary knowledges and skills to perform them may acquire different relative emphasis. A few new positions seem to be emerging as a result of specialization and new developments (e.g., evidence technicians, police planners, police legal advisors, paralegals, law interns, parajudges).

With the exception of correctional officer and counselor, recruitment and turnover did not appear to be significant problems; this was quite likely related to the depressed economic conditions during the time of the study, however.

Progress was noted in employment of minorities and women, although affirmative action had been less successful in the promotion of minority employees to supervisory and managerial levels.

Collective bargaining had an impact in work scheduling, and in training and education policies related to certain occupations in law enforcement. By comparison, the courts and corrections areas had seen relatively little union activity.

Training had expanded considerably in all sectors of the Criminal Justice System since 1970; however, the law enforcement area seemed to be most advanced in the area of training. Deficiencies identified by NMS included the need for more and better management training as well as rigorous evaluation of all training conducted.

The occupational (job) analysis approach used in NMS appears thorough. Its primary components were a task checklist, task analysis

form, and a knowledge checklist. However, while the general methodology can be replicated, it is not possible to prescribe specific steps that can be performed in "cookbook" fashion equally well across all situations.

Despite substantial increases in employment in all three criminal justice sectors, inadequate staffing emerged as the most serious manpower problem in all three sectors. This was generally attributed to budget limitations and marked increases in the demands for services.

Knowledge and skill deficiencies varied considerably by occupation. In the corrections area, for example, nearly 45% of juvenile treatment personnel did not meet recommended minimum entry requirements. In the courts area, voluntary resignation rates of staff attorneys averaging 22% in 1974 had adversely affected staff experience levels and capabilities.

In general, education levels of new employees were found to be higher in all three sectors of the criminal justice system. Particularly in the police and corrections areas, line workers and first line supervisors as a group were quickly becoming more highly educated than management personnel. Yet, general education did not appear to provide employees with the specific abilities to successfully cope with numerous bureaucratic and political obstacles and excessive workloads.

The NMS defined manpower planning as a process for systematically determining the number and categories of personnel required to achieve program objectives and for development of policies and programs for recruitment, training, compensation, and utilization of personnel to assure that the organization's manpower needs will be met.

The NMS criminal justice manpower planning model consists of a set of equations relating to two sets of variables listed below. The "exogenous" variables are external to the Criminal Justice System and include measures of key demographic or economic factors assumed to influence crime levels and/or criminal justice expenditures and employment. The set of equations produces estimates of "endogenous" variables (variables more closely related to the Criminal Justice System) and ultimately yields projections of employment:

Exogenous variables

- Population (total population of state)
- Youth percentage (of population)
- Urban percentage (of population)
- Unemployment rate
- Per capita personal income
- Total direct general expenditures of state and local government
- Federal grant funds to state and local governments for criminal justice activities
- Wages (average earnings of employees in each of five[1] sectors of the Criminal Justice System)

Endogenous variables

- Crime (number of Part I crimes)

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[1] For the model, the Criminal Justice System is divided into five sectors: police protection, judicial, prosecution, indigent defense, and corrections.

Crime rate (Part I crime rate per 1,000 population)

Number of arrests (for Part I crimes)

Arrest rate (ratio of arrests per Part I crimes)

Prisoners (number of inmates in state adult institutions)

Criminal Justice System expenditures

Criminal justice employment (by sector)

The NMS model was used to obtain national quantitative projections for selected criminal justice workload indicators, expenditures, and employment by sector for the period 1974-1985. In addition to this quantitative summary, NMS researchers provided supplemental information regarding specific manpower projections for law enforcement, corrections, and courts areas of the Criminal Justice System. Hopefully these projections have been useful to criminal justice agency administrators. However, there are several constraints which may severely limit the usefulness of the NMS model in the future, or otherwise make its use very expensive.

Note that five categories of data are necessary for updating the NMS model:

1. aggregate employment and expenditures data by sector,
2. occupational employment data by sector,
3. wage or earnings data by sector,
4. personnel turnover data for key occupations,
5. selected criminal justice workload data--crimes, arrests, and prison populations.

Requirements for items 1 and 3 above are met by the annual LEAA publication, Expenditures and Employment Data for the Criminal Justice System. Unfortunately, there is no other single systematic compilation which provides equally comprehensive data for the other three major input requirements of the model. Very few relevant data sources are published on a regular annual schedule. Most sources used for the current projections are the results of censuses or surveys conducted only once to date, or on an irregular schedule. In spite of LEAA guidelines for submission of Comprehensive State Plans which include a number of specific references to manpower and personnel data requirements, inspection of a small sample of these plans revealed that none of the plans currently provide comprehensive data and related information on personnel and workloads in the respective state's criminal justice agencies. Furthermore, the NMS model, by itself, is designed to yield quantitative projections, not qualitative ones. NMS did supply qualitative projections for the period 1975-1985, but was able to do so only by means of data on current experience and training backgrounds of Criminal Justice System employees, and data on the scope or contents of current specialized criminal justice training and education programs. These data were collected or processed as part of the NMS data collection program, and thus are not available on an ongoing or periodic basis.

Critique

In a number of ways both Project STAR and the National Manpower Survey represent monumental overtures to human resources planning and management in the Criminal Justice System. Yet, through hindsight, several observations may be offered that may be of value in guiding future criminal justice human resources management projects.

In both projects there appears to be a tacit assumption of the inevitability of crime as determined by social and economic trends. While this may be realistic, it also casts the Criminal Justice System into a reactive stance. That is, resultant human resources planning, development, and utilization efforts are to be geared to coping with the types and levels of crime predicted on the basis of projected social and economic trends. Insufficient emphasis is placed on proactive human resources planning which might alter or actively manage some of the projected trends and events.

The products of both projects are, in large measure, packaged results. Project STAR produced valuable information in the form of roles, tasks, performance objectives, and training modules, but little in the way of mechanisms or methodologies for achieving utilization of its products in individual criminal justice organizations. While NMS placed greater emphasis on methodological development in the areas of occupational analysis and manpower forecasting, it has not yielded methodologies which can be readily adopted and used by individual or

conglomerate criminal justice agencies without prohibitive expense. It is fair to observe that neither project provided methodological tools readily accepted by individual criminal justice organizations, or to stimulate the generation of resources for the implementation of their respective products. Of course, the reason for these shortcomings may reside not merely in the products of the projects themselves, but also in the political milieu which determines the utilization of results and recommendations.

Consultation with CJS Experts

As an essential step in the feasibility assessment of selected HRPDU methodological techniques for application in the Criminal Justice System, it was necessary to determine the current extent of human resources planning, development, and utilization activities in various types and sizes of criminal justice organizations. A full report of the study conducted to make these determinations is contained in Volume IV. Highlights of the study are presented here.

In addition to determining the nature and extent of HRPDU activities in a variety of criminal justice organizations, the study also focused on how human resources planning programs interface with the more traditional and commonly found personnel activities (e.g., employee selection, training, job evaluation, performance appraisal, etc.). The interview approach was used to gather data.

Fifty six interviews were conducted involving 45 organizations.

Various types of organizations were represented, including city police departments, county sheriffs' departments, state police and public safety units, corrections and rehabilitation institutions, a variety of court agencies, criminal justice service units, and a few personnel departments or general planning units which served criminal justice organizations. Geographically, the organizations were located in eight states in all areas of the United States except for the Pacific Northwest. The organizations varied extensively in size ranging from large city police departments to small, rural systems. Individuals in these organizations were selected for interviews on the basis of their familiarity with the human resources and personnel practices in their own and related organizations.

The study was essentially exploratory and qualitative in nature. Therefore, no attempt was made to include a statistically accurate, representative sample of criminal justice organizations. However, the sample did represent a variety of organizations involved in a variety of criminal justice activities from coast to coast. The interviews covered all aspects of human resources planning programs and related personnel activities in the organizations sampled. To a certain extent, the study was intended to supplement the information available in the Project STAR and the NMS reports, particularly in terms of HRPDU concerns at the level of the individual criminal justice organization.

A number of similarities in human resources planning activities were found to exist in all three sectors of the Criminal Justice System,

yet considerable variation was found from agency to agency. In general, long-range planning was just not a significant activity in the overall human resources programs of criminal justice organizations. Public pressure, budgetary, and political considerations were much more compelling forces in the allocation of manpower than were any long-range plans that may have been made. One respondent characterized his situation very well: "Planning is a futile activity when planning strategies are not implemented, and they are usually not implemented (in the Criminal Justice System) because there are no decision-makers with enough authority to carry out centrally planned decisions."

For the great majority of agencies sampled, human resources planning was more of a matter of responding to immediate needs rather than long-range plans. Planning activities were found to be largely a matter of day-to-day allocation and deployment of personnel. In addition, unanticipated budget constraints often made planning a waste of time.

The extent to which systematic human resources planning was being undertaken by criminal justice agencies varied with the size of the organization and the degree to which it was operated in a centralized manner. For example, a very large city or state police department was much more likely to be carrying out a systematic and sophisticated manpower program than was a small, decentralized court unit. There were exceptions to the trend, however. Even in large organizations, the day-to-day variations in pressures for services tended to supercede any long-range plans that may have been made.

The more sophisticated planning activities were carried out in the larger law enforcement organizations. Several had special research and planning units which carried out statistical analyses of population growth trends, building and housing development plans, crime trends, calls for service, response time on calls, arrest records, etc. However, even in these organizations, it was the rare exception that any kind of systematic formulas were used to translate such statistical information into projected manpower needs.

In corrections and rehabilitative service organizations, politics seemed to play an even more dominant role in influencing human resources planning than in other aspects of the criminal justice system. Often the prevailing philosophy (custody versus treatment) shifts with a new administration, and renders useless any previous manpower planning that had been done.

The courts were often administered on a highly decentralized basis, with individual judges having primary authority to staff their own courts. Sometimes a centralized planning agency provided guidelines to individual court units as to how they should determine their manpower needs.

One finding that was prevalent among organizations in all three sectors was that budgetary constraints were requiring the organizations to operate with fewer people per unit of work in each succeeding year.

Personnel administration activities were generally found to be characterized by a low level of sophistication. For example, job analysis, a fundamental activity which should provide the basic information

needed to design effective personnel programs, has rarely been carried out in a thorough and systematic manner in these organizations. Selection and training programs, job classification, performance appraisal, and other related personnel functions should be based on an accurate description of the work being performed in the organization. Yet, these programs typically have been developed without systematically obtained information about the relative importance of the specific activities or functions performed in the respective jobs. Assumptions have been made about the relative importance of various job fuctions when personnel programs were developed and administered. However, a number of the experts interviewed admitted that these assumptions were probably inaccurate in many cases. Thus, job recruits may be screened out on irrelevant qualifications in the employment process, training may be focused on skills that are not needed or not very important, and the performance of the incumbents may be appraised on factors that are not critical to job success. On the other hand, personnel administration practices are starting to change slowly. The larger and more centralized organizations, especially large law enforcement organizations, were more likely to have analyzed key jobs in a systematic manner than were smaller, decentralized organizations.

Logically, one might expect to find a close relationship between human resources planning and personnel administration activities. Overall, this appeared to be the case. However, the working relationships were not always as amicable and effective as would be desirable. In

larger organizations some planners had little respect for the personnel administrative function which was supposed to provide data for planning. A number of planning units seemed to operate in a completely independent manner. In smaller organizations it was not uncommon to find the same individual performing both the planning and personnel administration functions at a low level of sophistication.

More often than not, the planning function was handled within an individual criminal justice organization, whereas the personnel administration functions were performed for the organization by a centralized unit, such as a county civil service board, a city personnel department, a state administrative office, or a centralized court administrative unit. Typically, recruiting and selection for entry jobs were likely to be handled by the centralized personnel unit. The two units often shared responsibility for promotions. However, the involvement of the external personnel or civil service unit was at times pro forma and concerned primarily with conforming to established procedures. While it was found that the planners usually worked closely with the persons in Personnel responsible for employment, this work was more likely to involve day-to-day personnel needs rather than the long-range influences that should have been the concerns of the planners.

The planners in all sectors expressed considerable concern about affirmative action needed to comply with equal employment opportunity laws. A number of the organizations were under pressure to hire women and minorities in increasing numbers in order to comply with court-ordered mandates, consent decrees, or to avoid the loss of LEAA funds.

Some organizations reported that they had "lowered their employment standards" in order to get sufficient numbers of minorities and females through the screening process, and that this has resulted in a lower quality work force overall. The primary sources of motivation and the perceived results notwithstanding, the Criminal Justice System is becoming aware of affirmative action concerns and is taking steps to respond.

Some awareness of handicap hiring issues was found. A few law enforcement agencies employed handicapped individuals in their civilian ranks; none of the court or corrections agencies surveyed reported employing handicapped personnel, however.

A few planners expressed concerns over collective bargaining and employee relations issues. Several felt that militant unions caused problems in that they limited the freedom of administrators in implemeting certain human resources or personnel programs which would be in the best interest of the organization.

Performance appraisal was found to be a significant problem in most criminal justice organizations. While most organizations had some type of formalized performance appraisal program, only two interviewees out of the total sample of 56 felt that their performance appraisal programs were well designed and administered, and that the results were utilized in an effective manner. Many respondents stated that the commonly found rating errors made the appraisals worthless (e.g., almost everyone got the top rating regularly). Others felt that

their appraisal programs amounted to nothing more than additional paper work that was largely ignored. A few respondents noted that union agreements or civil service laws provided protection for ineffective/nonproducing employees to such an extent that job performance has become largely irrelevant.

Relationships between individual criminal justice organizations and institutions of higher education were found to vary considerably. A number of organizations reported good working relationships with educational institutions in their areas which had criminal justice or related training programs. These organizations employed graduates of the educational programs and used university resources for training, program development, and research. However, other respondents expressed negative attitudes toward university programs. They felt that university criminal justice programs were too narrow, theoretical, and not pragmatic. It was generally felt that criminal justice education programs needed to foster more realistic expectations in their students regarding career opportunities in criminal justice. Joint curriculum planning between educational institutions and criminal justice agencies was seen as highly desirable.

Implications for HRPDU

All organizations in all three sectors of the Criminal Justice System feel undermanned. They perceive a critical need for additional personnel, or mechanisms through which to get increased productivity

out of the present work force. Given both the current and projected state of the economy, it appears quite unlikely that pressures to reduce expenditures will subside; if anything, these pressures are likely to increase. Current projections of social trends indicate an increase in demands for Criminal Justice System services. The only readily apparent solution to this dilemma is to find new and better ways of getting the work done by means of more effective human resources planning, development, and utilization.

In order to achieve an efficient application of HRPDU methodologies to the Criminal Justice System, there is a critical need to explore the state of the art of HRPDU methodologies. These various methodologies need to be evaluated in terms of their reliability, validity, and utility for criminal justice organizations. Cost is an important factor. Criminal justice organizations need relatively inexpensive, but useful and effective HRPDU methodologies.

The first step in the quest for better methods would seem to be a thorough and systematic analysis of how the work gets done at the present time. A systematic job analysis effort would seem to provide the foundation upon which to develop better HRPDU procedures. Unfortunately, relatively few of the organizations studied have taken this step. For the most part, their specifications for selection, training, and the development of human resources seem to be based on imprecise data relating to the actual functions being performed in the organizations. Past practices are more likely to be the compelling force in determining

future needs, rather than the systematic analysis of specific functions and procedures that now characterize the Criminal Justice System.

There have been some exemplary job analysis studies conducted in criminal justice organizations (see Proceedings of the National Symposium on Job-Task Analysis in Criminal Justice, LEAA, 1978). Most of them have been conducted in law enforcement organizations, with considerable financial assistance from the Law Enforcement Assistance Administration. The primary focus of most of these job analysis studies was personnel selection, with training as a secondary focus. The Criminal Justice System needs more job analysis studies in all three sectors. Furthermore, these studies should be broader in scope, providing information bearing on HRPDU/personnel administration functions in addition to personnel selection and training (e.g., job design/redesign, job evaluation, career development, etc.). Costs per agency could be greatly reduced by collaborative efforts involving a number of related criminal justice agencies. Beyond the first step of job analysis, collaborative efforts should be mustered to reduce the costs of systematically applying a variety of HRPDU methodologies in criminal justice agencies.

There is an urgent need in many criminal justice organizations for mechanisms to deal with equal employment opportunity and affirmative action issues. The best defense against threats of EEO litigation is the efficient and effective utilization of human resources. Here, too, a systematic job analysis effort would appear to be an essential first step.

Chapter 3

HUMAN RESOURCES PLANNING, DEVELOPMENT, AND UTILIZATION

Contents

Overview and Definition

Organizations depend on people for their creation, survival, efficiency, effectiveness, growth, and change. Recognition of this fact has led to the emergence of a new concept to aid an organization's managers and decision-makers in dealing with people. A popular term for this concept is human resources. Human resources connotes that an organization's managers may apply many of the same rational, scientific principles to planning, developing, and utilizing its people that they apply to planning, developing, and utilizing monetary resources, buildings, and equipment.

Human resources available to an organization include:

1. all persons in the external labor market who may join the organization;
2. all paid or unpaid employees of the organization;
3. all consultants or other service providers who may be employed from time to time.

The scope of human resources is not limited merely to a listing of these people. It covers as well their potential for growth, their job performance capacity, their needs and aspirations, and their current levels of skill, ability, knowledge, and motivation. The concept of human resources also relates to changes in the composition of this group of people over time as workers and other service providers join or leave the service of an organization, perform better or worse, get promoted and transferred, or acquire new skills, abilities, and motives. Thus, the concept of human resources is a

dynamic one, reflective of the constantly changing human resource picture facing an organization.

The increasing utilization of the term human resources has drawbacks as well as advantages. Some may draw the incorrect inference from the term that units of people may be managed as any other organizational resource. However, human and other resources differ in certain significant ways. People are not rigid, predictable, and easy to control like machinery. Rather, people are dynamic difficult to predict, even harder to control and to change. Whereas resources like machinery are completely subservient to organizational goals, organizations must negotiate and develop a psychological contract with their people (Schein, 1978). This contract specifies the mutual obligations that the worker and the organization require of each other in order to accomplish organizational goals, and is subject to continuous modification. The point is that the use of the analogy between human resources and other organizational resources offers some useful strategies and outcomes to an organization. But when the analogy results in a dehumanization of an organization's people and a failure to recognize their needs and aspirations, use of the term becomes harmful and damaging to organizational goal accomplishment. It is not intended to use the term human resources in any way to dehumanize an organization's workers, and any such usage is rejected as inappropriate.

With these considerations in mind, the organizational functions of human resource planning, development, and utilization (HRPDU) may

be defined. Since the criminal justice system is the arena within which these processes are being studied, the definition is oriented toward this system. HRPDU includes those activities by which an organization insures that it has the right number and kind of people at the right places at the right times performing well on the right numbers of carefully designed jobs so that both the service delivery objectives of the organization and the needs of individuals who work for it are achieved (cf. Patten, 1971). Among the individual needs in this definition are the need for personal growth and the need to feel that one's particular skills and talents are being utilized. In the criminal justice system service delivery objectives might include prevention of crime, rapid apprehension of criminals, efficiently conducted yet fair trials, and effective rehabilitation of prisoners, probationers or parolees.

The primary link between the individual and the organization is the job. Thus, a central concern for HRPDU from an organizational vantage point is the goodness of fit between its jobs and its people. As jobs change by plan or by accident, people must adjust to the change; as people change through training and education, changes in the labor market, equal employment laws, and the like, jobs must likewise be altered to accommodate the change. To illustrate the latter point, it would be a mismatch if college educated law enforcement officers spent too much time on routine or clerical tasks. The importance of the jobs component to HRPDU cannot be overemphasized. If an organization's decision makers are to maximize the contributions

of people to the organization, they must be able to design, analyze, alter, evaluate, and group jobs together effectively.

Human resources planning, development, and utilization has been defined in the context of a single organization. This is not the only context within which it can be studied. Indeed, human resources experts employed by central governmental agencies such as LEAA are interested in HRPDU on a national basis. They need to answer such questions as how talented people might be attracted to criminal justice occupations rather than social service, industrial, or other occupations; and what educational programs will yield the most qualified workers for organizations in the criminal justice system.

On the other hand there is the individual and the individual's career. How can people do a better job than they now do of choosing the most suitable organization for themselves; how can people get more out of training opportunities based on their individual strengths and weaknesses?

Each of these contexts--from the national system to the single individual and his or her career--presents unique problems and challenges when HRPDU is the focus of study. Each context is critical. The insights offered by studies conducted within each context must be considered for one to fully appreciate the complexities of HRPDU problems.

However, in this present project, an explicit choice of the context to be studied had to be made to guide the progression of the

studies. The choice of the single criminal justice organization for the context was viewed as the most preferable alternative, and the definition of HRPDU reflects this. Moreover, as has been indicated earlier, the purpose is to study HRPDU techniques and methodologies in order to provide the individual criminal justice organization with efficient and effective tools for preventing and resolving human resources problems, maximizing achievement of service delivery objectives, and fulfilling the needs of its people.

A criminal justice organization's human resources are affected by, and in turn have an impact on, the types of jobs it offers, its organizational climate, its budget, and its environment. The implied interrelationships introduce the possibility that virtually all aspects of an organization's people, jobs, environments, and its own structure and function, must be studied in pursuit of the purpose. Therefore, some framework or taxonomy must be developed to help deal with the large and bewildering array of functions, processes, and activities that are closely interrelated in HRPDU. Armed with such a framework, one should be able to generate a wide range of currently available, or needed but not yet available, techniques and methods for accomplishing HRPDU. Ideally these techniques and methodologies could be adapted to fit circumstances, problems, and needs faced by criminal justice organizations. Although it is not yet a finished product, just such a framework of HRPDU activities and a listing of methods or techniques closely associated with these activities is introduced in the next chapter. The remainder of this

chapter will be devoted to a more detailed description of HRPDU activities.

Human Resources Planning (HRP)

Planning involves anticipation of the future so that one can influence it (White, 1972).. The human resources planner is concerned with forecasting several things. First, there is the need to forecast the future state of the organization and the labor market. Also of importance are predictions of the amount and kind of services likely to be demanded by the community, the composition of the workforce, and the mobility patterns of the workforce (their initial entry into the organization, planned or naturally occurring promotions, transfers, demotions, and turnover). In addition, planned or naturally occurring changes in the number and kinds of jobs within the organization must also be anticipated. The forecasting of the future state of affairs in these areas forms the foundation for action plans to insure that well qualified people are hired in sufficient numbers and then trained, placed, and deployed properly. Such plans may be made for short (weekly or monthly) or long (two to five or more years) periods of time. (See Hyde and Whitman, 1977; and Cascio, 1978, for a more detailed overview of the human resources planning process.)

There is a confusing paradox currently facing human resources planners. Society is becoming increasingly turbulent and dynamic. Drastic changes in lifestyles are now the rule rather than the

exception. This makes forecasting more difficult and more likely to be erroneous. Yet, planning appears to be even more necessary in these changing times if one wishes to meet the future's challenges successfully. Nevertheless, most organizations appear to be more responsive to the difficulty and possible lack of accuracy in human resources plans than to the increasing need to plan. Cleveland was reacting to this dilemma when he recently stated:

> We are in the world for keeps, yet we are still tackling 20-year problems with five-year plans, staffed with two-year personnel, working on one-year appropriations. (Quotation appears in Cornish, 1977, p. 236)

There must be more concern with human resource planning, and techniques must be devised to increase the probability that forecasts will be accurate. Moreover, human resources planning programs must be evaluated as to their payoffs for an organization.

If plans are to be accurate, human resource planners must be aware of general societal trends and must be able to "read" the environment. Schein (1978) has suggested that four elements of the environment should be considered--the technology, the economy, the political-legal situation, and social values and norms. He notes a number of trends that will have implications for human resources planning in all types of organizations. For example, in the area of social values and norms, the traditional concepts of male and female roles are no longer valid. Jobs formerly reserved for men are now being filled by women. More specific to the criminal justice system than Schein's general treatment is the listing

of social trends offered in the report of Project STAR (Smith, Pehlke, and Weller, 1976), trends which should have a substantial effect on the human resources picture faced by criminal justice planners in years to come. Researchers associated with Project STAR also suggested a set of key social indicators that planners might use to read the environment for forecasting purposes.

Still another necessary component for accurate planning is the integration of an organization's human resources plans with its general plans for future goals to be achieved, and the methods by which they are to be achieved (Schein, 1978). It was noted that human resource planning involves anticipation of organizational changes. Yet, it is common for human resources planners to be left uninformed by management of intended changes in goals and strategies for their achievement. Human resource planners must have sufficient information on these changes in order to plan accurately.

To be more specific about what is meant by human resources planning activities, a few brief examples are offered. The first example deals with staff deployment planning. Information might be gathered from census tracts to assess growth and shifts in population. These forecasts could then be used to plan the placement of new facilities and the deployment of staff.

The second example concerns recruiting. A study might be made of past trends in the types of people applying for jobs (e.g., graduates of bachelor's level criminal justice programs). Then

plans could be made to increase the number of a particular type of applicant by altering recruitment strategies, or changing the design of jobs to make them more attractive to the target group.

The third example illustrates the use of computer technology, and is feasible only for large organizations, or groups of small organizations. Several different indexes and a number of kinds of trend data might be included in a complex model of the way an organization's human resource requirements are changing. Anticipated changes in the tax base, trends in crime rates and patterns, and the demands for services likely to be encountered from the community are examples of the kinds of data that could be used. This model could then be used to predict the number and kinds of jobs likely to be required by an organization one or more years in the future.

These examples are not fictional. Planning activities like these are being carried out in criminal justice agencies around the country. Indeed the report of the National Manpower Survey conducted in the criminal justice system (NILECJ, 1978) contains procedures for forecasting future human resource requirements with the aid of computers.

Human Resources Development (HRD)

Human resources development activities are undertaken by an organization not only to enhance the job performance, skills, knowledge, abilities, and motivation of its people through training or educational programs, but also to prevent deterioration of these

attributes. Another aspect of HRD includes all activities by which an organization tries to make its labor market more attractive. These activities may consist of steps taken by an organization to make itself more attractive to applicants as well as steps taken to increase the number and qualifications of applicants. A third aspect of HRD involves the selection, placement, promotion, and transfer of applicants and workers.

Training

Formal training programs may be developed within the organization by its own staff or with the aid of consultants. Outside agencies such as colleges and universities also may provide educational programs that an organization's staff will find useful. Types of training and education programs include, among others, coaching programs (e.g., the field service training of law enforcement officers), formal classroom training (e.g., law school curricula, police or correctional officer academies) or self-administered training programs (e.g., computer assisted, self-paced programs to learn about changes in the law). In addition to formal training programs, organizations might use other HRD strategies, such as on-the-job training, rotating employees through several positions, enriching or enlarging jobs to develop further an employee's skills, providing time for sabbatical leaves, and designing career ladders and lattices to encourage employee development.

Extensive discussions of these activities are readily available

(cf. Patten, 1971; Kaufman, 1974; Goldstein, 1974; Craig, 1976). Integral parts of the training function are activities by which an organization assesses its training needs, and translates these needs into training programs as well as activities by which training programs are evaluated. The training needs assessment phase must include job analysis, analysis of the organization (its goals and resources), and analysis of the current levels of skill, ability, knowledge, motivation, and/or job performance among the staff. Evaluation of training is also a complicated process, but must cover both the training process (e.g., are staff members taking part in the training) and training outcomes (e.g., have trainees learned and have their job performances improved).

Labor Market Development

As part of human resources development, an organization may take a number of steps to improve its labor market (e.g., see Hawk, 1967). Improvements in the labor market raise the probability that well qualified people will be readily available for hire. General steps include attempts to improve the organization's image and establish good working relationships with local "feeder" schools, whose graduates may become valuable employees. Relationships between criminal justice organizations and colleges or universities can be based on co-op (work-study) programs, the organization's provision of internships for graduate students (e.g., legal or paralegal clerkships), or the organization's opening its doors as

a research site. Alternatively, an organization may use the educational and consulting services offered by the school. Criminal justice agencies may benefit more from local educational institutions if they take the time to cultivate a good working relationship.

More specific steps to develop the labor market could include raising salaries and improving fringe benefits to make jobs more attractive. Well designed recruitment programs are also helpful and depend on such factors as properly targeted advertising of vacancies, outreach efforts, and clear, realistic, yet enthusiastic descriptions of jobs.

Selection and Placement

The third aspect of HRD involves those screening and decision-making processes that insure the selection and placement of individuals who will become productive, long-tenured employees. Selection and placement here refer to appointment and assignment of new employees to particular vacancies from either the external labor market or the internal labor market, through transfers or promotions. Extensive treatments of selection and placement are also readily available (e.g., see Cascio, 1978). The most important elements of a sound selection and placement program are valid, fair screening processes like written tests and sound decision-making strategies which result in identification and appointment of the best applicants for an organization. It is common knowledge that such selection procedures must also produce minimum adverse impact, i.e.,

disproportionate pass/fail rates against classes of applicants protected by equal opportunity laws and guidelines.

Some may consider it unusual to group labor market development and selection together with training as HRD activities. The reason for this is that an organization may develop the number and kinds of people it needs either by training persons who are already in target jobs, or by venturing into its own employee group or the external labor market to find, select, and appoint individuals whose skills and abilities are already developed. Moreover, it recognizes the close relationship that should exist between recruitment, selection, and training, since training programs for newly appointed persons should be geared toward their particular needs. In any event, the organization is attempting, by engaging in any or all of these three types of HRD activities, to change and enhance the capabilities of its human resources, and to improve the match between jobs and people.

Human Resources Utilization (HRU)

Human resources utilization (HRU) concerns the roles, tasks, or jobs an organization requires its workers, consultants, and other service providers to perform. It also deals with where these tasks are to be performed (deployment), the excellence of performance on these jobs either individually or collectively, and the degree of motivation workers exhibit to perform well on the designated tasks. Level of motivation and job performance are directly

affected by quality of supervision and the appropriate use of such rewards as salary and such punishments as suspensions. The nature of the work itself may also have important motivating properties. Selected aspects of HRU are discussed more fully in the sections to follow.

Job Design

Perhaps the key element in HRU is job design. Jobs must be designed initially and redesigned as necessary so that their performance will lead to accomplishment of an organization's goals and objectives. Their design must also take into account available human resources capabilities and needs.

Jobs should not be designed in such a way that they are beyond the capabilities of anyone the organization might hire. However, since most organizations today are oriented toward fractionation and specialization of work, the opposite problem is more likely to be encountered. Kaufman (1974) has used the term "underutilization" to characterize jobs of low skill tasks with low time demands, and "misutilization" to refer to jobs of low skill tasks with high time demands. Misutilization is probably more common than underutilization in most organizations, but both are probably more frequent than overutilization where a job's skill demands completely exceed the capabilities of otherwise qualified workers. The delicate balance that must be struck between a job's requirements and the rewards associated with performing it on the one hand, and the needs and

capabilities of workers on the other is the constant challenge facing the work design specialist or the manager.

This balance must be sought in the face of two difficult problems. First, the job's performance must produce a net return for the organization, over and above what the worker receives. Second, the job's design necessarily changes as a result of the particular person performing it. These problems are exacerbated even more when managerial jobs are designed or changed. In Volume III of this report, extended treatments of job design and job redesign are presented.

Unions and employee associations may have a substantial impact on job design. Typically these groups will demand explicit and thorough job descriptions, and active participation in decisions concerning job changes. Thus, where unions have influence, HRU is a joint function of management and union.

Job design depends importantly on the availability of techniques for describing and analyzing job content into elements. Such job analysis methods are readily available, and issues associated with job analysis along with a review of several techniques are discussed at length later in this volume and in Volume III.

Job design has an obvious impact on the way an organization's people interrelate with each other and on the motivating properties of the work. To focus on an important motivator, a job's design affects its relative worth to an organization, and therefore influences what a worker will be paid. It also affects the worker's

prestige or status within and outside the organization. The procedures which an organization uses to rate jobs as to their relative worth are all captured under the term job evaluation. Moreover, the way jobs are grouped together, clustered, and sequenced may likewise affect pay, and may also affect promotional opportunities. The procedures by which an organization clusters or groups jobs are known as job classification methods. (Both job evaluation and job classification receive considerable attention later in this volume and in Volume III.)

Over and above such rewards as money and promotion, jobs should be designed with an eye toward motivation of workers through the value of the work itself. Current thinking on this topic is that jobs will be motivating to the extent that they provide variety, autonomy, tasks that are significant, and opportunities for feedback on how well the worker is performing (Hackman & Lee, 1979).

Performance Evaluation

The importance of performance evaluation in HRU derives from its utility as an information source on the adequacy of the human resources themselves, on the effectiveness of job design, and on the degree of fit between individual workers and their jobs. High job performance is the ultimate payoff for engaging in HRP, HRD, and HRU. An evaluation of job performance effectiveness is typically made for individual workers, but may also be done for work teams or departments.

Supervision and Control Systems

The supervisor plays a critical role in HRU, since it is the supervisor who is usually responsible for performance evaluation. Moreover, the supervisor is often in a position to facilitate worker-to-worker relationships, and serves as the key organizational representative in the negotiation of the "psychological contract" referred to earlier. In addition, the supervisor serves as a gatekeeper for any changes in job design brought about by an individual worker's particular interpretation of what the job is, and the worker's style of performance. The supervisor also functions as the direct representative of an organization's control system by giving those rewards and punishments permitted or required. Such control systems have a great impact, independent of job design, on whether human resources are utilized properly, wasted, or exploited.

Other Important Aspects of HRPDU

The planning, development, and utilization aspects have been treated separately. However, it must be emphasized and reemphasized that they are closely intertwined with each other. To underscore this point even further while simultaneously introducing important additional aspects of HRPDU, the issues of affirmative action and the human resources catalog will be discussed.

Affirmative Action

Virtually every organizational manager in society today is

aware of the need to make employment and related decisions (e.g., appointment to an apprenticeship program, placement, promotions, transfers, and selection for participation in training courses) in accordance with civil rights laws. The various applicable statutes require that such decisions must not be based on the affected person's race, sex, religion, national origin, age (if the person is between 40-70 years old) or handicap (Miner & Miner, 1979). The few exceptions to this general dictum permitted by law depend on the demonstration that sex, religion, national origin, age, or absence of handicaps are bona fide occupational qualifications required for successful performance of a job. For example, it is lawful to require that priests employed by Catholic organizations be Catholic.

However, it is not enough for organizations merely to avoid unlawful discrimination against so-called protected classes of employees. Rather, organizations must take affirmative steps to insure that traditionally unemployed or underemployed groups of people such as Blacks, Hispanics, and women are adequately represented in their workforce, or among their contractors, both as owners and workers. The requirement of affirmative action has produced a veritable HRPDU revolution in all sectors of society.

Human resources planners must now deal with goals and timetables, or in extreme cases with quotas to be achieved. Goals and timetables refer to targeted percentages that certain minority groups or women should represent in the workforce (goals) and the projected date when the target percentages should be achieved.

Quotas are hard and fast requirements for minority or female representation that the organization must achieve. Human resources planners must now also deal with delayed retirement to age 70, and probably will face a situation in the future where no mandatory retirement age will be permitted. As for the handicapped, planners must develop action plans to modify jobs or redesign equipment and facilities to accommodate the members of this extraordinarily diversified group of people.

It is timely to focus specifically on the minority issue for an illustration of the interrelationships in HRPDU. The human resources planner must share goals and timetables with the human resources developer. The developer must improve and adjust recruitment procedures and possibly change the discriminatory image of an organization, should such an image be held by the target group of applicants. The developer may also have to design training programs with special features, such as the use of bilingual instructors. Then, the manager responsible for utilization must be sensitive to cultural or other differences in assigning work and evaluating performance. Success or failure in selecting, utilizing, and retaining minority workers must be evaluated and reported back to the planner, who would revise action plans accordingly.

Although HRPDU for affirmative action purposes adds expense and complexity to these activities, it is considerably more expensive for an organization to foot the bill for litigation and back-pay awards. Affirmative action and equal opportunity considerations

will undoubtedly have a significant impact on HRPDU activities for many years to come.

Human Resources Catalog

Another important aspect of many organizations' human resources programs is the human resources catalog, which is also known as a skills inventory or an employee information system (Dukes, 1972; Murphy, 1972). The term human resources catalog is preferred, because it is more descriptive than the term skills inventory, and may include people (e.g., consultants) other than employees.

The human resources catalog may contain the names, addresses, and other identifying information on current, past, and potential employees, and consultants or other service providers. It can also include what job the person is currently working in, the appointment date if on staff, and a thorough listing of past work history and educational or training programs attended. The catalog might also have an abilities profile on each person in the file and such miscellaneous items of information as foreign languages spoken, military status, and occupational licenses held. With large numbers of people the human resources catalog may have to be computerized if it is to be feasible as a management information tool.

Why have a catalog? First and foremost, the catalog will reveal who is currently working for the organization and where workers can be found. Murphy (1972) lists a number of other uses for the catalog among which are the following drawn directly from

his list or slightly modified:

1. planning future human resources requirements,
2. identifying internal candidates for key technical position openings,
3. identifying skill and capability strengths and weaknesses in particular departments or divisions of an organization.

These three uses were selected because they illustrate collectively that the catalog may be equally useful for planning, development, and utilization.

Chapter 4

CLASSIFICATION OF HRPDU METHODS AND ACTIVITIES

Contents

Introduction

Human resources methods and activities may be classified in various ways, with differing schemes being preferable for differing purposes. One method of classifying has been implied in the preceeding pages where activities were discussed under the three major headings of human resources planning, human resources development, and human resources utilization. Another familiar way of classifying the actions of people and organizations is in a systems theory flow of input, process, and output activities. Still another framework might conceive of human resources as being operating on by an organization which in turn is impacted by a set of environments.

Early in the planning stages of this project, in the pursuit of manpower analysis methodologies and the feasibility of their use in the criminal justice system, the need for a classification framework quickly became apparent. It seemed imperative that work begin on a taxonomy of human resources methods that would be a guide to planning the subsequent research efforts to be undertaken. Such a framework, indeed, was developed and it has served the project well as a working tool, which itself continues to evolve with the progression of the project. Perhaps most importantly, it provided an initial perspective and assisted significantly in the selection of particular concepts and methods for intensive study and analysis. It also facilitated the identification of implicit theoretical assumptions and the definition of essential concepts. Thus, it has

already served its intended purpose in support of project planning and development.

Furthermore, its utility, even in its developmental state, was significant enough that a major part of a second grant will be devoted to the full development and refinement of a taxonomy of human resources methods and activities. The preliminary form of this taxonomy, which is necessarily inelegant and incomplete, is not really a taxonomy, but a heuristic listing of methods and activities in four useful categories. Thus, it should be identified as the list of human resources methods and the model to be constructed in the subsequent grant should be identified as the taxonomy.

List of Methods, Activities, and Information Sources

A division of four categories focusing on different aspects of human resources facilitated the generation of the list of methods, activities, and information sources. These categories are (1) the person, (2) the job, (3) the organization, and (4) the environment. These four classes do not fall along a single continuum, they are not mutually exclusive, they are not equal in importance; but, they do seem to offer considerable common-sense utility. That is their purpose.

Category 1.: The Person

These are activities in which the major emphasis or target is

on people (in particular or in the abstract, individually or collectively). Normally, these people are formal members or prospective members of the organization (both paid and unpaid).

1.1 Labor Pool Identification--the description in standardized characteristics of the number and types of workers and potential workers available at a given time, usually compiled within a circumscribed geographic area or industry.

- 1.1.1 Skills Banks
- 1.1.2 Labor Market and Organizational Censuses
- 1.1.3 Education System Data Generation
- 1.1.4 Biodata Systems
- 1.1.5 Human Resources Inventories

1.2 Labor Pool Forecasting--prediction of the number and type of workers available in a future time period (similar to 1.1 above).

- 1.2.1 Econometric Modeling
- 1.2.2 Occupation Popularity Projections
- 1.2.3 Worker Mobility Studies
- 1.2.4 Job Tenure Predictions

1.3 Recruitment--techniques and processes of "linkage" whereby information concerning

work opportunities is communicated to prospective workers. These procedures are both informal as well as formal and include "job search" processes wherein persons looking for employment seek out information about opportunities.

- 1.3.1 Word-of-Mouth Messages
- 1.3.2 Selected Media Use
- 1.3.3 Mass Media Use
- 1.3.4 "Head Hunting" Techniques
- 1.3.5 General Image Building Techniques
- 1.3.6 Educational Linkage Programs (Internships, Co-op, etc.)

1.4 Worker Development--those procedures by which knowledge, skills, orientations, attitudes, and values are transmitted to individuals.

- 1.4.1 Formal, External Education
- 1.4.2 In-Service/OJT
- 1.4.3 Vestibule Training
- 1.4.4 Apprentice Programs (federal, union)
- 1.4.5 Programmed/Self-Paced Instruction (e.g., CAI)
- 1.4.6 Role Playing
- 1.4.7 Simulation/Modeling

1.4.8 Motivational Techniques

1.4.9 Individual Counseling

1.4.10 Sensitivity Laboratory Training

1.4.11 Group Counseling

1.4.12 Orientation Socialization

1.4.13 Career Development

1.5 Worker Compensation--those procedures and methods to establish compensation and incentive systems and standards.

1.5.1 Productivity Bargaining

1.5.2 Performance Bonus Plans

1.5.3 Incentive Pay Systems

1.5.4 Attendance Award Plans

1.5.5 Piece-Rate Systems

1.5.6 Flexitime

1.6 Worker Assessment--techniques and procedures whereby persons are observed, measured, and judged with regard to knowledge, skills, attitudes, and values. These techniques have been developed and are generally used within the context of applicant selection.

1.6.1 Self-Assessment

1.6.2 Personal History Evaluation (e.g., biodata, portfolio)

1.6.3 Interviews

1.6.4 References/Background Checks

1.6.5 Written Tests

1.6.6 Work Samples/Simulation

1.6.7 Assessment Centers

1.6.8 Psychomotor Tests

1.6.9 Performance Ratings (productivity measures)

1.6.10 Physical Screening Methods

1.6.11 Worker-Job Compatibility Assessment

1.6.12 Potential Progress Assessment

1.7 Selection Strategy Development--rationales and procedures for constructing selection decision paradigms.

1.7.1 Multiple-Hurdle Techniques

1.7.2 Compensatory Methods

1.7.3 EEOC "Adjustments"

1.8 Worker Deployment--techniques associated with the placement of workers into appropriate locations or settings. These may be initial placements or be follow-up moves (e.g., transfers) subsequent to employment.

1.8.1 Preference Indications

1.8.2 Indigenous Criteria Consideration

1.8.3 Skills/Requirements Matching

1.8.4 Bid/Seniority/Merit Procedures

1.8.5 Nominal Group Technique

1.9 Performance Evaluation--procedures designed to measure and judge how well the worker is performing on the job. Techniques can focus on either process or impact measures, and involve the development of performance criteria and standards (related to 3.1, 3.2, 2.1, and 2.3 below).

1.9.1 Subjective Ratings

1.9.2 Objective Productivity Measures

1.9.3 Group Process Techniques

1.10 Leisure/Second/Career/Retirement Preparation--technology associated with preparation of workers for system (organizational) separation. Such preparation may be voluntary or involuntary and may involve entry into leisure pursuits, avocational interests, or a new career.

1.10.1 Counseling

1.10.2 Special Interest Training

1.10.3 Career Development/Planning

1.10.4 Career Information Systems

1.10.5 Resource Provision

Category 2.: The Job

These activities are characterized by having the job (or position) as the main target or focus. These functions along with those that are person-related above are viewed by many theorists to be part of the traditional HRPDU "core."

2.1 Role/Task Definition--techniques which identify, de novo, roles, tasks, and activities which are required to operationalize the system's objectives and missions. These processes do not focus on what is but on what ought to be (whether or not it currently exists) if the system is to achieve its purposes.

2.1.1 Role Analysis (e.g., STAR Project)

2.1.2 Task Construction (Delphi procedures, observation)

2.2 Job Design/Construction/Alteration--techniques and processes associated with the division of labor. These involve the study of job dimensions, job boundaries, and job composition as well as criteria for "packaging" activities into optimum modules of work.

2.2.1 Taxonomies of Job Characteristics

2.2.2 Job Factoring

2.2.3 Developmental Approach

2.2.4 Job Enlargement/Job Enrichment

2.2.5 Job Setting Assessment (e.g., tools, equipment, climate/ weather, safety factors)

2.2.6 Job Design

2.3 Job/Role/Task Description--techniques associated with the collection of information about existing work activities being performed within the system.

2.3.1 Position Analysis Questionnaire (PAQ)

2.3.2 Functional Job Analysis (FJA)

2.3.3 Critical Incidents Technique

2.3.4 Task Taxonomy (Task Ability Scales)

2.3.5 Job Element Approach

2.3.6 Task Analysis

2.4 Job Classification/Sequencing--procedures by which jobs are cast into standard language. Involves the development of classification specifications, job "families," and job ladders and lattices (i.e., vertical and horizontal job sequences).

2.4.1 Functional Schemes

2.4.2 Task Schemes

2.4.3 Objectives Schemes

2.4.4 Complexity Schemes

2.5 Job Evaluation--procedures by which existing or proposed) jobs are assessed in order to develop adequate and equitable compensation schedules. These procedures take into account such parameters as working conditions, hazards, the nature of work activity, and type and amount of worker preparation required.

2.5.1 AAIM Job Rating Plans

2.5.2 Job Ranking

2.5.3 Job Classification

2.5.4 Factor Comparison

2.5.5 Factor Ranking System

2.5.6 Point Method

2.5.7 Check-List Method

2.5.8 Profile Method (Hay Guide Chart)

2.5.9 Position Analysis Questionnaire

2.5.10 Castellion Method

2.5.11 Time Span of Discretion Method

2.5.12 Decision Banding (Paterson Method)

2.6 Job Forecasting--procedures by which both the type (e.g., composition) and numbers of jobs are predicted for various periods of time in the future.

2.6.1 Trend Analysis

2.6.2 Linear Extrapolation

Category 3.: The Organization

These are activities which, while not typically thought of as central to HRPDU, directly and indirectly influence the philosophy and technological options associated with the traditional HRPDU "core" functions. These system-level functions determine mission, form, and structure of the organizational entities within which human resources will be used.

3.1 Mission Analysis--techniques designed to define organizational direction and to refine these directions (broad goals) into more specific operational objectives.

3.1.1 Goal Analysis

3.1.2 Multiple Attribute Utility Analysis

3.1.3 Social Judgment Techniques

3.1.4 Needs Assessment

3.1.5 MBO

3.1.6 Relevance Tree

3.1.7 Goal Matrix

3.1.8 Work Planning and Review

3.1.9 Policy Analysis

3.2 Organizational Management and Design Methods--techniques designed to apportion and manage people, work, authority, and responsibility

within the organization as well as to create or redesign organizational units.

3.2.1 Socio-Technical Design

3.2.2 Matrix/Project Management

3.2.3 MAPS

3.2.4 Autonomous Groups Technique

3.2.5 Intergroup Building

3.2.6 Cross Functional Teams

3.2.7 Human Resources Matrix

3.2.8 Organizational Overlays

3.2.9 Decentralization

3.2.10 Program Development

3.2.11 Component Design

3.2.12 Control System Design

3.2.13 Devolution

3.2.14 Participative Management

3.2.15 Self-Management

3.2.16 Scanlon Plan

3.2.17 Management Grid Techniques

3.2.18 Process Consultation

3.2.19 Reward/Punishment System Design

3.2.20 Planning Process Analysis

3.3 Management Decision Making Techniques--techniques applied to the process of organizational decision making for the

purpose of better utilization of time, financial resources, and personnel.

3.3.1 Decision Trees

3.3.2 Systems Analysis

3.3.3 Bayesian Decision Theory

3.3.4 Simulation

3.3.5 Cost-Benefit Analysis

3.3.6 Linear Programming

3.3.7 CPM/PERT

3.3.8 Management Information Systems

3.3.9 Scheduling Models

3.3.10 Inventory Models

3.3.11 Location Models

3.4 Financial Management Techniques--techniques and procedures associated with ways of determining costs, levels of services, priorities, feasibility, and allocation of financial resources.

3.4.1 Line Item Budgeting

3.4.2 Program Budgeting

3.4.3 PPBS

3.4.4 Zero Base Budgeting

3.4.5 Human Resources Accounting

3.4.6 Cost Center Accounting

3.4.7 Cost Analysis

3.4.8 Cost Effectiveness

3.4.9 Cost Control

3.4.10 Cash Flow Analysis

3.4.11 Feasibility Analysis

3.4.12 Breakeven Analysis

3.4.13 Sensitivity Analysis

3.4.14 Capacity Analysis

3.4.15 Demand Analysis

3.4.16 Investment Analysis

3.4.17 Capital Budgeting

3.5 Organizational Development and Change--techniques and processes for producing desired organization and individual change.

3.5.1 Conflict Training

3.5.2 Confrontation Meetings

3.5.3 Survey Feedback

3.5.4 Peer Group Influence

3.5.5 Information Program

3.5.6 Third Party Intervention

3.5.7 Team Building

3.5.8 T Groups

3.5.9 Encounter Groups

3.5.10 Behavior Modification

3.5.11 Transactional Analysis

3.5.12 Team Problem Solving

3.5.13 Human Relations Training

3.5.14 Team Skills Procedures

3.5.15 Goal Setting Techniques

3.5.16 Organizational Intervention

3.6 Organizational Performance Evaluation--techniques designed to evaluate organizational efficiency, effectiveness, productivity, and "climate."

3.6.1 Productivity Analysis

3.6.2 Cost Analysis

3.6.3 Effectiveness Surveys

3.6.4 Process Evaluation

3.6.5 Social Impact Analysis

3.6.6 Formative Evaluation

3.6.7 Goal Attainment Scaling

3.6.8 Summative Evaluation

3.6.9 Job Satisfaction

3.6.10 Morale Surveys

3.6.11 Organizational Climate Studies

3.6.12 Turnover/Absenteeism Studies

3.6.13 Planning Accuracy Estimation Methods

Category 4.: The Environment

These are activities or processes relating to the external environments which impinge on the delivery system in the form of pressures, issues, or constraints.

4.1 Needs/Demand Analysis--procedures associated

with "sensing" and gathering information about unmet needs (e.g., of the public, of clients, or of workers) or demands for changes and/or innovations in the system or any of its elements.

4.1.1 Social Indicators

4.1.2 CJS Indicators (e.g., NMS, Project STAR)

4.1.3 Consumer Surveys

4.1.4 Target Identification

4.1.5 Problem Delineation

4.1.6 Social Area Analysis

4.1.7 Key Informant Approach

4.1.8 Interest Group Demand Studies

4.1.9 Linkage and Boundary-Role Analysis

4.2 Special Issues Identification--techniques and strategies for identifying and collecting information on the emergence or changes in special issues and problems.

4.2.1 Unionization Impact Analysis

4.2.2 Contract Negotiation/Collective Bargaining Reviews

4.2.3 Grievance Processing Precedents

4.2.4 Minority Issues Analysis

4.2.5 Affirmative Action Procedures

4.2.6 Legal Precedents

4.2.7 Policy Conversion Procedures

4.2.8 Futuristics

4.2.9 Labor Relations Studies

4.3 Trends analysis--forecasting and collection of information about trends in critical environmental sectors.

4.3.1 Economic Trends Assessment

4.3.2 Econometric Modeling

4.3.3 Content Analysis

4.3.4 Social Trends Analysis

4.3.5 Survey Research

4.3.6 Attitude Measurement

4.3.7 Demographic Analysis

4.3.8 Standardized Statistical Reports

4.3.9 Technological Trends Analysis

4.3.10 Professional Trends Analysis

4.3.11 Futuristics

Chapter 5

DESCRIPTION OF JOB-BASED METHODS

Contents

Why Focus on Jobs?

In the earlier discussion of human resources planning, development, and utilization (HRPDU), the criticality of the number and kinds of jobs in an organization was highlighted. The HRPDU methods list was also designed with this point in mind, for an entire component of the list is based on the area of jobs. Job design, description, and analysis are generally viewed as a prerequisite for virtually every type of human resources program an organization might adopt. To cite one important illustration of this point the Uniform Guidelines on Employee Selection Procedures, recently adopted by the Department of Justice and other Federal EEO enforcement agencies, mandate job analysis for practically all personnel selection programs.

Five parts of the jobs component of the list of methods were selected as targets of further study:

1. job/task definition,
2. job design/construction/alteration,
3. job/task description,
4. job classification/sequencing,
5. job evaluation.

Job/task definition refers to those activities in which jobs and tasks are newly designed and established as plans unfold to operationalize an organization's objectives and mission.

Job design, construction, and alteration cover activities

associated with the division of labor. As such, job design involves the study of job dimensions, job boundaries, and job composition as well as those data which suggest means for packaging activities into optimum modules of work.

Job/task description refers to activities associated with the collection and analysis of information about existing work functions being performed within the system. The methods associated with the term job analysis are considered under this category.

Job classification and sequencing involve activities by which jobs are arranged into classes, groups, or families on some systematic basis, such as original lines of authority, or technology-based job/task content. Job classification plans may serve as the basis for career ladders or lattices (vertical and horizontal job sequences).

Job evaluation includes activities by which jobs are assessed for contribution and worth to the organization in order to develop adequate and equitable compensation rates for jobs.

In each of these five areas, a number of techniques and methods were carefully reviewed for their quality and feasibility of use in the criminal justice system. It is believed that all major methods and techniques in each of these five areas have been covered (see Volume II). The determination of what methods to include in the study was based on standard professional recognition and practice both within and outside of the criminal justice system.

The sixth part of the jobs component of the list--job forecasting, the forecasting of changes in the numbers and kinds of jobs--

was not dealt with in this research. There were several reasons for its exclusion. First and foremost is the fact that the National Manpower Survey (NILECJ, 1978) very thoroughly covered job forecasting and developed a forecasting model which may be considered "the state of the art" in the criminal justice area, even though it has yet to be tried out and fully evaluated at state or local levels. Secondly, there are a number of excellent sources already available that discuss techniques and procedures for job forecasting and provide additional reference material (e.g., Cascio, 1978; Schein, 1978). Third, since criminal justice organizations appear to have little control over the number of jobs they may create, relative to the legislative, budget-making branches of government, an extensive study of the sophisticated statistical or computer modeling procedures now associated with job forecasting did not seem to be a cost-effective avenue to pursue with the limited resources of this project.

In the remainder of this chapter, an overview is provided of major methods in the five areas selected for intensive study. More extensive, detailed discussions of these methods are found in Volume II. Those papers are the source documents for the discussion to follow.

Overview of Job-Based Methods

For purposes of this overview, the topics of job creation and job alteration have been combined. The elements of the two topics

are presented in what is essentially a chronological order, from mission analysis and task definition, through job construction/design and role definition, to job alteration. In the section on job, role, and task description, several of the most important job analysis methods are described, such as the PAQ, the critical incident technique, and task analysis. In the third section are discussed job/occupational classification; then in the fourth section numerous job evaluation techniques are described.

Job Creation and Alteration

Mission analysis. Jobs and tasks come into being in basically two ways. They may be carved out of or blended from existing jobs (job factoring), or they may be inferred from objectives by means of a deductive process. Mission analysis (also called the developmental approach) is the deductive process of moving from general statements of goals, through more specific statement of objectives, to very particularized statements of processes expressed in terms of activities and tasks that make up jobs (see Teare and McPheeters, 1970; Wiley and Fine, 1969). In essence, the goals and objectives are the "ends," and the activities and tasks are the "means" to the ends. Mission analysis is typically used when programs and/or organizations are being developed for the first time. However, this developmental approach can also be quite useful in redesigning programs and/or organizations.

The starting point is a careful elaboration of the needs and

problems to be dealt with by the program or organization. Next, the goals and objectives are specified on the basis of the needs/problems configuration. It is particularly important that the objectives be expressed in operational and measurable language. Finally, the tasks and activities required to accomplish the objectives are delineated and then grouped or packaged into the jobs and programs of the organization.

Task definition. Tasks are the basic building blocks of jobs. A task is a specific unit of work performed by a single person that has an identifiable beginning and end (Connell, Lobdell, and Stock, 1970). It is an action or action sequence designed to contribute a specified end result toward the accomplishment of an objective (Fine and Wiley, 1971).

Theoretically, the components of a task can be viewed as a transformation process brought about by a worker acting within the context of a technology (Connell, et al., 1970). The task starts with the beginning state which is characterized by varying degrees of discretion/prescription, standards, clarity, and constraints. Next, the transformation is carried out by means of worker actions which involve the application of a technology. The technology includes all methods, procedures, techniques, tools, and equipment used by the worker, and can be conceptual as well as physical. The worker acts in order to produce an output or to achieve an impact. The achievement or production of the end state signifies the completion of the task.

In the creation of a new job or task, an inferential (deductive) link must be constructed between the objectives of the task and the process by which it is to be achieved. Tasks and roles emerge on the basis of these linkages. The rationale for selecting and packaging tasks may be the existence of a direct and verifiable connection between the tasks and the outcomes. This will be true for those activities that invariably bring about the same result. Or, the linkage between ends and means may be established through the use of a social or biological process (e.g., the "modus operandi" of a criminal) which has a documentable "natural history." The third, and perhaps least desirable method of selecting tasks and activities, is by consensus, i.e., agreement of some informed source group or acknowledged "experts." The dangers inherent in the consensus method are the accumulation of unstandardized anecdotal evidence, and the reification of conventional wisdom.

Job construction and design. Jobs are the key building blocks in the world of work. A job is the portion of an employee's work role that deals with his/her direct activities in relation to accomplishment of one or more objectives. A job consists of tasks and activities that have been packaged into a singular set. This package or set of tasks and activities is performed by an individual employee, although there can be a number of employees performing virtually identical or highly similar jobs. Job design deals with the allocation and arrangement of organizational work activities and tasks into various packages.

Three major influences on the job design process are apparent from a review of relevant literature. First there is the engineering influence in which job design is viewed as process-centered or equipment-centered (Davis, 1961). That is, jobs are designed by specializing activities or functions to achieve minimum production time. The second influence is the psychological influence in which job design is worker-centered, with particular emphasis being placed on designing jobs so as to enhance worker motivation and satisfaction. The engineering and psychological influences may, of course, be considered simultaneously. The third influence is sociological in nature, and deals with role content.

The lack of a unifying conceptual framework has led to confusion with regard to job design criteria. During the pre-industrial and craft period of history, work was organized along skill lines, and tradition was a valued criterion. As the factory system emerged, the so-called natural processes of work were altered by the machine and by the work setting. Industrial society evolved into a world of work that was a mixture of industrial and post-industrial technology, in which the values of production interacted with the values of service. Issues involving the relationship between the nature of work and worker acceptance became important. Basically, the arrangement of work activities into jobs is largely a function of customs and convention, local option, extra job or individual conditions, and and simply accidents of the moment (Prien and Ronan, 1971).

Role definition. Roles are the major means for linking the individual with the organization. They are the building blocks of social systems and the sum of the requirements with which social systems confront their members (Katz and Kahn, 1966). In enacting roles, individuals behave in social situations according to the expectations of others. In occupational roles, the social situation is the work place, the profession, or the discipline. A work role is somewhat outside of the direct flow of the technical content of jobs and tasks. It seems to transcend and yet overlap the concepts of job and task; it deals as much with the style of work as with its content. The work role links the worker to both the technological work process and the work group.

Job alteration. Job alteration is the process through which existing jobs are broken down into their component tasks, and these component tasks are regrouped into alternative configurations, or jobs. The intentional manipulation of job characteristics is a recent phenomenon. It is usually carried out by management so as to bring about desired employee responses (increased production and/or satisfaction) or to reduce undesired responses (bordeom, alienation, and/or turnover).

Typically, tasks which are similar in difficulty and/or content are grouped together, and these homogeneous clusters form the building blocks of new jobs. These clusters can be blended into various types of new jobs which vary greatly in terms of both scope (the number of different operations performed by the worker) and

depth (the degree to which the worker can influence the work environment and can plan and execute his/her work without control or supervision from others).

Job alteration has most frequently taken the form of either job enlargement or job enrichment (cf. Katzell, Bienstock, and Faerstein, 1977). Job enlargement mainly involves manipulation of job scope, and represents an expansion of the structure of the job. Job enrichment, on the other hand, involves the manipulation of job depth--an increase in the autonomy and control exercised by the worker. Research has shown that job enrichment generally has more benefit (in terms of productivity and/or satisfaction) than job enlargement. However, job enrichment may not be possible in low level jobs. Furthermore, there may well be as many failures as there are successes in the use of job redesign to influence various types of job performance.

Job Analysis--Job, Role, and Task Description

Broadly speaking, job analysis is the collection and analysis of any type of job-related information by any method for any purpose (Tiffin and McCormick, 1965). It is a fundamental activity which should provide the basic information needed for effective human resources planning, development, and utilization programs.

Job analysis methods come in a variety of forms, and generate various types of information useful for a wide variety of organizational purposes. See Table 1 for a listing of the purposes. A

Table 1

Purposes for Job Analysis Information

1. Job Description: A complete job description should contain job identification, a job summary, the job duties, accountabilities, and job specification or employment standards information (Henderson, 1975).

2. Job Classification: Job classification is the arrangement of jobs into classes, groups, or families according to some systematic schema.

3. Job Evaluation: The basic objective of job evaluation is the "correct" slotting of jobs in terms of their relative worth both within an organization and within the relative labor market.

4. Job Design/Restructuring: Job design deals with the allocation and arrangement of organizational work activities and tasks into sets. A singular set constitutes a "job", and is performed by the job incumbent. Job restructuring or redesign consists of reallocation/rearrangement of the work activities into different sets.

5. Personnel Requirements/Specifications (for acquisition and deployment including recruitment, selection, and placement): Personnel requirements and specifications for a particular job should set forth the personal knowledges, skills, aptitudes, attributes, traits, etc. that are related to successful performance of that job.

6. Performance Appraisal: Performance appraisal is (or should be) a systematic evaluation of personnel by their supervisors or others who are familiar with their performance. Factors or dimensions forming the basis for the performance appraisal or evaluation should be job related.

7. Worker Training: Training is a systematic, intentional process of influencing behavior of organizational members such that their resultant behavior contributes to organizational effectiveness. Here, the term behavior includes any aspect of human activity, cognition, or feeling directed toward the accomplishment of work tasks.

Table 1 continued

8. Worker Mobility (career development, career lattices): Worker mobility is the movement of individuals into and out of positions, jobs, and occupations.

9. Efficiency/Safety: Effecting efficiency and safety in jobs involves the development of work processes with particular reference to the work activities of people, including work procedures, work layout, and work standards. The proper design of equipment and other physical facilities is also involved.

10. Manpower/Workforce Planning (projection, skillsbanking, worker profiles by job/task): Manpower/workforce planning includes anticipatory reactive activities by which an organization ensures that it has the right number and kind of people at the right places, at the right times, performing jobs which maximize the service objectives or profit of the organization (cf. Patten, 1971). It also includes the activities by which an organization enhances the self-actualization and growth needs of its people, and allows for the maximum utilization of their particular skills and talents.

11. Legal/Quasi-Legal Requirements: Legal requirements refer to obligations imposed by legislative bodies or courts. Quasi-legal requirements refer to regulations or guidelines established by government agencies (EEOC, OFCC, OSHA, etc.), or agreements with industrial or craft unions and other groups or organizations.

more detailed consideration of purposes appears in Volume II.

The Position Analysis Questionnaire (PAQ). The PAQ is a structured job analysis instrument consisting of 187 job elements of a worker-oriented nature (McCormick, Jeanneret, and Mecham, 1972). The elements are organized into six divisions. The first three (Information Input, Mental Processes, and Work Output) represent an information processing (stimulus⟶ organism⟶ response) frame of reference in thinking about three major aspects of virtually any job. Division 4 (Relationships With Other Persons) elements provide for the analysis of interpersonal aspects of jobs. Division 5 (Job Context) provides for describing the work situation or environment within which an individual works. The sixth division consists of a variety of job elements which do not lend themselves to being classified in the other divisions.

PAQ job element ratings are used to derive job dimension scores for individual positions or jobs undergoing analysis. Two types of job dimension scores can be obtained. One type consists of dimensions based on human attribute profiles of the individual job elements; the other consists of dimensions based on job data.

The three primary uses of the PAQ are (1) the determination of aptitude requirements for jobs, (2) job evaluation and setting compensation rates, and (3) job classification or grouping. It is also potentially useful in job redesign/restructuring efforts. In terms of career pathing/development a vocational interest inventory, the Job Activity Preference Questionnaire (JAPQ), has been developed

for use with PAQ job analysis data.

The critical incident technique (CIT). In a general sense, the CIT is a method of research as well as a method of job analysis. That is, it is a set of procedures of collecting direct observations of human behavior in such a manner as to facilitate their potential usefulness in solving practical problems and developing psychological principles.

As a job analysis method, CIT defines the job under analysis in terms of those behaviors necessary for successfully performing it. Dunnette (1966) provides a concise description:

> This method (CIT) asks supervisors, employees, or others familiar with a job to record critical incidents of job behavior. The incidents are just what the name implies--actual outstanding occurrences of successful or unsuccessful job behavior. Such occurrences are usually recorded in stories or anecdotes. Each one describes (1) what led up to the incident and the setting in which it occurred, (2) exactly what the employee did that was so effective (or ineffective), (3) perceived consequences of the critical behavior, and (4) whether such consequences were actually within control of the employee. After a large number of such incidents are collected, they may be abstracted and categorized to form a composite picture of job essentials. These categories, in turn, form a behaviorally based starting point for developing checklists of task behaviors regarded as crucial to either effective or ineffective performance. (pp. 79-80)

The primary value of the CIT lies in the fact that it provides a record of specific behaviors from those persons in the best position to make the necessary observations and evaluations. It must be emphasized, however, that critical incidents represent only raw

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1 OF 2

data and do not automatically provide solutions to problems.

While CIT data have a number of potential uses (see Volumes II and III), the method has been applied primarily in the area of performance appraisal, and to a lesser extent in the areas of training and selection. For example, Smith and Kendall (1963) used CIT data in the development of behaviorally anchored rating scales (BARS); Latham and Wexley (1977) used CIT data to develop behavioral observation scales (BOS). The CIT has been used to identify behavior areas or dimensions in which training is needed, to identify the job classifications in organizations for which training is needed, to develop the actual content of training programs, and in evaluation of the effectiveness of training programs. Flanagan (1953) described how CIT data can be used to construct four different types of selection procedures: (1) biographical data inventory, (2) information type test, (3) multiple-choice situation test, and (4) situational performance tests.

Job element method (JEM). The JEM is a job analysis method which focuses on the human attributes necessary for superior performance on the job under analysis (Primoff, 1975). A small group of subject-matter experts, supervisors and experienced job incumbents, generate job elements and subelements in the form of knowledges, skills, abilities, and other personal characteristics. Then, they rate each job element on four scales:

1. What relative portion of even barely acceptable workers are good in the element?

2. How important is the element in picking out the superior worker?

3. How much trouble is likely if the element is ignored when choosing among applicants?

4. To what extent can job openings be filled if the element is required in all new workers?

The ratings serve as the basis for calculating several values which provide information about the individual job elements. In addition to group sums for each of the four categories, the following indices are calculated:

1. an indication of how valuable the element will be for selecting superior workers;

2. an index which differentiates elements, which are broad, from subelements, which are narrow;

3. an indication of whether or not the elements would be a valuable subject for a training program.

The predominant use of the JEM has been for development of selection procedures, and it has been used extensively for this purpose by the U. S. Civil Service Commission (now the Office of Personnel Management). The JEM can be used to determine the subject matter for training programs and holds promise for use in the development of performance appraisal instruments.

Ability Requirements Scales (ARS). The ARS, a structured, ability oriented method, was originally developed to provide a means of classifying tasks according to specific human ability requirements (Fleishman, 1975).

In the ARS methodology, an ability is considered as a general

trait. It is different from a skill in that a skill is a proficiency at a single task. An ARS ability is an intangible which makes some people better performers than others on groups of related tasks.

The ARS method contains 37 abilities which appear consistently across situations, jobs, and tasks. These abilities fall into four categories: (1) Mental Abilities, (2) Physical Abilities, (3) Abilities Which Require Some Action to be Taken When Specific Sensory Cues are Present, and (4) Abilities Having to do With the Way Incoming Sensory Material is Perceived. A job is analyzed by rating how much each of these abilities is required for average job or task performance. The scales used in the job analysis are 5 or 7-point rating scales, with three examples or tasks which would require certain levels of the ability in question. They can be used in rating abilities needed for the job as a whole as well as for individual tasks.

The ARS method is relatively new to the job analysis scene. It has been used in selection procedure development for the Philadelphia Police Department. The method appears potentially useful for job classification, job evaluation, job design/restructuring, and manpower/workforce planning.

Work-oriented job analysis methods. There are a variety of work-oriented job analysis methods. All of them are concerned with what gets done on the job along with the methods and the materials or equipment used. The primary outcome of work-oriented job analysis methods is a description of observable tasks, duties, and/or activities which are performed on the job. However, work-oriented job

analysis methods usually do not stop with what gets done. They also include a set of ratings on various components of the job. Aspects of tasks or activities which can be rated include the amoung of time it takes to do the task, task difficulty, and importance of the activity to the total job. In addition, work-oriented methods deal with human attributes needed for task performance, but only after the job has been broken down into tasks, and after these tasks have been rated or evaluated in some way.

The crux of all work-oriented job analysis methods is the task. However, what constitutes a task depends upon the particular method of job analysis used. For example, in the U. S. Department of Labor (1972) version of task analysis, a task is defined as one or more elements of and one of the distinct activities that constitutes logical and necessary steps in the performance of work by the worker. In Functional Job Analysis (FJA), a task is an action or action sequence grouped through time designed to contribute a specified end result to accomplishment of an objective for which functional levels of orientation can be reliably assigned (Fine and Wiley, 1971). FJA descriptions of tasks performed include what the worker does and the results of the actions taken. Machines, tools, equipment, work aids, materials, products, and services used, as well as requirements of the worker are listed. In addition, the way the task relates to data, people, and things is measured.

In task inventories, tasks are generally much more parsimonious than FJA-type tasks and, typically, give no information about the

circumstances surrounding the activity. On the other hand, there are usually many more tasks in a task inventory for a given occupational area than one might expect to find in a job analysis product derived from FJA. Furthermore, task inventory-based data systems are readily adaptable to electronic data processing technology through software packages such as CODAP (Comprehensive Occupational Data Analysis Program).

Additional work-oriented job analysis methods are discussed in Volume II. Although most methods give at least an implied definition of what a task is, some leave the parameters almost totally undefined. However, the common elements of the term task are that the task is viewed as a subdivision of a job, and it is concerned with what gets done on the job.

Some form of task analysis information is essential in writing job descriptions and in content validation of selection procedures. Moreover, it is difficult to conceive of the process of job design/redesign without task information. Task information can be used in the development of performance appraisal instruments. Still another argument in favor of analyzing jobs into tasks is the expectation that such an analysis would be easier to defend in the event of a legal challenge with respect to such issues as selection procedures or pay equity. Very recent research[1] indicates that people typically conceptualize jobs in terms of the tasks involved, i.e., what gets

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[1] Cornelius, E. T., III. Personal communication, February, 1980.

done on the job, rather than in terms of human attributes or knowledges, skills, and abilities required to perform the job.

In concluding this section containing brief descriptions of job analysis methods, it seems appropriate to note, again, that job analysis information forms the cornerstone of effective organizational human resources planning, development, and utilization efforts. This should become more apparent if the reader notes how job analysis pervades job classification and job evaluation, both of which are discussed in the following sections.

Job/Occupational Classification

Many functions of human resources management require determination of the extent of similarities and differences among jobs. Jobs are classified and grouped to permit efficient organizational administration of personnel selection, promotion, performance appraisal, and compensation programs, to name a few. The importance of job classification and grouping to effective and efficient personnel administration in all types of organizations is underscored by the trend toward increased job specialization, particularly in the Criminal Justice System (NILECJ, 1978).

Dimension schemes for job classification systems. Judging by the number and variety of job/occupational classification schemes presented in the literature, it would appear that job classifications are "application specific." Most uses of job classification require groupings of occupations or jobs that are similar along

some particular dimension(s). There are a variety of dimensions and classification systems. The appropriate combination is dictated to some extent by the type of organization and by the ultimate use to be made of the classification system.

A variety of classification systems is discussed in Volume III. The International Standard Classification of Occupations (ISCO) is probably the most widely used occupational classification scheme in the world, particularly for census purposes. Trieman's (1977) classification scheme captures both differences in type of work done and differences in occupational prestige.

The U. S. Department of Labor's system involves three classification schemes. The Occupational Group Arrangement is a three-level hierarchy with nine general occupational categories at the broadest level, successive subdivisions of each broad category into occupational divisions, and further subdivisions into occupational groups. The Worker Traits Arrangement is organized into 22 broad areas of work, with each area of work containing several specific worker trait groups. The Occupational Aptitude Pattern (OAP) identifies broad families for vocational guidance purposes based on General Aptitude Test Battery (GATB) norms.

Based on occupational groups containing career path progressions, the General Schedule of the U. S. Civil Service Commission (now the Office of Personnel Management) contains 18 grades or positions requiring similar levels of qualifications and responsibility. The grades are used for compensation purposes. The occupational groups

are subdivided into classes of positions involving similar work. The U. S. Department of Commerce system is based on a four-level hierarchy, with each level successively containing more finely detailed groups.

The U. S. Air Force makes use of the flexible computer software package, CODAP, in its extensive occupational research program. Based on task inventory data, jobs in an occupational area are grouped into clusters and the work for each cluster is described.

Holland's Psychological Classification of Occupations is a vocational data system. It consists of six categories--Realistic, Investigative, Artistic, Social, Enterprising, and Conventional--which represent occupational choices that are a function of both personality and environment. In another vocational data system, the Minnesota Occupational Classification System, both the needs and abilities of the person and the environment are examined and described in an integrated fashion using information derived from several classification schemes.

The PAQ job analysis system can be used to group jobs on the basis of standard PAQ job dimension scores which reflect clusters of human behaviors and job contexts/characteristics that exist in the world of work.

One additional method of job classification not covered in the literature, but perhaps the most frequently used in private sector organizations, is classification by fiat. A person in a position of authority simply decides how various jobs will be grouped or

classified in the organization.

Statistical approaches to job grouping. Applications of statistical techniques for job classification purposes are described in Volume IV. For the purpose of making this overview complete, the techniques are listed here: (1) analysis of variance, (2) multivariate analysis of variance, (3) factor analysis, (4) hierarchical cluster analysis, and (5) multidimensional scaling.

Job Evaluation Methods

Job evaluation is an administrative technique used to determine an "ideal" hierarchical arrangement of jobs in terms of their relative worth both within an organization and within the relative labor market. It ultimately rests on a series of subjective judgments, for there are no explicit absolute criteria for job worth. Job evaluation does not eliminate chance error inherent in human judgment, but establishes a framework in which human judgments can work more systematically and reliably.

There are various job evaluation techniques in use in both public and private organizations. Most types of job evaluation systems share a similar methodology. The first step usually involves a careful description of each job within the unit being evaluated. Next, each job is evaluated with respect to its relative worth to the organization, resulting in a hierarchy of jobs. The third step utilizes the results of job evaluation in establishing wage or salary rates. It should be apparent from the emphasis on "the

job" that it is the job and not the worker that is evaluated in job evaluation. Conventional job evaluation systems differ in two major respects--(1) consideration of the job as a whole versus the consideration of the job by parts or elements and (2) the comparison of each job against other jobs versus the comparison of each job against a defined standard. The various job evaluation methods are described briefly here and in considerable detail in Volume III.

Job ranking. Job ranking is the most basic and rudimentary method of job evaluation, as well as the easiest method to conduct administratively. Each job to be evaluated is considered as a whole and is compared to the other jobs being evaluated. The method is non-quantitative in that it produces only a rank order of jobs rather than results which present the degree or interval of difference between jobs. It is non-analytical in that jobs are not split into factors or component elements for detailed appraisal and comparison.

Job or position classification. Job classification for job evaluation involves the use of a predetermined and ideal hierarchical structure, with the categories of the structure delineated on the basis of factors such as level of difficulty/responsibility and degree of skill thought to be required by various jobs and job classes. Each job or job class is fit into the structure by comparing its characteristics with the idealized levels describing each category in the system. For example, assume that 15 salary grades (categories) are defined on the basis of six factors in a

job evaluation system. As each new job is established, it would typically be assigned to a job class. Each job class has been previously assigned to one of the 15 salary grades. When a new job is established, it would have to be assigned to one of the 15 salary grades in the hierarchical structure.

Like job ranking, classification deals with the whole job. Although the classification method recognizes various factors or components in jobs, these are not analyzed separately.

Point method. In general, the point method refers to any quantitative job evaluation approach that uses numbers to measure jobs without showing actual pay amounts. Basically, a job evaluation committee analyzes job descriptions and specifications for a sample of jobs. Typically, ten to fifteen "independent" factors that distinguish among jobs in terms of difficulty and responsibility are selected and defined (e.g., education requirements, job complexity, physical requirements, responsibility for materials and equipment, etc.). Values are assigned to each level of each factor. Each job is rated separately on each factor and is assigned the corresponding number of points for the particular rated level on each factor. The points are then totaled across all factors to obtain the job worth score for each job. The point method is both quantitative and analytical.

Factor comparison method. The factor comparison method combines the point method with the principle of ranking in evaluating job families. It is an analytical approach that breaks jobs down into

a few broad factors, typically no more than seven. Several evaluation factors are selected from the descriptions and specifications of the jobs to be evaluated. Then a number of key jobs (or bench marks) are selected. This choice of bench mark jobs is critical because their rates of pay become the standard against which other jobs are evaluated.

The remainder of the process involves the establishment and resolution of two different but related rank orders. First, each bench mark job is ranked under each factor in terms of the relative importance of that factor in each job. This step is called factor ranking. The next step, called factor evaluation, involves assigning monetary values to each factor for each job in such a manner that the rank order of money values for any particular factor is consistent with the relative importance rank order established in the previous step. Of course, the sum of the monetary values across all factors for a given job must equal the total wage for that job. This may sound relatively straightforward, but in practice it is not. Because the monetary value assigned to each factor for each job is arbitrary and typically not the same for each job, the results of both factor ranking and factor evaluation must be "juggled" repeatedly to achieve consistency between the two rank orders across all jobs.

The Hay guide chart profile method is basically a factor comparison method using either three or five particular factors. Job content is described using three elements: (1) know-how, (2) problem-

solving, and (3) accountability. Two additional aspects, (4) working conditions and (5) physical effort, are sometimes used when measuring factory jobs. This method is described more thoroughly in Volume III.

The factor ranking system is a hybrid method combining features of the job ranking, point rating, and factor comparison methods of job evaluation. It, too, is thoroughly described in Volume III.

AAIM job rating plans. The American Association of Industrial Management (AAIM) has developed several standardized point systems for job evaluation. Separate plans are available for manual, nonmanual (clerical, technical, supervisory, etc.), and executive positions. Using adequate descriptions of job duties and responsibilities, a job rater and the job supervisor jointly complete the rating process for the job under the supervisor's control. Factors have been identified for the general types of jobs, and degrees or steps with their respective point values have been established for each factor. Manual jobs are rated on eleven factors; nonmanual jobs are rated on nine different factors, plus two additional factors where supervision of others is involved. The points are totaled across all factors to obtain the job worth score for each job. Based on the score range into which its point total falls, a job is assigned to one of 16 grades.

Time-span of discretion. The time-span of discretion method of job evaluation is based on a single factor, time-span of discretion. Time-span is the longest period of time which can elapse

in a role before the manager can be sure that his/her subordinate has not been exercising marginally substandard discretion continuously in balancing the pace and quality of his/her work. Marginally substandard discretion refers to discretion or decision-making which leads to results that are just outside the set standards of time or quality. In general, jobs higher in the organizational hierarchy have longer periods (time-span of discretion) before the results are scrutinized for adequacy than do jobs lower in the hierarchy. For jobs with multiple-task roles, the time-span of the longest task or sequence of tasks is used in determining the category of time-spans into which a given job falls. The five basic categories are (1) less than one month, (2) up to six months, (3) one year to 15 months, (4) up to three years, and (5) up to 10 years.

The Castellion method. The Castellion method of job evaluation is basically a standardized point method that considers the following job factors: (1) kinds of decisions made, (2) frequency of decisions made, (3) the kinds of numerical computation involved, (4) comprehensive ability required, (5) vigilance exercised, (6) consequence of errors, (7) education required, and (8) experience required. The total evaluation points for a given job are determined by multiplying the frequency of decision-making scale value by the scale value for tha appropriate decision level (kind of decisions made) and adding the points (scale values) from the other six factors.

Decision banding. Decision banding, or the Paterson method of

job evaluation, is essentially a factor comparison method based on a single factor--decision-making. Jobs are grouped into six decision bands based on the type of decisions required in the job: (1) policy-making, (2) programming, (3) interpretive, (4) routine, (5) automatic, and (6) defined. If additional gradations are necessary, sub-grading mechanisms can be used to increase the complexity of the classification. Various mechanisms can be used, including a decision count, mixture of decision counting and job ranking, or conventional job ranking.

Job component method (PAQ). The job component method of job evaluation is based on an approach to job analysis using large inventories of components or elements. The Position Analysis Questionnaire (PAQ) is a structured job analysis questionnaire consisting of 187 job elements of a worker-oriented nature. These worker-oriented elements tend to characterize the generalized human behaviors involved in work activities and, thus, the PAQ can be used to analyze virtually any job.

For each job under analysis, one or more PAQ record forms are completed by job analysts, supervisors, and/or incumbents. These data are processed into job evaluation information directly without being reviewed and translated by a job evaluation committee. The 187 element ratings are used to derive job dimension scores. The job dimension scores are then combined using a formula derived from past research. The formula comes from a study of 340 jobs in 45 varied organizations, which was conducted to identify the relationship between PAQ job dimension scores and going rates for compensation.

Chapter 6

EVALUATION OF JOB ANALYSIS AND JOB-BASED METHODS

Contents

Introduction

Purposes of Job Analysis

A comprehensive review of the literature on job-based methods revealed numerous and varied purposes for job analysis information. The various lists have been integrated into the one presented in Table 1. The reader desiring more detail is referred to Volume II, where each of the 11 purposes which job analysis information might serve is defined in more detail.

Note that these purposes for job analysis information are not mutually exclusive or independent. There is considerable overlap and interrelationship among them. The list includes virtually every element of the jobs area in HRPDU methods list, as well as elements from other areas, again underscoring the importance of job analysis for effective HRPDU. For this reason, the evaluation of job-based methods will center primarily around the job analysis methods.

Practicality of Job Analysis Methods

Listed in Table 2 are 10 important factors which must be considered in evaluating the pragmatic utility of job analysis methods. These, too, are defined in more detail in Volume II.

Evaluation of Job Analysis Methods: Purpose and Practicality

An earlier section of this volume included brief descriptions of the major methods of job analysis. Here the presentation is of tentative evaluations of each job analysis method relative to the 11 uses and 10 pragmatic utility considerations listed in Tables 1 and 2. It must be emphasized that these evaluations cannot be considered "the last word" because the state of the art of job analysis has not advanced to the point where a scientifically based evaluation is possible. While most of the job analysis methods have been applied numerous times in private industry, and some of them have been applied extensively in the public sector (including the Criminal Justice System), very little research has been conducted comparing the usefulness and practicality of one job analysis method versus another.

Table 1 shows the ratings given to each job analysis method in terms of its utility for each of the 11 purposes. The meanings of each rating are as follows:

A--the method is directly and optimally applicable for this purpose;

B--the method is potentially applicable for this purpose, or applicable with some reservations;

C--the method may or may not be applicable for this purpose;

D--the method is apparently not applicable for this purpose.

Table 1

Ratings of Job Analysis Methods on Purpose Considerations

Purpose	Job Analysis Method					
	PAQ	CIT	JEM	ARS	FJA	TI
1. Job Description	D	B	D	D	B	B
2. Job Classification	B	C	D	B	B	B
3. Job Evaluation	A	C	C	B	B	B
4. Job Design/ Restructuring	B	B	C	C	B	B
5. Personnel Requirements/Specifications	B-	B+	B	B-	B-	B-
6. Performance Appraisal	C	B	B-	C	B-	B-
7. Worker Training	D	B	B	D	B	B
8. Worker Mobility	B	B	B	B	B	B
9. Efficiency/Safety	C	B-	C+	C	B	C
10. Manpower/Workforce Planning	C+	C	C+	C+	C	C+
11. Legal/Quasi-Legal Requirements	B-	B+	B-	B-	B-	B-

PAQ--Position Analysis Questionnaire

CIT--Critical Incident Technique

JEM--Job Element Method

ARS--Ability Requirements Scales

FJA--Functional Job Analysis/ DOL Task Analysis

TI--Task Inventory/CODAP

These ratings should not be taken to mean that a job analysis method has been applied for each of the purposes listed. Rather it has been rated on the basis of either experience/research with actual applications, or potential for such applications.

The most obvious fact to be derived from a quick inspection of Table 1 is that no single job analysis method receives high marks across the board. That is, no one job analysis method yields sufficient information to meet optimally the requirements for all or even most of the 11 purpose considerations. In fact, only one method is judged as optimally meeting the requirements for a single purpose. The PAQ, alone, is considered sufficient for job evaluation purposes.

By far, the personnel requirements/specifications purpose has received the most attention in the literature. Levine, Ash, and Bennett (1980, in press) empirically compared four job analysis methods--task analysis, JEM, PAQ, and CIT--to assess their relative utility for personnel selection purposes. Despite substantial differences inherent in these job analysis methods, no substantial effects were observed on exam plan contents or costs encountered in developing exam plans from the different job analysis reports. In other research, Levine, Bennett, and Ash (1979) conducted a national survey of public personnel selection practitioners to determine their familiarity, evaluation, and use of four job analysis methods--task analysis, JEM, PAQ, and CIT. None of the methods received a highly positive evaluation. Even those survey respondents who

Table 2

Practicality Considerations for Job Analysis Methods

1. Operational--Has the method been tested and refined enough to be considered ready for use in its current form?

2. Off-the-Shelf--Is the methodological instrument involved ready-made, or must it first be designed and constructed, i.e., tailored to the particular job?

3. Occupational Versatility/Suitability--Is the method suitable for analyzing a variety of jobs, or at least the types of jobs one desires to analyze?

4. Standardization--Is the method capable of yielding norms, thus allowing the comparison of data obtained from different sources of information at different times?

5. Respondent/User Acceptability--Is the method, including its various reporting/information gathering requirements and results format, acceptable to the job analysis respondents and users?

6. Amount/Availability of Job Analyst Training--How much training is required for job analysts to be able to use the method independently, and how readily available is the training?

7. Sample Size--How many respondent or sources of information does the method require in order to ensure adequately dependable data?

8. Reliability--Will the method yield similar results upon repetition?

9. Cost--What is the estimated cost of the method? The cost would include cost of materials, required training, consultative assistance, and person-hours times salary for job analysts, respondents, and clerical support.

10. Quality of Outcome--Will the method generally produce high quality outcomes (e.g., legally justifiable, valid exams; effective training programs) relative to other methods?

expressed marked preferences for a particular method indicated that none of the methods satisfied completely their need for job analysis information. A substantial proportion of the respondents suggested that one solution to this dilemma for them is the utilization of combinations of methods.

Other authors, experts in job analysis methodology, offer similar advice. For a minimally comprehensive selection-oriented job analysis, Brumback (1976), Lewin (1976), and Prien (1977) all call for a combination of task-based and attribute-based job analysis methods. In the Criminal Justice System, the Georgia Peace Officer Standards and Training Council used the PAQ, JEM, and TI because they believed that the three methods in combination would produce comprehensive and exhaustive information defining the scope and nature of entry-level law enforcement officer jobs in Georgia (Lowe, Cook, and Rannefeld, 1978).

For job description purposes, some form of task-oriented job analysis is essential. The important tasks involved in jobs must be clearly specified. Knowledges, skills, abilities, aptitudes, and other human attributes should also be specified, thus requiring the use of the JEM (or some modification of it) and either the PAQ or ARS.

Jobs can be appropriately classified or grouped on the basis of worker-oriented job dimensions of the PAQ (or perhaps the ARS ability dimensions), or on the basis of percent of task overlap using either FJA, or TI with CODAP. An optimal classification system would be

based on both attribute-oriented and task-oriented dimensions.

In our opinion, the PAQ alone is adequate for job evaluation purposes. However, a job evaluation system based on the PAQ, while quite probably valid, is difficult to explain to employees who might question the job evaluation results. To maximize the perception of equity among employees, it would be desirable to base compensation on both human behavior (PAQ) and task dimensions. The TI approach in combination with CODAP appears to be the most feasible complement to the PAQ system for this purpose.

No conventional method of job analysis, by itself, is adequate for the purpose of job design/restructuring. This is also true for any and all combinations of conventional job analysis methods. Job analysis techniques are limited to depicting jobs as they are, and cannot describe jobs as they ought to be or jobs that do not presently exist (Teare, 1978). Effective job design/restructuring efforts appear to require a multi-step process beginning with the identification of needs/problems, proceeding through the delineation of general goals, specific objectives, and culminating in the identification of tasks necessary to meet the objectives. Either FJA or the TI/CODAP approach could be used at this point. A very desirable addition would be the use of the PAQ or ARS to group tasks in such a manner as to create jobs which match human aptitude/interest/ability configurations.

Perhaps the single best job analysis method for performance appraisal purposes is the CIT. Yet, it is also very desirable to

link performance appraisal to specific job tasks. The optimal combination of methods for this purpose would be the CIT with either FJA or TI/CODAP.

Worker training involves instilling in employees the knowledges, skills, abilities, and human behaviors related to the tasks to be performed. This calls for the use of JEM, CIT, and either FJA or TI/CODAP. However, these may need to be supplemented by an even more detailed analysis based on subelements of the units in these methods. The PAQ would be useful in selecting employees most likely to succeed in training programs.

For worker mobility, the PAQ system in conjunction with FJA or TI/CODAP appears to be a useful combination, although both JEM and ARS have something to offer for this purpose, also. The PAQ system permits the grouping of jobs on the basis of basic human behaviors required to perform them. The types and amounts of human aptitudes and attributes associated with success in each job or job group can be identified. The system incorporates an occupational prestige index and is linked to an interest inventory. When compatible person assessment information exists together with PAQ job information, it is possible to match people to jobs based on their aptitudes/attributes and interests. The occupational prestige index is useful in building career ladders. However, without one of the task-oriented methodologies, job descriptive information is insufficient. Furthermore, specific knowledges and skills are best identified by means of JEM, while the ARS is probably optimal for determining the physical

abilities required in jobs. Thus, it appears that an optimal worker mobility program would require job information from four of the six methods reviewed here.

None of the job analysis methods is specifically geared to yield efficiency/safety information. The CIT results in behavioral and contextual information that bears on efficiency/safety, but this behavioral information must be tied to task information, preferably of the depth of FJA task information, to be utilized effectively. The potential utility of the other methods for this purpose is essentially unknown at present.

Manpower/workforce planning is closely related to virtually all the other purposes, particularly to worker mobility. For aptitude/ability/skills banking, and creating worker profiles by job/task, the combination of PAQ, JEM, and TI/CODAP appears optimal. None of the methods in their current forms deals very well with the job forecasting aspect of manpower/workforce planning.

Virtually all of the methods would be useful for meeting legal/quasi-legal requirements. The specific method or combination of methods that would be most useful depends upon the particular legal/quasi-legal requirement in question. At the present time, personnel selection processes are center stage in the legal limelight. Thus FJA or TI in combination with the JEM and PAQ might prove valuable. If the legal controversy centers around job evaluation, PAQ data would be most helpful in the resolution.

Now, in consideration of practicality, the reader is referred to

Table 3. All of the job analysis methods reviewed there are

Both the PAQ and JEM are considered "off-the-shelf" methods. The PAQ is a standardized instrument. The JEM is not standardized in that it will not yield identical job elements across different groups of subject matter experts. However, the methodology for generating and rating job elements, as well as analysis of the raw job element data, is prescribed in the form of a manual (Primoff, 1975). There is no manual, as such, for the CIT. However, the literature contains fairly complete descriptions of variants of the CIT methodology. The ARS is "mostly off-the-shelf," in that the abilities taxonomy is standardized. However, Fleishman[1] points out that scale anchors for specific jobs/occupations have not been developed to the point where the technique can be considered completely off-the-shelf. The use of consultative assistance for developing the anchors adds appreciably to the cost of what might otherwise be a very economical job analysis method.

Neither of the task-oriented methods (FJA and TI/CODAP) is "off-the-shelf" in that task statements must typically be developed for particular jobs or occupational groups. However, a sufficient number of TI/CODAP studies of entry-level law enforcement officer jobs have been conducted (LEAA, 1978) so that it appears quite feasible to create a standardized task inventory for this job group. In fact, only the absence of time, money, energy, and possibly cooperation precludes the development of a standardized task inventory for the

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[1] Fleishman, E. A. Personal communication, August 24, 1979.

Table 3

Ratings of Job Analysis Methods for Practicality[2]

Practicality Considerations	Job Analysis Method					
	PAQ	CIT	JEM	ARS	FJA	TI
1. Operational	Yes	Yes	Yes	Yes	Yes	Yes
2. Off-the-Shelf	Yes	Mostly	Yes	Mostly	No	No
3. Occupational Versatility/ Suitability	High	High	High	High	High	High
4. Standardization	High	Moderate	Low	High	Moderate	High
5. Respondent/User Acceptability	Not always, depends	Not always, depends	Yes	Yes	Yes	Yes
6. Amount/Availability of Job Analyst Training	Low/ Moderate	Moderate	Moderate	Low/ Moderate	Moderate	Moderate
7. Sample size	Very Minimal	Moderate	Minimal	Minimal	Minimal	Moderate/ High
8. Reliability	High	Moderate/ High	Moderate	Moderate/ High	Moderate/ High	High
9. Cost	Low	High	Moderate	Moderate	Moderate/ High	Moderate
10. Quality of Outcome	Mostly High	Mostly HIgh	Moderate	Unknown	Moderate	Mostly High

PAQ -- Position Analysis Questionnaire
CIT -- Critical Incident Technique
JEM -- Job Element Method
ARS -- Ability Requirements Scales
FJA -- Functional Job Analysis/DOL Task Analysis
TI -- Task Inventory/ CODAP

[2]Part of the ratings are adapted from Brumback et al. (1974).

Criminal Justice System. There are detailed instructions and training programs on developing FJA task statements and on using its worker attribute scales. However, the specific wording of FJA task statements will vary somewhat from job analyst to job analyst and incumbent to incumbent, as may the worker attribute ratings.

All of the methods have high occupational versatility/suitability. Both the CIT and PAQ are occasionally plagued by problems with respondent/user acceptability, although task inventories can contain so many tasks and/or so many rating scales as to make their conscientious completion rather onerous to respondents. None of the methods requires more than a moderate amount of job analyst training for its use, and ample instruction/training is available for all the methods.

The sample size required by each method is directly related to the purpose for which the job analysis is being conducted. The sample size ratings in Table 3 reflect the requirements for development of personnel selection procedures. If the purpose of conducting a job analysis is to establish a comprehensive classification system, then sampling per se is insufficient, but measurement of the population is required. The reliability of all the methods, when the job analyses are properly conducted, is acceptable.

The PAQ is by far the most economical job analysis method. At the other end of the cost spectrum are CIT and FJA. There may be substantial costs incurred in the development of a comprehanesive task inventory for a previously unanalyzed occupational group, but this is essentially a one-time cost. The CI method is fairly economical once

the inventory has been developed. The JEM is moderate in terms of cost.

The quality of outcome for all the methods considered is directly related to using the right method for the purpose at hand, and requires proper implementation of the method. An "unknown" rating has been given to ARS on this consideration because it is relatively new to the job analysis scene. It has potential for being the best method for determining the physical requirements of jobs, especially when used in conjunction with task analysis. FJA is rated as moderate on the quality of outcome dimension because its worker attribute scales are insufficient for such purposes as design of job-related tests and development of training programs (Brumback, 1976), although its detailed task statements can be used to develop work sample tests. These are seldom used, however, due to their high costs of administration. Furthermore, FJA does not allow for ready comparison among jobs, and it is quite laborious. The JEM is rated as moderate on this dimension because of its lack of standardization, and its bypassing of tasks. Incidentally, the selection procedure for New York State Troopers based exclusively on a JEM job analysis has been rejected by the courts (U. S. vs. State of New York, District Court, 21EPD 30314).

In concluding this evaluative discussion of the various job analysis methods, it must be re-emphasized that these evaluations are based on carefully informed opinions, not definitive scientific evidence. Research currently underway involves a systematic survey of a large number of expert job-analysis users in order to gather their

opinions on the subject. Upon completion of this research it may be necessary to revise the ratings given here.

Conclusions

At this point a brief summary of all conclusions about the state of the art of job analysis methods is appropriate.

1. There are a substantial number of alternative job analysis methods available. Furthermore, these methods are applied in a variety of forms with presumably useful impacts.

2. Job analysis methods vary along a number of dimensions, including the level of analysis, how to collect the data, the source of the data (typically incumbents, supervisors, or both), the type of data, and the analysis of data.

3. Job analysis methods vary substantially in cost.

4. Job analysis methods vary somewhat in terms of the availability of training, with the most training available for FJA and DOL task analysis, and the least training available for CIT.

5. Job analysis methods vary somewhat in terms of their acceptability to users. However, with the possible exception of the CIT and PAQ, most methods can be made palatable for most users.

6. There are very few systematic empirical, comparative studies of job analysis methods available. One comparative study of job analysis methods for personnel selection purposes was found (Levine, Ash, and Bennett, 1980, in press), as was one comparative study of job analysis methods for occupational/job classification/grouping (Cornelius, Carron, and Collins, 1979).

7. All job analysis methods depict jobs as they are now, not as they ought to be or jobs that do not presently exist.

8. For purposes of job design or job restructuring, the use of a developmental approach or mission analysis is recommended. That is, jobs should be designed so that each task contributes to organizational goals.

9. For the most part, the applications of the different job analysis methods do not overlap. That is, the methods yield different types of information about jobs, and these different types of information are useful and/or complementary for different purposes.

10. Given the current state of the art, there are six basic job analysis research areas in which there is only partial information (Prien and Ronan, 1971). Future empirical research on job analysis should attend to the following considerations:

    (a) the determination of the reliability and validity of responses obtained from job incumbents, supervisors, and other raters;

    (b) the relation between function components and person characteristics;

    (c) the relation between job functions and performance behavior or style;

    (d) the relation between function characteristics such as time requirements, relative emphasis, level of difficulty, and person characteristics;

    (e) the construct validation of job functions and function composites;

    (f) the experimental design and controls used in job analysis research designed to answer pragmatic questions.

11. Job analysis, in general, is plagued by semantic confusion. Terms such as "task," "element," "job element," and "ability" change in meaning relative to the job/analysis method under consideration.

12. Organizations typically employ job analysis to solve the crisis of the moment, or the particular problem at hand. To develop effective HRPDU mechanisms, organizations need to collect and use job analysis information for a variety of purposes.

13. For most purposes relative to HRPDU, task, behavior, and knowledge/skill/ability information is necessary or useful. In other words, most of the potential uses for job analysis information require both task-based and attribute-based information.

14. A multi-methodological approach to job analysis is almost always preferable and superior to any single method.

15. Despite the relative lack of knowledge about various methods, systematic job analysis, classification, and evaluation systems are legally mandated.

Evaluation of Other Job-Based Methods

Earlier in this volume the two basic methods of job design/construction/alteration were identified--job factoring and the developmental approach. The developmental approach is inherently logical and its use is strongly encouraged in the design/construction/alteration process whenever one wishes to avoid being trapped by existing job boundaries and organizational constraints. Unfortunately, virtually all of the few applications of the developmental approach have involved unique variations, and appear to be considerably confounded by contextual circumstances. Given the current state of the art, the only evaluation possible is based on the logic of the developmental approach.

The job factoring approach (carving out or blending new jobs from existing ones) to job design/construction/alteration is more typical. It involves the intentional manipulation of job characteristics by management in order to bring about desired employee responses (increased production and satisfaction) or to reduce undesired responses (boredom, alienation, turnover). Frequently it does not work. There are apparently as many failures as there are successes in the use of job design to affect various kinds of

job performance (Hackman, 1974). Recent work indicates that individual employee characteristics must be considered. Apparently, job enlargement/enrichment efforts only lead to the desired outcomes if the affected employees have a desire to obtain "growth satisfactions" from their work.

There are numerous job evaluation methods. For the most part, total job evaluation points can be reliably measured by a variety of the methods and the different methods yield essentially identical hierarchical arrangements of jobs. Since the different methods of job evaluation, properly conducted, generally yield very similar results, the dual criteria of cost and psychological acceptability should be used in choosing a job evaluation method. When cost considerations include potential alternative uses of the data collected, the PAQ clearly emerges as the most cost-efficient job evaluation method for organizations committed to effective HRPDU efforts (cf. Robinson, Whalstrom, and Mecham, 1974).

There has been very little empirical research comparing the numerous job/occupational classification methods. Based on the little research that has been conducted, it is apparent that different classification approaches typically yield considerably different results (cf. Cornelius et al., 1979; Ghiselli, 1966; Remstad and Rothney, 1958). In short, classification schemes are generally not comprehensive. They typically lack an explicit rationale or theory that would permit unambiguous interpretation of classification data; classes usually are derived using more than one logical or empirical principle; and many

classification systems are difficult to use or teach. Finally, classification systems are not compatible with one another. In choosing a classification method, practitioners and researchers must pay close attention to the objectives for which the occupations in question are to be grouped or classified, and to the type of job data to be used for classification purposes.

Chapter 7

RECOMMENDATIONS FOR THE USE OF JOB-BASED METHODS

Contents

Implementation

The Need

The Criminal Justice System needs to use sophisticated job-based methods for a variety of reasons. First, criminal justice agencies need to accomplish more work with existing or perhaps even decreased levels of support. This calls for more effective utilization of human resources, which might be facilitated by job redesign or alteration. Secondly, the employment and promotion functions of many criminal justice agencies face substantial legal restrictions related to equal employment opportunity and affirmative action issues. Job analysis is critical for establishing the job-relatedness of employee selection and promotion criteria and in the development of job-related training programs. In addition, job analysis may be useful in establishing or identifying knowledge, ability, and skill requirements across criminal justice sectors, enhancing opportunities for mobility and career development assignments. Thirdly, job classification and job evaluation information is useful in the area of collective bargaining and in avoiding or settling some types of grievances. Unionization of segments of the criminal justice workforce is increasing.

Criminal justice agencies need job-based methods that are relatively simple to implement and use. While the agency employees who are responsible for personnel and planning functions are generally well educated, they are not technical experts in job analysis, job

design/redesign, job evaluation, and job classification. Given present criminal justice agency work priorities, job-based methods also need to be inexpensive.

The Ideal Response

In the ideal situation, it would be recommended that the Criminal Justice System start anew, and design its jobs using the developmental approach. That is, legislative bodies could determine the overall mission of the Criminal Justice System in terms of the needs and problems it is addressing relative to society in general, various criminal justice organizations, and individual users/clients of the Criminal Justice System. The overall mission would then be expressed in terms of general organizational goals, and these goals would be further operationalized into specific objectives for accomplishment by smaller work groups or individuals. Then, specific tasks and activities required to meet each objective would be determined. Only such tasks and activities would be included in the work to be performed by the Criminal Justice System. These tasks would then be grouped together into jobs in such a way as to ensure their performance in a maximally efficient manner, and to facilitate the efficient utilization of human resources. Jobs could be designed to match the individual knowledges, skills, abilities, aptitudes, attributes, and interests of the personnel currently in criminal justice organizations, as well as those individuals currently being prepared by various institutions of higher education.

The Realistic Response

The fact of the matter is that the Criminal Justice System is not in an ideal situation. Both criminal justice organizations and the jobs within them already exist, and it does not appear reasonable or feasible to start over by redefining the criminal justice world. Therefore, it is recommended that multi-methodological job analysis be the first job-based method applied throughout all segments and all levels of the Criminal Justice System. The result would be a systematic analysis and description of how work in the Criminal Justice System gets done at the present time, with emphasis on the tasks, human behaviors, and knowledges, skills, and abilities, required for the performance of that work. Such an information base would provide the foundation upon which to develop better ways and procedures for getting the work done. Perhaps of more importance, however, is the fact that personnel practices of criminal justice organiztions must be founded on such a systematic data base in order to avoid being shut down by the courts.

Armed with accurate information as to how work is currently accomplished, individual criminal justice organizations should then undertake a limited form of mission analysis as a possible step toward job redesign/alteration. At the organizational level, the purpose of the mission analysis would be the clarification of organizational goals at the managerial levels. Next, the objectives of work units and tasks of employees would be checked to determine the extent to which these contribute to the accomplishment of the

organizational goals. Strong and careful consideration should be given to the elimination of any tasks or work activities found not to be related to organizational goal accomplishment. The next step would be the assessment of individual employee needs, as well as knowledges, skills, and abilities. For employees high in growth needs, task and work activities might be rearranged so as to create jobs with increased skill variety, task identity, task significance, autonomy, and feedback. So long as the employees matched with enriched jobs possess the abilities/aptitudes to perform/quickly learn to perform them, the results are likely to be increased work motivation, higher quality work performance, high job satisfaction, and reduced absenteeism and turnover--all boons that would certainly benefit any labor-intensive system.

Priorities

In terms of priorities for applying job-based methodologies to the Criminal Justice System, job classification and job evaluation must rank a distant third and fourth behind job analysis and job design/redesign. In the law enforcement and corrections sectors, both job classification and evaluation are frequently beyond the purview of criminal justice organization personnel. Typically, these functions fall into the province of the respective government personnel/civil service agency department. The jobs in criminal justice organizations are typically classified and evaluated as a part of the larger governmental system. However, any significant change in the allocation/arrangement of work tasks in jobs as a

result of job redesign efforts may be accompanied by concomitant changes in job classifications and salary grades.

Benefit-Cost Considerations

At the present time the majority of criminal justice organizations report being understaffed, and it appears that they will be facing even more serious budgetary pressures and restrictions in the foreseeable future. Criminal justice organizations need relatively inexpensive, but useful and effective HRPDU methods, and a systematic job-analysis effort is needed by nearly all criminal justice organizations in order to provide the foundation upon which to develop other HRPDU procedures.

Unfortunately for criminal justice organizations, job analysis costs money. It costs money to buy the expertise required to conduct job analyses and to develop and implement the indicated changes in human resources management practices. The vast majority of criminal justice organizations do not have this expertise and, to buy it on the open market, they must compete with private sector businesses which are also attempting to acquire this type of expertise. Job analysis costs money in yet another way. Job information must be collected from employees of criminal justice organizations who already have excessive demands placed upon their time. Thus, time spent by criminal justice employees in supplying data for job analysis purposes is often viewed as a frill which detracts from the primary mission of the organization; often the necessary time is not

allocated.

So there is an apparent contradiction, one which the business person understands very well, but one which somehow seems to either baffle or frustrate the keepers of criminal justice agency purse strings. One has to spend money in order to make money, or in this case, to save money through eventual realization of more effective HRPDU practices.

The point of this discussion is to emphasize the need for criminal justice organizations to understand the benefit-cost considerations in effective job analysis methods. Evaluation indicates that no single job analysis method will provide a sufficient data base for adequate development of the majority of HRPDU activities. Ultimately, a multi-methodological approach to job analysis will be required for the Criminal Justice System, perhaps more expensive initially, but more cost-effective in the long run.

References

Beal, E. F., Wickersham, E. D., & Kienast, P. K. The practice of collective bargaining. Homewood, Illinois: Richard D. Irwin, Inc., 1976.

Block, P. B., & Weidman, D. R. Managing criminal investigations. (U. S. Department of Justice, Law Enforcement Assistance Administration, National Institute for Law Enforcement and Criminal Justice.) Washington, D. C.: U. S. Government Printing Office, 1975.

Brown, W., III. The light at the top of the stairs: The Equal Employment Opportunity Act of 1972. Personnel Administration, 1972, May-June, 4-7 and 66-69.

Brumback, G. B. One method is not enough: An overview of selection oriented job analysis methodology. Chicago: Paper presented at the Selection Specialists' Symposium of the International Personnel Management Association, July, 1976.

Brumback, G. B., Romashko, T., Hahn, C. P., and Fleishman, E. A. Model procedures for job analysis, test development and validation. AIR-37600-4/74-FR. Washington, D. C.: American Institutes for Research, July, 1974.

Burack, E. H., & Walker, J. W. (Eds.) Manpower planning and programming. Boston: Allyn & Bacon, Inc., 1972.

Cascio, W. F. Applied psychology in personnel management. Reston, Virginia: Reston Publishing, 1978.

Christal, R. E. The United States Air Force occupational research project. JSAS Catalog of Selected Documents in Psychology, 1974, 4, 61. (Ms. No. 651)

Connell, K. F., Lobdell, N. E., & Stock, J. R. Summary report and work plan: An exploratory and pilot study of task analysis of social welfare jobs. Columbus, Ohio: Battelle Memorial Institute, 1970.

Cornelius, E. T., III, Carron, T. J., & Collins, M. N. Job analysis models and job classification. Personnel Psychology, 1979, 32, 283-297.

Cornish, E., and members and staff of the World Future Society. The study of the future. An introduction to the art and science of understanding and shaping tomorrow's world. Washington, D. C.: World Future Society, 1977.

Craig, R. (Ed.) Training and Development Handbook (2nd Ed.) New York: McGraw-Hill, 1976.

Davis, L. E. The concept of job design and its status in industrial engineering. In Symposium on human factors in job design. American Psychological Association. Santa Monica, California: Systems Development Corporation, Report SP-611, November, 1961.

Dukes, C. W., III. Designing an employee information system. In Burack, E. H., and Walker, J. W. (Eds.) Manpower planning and programming. Boston: Allyn and Bacon, 1972.

Dunnette, M. D. Personnel selection and placement. Belmont, California: Wadsworth Publishing Company, Inc., 1966.

Fine, S., and Wiley, W. An introduction to functional job analysis. Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, 1971.

Flanagan, J. C: Improving personnel selection. Public Personnel Review, 1953, 14, 107-112.

Fleishman, E. A. Toward a taxonomy of human performance. American Psychologist, 1975, 30, 1127-1149.

Ghiselli, E. E. The validity of occupational aptitude tests. New York: Wiley, 1966.

Goldstein, I. L. Training: Program Development and Evaluation. Belmont, California: Wadsworth, 1974.

Hackman, J. R. On the coming demise of job enrichment. Technical Report No. 9, Department of Administrative Sciences. New Haven: Yale University, 1974.

Hackman, J. R., & Lee, M. D. Redesigning work: A strategy for change. Scarsdale, N. Y.: Work in American Institute, 1979.

Hackman, J. R., & Oldham, G. R. Development of the job diagnostic survey. Journal of Applied Psychology, 1975, 60, 159-170.

Hawk, R. H. The recruitment function. New York: American Management Association, 1967.

Henderson, R. I. Job descriptions: Critical documents, versatile tools. New York: AMACOM, 1975.

Hyde, A. C., & Whitman, T. S. Workforce planning: The state of the art. In J. M. Shafritz (Ed.) The Public Personnel World: Readings on the professional practice. Chicago: IPMA, 1977.

Katz, D., & Kahn, R. L. The social psychology of organizations. New York: John Wiley, 1966.

Katzell, R. A., Bienstock, P., & Faerstein, P. H. A guide to worker productivity experiments in the United States: 1971-1975. New York: University Press, 1977.

Kaufman, H. G. Obsolescence and professional career development. New York: AMACOM, 1974.

Kelling, G. L., Pate, T., Dieckman, D., & Brown, C. E. The Kansas City preventive patrol experiment. Washington, D. C.: Police Foundation, 1974.

Latham, G. P., & Wexley, K. N. Behavioral observation scales for performance appraisal purposes. Personnel Psychology, 1977, 30, 255-268.

Law Enforcement Assistance Administration. Proceedings of the national symposium on job-task analysis in criminal justice. Washington, D. C.: Law Enforcement Assistance Administration, U. S. Department of Justice, 1978.

Levine, E. L., Bennett, N., & Ash, R. A. Evaluation and use of four job analysis methods for personnel selection. Public Personnel Management, 1979, 8, 146-151.

Levine, E. L., Ash, R. A., & Bennett, N. Exploratory comparative study of four job analysis methods. Journal of Applied Psychology, 1980, in press.

Lewin, D. Cautions in using job analysis data for test planning. Public Personnel Management, 1976, 5, 255-257.

Lowe, R. L., Cook, K. R., & Rannefeld, D. N. Project CAREERS: A job analysis of entry-level peace officers in Georgia. In Proceedings of the national symposium on job-task analysis in criminal justice. Washington, D. C.: Law Enforcement Assistance Administration, U. S. Department of Justice, 1978.

McCormick, E. J. Job and Task Analysis. In M. D. Dunnette (Ed.), Handbook of industrial and organizational psychology. Chicago: Rand McNally, 1976.

McCormick, E. J., Jeanneret, P. R., & Mecham, R. C. A study of job characteristics and job dimensions based on the Position Analysis Questionnaire (PAQ). Journal of Applied Psychology, 1972, 56, 347-368.

Miner, M. G., & Miner, J. B. Employee selection within the law. Washington, D. C.: Bureau of National Affairs, 1979.

Murphy, R. H. A personalized skills inventory: The North American Rockwell Story. In Burack, E. H. and Walker, J. W. (Eds.) Manpower planning and programming. Boston: Allyn and Bacon, 1972.

National Institute of Law Enforcement and Criminal Justice (NILECJ). The National Manpower Survey of the Criminal Justice System. Washington, D. C.: U. S. Government Printing Office, August, 1978.

Patten, T. H., Jr. Manpower planning and the development of human resources. New York: Wiley and Sons, 1971.

Pearl, A., & Riessman, F. New careers for the poor. New York: Free Press, 1965.

Prien, E. P. The function of job analysis in content validation. Personnel Psychology, 1977, 30, 167-174.

Prien, E. P., & Ronan, W. W. Job analysis: A review of research findings. Personnel Psychology, 1971, 24, 371-396.

Primoff, E. S. How to prepare and conduct job element examinations. (Technical Study 75-1, U. S. Civil Service Commission.) Washington, D. C.: U. S. Government Printing Office, 1975.

Remstad, R., & Rothney, J. W. M. Occupational classification research results. Personnel and Guidance Journal, 1958, 36, 465-472.

Robinson, D. D., Whalstrom, O. W., & Mecham, R. C. Comparison of job evaluation methods: A policy capturing approach using the Position Analysis Questionnaire. Journal of Applied Psychology, 1974, 59, 633-637.

Schein, E. H. Career dynamics: Matching individual and organizational needs. Reading, Massachusetts: Addison-Wesley, 1978.

Smith, C. P., Pehlke, D. E., & Weller, C. D. Project STAR. Cincinnati, Ohio and Santa Cruz, California: Anderson-Davis, 1976.

Smith, L. The EEOC's bold foray into job evaluation. Fortune, 1978, 98, 58-60 and 64.

Smith, P. C., & Kendall, L. M. Retranslation of expectations: An approach to the construction of unambiguous anchors for rating scales. Journal of Applied Psychology, 1963, 47, 149-155.

Task Force on Criminal Justice Education and Training. Manpower planning and development programs in the Law Enforcement Assistance Administration. Internal Report to the Administrator of the Law Enforcement Assistance Administration, January, 22, 1976.

Teare, R. J. Final report: OCJET job-task analysis symposium. In Proceedings of the national symposium on job-task analysis in criminal justice. Washington, D. C.: Law Enforcement Assistance Administration, U. S. Department of Justice, 1978.

Teare, R. J., & McPheeters, H. L. Manpower utilization in social welfare. Atlanta: Southern Regional Education Board, 1970.

Tiffin, J., & McCormick, E. J. Industrial psychology. Englewood, Cliffs, New Jersey: Prentice-Hall, Inc., 1965.

Treiman, D. J. Occupational prestige in comparative perspective. New York: Academic Press, 1977.

U. S. Department of Labor, Manpower Administration. Handbook for analyzing jobs. Washington, D. C.: Author, 1972.

White, B. H. Problems of industrial organizations in manpower planning and forecasting. In Burack, E. H. and Walker, J. W. (Eds.) Manpower planning and programming. Boston: Allyn and Bacon, 1972.

Wiley, W. W., & Fine, S. A. A systems approach to new careers: Two papers. Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, 1969.

Wycoff, M. A., & Kelling, G. L. The Dallas experience: Organizational reform. Washington, D. C.: Police Foundation, 1978.

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