



Police Productivity

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National Institute of Law Enforcement and Criminal Justice
Law Enforcement Assistance Administration
United States Department of Justice

POLICE PRODUCTIVITY

A Selected Bibliography

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National Institute of Law Enforcement and Criminal Justice
Law Enforcement Assistance Administration
United States Department of Justice

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INTRODUCTION

Community concern for the quality and cost of law enforcement services has provided impetus for police management to focus attention on productivity. In order to achieve more efficient delivery of services, several preliminary steps are essential: determining the factors that contribute to efficient delivery of services and measuring the impact of attempts to improve such efficiency.

It is apparent that merely defining the concept of police productivity is a difficult task because there is no universally accepted process for measuring police efficiency. Unlike the industrial sector, the nature of police services does not lend itself to a simple profit-loss analysis. The literature on police productivity includes works that address the nature of the police function and the effectiveness of traditional police management.

In addition to problems of definition and measurement, police management recognizes that any program designed to improve productivity raises sensitive personnel issues, and this is further complicated by the rise in police unionization.

This bibliography has been compiled to focus attention on the topic of police productivity and to highlight the literature that reflects the growing interest in police productivity. In addition to documents about the nature of productivity from sociological, managerial, and economic viewpoints, the selections address these aspects of police productivity:

- Measuring Productivity. Theories and techniques for measuring productivity of patrols, investigative activities, programs, performance, and crime prevention techniques.
- Management Activities. Discussions of the function of management, proposals for implementing programs designed to improve productivity, and the personnel and labor relations implications of productivity programs.
- Approaches to Improving Productivity. Examples of programs designed to improve productivity, including team policing, crime analysis units, crime and forensic laboratories, equipment, consolidation, and reorganization.

All of the documents cited above have been selected from the data base of the National Criminal Justice Reference Service. Information about how to obtain the documents may be found on the following page.

HOW TO OBTAIN THESE DOCUMENTS

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1. AMERICAN BAR ASSOCIATION. Urban Police Function, Standards Relating to: Supplement. Approved Draft, 1973. Washington, 1973. 303 p.
(NCJ 42779)

These standards concern the tasks of the police in large urban areas and in smaller communities and are designed to increase the understanding of the police function in order to improve the quality of its service. The standards presented were developed by the American Bar Association (ABA), and the draft was approved in 1973. The volume presents the complete standards for such major police responsibilities as criteria for local objectives and priorities, relations with groups outside the criminal justice system, the exercise of police discretion, police accountability, unions and political activity by officers, recruitment and training of patrol officers, the contribution of the legal profession in developing local policies concerning the police, measurements of police effectiveness, and research. Each standard is subsequently restated followed by ABA commentary. The meaning, purposes, and background of the standards are discussed, along with their implications for police policy and their relationships with other standards. The commentaries include quotes from judicial decisions, case examples, and historical documents. A selected bibliography is appended.

2. BARBOUR, G. P., D. J. BORUT, and D. M. FISK. Challenge of Productivity Diversity: Improving Local Government Productivity Measurement and Evaluation. Part 4: Procedures for Identifying and Evaluating Innovations. Six Case Studies. Washington, Urban Institute, 1972.
136 p.

(NCJ 41750)

This report is the result of 8 months (October 1971 to May 1972) of research into identifying and evaluating innovations in solid waste collection and police crime control. These two examples of public service delivery by a local government were used to develop and demonstrate an approach for seeking out innovations and new techniques in local government functioning and for systematically and thoroughly evaluating their cost, potential effectiveness for improving productivity, and transferability to other governments. This report examines in detail three innovations in solid waste collection and three in police crime control and suggests that indepth evaluations of local government innovations could yield valuable results. The police case studies involve the use of nonsworn professionals in the Dallas (Tex.) Police Department; manpower resource allocation in the Kansas City (Mo.) Police Department; and the use of helicopters by the Los Angeles Police Department and County Sheriff's Department. The emphasis of the studies is on the procedures for locating and evaluating innovations. A 3-phase process is recommended: identification of possible local government innovations, thorough evaluation of each and its potential effect on productivity, and provision for the rapid and effective dissemination of the findings to other local governments in

the United States. The establishment of a formal method within local governments for obtaining citizen feedback is also strongly recommended. A bibliography and samples of initial case screening are appended. For Parts 1, 2, and 3 of this study report, see NCJ 14198, 10986, and 11323.

3. BARBOUR, G. P. and S. M. WOLFSON. Productivity Measurement in Police Crime Control. Public Management, v. 55, n. 4:16-19. April 1973. (NCJ 14771)

The difficulties in measuring productivity for agencies such as the police, the need for accountability of the police, and 12 possible productivity measurement indicators for police activity are discussed. The most useful approach to the complexities of measuring police crime control activity is seen as the collection and analysis of a variety of indicators, as no single productivity measurement function is a complete measure of productivity. The authors suggest 12 measurement indicators, 5 of which can be used immediately and 7 of which require supplemental information collection. These indicators include crime rate; clearance rate; and arrest, clearance or population served for police employee, or per thousand dollar expenditure. Measures requiring additional data include crime rates and clearance rates based on victimization survey data, percent of arrests that lead to convictions, percent of arrested surviving court of limited jurisdiction, average response time for calls of service, and percentages of the population expressing lack of feeling of security or satisfaction with police service.

4. BLUMBERG, A. S. and A. NIEDERHOFFER. Police and the Social System: Reflections and Prospects. In their Ambivalent Force: Perspectives on the Police. 2d Ed. (NCJ 44843). New York, Holt, Rinehart and Winston, 1976. 22 p. (NCJ 44844)

Some causes of police ambiguity and frustration, their historical background, and portents for the future of the police are examined. Sociologists view crime as a normal product of society. Everyone violates the law, but few can be prosecuted. There are seven types of crime: upperworld (corporate), organized, violent personal, public order, commonplace (petty theft, fraud), political, and professional. Commonplace crime, while not the most harmful of these types, is the most visible, and therefore is the most vulnerable to the instruments of law enforcement. Like other bureaucracies, the police force is anxious about its productivity and related budgetary grants; public order and commonplace offenses serve as the requisite statistical data bolstering law enforcement budgets. Society expects police to perform effectively within two models of justice--the due process model, in which protection of the rights of the accused person is of

foremost importance; and the crime control model, concerned primarily with efficiency and production in day-to-day operations. The police are the most visible element of the criminal justice system and are held responsible for any negative features of the end product of that entire system. In many cases, police perform more important judicial functions than do judges, particularly in deciding which persons to arrest. A system of external review is necessary to control and reduce possible harmful consequences of police discretion. Some medieval English laws are examined, and similarities between the law enforcement abuses they were designed to correct and those of the 1970's are demonstrated. Many police officers feel that there is one universal solution to their problems--professionalization (increased specialization, training, and education). Problems which could result from this approach are pointed out. Critical issues which may be facing the police during the 1980's include police unionization, the role of policewomen, civil disorders, and the future direction of the FBI.

5. BOYDSTUN, J. E. San Diego Field Interrogation. Final Report. Washington, Police Foundation, 1975. 140 p. (NCJ 28815)

This report presents a summary of the objectives, design, conduct, and evaluation of tests of alternative field interrogation (FI) policies conducted by the San Diego Police Department. The study was conducted to determine the major effects of three alternative departmental policies for conducting field interrogations. In the control area, field interrogations were conducted with no change from normally practiced activities. In the special FI area, field interrogations were conducted only by officers who were given special supplementary training focusing on methods for reducing friction between interrogator and subject. In the no-FI area, field interrogations were suspended for the 9-month experimental period. Community attitude surveys were conducted in each of the areas prior to and following the experimental period and a variety of data were collected for analysis. Analysis consisted of examining data to determine changes occurring within each area during preexperimental, experimental, and postexperimental periods and comparing changes to identify differences that could be associated either with suspension of FI or special training. The analysis supported the hypothesis that some level of FI activity, as opposed to none, provides a deterrent effect on suppressible crime in localized areas and that neither frequency of FI nor amount of training had a major influence on citizen opinions and attitudes. Results are held to be generally applicable to San Diego, due to traditional FI activity and training there.

6. BURPO, J. H. Improving Police Agency and Employee Performance Through Collective Bargaining, Part 1. Police Chief, v. 41, n. 2:36-38, February 1974. MICROFICHE (NCJ 12963)

Collective bargaining is a two-way process, and public employers should begin to make management demands on police unions to the same extent that unions make demands on management. One term of management bargaining demands is to improve the police agency's productivity and to improve individual employee performance standards. However, this either has not been recognized in most jurisdictions or has been put to limited use. Union resistance to programs geared toward improving agency or employee performance can be eliminated or reduced by management negotiators placing these programs on the bargaining table and negotiating them into the collective bargaining contract. For part 2 of this article, see NCJ 37105.

7. _____ . Improving Police Agency and Employee Performance Through Collective Bargaining, Part 2. Police Chief, v. 41, n. 4:30, 32, 34, 36. April 1974. (NCJ 37105)

Productivity bargaining is the negotiation and implementation of formal collective bargaining agreements stipulating changes in work rules and practices in order to achieve increased productivity and reciprocal worker gains. New York City's successful experience with this technique for reducing or eliminating employee-union resistance to new programs that improve overall performance involved a 4-phase program--reduction of unit costs, improvement of personnel resources deployment, improvement of government processing procedures through the use of computers, and development of new technologies. Problems with bargaining over productivity programs which should be foreseen by management negotiators include its subjectivity to change through union negotiating initiatives, the possible need to make program adjustments, and the program's subjectivity to the grievance procedure. Kalamazoo, Michigan, also applied the principles of productivity bargaining to the improvement of individual employers by negotiating an annual firearms qualification policy for all police officers. For part 1 of this article, see NCJ 12963.

8. _____ . Labor Relations Guidelines for the Police Executive. Evanston, Illinois, Northwestern University, 1976. 22 p. (NCJ 34218)
Pub. No. 91

The two major objectives emphasized are developing an atmosphere of labor-management cooperation and providing management personnel with the necessary authority to maintain control of department operations. This publication first examines some general principles that will

assist in achieving these two objectives and then proposes some specific management policies and programs that achieve better labor-management cooperation and maintain efficient department operations. The specific areas discussed include creation of a labor relations unit within the police department, the development of a working relationship with the union, achieving a supervisory and management team supportive of management objectives, motivating employees to work, resolving conflicts between the professional police agency and union objectives, improving productivity of the police department, reconciling corruption problems and union objectives, and responding to employee job actions. Appended are a sample police grievance form, an outline of the organizational structure of a labor relations unit, and a list of labor relations publications.

9. CHAIKEN, J. M., and P. DORMONT. Patrol Car Allocation Model. Santa Monica, California, Rand Corporation, 1976. 38 p. (NCJ 45304)
Stock No. ADA 037 909

An improved computer program is presented for specifying the number of police patrol cars that should be on duty in each area of a city at various times each day. This publication is part of the Rand Paper Series. The program discussed is a synthesis of previous patrol car allocation models with several improvements. The model allocates car-hours to shifts, which is defined as a combination of a specific tour on a specific day in a specific precinct. The purpose of using car-hours is to permit tours to have any duration desired, not necessarily all the same. Its major innovation is the ability to prescribe allocations when one tour on each day in each geographical command overlays two other tours. The program also sets constraints on performance to avoid the common error of concentrating so many cars in dense areas with many calls for service that unacceptable delays are encountered in sparsely populated areas with relatively few calls for service. Mathematical development of the model is explained. The program has been designed to be inexpensive and readily transferable. A bibliography is appended.

10. CHAPMAN, J. I., W. Z. HIRSCH, and S. SONENBLUM. Crime Prevention, The Police Production Function, and Budgeting. Public Finance/Finances Publiques, v. 30, n. 2:197-215. 1975. (NCJ 34254)

A production function is constructed which is used to estimate the relative extent to which a specific police agency prevents property crimes. Since in addition to crime prevention the output of the police also includes a punitive component, output equations are employed which combine data with prevention estimates to produce an index of police real output. The agency's behavior is then analyzed in terms of the effects that resource use has on its output, which

are formalized in a police production function. The model has been applied to the city of Los Angeles and quantitative output and production function results are reported. Finally, the analysis is related to the process of municipal budgeting, specifically in Los Angeles from 1956 to 1970. It was found that the police agency seemed to enjoy the benefits of increasing returns to several of its resources. Particularly, field officers, civilians, and motorcycle teams were found to have output elasticities that were substantially greater than one. It was further found that an appropriate production function gives a heavy weight to the punitive component of output.

11. CONNECTICUT GOVERNOR'S PLANNING COMMITTEE ON CRIMINAL ADMINISTRATION.
Plan To Increase Police Productivity: A Report on the Reorganization of the East Hartford Police Department. By R. Dart, V. Lubans, and R. Showalter. Hartford, 1974. 189 p. (NCJ 15130)

This presents a report on new departmental structure, administrative systems, and plans for police professionalization. A detailed functional job task analysis of all the positions in the department led to recommended changes in the department's job functions, a new records system, a management information system, a performance evaluation system, a sector team policing plan, a career ladder and training plan, and a new schedule of 4 days on and 3 days off to facilitate team policing and training opportunities. Implementation of the recommended changes had begun during the study process so that each of the new systems and practices was already established or being installed at the conclusion of the study. The reorganization of the East Hartford Police Department produced a structure in which the chief of police is supported in an effort to be the policymaker and is provided with an executive staff to help advise as well as filter extraneous, diverting matters. Also, the reorganization unified and consolidated workfields so that all administration matters are in one command and all operations in another. Command has been unified so that one individual is responsible for an entire workfield. Within each workfield the reorganization provided a structure in which responsibilities and duties are explicitly defined and teamwork is encouraged. Numerous illustrations and tables and six attachments provide various analytical data as well as procedures for implementing the recommended systems.

12. CRABTREE, C. T. Investigation-Apprehension Control and Management System. Springfield, Virginia, National Technical Information Service, 1973. 115 p. (NCJ 12054)
Stock No. PB 233 376/AS

Investigation, control, and management (ICAM) is a practical operational tool for monitoring and managing the productivity of criminal investigators. This report describes ICAM and its current operation in the Department of Public Safety, Sunnyvale, California, the city that has developed and tested the technique. The rationale and the derivation of ICAM is illustrated through the presentation of a conceptual model of the apprehension system, the series of activities which produce information leading to arrest. The system is viewed as an information processing media that acquires, stores, processes, or transmits information that contributes to the systems performance. The flow of apprehension system activities is described and system performance measures and their use are defined and demonstrated. The manuscript describes how the data to operate ICAM are produced from activity reports which are completed by police field personnel. Detailed instructions and coding forms are appended. The ICAM basic performance module, which produces several basic types of management reports, is presented and the uses of the reports are explained. Deficiencies which commonly exist in police reporting systems and which ICAM is designed to overcome are outlined. The ICAM model is demonstrated using 30 example criminal cases. The report concludes with examples which show how ICAM is used to support the typical management sequence of planning, goal setting, the development and selection of alternatives, organizing, controlling, and evaluating.

13. DALLAS AREA CRIMINAL JUSTICE COUNCIL. Dallas: Expand Crime Laboratory and Increase Training of Police Personnel. Evaluation Report, First Year, October 1, 1973 - September 30, 1974. Dallas, Texas, 1974. 36 p. MICROFICHE (NCJ 18514)

This is an evaluation of a project that increased the manpower of the Dallas County Institute of Forensic Sciences by three scientists and added new equipment and reference volumes to the laboratory. The evaluation report is organized by Project Objective. The first objective was to provide services not available through local funding. The 14 new services provided are listed and described in table form. The second objective was to increase laboratory productivity and to increase the speed of reporting results. The average time taken to perform 18 different services is contrasted between 1972 and each quarter of the evaluation year. The third and fourth objectives are concerned with training scientists to understand the needs of the police concerning the lab and with training police officers to understand the needs of the scientists regarding evidence collection and presentation. The number of persons trained is reported. Attachments discuss the physical evidence analysis capability of the

lab, the equipment that is used, and the percentage of lab involvement in various types of crimes.

14. EDGAR, J. M. Information Model Policing: A Design for the Systematic Use of Criminal Intelligence in a Team Policing Operation. Washington, 1976. 13 p. (NCJ 34621)

A proposal for a decentralized police intelligence system to complement modern police operations such as team policing is discussed in this publication. The author initially distinguishes two basic approaches to police field operations, the traditional tactical model and the recently developed information model. He demonstrates that where the information model has been properly implemented, it has been followed by decreases in crime rates and greatly increased clearance rates. The final section describes how the effectiveness of an information model field service system can be improved even further by the systematic use of criminal intelligence.

15. FARMER, D. J. Police Productivity. Overview, v. 1, n. 1:18-20. April 1973. (NCJ 11632)

The basic approach in improving police productivity in any sizable agency should begin with the establishment of an appropriate operational and personnel environment. Beyond this, planning should be undertaken involving, first, the identification of low productivity areas and the development of improvement measures. The increased use of civilians and preventive patrol is an example of such measures. Second, the planning should consist of the application of modern management techniques, such as participatory management and forms of management emphasizing objectives and goal-orientation. The discussion is illustrated with examples of New York City Police Department practices.

16. GREENWOOD, P. W. Analysis of the Apprehension Activities of the New York City Police Department (NYCPD). New York City-Rand Institute, 1970. 60 p. (NCJ 00393)
Pub. No. R-529-NYC

The development of criteria for evaluating apprehension efforts and application of these criteria to existing programs is detailed. The study concentrates on programs leading to the arrest of part 1 offenders--those who commit homicide, rape, robbery, assault, burglary, grand larceny, and auto theft. The clearance rate is the fraction of crimes reported to the police that the police claim to have solved. Probability of arrest was adopted as a more accurate measure of apprehension program effectiveness. The study suggests that each arrest should be qualified by the seriousness of the offense and the final court disposition of the case so that detective work resulting in arrest of the more serious offenders or in higher conviction rates will be favorably recognized and encouraged. In determining the preferred allocation of manpower among apprehension activities, such as investigation, patrol, stakeouts, and tails, it is necessary to estimate the marginal productivity of additional manpower in terms of arrests per man-day. For part 1 crimes, the probability of arrests differs vastly between the crimes of passion--homicide, rape, and assault--and the crimes of profit--robbery, burglary, and larceny. This probability is high for crimes of passion, and the study of assault showed that the probability increases as more effort is devoted to each case. For crimes of profit the probability of arrest is extremely low. Arrests for property crimes are pickup arrests made near the scene of the crime or as a result of evidence that is readily apparent at the time the crime is reported.

17. Insights From a Police Investigation Study: A Potential Adversary Role for the Police. Santa Monica, California, Rand Corporation, 1976. 14 p. (NCJ 43449)
Pub. No. P-5722

The study, which was presented at the 1976 Annual Meeting of the American Society of Criminology, examines the amount of effort devoted by police to investigate reported crimes, how this effort is organized, and what is accomplished. A national survey of all departments exceeding 150 employees or serving populations over 100,000 was conducted to determine patterns of resource use, investigative procedures, personnel policies, and special projects. Uniform Crime Report data on offenses, arrests, and clearances were obtained and combined with the survey responses to provide gross performance comparisons among departments. More than 25 departments which were identified as being progressive in their approach to investigative management were visited by the research staff for observations and interviews of investigation personnel. It was demonstrated that investigation efforts have only a marginal effect on the rate at which

arrests are made. The primary finding was that crimes are solved by patrol officers who respond to the scene or interview witnesses, and not by the sifting of evidence or deduction. The detectives' role consists mainly of processing the paperwork and bringing all of the necessary pieces of information together for prosecutorial purposes. Other findings suggested that investigators spend more time on cleared cases after arrest than before; fingerprints still account only for about 1 percent of all case clearances due to lack of processing capabilities; and, for proactive strike teams which work undercover, the arrest productivity was often "inflated" with easy arrests passed on from other units. Principal reforms suggested to improve police effectiveness included more selective screening of cases for investigation followup and early closure for those where solution appears unlikely, assignment of more investigative responsibilities to patrol commanders, and increased capacity to conduct latent fingerprint searches. The report discusses a critique of the findings which it considers typical of the reaction that many studies of police performance have received. The observation that many detectives and the police in general take little interest in a case after it has been filed by the district attorney is discussed in more detail. Some of the issues raised by negative reactions to this finding are examined, and constructive ways of dealing with them are proposed. It is noted that if a police chief believes that the prosecutor or the judges are not behaving in the public interest or within the spirit of the law, the natural adversary position which the criminal justice system provides by confronting the prosecutor or judge publicly, based on a systematic examination of how the system is functioning, can be adopted.

18. GRIMES, J. A. Police, the Union, and the Productivity Imperative. In Wolfle, Joan L., and John F. Heaphy, Eds., Readings on Productivity in Policing. (NCJ 31282). Washington, Police Foundation, 1975. 39 p. (NCJ 31285)

Intended for officials involved in police productivity efforts, this paper describes police employee organizations--their goals, their perceptions of their role in management, and their attitudes on productivity. The history and development of police employee organizations is reviewed, and several of the prominent organizations are described. Police unions, and in particular, local police employees associations, are examined and the processes of interaction with police management are described. Because productivity programs require management-union cooperation, it is important that efficient mechanisms for communication and negotiation be maintained. Examples are presented of how several departments have approached this task. A number of case studies of productivity programs are included. The author concludes that productivity maximization is and will remain an imperative, as will the need for unions and management to reach mutually acceptable policies for achieving it.

19. HALE, C. D. Fundamentals of Police Administration. Boston, Massachusetts, Holbrook Press, 1977. 374 p. (NCJ 40541)

The basics of police administration are explored along with the practical problems of planning, organizing, activating, and controlling the modern police agency. This book emphasizes the personnel issues. Recent matters such as police productivity and police labor relations are covered, as well as management by objectives. Using nontechnical language, the author discusses team policing and the relationship of police to public administration. Chapter summaries, questions, charts, illustrations, and extensive bibliographies are provided.

20. HAMILTON, E. K. Police Productivity: The View from City Hall. In Wolfle, Joan L., and John F. Heaphy, Eds., Readings on Productivity in Policing. (NCJ 31282). Washington, Police Foundation, 1975. 25 p.

(NCJ 31283)

It is asserted that basic changes in the politics and economics of many American cities have affected the value that city administrators and police leadership attach to determining and reporting police productivity measures. The author discusses the difficulty inherent in trying to link input productivity--optimal use of resources with respect to a stated list of police activities--with output productivity--the providing of adequate services and crime control. Numerous factors, largely political in character, which are said to have changed the perspectives of many mayors and city managers during the last 10 years, are explored. The author speculates on prospects for the next decade, in which he feels it likely that the preoccupation with police productivity will either stimulate introduction of important new management tools, or that it will collapse in a wave of public and professional disillusionment.

21. HATRY, H. P. Wrestling with Police Crime Control Productivity Measurement. In Wolfle, Joan L., and John F. Heaphy, Eds., Readings on Productivity in Policing. (NCJ 31282). Washington, D.C., Police Foundation, 1975. 43 p. (NCJ 31286)

This report discusses a number of alternatives that have been proposed to improve police crime control productivity measurement. The problem of defining units of output to be measured is discussed and some specific productivity measurements are illustrated. Problems often encountered with existing measures--crime prevention and deterrence measures, arrest rates, citizen feedback measures, and workload oriented measures--and ways of circumventing those problems are discussed. Input measures and related difficulties of quantification are examined. It is said that measurement of the productivity of individual police officers should be used only as an internal

management tool for constructive improvements. Suggestions are made for the interpretation of productivity data. Methods include comparisons of past and current performance, comparison of the performance of similar departments and units, and comparison of actual with projected performance.

22. HIRSCH, G. B., and L. J. RICCIO. Measuring and Improving the Productivity of Police Patrol. Journal of Police Science and Administration, v. 2, n. 2:169-184. June 1974. (NCJ 14483)

Parameters are proposed for measuring patrol output and suggestions are given for improving police patrol efficiency and productivity. Only the function of apprehending criminal offenders is analyzed here, but parallels can be drawn to the other primary patrol objectives--the deterrence of crime and the provision of noncrime services. A more accurate indicator than number of arrests is needed. The quality of arrests can be considered if, for instance, only those arrests that lead to convictions are counted. This measurement is more in line with the goal of police patrols--the maintenance of community safety and well-being. Suggestions for improving patrol productivity include reducing time spent in court, reducing vehicle downtime, taking reports over the phone, and reducing excessive time spent on calls.

23. HOLZER, M. Police Productivity: A Conceptual Framework for Measurement and Improvement. Journal of Police Science and Administration, v. 1, n. 4:459-467. December 1973. (NCJ 11911)

Aspects of police productivity measurement and enhancement are discussed with attention to input and output measures and catalysts for productivity improvement. Productivity in law enforcement organizations, as in other public and private organizations, is the relationship between inputs and outputs. Indices of police productivity are the ratios of outputs, such as arrests, to inputs, such as capital and labor. Resource inputs available to police organizations are measurable in terms of the common denominator of dollars or units of time in the case of labor resources. Thus, the major obstacles to judging police productivity are measures of output, not input. The bases for police productivity indices are: (1) internal output, which ranges from internal investigation to clerical, transportation, and training; (2) external output, which can be defined as the end products of the organization (i.e., those goods and services rendered for use outside the organization itself); and (3) effectiveness of output--the utility, social benefit, impact, or client satisfaction derived from the external outputs. Output quantifications and indices possess an inherent management utility in the area of productivity enhancement. Once deficiencies or areas for improvement have been identified, out-

put measures can both dictate and assess the role of certain productivity catalysts. Five primary catalysts are: (1) productivity bargaining (i.e., the process of negotiating increased productivity with police employee unions or fraternal organizations); (2) capital investment; (3) awareness of innovation; (4) independent management audits; and (5) management principles. Of the five, productivity bargaining has received the most attention. Capital investment and innovation awareness receive limited attention, and audits and management principles little or no attention at all. Some other possible catalysts range from economies of scale and the use of unarmed citizen volunteers to the elimination of legal constraints on police work schedules and the development of improved legislative capability to evaluate police problems.

24. KELLING, G. L., T. PATE, D. DIECKMAN, and C. E. BROWN. Kansas City Preventive Patrol Experiment: A Summary Report. Washington, Police Foundation, 1974. 66 p. (NCJ 42537)

This report summarizes the results of a year-long study to determine the impact that routine police patrol had on the incidence of crime and the public's fear of crime. Three controlled levels of routine preventive patrol were used in the experimental areas of Kansas City. One area, termed "reactive," received no preventive patrol. Police entered the area only in response to citizen calls for assistance. This, in effect, substantially reduced police visibility in that area. In the second area, called "proactive," police visibility was increased two to three times its usual level. In the third area, termed "control," the normal level of patrol was maintained. Analysis of the data gathered revealed that the three areas experienced no significant differences in the level of crime, citizens' attitudes toward police services, citizens' fear of crime, police response time, or citizens' satisfaction with police response time. Work on developing deployment strategies based on specific crime prevention and service goals rather than routine preventive patrol is recommended.

25. KELLING, G., and M. A. PATE. Person-Role Fit in Policing: The Current Knowledge and Future Research. In Kroes, W. H., and J. J. Hurrell, Jr., Eds., Job Stress and the Police Officer: Identifying Stress Reduction Techniques. Proceedings. (NCJ 43642). Washington, U.S. Government Printing Office, 1975. 13 p. MICROFICHE (NCJ 43651)
Stock No. 017-033-00149-9

Studies concerned with the convergence of the individual's skills and personality with the characteristics and requirements of the role the individual performs are reviewed in this paper that was presented at a symposium held in Cincinnati, Ohio, on May 8-9, 1975. It has been assumed that the better the person-role fit, the more satisfied and

productive the person will be. A lack of fit has been thought to be responsible for such problems as stress, dissatisfaction, boredom, alienation, low productivity, and, ultimately, poor physical and mental health. The possibility of a poor person-role fit may be discovered before a person joins an organization, either by the organization in its screening efforts or by the individual. Once a part of the organization, the individual may respond to a growing person-role misfit through such self-initiated actions as leaving the organization, becoming apathetic, forming unions, or attempting upward mobility. Although the individual may adjust to the role requirements through changes in personality, such solutions often are accompanied by undesirable byproducts. The Dallas Police Department uses a task-specific approach to match recruits to functions and is beginning to examine the fit between personality characteristics and organizational environment. The Kansas City Police Department uses a task-oriented approach to assess candidates for promotion to supervisory positions. A study of work orientation and attitude in police officers found that most attitudes appear to be the product of a combination of variables from the work and the nonwork milieu. A second study found that background factors held little explanatory value with regard to job satisfaction among police officers. Research seems to indicate that certain aspects of police work are stressful. However, little is known about the causes and effects of stress or about the outcomes of programs designed to isolate and deal with stress. Considerable theoretical and empirical research remains to be done. A list of references is included.

26. KORNBLUM, A. N. Moral Hazards. Lexington, Massachusetts, D. C. Heath and Company, 1976. 248 p. (NCJ 37709)

This book is a study of how leaders of any organization can attempt to reduce corruption and other forms of deviation so that individual action in the field is consistent with pronouncements at headquarters. It analyzes strategies used by successive administrations in New York City from the 1950's into the mid-1970's to overcome collusive resistance between police officers who were allied with gamblers. Incentives and pressures for organizational change are considered in light of their costs and benefits and conditions under which they are likely to be effective. The directive strategies analyzed are establishing goals, policies, and procedures; shuffling personnel and boxes; changing individual incentives and attitudes; and inducing productivity. The control strategies studied include reporting misconduct and investigative activities, supervising personnel, discovering malpractice, and imposing sanctions. Of particular note is a model assessing administrators' use of "functional anxiety" (fear) to assure compliance from subordinates. An alternative strategy to these external controls is also explored--a large-scale commitment to and integration of organizational goals with individual goals through professionalism and professionalization. The

appendix contains data on "an insider's view of gambling enforcement." A subject index is provided.

27. LIND, R. C., and J. P. LIPSKY. Measurement of Police Output: Conceptual Issues and Alternative Approaches. Stanford, California, Stanford University, undated. 39 p. (NCJ 12202)

This publication discusses the measurement of police production in terms of social and monetary costs within the context of the criminal justice system's institutions and social environment. Police services are an intermediate step in the production of justice, and their effectiveness depends on the operations of the court and the corrections systems, as well as on police efforts. Since it can be assumed that the social costs of crime increase with the number of offenses, crime rates can be used as one measure of system production and effectiveness. To be of practical use, each measure must have an accepted and valid formula for computing output, must utilize obtainable data, and must be of sufficient sensitivity to measure changes resulting from the activity being evaluated. The strengths and weaknesses of a number of approaches to measuring police output are surveyed, and cost-benefit and cost-effectiveness analysis are discussed in detail. An outline of the type of empirical analysis required to validate potential measures of police productivity is provided. The report concludes by examining the fundamental ways in which police actions can affect the crime rate in an attempt to isolate those capabilities which account for most of the police impact.

28. LOCAL GOVERNMENT POLICE MANAGEMENT. Washington, International City Management Association, 1977. 567 p. (NCJ 42071)

Policing in the United States has shifted in emphasis from the traditional areas of law enforcement to broader concerns which show that the police are part of a much wider community. The principal purposes of this book are to provide police chiefs and other command officers with information on contemporary principles and practices for police management, to set forth the latest methods for police department operations, and to offer alternative concepts and procedures for relating the work of police management to city and county government and the community at large. Management problems are approached from the point of view of the police chief, command officers, and the chief administrator. The book has been prepared also to serve the needs of police instructors, educators, and students. Part 1 includes 4 chapters that cover historical background and the work of the police department, both internally and externally, in management, city, and county government, and the problem of internal and external corruptive influences. Part 2 comprises 3 chapters

on organization, management, and productivity. The 6 chapters in part 3 focus on patrol, traffic, criminal investigation, organized crime, crime prevention, and juvenile programs. Personnel management, labor-management practices, internal controls, community relations, research and planning, and the legal adviser are considered in part 4. The ancillary services of information management, facilities and material, criminalistics, and jail management are discussed in the 4 chapters making up part 5. The final section contains a concluding chapter with a look ahead at possible future trends in police services. A 9-page selected bibliography and an index are provided.

29. MACIEJEWSKI, J. Team Policing Improves Teamwork. Police Chief, v. 43, n. 7:54-57. July 1976. MICROFICHE (NCJ 35219)

A description of the development and implementation of a police manpower deployment system which allows for the provision of specialized services without diminishing the effectiveness of regular patrol or requiring additional personnel is presented. Specialized juvenile, police-community relations, and crime prevention units were formed by grouping the three functions into one section and cross-training the personnel in all of the tasks involved. All regular uniform patrol officers were then graded according to experience, training, special skills, and productivity. The officers were grouped into four closely matched units or teams, each headed by a patrol sergeant, and were allocated to twenty of the twenty-one 8-hour shifts. A fifth unit comprised of specialists, detectives, and administrative personnel was formed to cover the remaining shift. This system is evaluated according to its effect on specialization, lines of supervision and command, training, and morale. It is concluded that the introduction of this system has increased productivity, improved the lines of communication and morale, and given the department a good community image since, because of cross-training, there is always someone available for community relations, juvenile, or crime prevention work.

30. MASSACHUSETTS COMMITTEE ON CRIMINAL JUSTICE. Worcester (Mass.): Crime Impact Program. An Evaluation Report. By R. C. Larson, J. B. Green, J. C. Williamson, V. K. Dunlap, and J. W. Simon. Cambridge, Massachusetts, Public Systems Evaluation, Inc., 1975. 350 p. MICROFICHE (NCJ 35262)

This is an evaluation of the second year of a project to achieve short-term reductions in the incidence of robbery and burglary on a citywide basis in Worcester (Mass.), with emphasis on a specified target area. The program consisted of seven components aimed at achieving goals of civilianization; decentralization; and specializa-

tion within the department through concentrated patrol; increased investigative manpower; improved administrative support; use of civilians to answer service calls; and establishment of a crime prevention unit. All available data elements relevant to the project that were traditionally collected by the Worcester Police Department and especially those demonstrating the impact of the use of police service aides were analyzed, as were the results of questionnaires administered to and interviews conducted among participants and telephone interviews with service call clients. Findings conclude that the Worcester Crime Impact program has successfully met its main output goal of reduced target crimes primarily because of the significant increase in manpower and because of the flexibility and organization provided by the impact program.

31. Worcester (Mass.): Crime Impact Program. An Evaluation Report, Volume 2: Appendixes. By R. C. Larson, J. B. Green, J. C. Williamson, V. K. Dunlap, and J. W. Simon. Cambridge, Massachusetts, Public Systems Evaluation, Inc., 1975. 214 p.
MICROFICHE (NCJ 42295)

These appendixes to the evaluation report of the Worcester (Mass.) Crime Impact Program (NCJ 35262) contain the formal survey instruments used in the evaluation, as well as summaries of client and police officer surveys.

32. MORE, H. W., JR., Ed. Effective Police Administration: A Behavioral Approach. San Jose, California, Justice Systems Development, Inc., 1975. 462 p. (NCJ 25921)

This anthology of writings is designed to introduce the student and the practitioner to the managerial functions of planning, organizing, fiscal management, and budgeting. It also identifies the major elements of organizational development and the implications of change in police organizations. Examples are included to illustrate the application of major theoretical views and conceptual approaches to management, such as grid management, theory X-theory Y, force field analysis, and systems analysis. Individual chapters cover the history of police management thought, theories of behavioral science, systems analysis, managerial functions, organizational development, managing for results, leadership styles, team policing, and police productivity. Special teaching aids include outlines of chapter objectives, discussion questions, annotated references, and numerous examples of management techniques. Subject and name indexes are also provided.

33. MORGAN, J. P. Planning and Implementing a Productivity Program. In Wolfe, Joan L., and John F. Heaphy, Eds., Readings on Productivity in Policing. (NCJ 31282). Washington, Police Foundation, 1975. 21 p.

(NCJ 31287)

A method is described by which police administrators can implement a program of productivity measurement and improvement. The creation of a productivity management unit, headed by a productivity analyst, is suggested. Primary areas of concentration are operations that consume large numbers of man-hours or involve large numbers of employees who perform routine and repetitive tasks, areas where unit costs are high, and functions that normally result in backlogs of work. Several general rules for setting productivity objectives are given. Productivity measures must then be chosen, and baseline data accumulated. Methods of monitoring projects in productivity programs are discussed. Case study examples are provided for each of these steps. Common obstacles and methods of avoidance are described. The importance of approaching productivity programs in such a way that individual officers do not perceive their own interests to be threatened is stressed.

34. MUNRO, J. L. Administrative Behavior and Police Organization. Cincinnati, Ohio, Anderson Publishing Company, 1974. 213 p.

(NCJ 13479)

An overview of the multidisciplinary management approach integrating the fields of police administration and human behavior is presented in this publication. Management personnel, including police administrators, are beginning to take advantage of the knowledge produced by social scientists to understand individual and organizational behavior. The author begins by discussing the purposes, objectives, and goals of police work within the framework of a democratic ideology. He then notes that scientific methodology can provide academics and administrators with reasoned policy alternatives which have had their consequences predicted. The remainder of the text draws on research studies of scientists from many disciplines and includes the theoretical and the practical approaches to police work. Individual and cultural influences on the police officer are noted and the "police personality" is discussed. Leadership, supervision, motivation, morale, and productivity within the quasi-military structure of most police agencies are explored. The author concludes that the continued use of an authoritarian philosophy of management frustrates managers and officers and will not produce the kind of democratic policing that society expects. As an alternative, the author presents for consideration a model for police organization based on an integration of safety, welfare, and mental health functions which might redefine police roles, broaden police alternatives, and increase individual responsibility and satisfaction through team effort.

35. MURPHY, P. V. Police Accountability. In Wolfle, Joan L., and John F. Heaphy, Eds., Readings on Productivity in Policing. (NCJ 31282). Washington, Police Foundation, 1975. 12 p. (NCJ 31284)

The author states that budgetary considerations will cause police administrators to be held increasingly accountable for their use of resources. Several factors, such as the difficulty inherent in attempts to define police responsibilities and the insular attitude of police departments toward each other, have so far deferred such accountability. Industry's attempts at profit maximization through concentration on productivity measurement and improvement present potentially valuable examples. Suggested areas for concentration include the defining of officers' responsibilities, increased inter-agency and interdepartmental cooperation, and coordination with lawmakers and public officials of enforcement policies.

36. NATIONAL COMMISSION ON PRODUCTIVITY. Challenge of Productivity Diversity: Improving Local Government Productivity Measurement and Evaluation. Part 3: Measuring Police-Crime Control Productivity. By P. S. Schaeffer and J. Kalish, Washington, Urban Institute, 1972. 160 p. (NCJ 11323)
Stock No. 223 117

The difficulties and inadequacies with productivity measurement in the police and crime control field, as well as suggested developments and refinements, are presented in this publication. An especially complex problem is that of measuring the deterrent effect of law enforcement activities--accurately linking the absence of crime to particular controls and properly evaluating the controls in terms of costs and of benefits achieved in greater protection to lives and property. "Quality of arrest" indicators are recommended as one approach to measuring the deterrent effect. Such indicators would show more about the disposition of arrests, such as the number of felony arrests which "survive" a preliminary court hearing. Other suggested data would measure citizen feelings about security and the quality of treatment received from police. A national productivity measurement effort is urged along with the formation of a measurement analysis team. Areas for future research are mentioned and bibliographies are included. Appendixes containing information on data collection and utility are found in NCJ 10986. For other documents in this series, see NCJ 10985, 14198, and 13127. Part 2 does not discuss criminal justice.

37. Challenge of Productivity Diversity: Improving Local Government Productivity Measurement and Evaluation. Part 3: Measuring Police-Crime Control Productivity. Appendixes. Washington, Urban Institute, 1972. 72 p. (NCJ 10986)

Four appendixes discuss data requirements for the development of a useful national police-crime control productivity measurement system. Appendix A is an illustrative list of data necessary for comprehensive police productivity analysis. The nature and availability of these data are discussed in appendix B, along with problems inherent in their use. Appendix C presents a sample data collection format and a sample citizen survey providing indices of feeling of security, victimization, and general police-community relations. A literature search was conducted as part of this study, and the resulting annotated bibliography on police productivity is contained in appendix D. For the full report, Measuring Police-Crime Control Productivity, see NCJ 11323. For other documents in this series, see NCJ 10985, 14198, and 13127. Part 2 does not discuss criminal justice.

38. Improving Police Productivity: More For Your Law Enforcement Dollar. A Brief for Elected Officials. Washington, undated. 14 p. MICROFICHE (NCJ 12260)

Guidelines are presented for assessing the quality of police protection and services in a jurisdiction in order to maximize the overall effectiveness. The purpose of this illustrated booklet, most of which is in question and answer format, is to stimulate maximum output using existing manpower, equipment, and financial resources. Included is a listing of members of the Advisory Group on Productivity in Law Enforcement, as well as a list of National Commission on Productivity members.

39. Jurisdictional Guide to Productivity Improvement Projects: A Handbook for Public Officials, 2d Ed. Washington, International City Management Association, U.S. Government Printing Office, 1975. 75 p. MICROFICHE (NCJ 28092)
Stock No. 052-003-00181-1

Brief descriptions and addresses are provided for research projects and programs dealing with police systems analysis, technological innovations, and personnel in the public safety section of this handbook. The project manager's name and address and the population of the jurisdiction in which it is taking place are presented. Types of projects include manpower analysis, traffic control, night vision scopes, and the use of police paraprofessionals.

40. Managing Human Resources in Local Government: A Survey of Employee Incentives. By J. M. Greiner, and H. P. Hatry. Washington, Urban Institute, 1973. 60 p.

MICROFICHE (NCJ 14101)
Pub. No. NCP-73006

This is a discussion of the definition of incentive, types of incentives, illustration of incentive programs, and considerations for implementing incentive programs. The use of employee incentives to increase productivity in local government services is discussed. An incentive is broadly defined as anything which is offered to obtain a desired performance or behavior. Examples of various incentives are listed and classified as being positive, quasi, or negative. Among the incentives listed are merit increases, performance bonuses, monetary incentives, job enrichment, awards, educational benefits, rules, and punishment. Illustrations of incentive programs are given for law enforcement, sanitation, public works, health and welfare, and parks and recreation. Under the implementation of incentive programs, consideration is given to obstacles, measurement of performance, evaluating the effectiveness of incentives, and incentive design and adaptation. A cross-index by type of incentive and a jurisdictional index are provided.

41. Opportunities for Improving Productivity in Police Services. Washington, 1973. 85 p. (NCJ 12261)

Issues and suggestions related to measuring and improving police productivity in the specific areas of patrol, crime prevention, and human resources management are discussed. The Advisory Group on Productivity was established by the National Commission of Productivity and was given the task of developing the tools and measures with which police departments can improve productivity themselves. Various empirical and analytical approaches to the problem of police productivity were employed. The advisory group's report begins by briefly defining the concept of productivity as it might be applied to police services. The need to view police productivity in terms of a process integrally related to overall police management is emphasized. The problem of measuring police activity is discussed. Some pitfalls of measures currently in use are identified, the principal elements of measurement are analyzed, and the importance of using measures within the overall management context is pointed out. The bulk of the document is composed of 3 chapters which apply the productivity concept to 3 substantive target areas--patrol, crime prevention, and human resources management. In each case, details are provided to assist departments in moving rapidly to use the ideas in their own situations. Although specific suggestions for productivity measurement and improvement are included, the discussion summarizes key points in a manner broad enough to increase their general applicability. Barriers to productivity improvement are examined,

including both the impediments to change existing in many police departments and the factors that determine the success or failure of new programs. A final section presents the advisory group's suggestions for national support to assist State and local police agencies in developing their own capabilities for improving productivity.

42. Thinking About Productivity in Law Enforcement: A Preliminary Staff Paper, 16 March 1973. Washington. 20 p.
MICROFICHE (NCJ 28602)

An outline of productivity measurement theory, its applications to police work, and problems encountered in its implementation are presented. Productivity is output over input, where output is the services measured with respect to the attainment of goals or objectives, and input includes the total resources consumed. Some desirable characteristics of a police productivity measure are put forth. There is also a discussion of the determinants of productivity. Lists of reasons for low productivity and barriers to implementing police productivity improvements are provided.

43. Tying City Pay to Performance: Early Reports on Orange, California, and Flint, Michigan. By J. M. Greiner, Washington, Labor-Management Relations Service, 1974. 29 p.
MICROFICHE (NCJ 19602)

These interim evaluations of the Orange (Calif.) performance incentive plan for police and the Flint (Mich.) incentive system for waste collectors include assessments of productivity improvement and enhanced job satisfaction. Both these programs rely on quantitative measures of employee performance in determining the awards to be distributed. Consequently, employee performance is linked to incentive rewards through objective formulas rather than subjective assessments by city management. In evaluating the Flint and Orange incentive efforts, the Urban Institute utilized previous Institute research on measuring the effectiveness and productivity of waste collection and crime prevention activities. A list of criteria used in assessing employee job satisfaction is provided. The evaluators were constrained to the use of existing, readily available data due to the limited time and funds available; consequently, it was necessary to rely on department records and interviews with program personnel. In both cases, the evaluation strategy involved the collection and comparison of evaluative data for comparable time periods before and after the introduction of the incentive program. Among the problems noted in these two modestly successful programs are complexity of the program, complicated and unexpected impacts, a need for accurate baseline data, potential problems with equity, and the need for independent reviews

to insure confidence in the reliability of information used to determine incentive payments.

44. NATIONAL SCIENCE FOUNDATION. Measures of Metropolitan Police Industry Structure. Service Structure Matrices for the Albany/Georgia SMSA (Standard Metropolitan Statistical Area): Police Services Study. Technical Report. By J. P. McIver. Bloomington, Indiana University Department of Political Science, 1975. 27 p.

(NCJ 36772)
Pub. No. T-5

Service structure matrices illustrate the computation of the measures of the structure of interorganizational arrangements for policing in metropolitan areas. Consumers and producers for each of 10 police services, half "direct" and half "auxiliary," are arrayed on a matrix. Each cell in a matrix identifies a dyadic relationship between one producer (police agency) and one consumer (service area) for a particular service. Within each cell of a matrix as many as six service code indicators appear to describe relationships between a producer and a consumer. The first letter describes the provision of police services by the producer to the consumer as irregular, regular, coordinated, or alternated. The second code describes the relationship as written, unwritten, or own. The third code indicates whether or not the service is produced for a fee or by own. The last three codes are used only to describe alternate relationships. The fourth code notes exclusive or nonexclusive service. The fifth code identifies the type of alternate production of service, and the final code indicates the location of alternate service provision. The police services described are burglary investigation, homicide investigation, general area patrol, traffic patrol, traffic investigation, dispatch, training, detention, and crime lab analysis (both chemical and narcotics). For each service, 23 structural measures appear below the matrix. For an explanation of these measures, see NCJ 36781.

45. On Righteousness, Evidence, and Reform: The Police Story.
By E. Ostrom. Bloomington, Indiana University, undated. 29 p.
MICROFICHE (NCJ 29529)
Pub. No. R 75-7

The author reviews the case for police consolidation and finds that there is absolutely no evidence supporting the idea that consolidation leads to improved or less costly police services. The article traces the development of the concept of the total consolidation of local police departments from the 1967 President's Commission. The author finds that although the belief that the merger of small local agencies will lead to improved efficiency and provide more cost effective police services is widespread and often quoted, there is

absolutely no empirical evidence to support this contention. Using the results of a number of earlier studies conducted by the author and her associates the author indicates that there is evidence that smaller police departments provide generally better police field services for less cost than larger departments, and that there is some evidence that medium-size departments are the most effective and least costly for the quality and amount of services rendered. The author concludes that certain economies of scale might result from the consolidation of certain support services in small local departments such as criminalistics, but there is every indication that the consolidation of field services will reduce the quality of services rendered and make them more costly.

46. Public Services Industry Approach to the Study of Police Metropolitan Areas: Police Services Study. Technical Report. By E. Ostrom, R. B. Parks, and G. P. Whitaker. Bloomington, Indiana University Department of Political Science, 1976. 37 p.

MICROFICHE (NCJ 36781)

Pub. No. T-19

This report discusses measures which provide a method for describing differences and similarities in interorganizational arrangements for different police services within a metropolitan area. A private industry (producers-consumers) approach is used to describe the patterns of service delivery between police agencies and individual citizens or households and the patterns of relationships among different agencies in the Fayetteville, North Carolina, Standard Metropolitan Statistical Area (SMSA). Both direct (general area patrol, traffic investigation, burglary investigation) and intermediate (radio communications, entry-level training, adult pretrial detention) services are measured according to each of seven service areas and to the type of production (regular or irregular). The relationships among producers and their consumers are arrayed in a service matrix according to the following service delivery measures: fragmentation, multiplicity, independence, autonomy, alternation, coordination, duplication, and dominance. Fragmentation is defined as the number of service areas for the service, multiplicity as the number of producers of the service, and independence as the number of service areas receiving service from their own producer divided by the total number of service areas. Autonomy is the number of service areas receiving service from their own producers exclusively divided by the total number of service areas. Coordination is the number of service areas receiving service from a coordinated arrangement between two or more producers divided by the total number of service areas. Alternation is defined as the number of service areas receiving service from alternating producers in time, space, or clientele divided by the total number of service areas. Duplication occurs when a service area receives a service from two or more separate producers and dominance counts the number of service

areas served by the largest producer in the metropolitan area. For a related document, see NCJ 36772.

47. NATIONAL SYMPOSIUM ON POLICE LABOR RELATIONS: GUIDELINES AND PAPERS. WASHINGTON, D. C. JUNE 9-12, 1974. Gaithersburg, Maryland, International Association of Chiefs of Police, 1974. 82 p. (NCJ 15497)

This publication presents the guidelines that evolved from a symposium sponsored by the International Chiefs of Police, the Police Foundation, and the Labor-Management Relations Service. Four key issues were discussed: the role of labor and management in the labor relations process; professionalization and unionism in law enforcement; productivity in law enforcement; and key issues in police unionism--national unions, strikes, discipline, and corruption. Four discussion sections corresponding to the issues were selected. Each section was composed of three subgroups: mayors, city managers, county executives; police chiefs; and police union officials. The discussion sections met for one-and-a-half days. The proposed policy recommendations were then prepared through the joint efforts of the section moderator, resource person(s), and a representative of each subgroup in the discussion section. These proposals were then reviewed by all the symposium participants at a plenary session. Members of the session approved, disapproved, or modified the proposed recommendations. The labor relations guidelines contained in the first part of this report represent the consensus of the plenary session on the recommendations developed by the discussion groups. The second section of this report contains the concept papers prepared by seven knowledgeable practitioners in the field of police-labor relations. These papers were used as a guide for the discussions that took place at the National Symposium on Police Labor Relations.

48. PENNSYLVANIA DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. Perceived Opportunities for Improving Productivity in the Harrisburg Bureau of Police. By J. C. McDavid and D. N. Allen. University Park, Pennsylvania State University Institute of Public Administration, 1976. 119 p. (NCJ 38225)

This study reports on the perceived opportunities for productivity improvements in the Harrisburg Police Department, as seen from the results of a survey given to 52 (nearly one-third) of the police officers involved. The most consistent finding was the high level of concern expressed by officers over the need for a fair and equally administered promotion policy. Other positively related productivity factors were identified as more inservice training, more basic training, better equipment, and more concentration on crime and less on non-crime-related services. Other factors were identified as in-

creasing the real patrol time, decreasing foot patrols, and eliminating one-man patrol cars. Responses are broken down by such categories as officer's ranks, assignments, home location, and age.

49. QUARLES, C. L. Police Manpower Alternatives. Law and Order, v. 25, n. 5: 44, 46-50. May 1977. (NCJ 41405)

This article examines the reasons for using sworn and nonsworn police personnel. There are numerous manpower alternatives to the use of sworn police officers working within every division of the police department. These important considerations should be made by every police department to determine where civilians or nonsworn officers may be used. The benefits, where professional standards are promulgated, are dollar savings, the increased availability of police officers to their primary task, and increased productivity in law enforcement and in the specialized auxiliary services because the best people are working in their own area of expertise. Morale, motivation, and productivity are at their highest level when the best people are placed in the positions for which they are qualified. The use of nonsworn personnel should always be made with the broadest bases of police efficiency, effectiveness, and economy as the primary consideration.

50. RHODES, W. R. Behavioral Science Application to Police Management. Police Chief, v. 37, n. 5:46-50. May 1970. (NCJ 02861)

Behavioral science theories and various administrative viewpoints regarding employee motivation are presented along with suggestions for implementation of participative management to increase productivity. To critics of police productivity it seems that police are unwilling to put forth any more than minimum effort, even though they are well paid and have good fringe benefits and job security. The problem can be explained by a "hierarchy of needs." As soon as one human need is satisfied, another appears in its place. After physical, safety, and social needs are fulfilled, people are free to concentrate on ego needs. If people are content with present attainments, they lack personal goals and become frustrated and unmotivated: a situation which causes problems for administrators. Police managers must realize that today's police officers, unlike those of a previous era, do not have to worry about their physical or social needs. They feel an increasing need to assert their individuality, and administrators must gear management control to the needs of modern officers. Two basic administrative viewpoints on employees are summarized: one is based on the assumption that the average human being has an inherent dislike of work and will avoid it if possible; the other arises from the belief that the expenditure of physical and mental effort in work is as natural as play or rest. The first is the traditional or defensive view; it leads to one-way communication, top level deci-

sionmaking only, and clear-cut instructions to workers. The second is a participative concept; it involves two-way communication, line officer involvement in planning, and decisionmaking at the most logical level. The author points out that different situations call for different types of supervision; a management style should be tailored to fit the particular characteristics of each task, supervisor, and subordinate relationship. Examples of companies that have implemented participative management are cited. Suggestions for implementation of the approach and a 19-question data collector designed to help the administrator pinpoint problem areas are presented. References are provided.

51. RICCIO, L. J., Ed. Police Productivity: Proceedings of the Criminal Justice Symposium, July 19, 1974. Bethlehem, Pennsylvania, Lehigh University Department of Industrial Engineering, 1974. 82 p.
MICROFICHE (NCJ 29989)

This is the proceedings of a police productivity symposium sponsored by the Department of Industrial Engineering of the Lehigh University and the National Commission on Productivity in July 1974. A series of papers were presented at the Criminal Justice Symposium focusing on police productivity by respected representatives of the criminal justice and public administration fields. Topics and authors include "Productivity Bargaining and the Police," by Edward K. Hamilton; "The Police Manager and Productivity," by J. P. Morgan; "Police Productivity and the Patrol Officer," by Edward J. Kiernan; "Police Productivity--The Management Analyst's Viewpoint," by Lucius J. Riccio; "Police Productivity--Perspectives for the Future," by Patrick V. Murphy; "Operational Police Performance Measures and Their Use in Resource Association," by Richard C. Larson; "Management and Control of the Apprehension Function," by George Hansen; and "Police Productivity Measurement: Initial Approaches and Practical Problems," by Philip Schaneman.

52. RICE, J. E. and H. C. ZAVISLAK. Police Paraprofessionals in Jackson, Michigan. Police Chief, v. 44, n. 1:47-49. January 1977.
(NCJ 38567)

This article presents a description of a 2-year old program in Jackson (Mich.) to improve the productivity and professional attitudes of members of the police force by recruiting and training students to respond to noncriminal service calls. The authors discuss the implementation and operation of the program, as well as favorable evaluations of the program in terms of service statistics and departmental acceptance. They conclude that the police cadet program has proven itself to be an effective method of achieving professionalism and high productivity in an efficient and cost effective way.

53. SAN JOSE (CALIF.) POLICE DEPARTMENT: FOUR DAY-FORTY HOUR WORK WEEK FOR NON-UNIFORM PERSONNEL. A FEASIBILITY STUDY. San Jose, California, San Jose Police Department, undated. 60 p.

MICROFICHE (NCJ 32145)

This study of the feasibility of a 4-day work week with 10-hour days for nonuniform, sworn police personnel was conducted to determine its impact on the efficiency and effectiveness of police services. The study was conducted between September 1975 and January 1976. It was part of an agreement between the City of San Jose, Calif., and San Jose Police Department employee representatives. A modification of the scientific method was used for the study. A review of literature and the interviewing of some of the department's top managers identified issues, and local data were collected to support the issues. The 20 largest police departments in California were surveyed to review their experiences with a 4-day, 10-hour work program. A questionnaire was developed, tested, and administered to 129 investigators within the San Jose Police Department. A detailed explanation of the procedures in each of these phases is presented in the report. Based on the review of literature and the statewide survey of other departments, it is concluded that success or failure of a "4-10" plan is dependent on local conditions; none of the cities surveyed has successfully implemented a 4-10 work week for nonuniform sworn personnel; and generally, a 4-10 work week is more apt to succeed if certain implementation requirements are adhered to. The attitudes of top department managers toward 4-10 plans revealed that a majority were negative, were very negative, or tended toward negative. Advantages and disadvantages of the plan, as identified through the questionnaire, are outlined and categorized by whether they have an operational, transitional, or personal impact. While personal issues appeared to favor a 4-10 plan, operational issues pointed more toward the negative side. In general, the analysis did not support the belief that a 4-10 plan would result in an overall increase in operational efficiency. Supporting data are provided throughout, and a sample of the questionnaire and a summary of activity for investigative personnel are appended.

54. SIGHEL, J. L. Challenge of Patrol Performance Evaluation in the Study of Policewomen. New York, Vera Institute of Justice, undated. 40 p.

MICROFICHE (NCJ 44587)

The strengths and weaknesses of traditional measures of patrol performance are discussed, and the development of an observation system for evaluating the performance of male and female patrol officers is described in this paper that was presented to the National Conference on Criminal Justice Evaluation on February 22, 1977. Traditionally, measures of patrol outcome, particularly productivity measures, have been used to assess patrol officers' performance. Other traditional measures include rating scales and test scores. The ac-

tual observation of patrol performance is less common, as is evaluation by clients of police service. In addition, arrest quality measurement has emerged in counterpoint to arrest productivity counts. It became apparent to researchers involved in evaluating the performance of female police officers in the New York City Police Department that, although many existing patrol performance measures were appropriate in a study of policewomen on patrol, the measures needed to be refined and expanded. The researchers focused on firsthand observation as a means of obtaining information on how men and women conduct the patrol process. A new patrol measure--controlling--was developed. Controlling behavior involves the officer's attempts to influence citizens to take a particular action. Other modes of policing process measurement developed include citizen interviews and reviews of departmental arrest reports. The New York study derived the most valuable indicators of patrol performance from observations recorded by observers who accompanied officers on 8-hour tours of duty. It was concluded that firsthand patrol observation, supplemented by tests of performance in simulations of physically demanding patrol events, is the evaluation method of choice. Details of the observation methods developed, a copy of the form and codes used by observers, and a copy of a self-evaluation questionnaire for patrol officers are included.

55. STAUDO HAR, P. D. Experiment in Increasing Productivity of Police Service Employees. Public Administration Review, v. 35, n. 5:518-522. September-October 1975. (NCJ 29214)

Comments and suggestions concerning the police incentive plan experiment of the city of Orange, California, are discussed. This article examines an experiment in productivity bargaining between the city of Orange, California, and the City of Orange Police Association. The plan, in force from 1973 to 1975, provided for police salary increases dependent on reductions of reported rape, robbery, burglary, and auto theft over a predetermined period of time. Although particular crimes increased during the measured periods, overall reduction allowed maximum salary increases under the plan. The difficulty of measuring crime rates and police effectiveness is discussed and suggestions for possible improvement are provided. Pertinent sections of the incentive plan are included.

56. STRONGE, W. B. Economics of Crime and Law Enforcement. Springfield, Illinois, Charles C. Thomas, 1976. 518 p. (NCJ 37726)

This text is a collection of 24 contemporary writings (see NCJ 37727-37750) that deal with economic interpretations of crime and law enforcement services, many of which are empirically tested. Divided into 4 sections, it first covers the theoretical models of criminal

behavior, thus providing a framework for later analysis. In the second section, many of these models are tested. The economic aspects of society's response to crime through law enforcement systems are reviewed in the third section. Finally, section four illustrates the diverse nature of the economist's research tools which have been applied to the criminal justice system. Theoretical and empirical discussions are provided on a wide range of subtopics, including the cost of crime, income and delinquency, the returns of crime, unemployment and crime, economies of scale in the provision of police services, deterrence, correction, and criminal justice system modeling. The purpose of this book is to bring together important contemporary articles on the economics of crime and to serve as an aid to students and analysts in the areas of economics, sociology, and criminal justice. The individual crime decision and society's response to this decision through law enforcement and criminal justice systems are explored. This is a suitable text for courses on the economics of criminal justice.

57. TATUM, G. H. Combating Crime: Full Utilization of the Police Officer and CSO (Community Service Officer) Concept. Police Chief, v. 44, n. 4: 46-47, 50, 87. April 1977. (NCJ 40823)

This article illustrates how the police officer can work with the community for maximum efficiency in fighting crime. The implementation of a community service officer program is described. Some of the functions of the community service officer include traffic enforcement, animal control, safety education for bicyclists, and assisting people in distress. Specialization versus generalization of community service programs is discussed. Methods are presented for evaluating community service programs involving productivity, clearance rates, and response times.

58. TYLER, G. K. and C. HASTORF. Prodme: Development of a Productivity Measuring System for Patrol Officers Within a Municipal Police Agency. Fremont, California, Fremont Police Department, 1976. 74 p. MICROFICHE (NCJ 34461)

This is a report on a Fremont, California, project to establish a point system productivity index in order to monitor individual officer's responses to department goals and objectives and to evaluate officer productivity. The researchers designed and implemented a daily productivity log which was utilized to record the frequency of activities for each officer on a daily basis, and an officer's monthly achievement report which was utilized as a feedback instrument for the officer to display his total point accumulation in comparison to other officers. The second phase of this project consisted of simultaneously monitoring the Prodme target group and a control group by

computer. The automated phase involved the assigning of additional data to the present officer activity file. By having this data available on a monthly basis, the supervisor can easily observe the officer's progress and thus plan for the latter's training and counseling needs. Productivity ratings of those officers measured were found to increase each month. Prodme group productivity was significantly higher than that of the control group.

59. U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT. Hypercube Queuing Model for Facility Location and Redistricting in Urban Emergency Services. By R. C. Larson. New York City-Rand Institute, 1973. 60 p.

(NCJ 11696)

Pub. No. R-1238-HUD

The methodology suitable for computer implementation to assist urban administrators in various redistricting and dispatching problems of emergency service systems is discussed. Building on work done previously by others, this report develops computationally efficient algorithms that allow one to evaluate numerically the performance characteristics of systems having up to 12 emergency response units. The hypercube model is described and discussed in detail. The report includes a review of literature pertaining to urban facility location and redistricting. A concluding section covers promising extensions and generalizations.

60. Hypercube Queuing Model: User's Manual. By R. C. Larson. New York City-Rand Institute, 1975. 108 p.

MICROFICHE (NCJ 29826)

Pub. No. R-1688/2-HUD

Step-by-step instructions are detailed for collecting data and operating the Hypercube Queuing Model program. The Hypercube Queuing Model is a computer program to assist police departments in designing patrol beats and analyzing other questions related to the geographical details of patrol car operations. It stores geographical information like a dispatcher's map. Any changes that could possibly be shown on a dispatcher's map, such as increasing or decreasing the number of patrol cars, changing the patrol areas of cars, or overlapping or combining patrol areas, can be studied with the model. This report describes and gives examples of applications; describes the procedures to operate the computer program once it has been installed in the user's computer system; and discusses the decisions to be made (such as the dispatching strategy employed), the results, and the costs and requirements for operation. The program is written in PL/1 computer language. For the executive summary, see NCJ 28925.

61. U.S. DEPARTMENT OF JUSTICE. Law Enforcement Assistance Administration. Consolidation of Police Services Case Study: Jacksonville, Florida. Research Papers, Volume 2. Falls Church, Virginia, Koepsell-Girard and Associates Inc., 1973. 257 p. MICROFICHE (NCJ 16025)

This is a collection of five working papers, including descriptions of the transition and the first 4 years of consolidated law enforcement, analyses of costs, and the quality of consolidated police services. General government consolidation, police services transition, and the key issues faced in police services consolidation are discussed. A profile of key changes and improvements in departmental structure, manpower, or programs which have occurred in the office of the sheriff since consolidation is provided. The conceptual approaches to economies of scale and the allocation of resources in law enforcement are examined. The cost of law enforcement services, the law enforcement budget and its relation to the evaluation of program effectiveness, the cost of law enforcement since consolidation, and the economies of scale of selected law enforcement activities are analyzed. Finally, the effect of consolidation on the productivity and quality of law enforcement in Jacksonville is investigated. For the text of the consolidation of police services case study and additional research papers, see NCJ 16024 and 16113.

62. _____ . Law Enforcement Assistance Administration. Crime Analysis Program (CAPER): Evaluation for Police Patrol Productivity Application. Police Technical Assistance Report. By F. A. Newton and J. F. Francini. Arlington, Virginia, Westinghouse Justice Institute, 1975. 11 p.

(NCJ 30184)

Pub. No. R-75-107

This report, dated October 15, 1975, assesses the utility and applicability of the CAPER system to the planned patrol productivity program and its possible uses in improving crime analysis-crime prevention capabilities. The police section of the Office of Regional Operations, LEAA, Washington, is developing a multiyear \$2.2 million program directed at improving the productivity, effectiveness, and deployment of patrol units through the effective use of departmental crime analysis units, crime prevention units, and their analysis support to patrol operations. The Crime Analysis-Project Evaluation-Research System (CAPER) was developed to provide medium-sized cities and counties with a relatively simple crime analysis, project evaluation, and research capability. This system application appears to offer strong potential for use as a crime analysis mechanism, particularly with the target groups that will participate in the planned Police Productivity Program. Accordingly, this assignment provides an evaluation of CAPER from transfer and utility viewpoints. To accomplish this task, interviews were scheduled with the

CAPER project director and three departments within Santa Clara County that use CAPER for crime analysis purposes. During the course of the interviews with the San Jose Police Department personnel, the demonstrated capabilities of the expanded Geo-Data Analysis and Display System (GADS) were discussed as an attractive alternative to CAPER for consideration. Accordingly, the potential of GADS as a crime analysis tool was also investigated. A review of the CAPER system revealed that the system is not online and produces information to most of its users on a quarterly basis. Two of its users get the information every month. Because of the information lag, it was concluded that CAPER would not be supportive of a Patrol Productivity Program. Another shortcoming of the system is that CAPER does not edit cleared crimes from the population and does not interface with any information system of known offenders. However, it was found that the GADS system is effective and can be easily transferred to other law enforcement applications. The technique employed can be applied to any application where there is a need to assign personnel by geographical area for the purpose of providing timely services. It was recommended that strong consideration be given to the GADS (Geo-Data Analysis and Display System), developed by the San Jose Police Department, in the advanced stages of the Patrol Productivity Program.

63. _____ . Law Enforcement Assistance Administration. Integrated Criminal Apprehension Program: Crime Analysis Executive Manual. Preliminary Draft. By R. P. Grassie, R. V. Waymire, J. W. Burrows, C. L. R. Anderson, and W. D. Wallace. Washington, 1977. 80 p.
MICROFICHE (NCJ 43900)

This overview of crime analysis and its impact on police department activities is written for the administrator and addresses the considerations and decisions necessary for implementation of a crime analysis unit. After an overview and historical survey of crime analysis, this manual discusses what crime analysis can do for the executive, what its relationship should be to other departmental functions, and what its relationship should be to outside criminal justice agencies. Manual, semiautomated, and the automated systems are described. The section on the implementation process covers delineation of objectives, capabilities and limitation of various systems, and organizational and operational requirements. Personnel, equipment, and supplies needed for each type of system are listed, along with education and training required. Figures illustrate typical crime analysis bulletins, possible tactical responses to various crime patterns, use of crime analysis in total departmental decisionmaking, and unique descriptors which should be gathered by patrol officers to generate good analysis data. It is emphasized that, to be most effective, crime analysis must have the support service. For other manuals in the set, see NCJ 43901, 43902, 43903, and 43937.

64. _____ . Law Enforcement Assistance Administration. Patrol Emphasis Program. Interim Evaluation Report. Duluth, Minnesota, Duluth Office of the Mayor, 1976. 66 p. MICROFICHE (NCJ 35323)

This is an interim evaluation of a program developed by the Duluth Police Department to improve patrol productivity by concentrating resources during those times when demands for service require the highest level of response. The patrol emphasis program was designed to augment the patrol force by utilizing officers employed on a voluntary overtime basis during hours of peak workload. Preliminary findings indicate that response times during peak workload hours remained lower than aggregate response time and that the project goal of an 11 percent reduction in response time during the period of program operations was attained for emergency and nonemergency calls. Recommendations include expanding project goals of the patrol emphasis program to include a goal of crime reduction.

65. _____ . Law Enforcement Assistance Administration. Productivity Analysis of Selected Law Enforcement Services in Boulder County (Colo.). By M. D. Williams. Denver, Colorado, Denver Regional Council of Governments, 1976. 201 p. (NCJ 37000)

This study provides general data on Boulder County (Colo.) crime and analyzes certain policies of the patrol division of the Boulder County Sheriff's Department. Demographic and social factors are examined for the unincorporated area of Boulder County. Personnel characteristics, budget, shift assignments, and patrol officer productivity of the sheriff's department are discussed. Data on burglaries, larcenies, robberies, assault, motor vehicle theft, and vandalism are presented by zone and by shift. Policy analysis sections cover the effectiveness of having patrol officers perform investigations typically assigned to detectives, a burglary policy for Boulder County, the effectiveness of reassigning personnel, and factors critical to work schedules.

66. _____ . Law Enforcement Assistance Administration. Puerto Rico: Crime Laboratory Study. Police Technical Assistance Report. By B. J. Hoel and J. D. Nicol. Kansas City, Missouri, Midwest Research Institute, 1975. 111 p. MICROFICHE (NCJ 29606)
Pub. No. 75-48

A crime laboratory study is presented for the Puerto Rico Crime Commission which affects the island of Puerto Rico, with a population of 2,883,747, a police strength of 9,463, and an area of 3,435 square miles. Various measures of crime lab productivity and perceived usefulness were taken, including total cases, types of cases, cases

to lab as a function of distance from submitting agency, cases per officer, case load per examiner, and court testimony. The data were analyzed and recommendations were made on workload, resource utilization, laboratory procedures and methodology, and crime scene search training and equipment. Appendixes include a suggested crime scene search training program, a discussion of equipment usage, and crime lab management guidelines.

67. U.S. DEPARTMENT OF JUSTICE. Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Assessment of Productivity and Cost of Municipal Police Patrol Services. By S. Vanagunas. Doctoral Dissertation, Michigan State University, East Lansing, undated. 183 p. MICROFICHE (NCJ 29532)

This study proposes techniques for assessing the productivity of municipal police patrol services. The study attempts to classify "output" in terms of services rendered and "input" in terms of costs to derive a model providing the economically optimal operating conditions for patrol operations. An economically productive patrol division was found to be one that has a high rate of arrests resulting from responses to crime-related calls, one which minimizes patrol time elapsed per dispatch event, and one which maximizes the degree of satisfaction with police service expressed by those using it. Specific productivity measures are provided.

68. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Case Screening and Selected Case Processing in Prosecutors' Offices. By W. Merrill and M. Milks. Washington, U.S. Government Printing Office, 1973. 46 p. MICROFICHE (NCJ 08043)
Stock No. 027-000-00183-1

Recommendations are presented for implementing screening and special case units to achieve the object of efficiently utilizing prosecution resources. Effective case screening by prosecutors can increase the efficiency of the prosecutor's office and the courts. Some cases are too minor to merit the cost of prosecution; sometimes the available evidence cannot reasonably be expected to produce convictions. Society's interests might be better served in other cases if formal proceedings were suspended on condition that the offender participate in a rehabilitation or treatment program. One benefit of such case screening is that some of the resources of the prosecutor's office can be concentrated on processing selected cases involving dangerous crimes or repeat offenders. The report includes descriptions of alternative screening and special case processing programs, factors to be considered in choosing a particular alternative, steps in implementing a program, recommended policies for the staffing units, and recommended operating procedures.

69. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Criminal Investigation Process: Dialogue on Research Findings. Santa Monica, California, Rand Corporation. U.S. Government Printing Office, 1977. 75 p.
(NCJ 40331)
Stock No. 027-000-00510-1

In 1973, the National Institute of Law Enforcement and Criminal Justice awarded a contract to the Rand Corporation to undertake a nationwide, 2-year study of the effectiveness of police investigative practices. The criminal investigation process in municipal and county police departments was studied by survey, by interviews and observations, and by special data collection. In October 1975, the Rand Corporation published its findings and proposed reforms in 3 volumes. The principal finding of the research was that, although the solution or clearance of reported crimes is the primary focus of police investigators, most clearances are arrived at through the activities of patrol officers, the public, and routine police procedures, rather than investigative techniques. It was further suggested that solutions for only a very small percentage of crimes, concentrated in a few specific crime types, are generated through the use of what has been traditionally thought of as investigative efforts. Much of this traditional investigative effort is applied to crimes which empirical evidence indicates will never be solved. As a result of this finding, along with others on fingerprint processing, the use of information systems, strike forces, victim satisfaction, and post-arrest investigation thoroughness, the researchers suggested a number of reforms intended to result in more effective and efficient investigation activity. When the study was made public, it sparked a debate in the law enforcement community. A critical analysis of the Rand research and the researcher's response appeared in the July 1976, issue of the Police Chief. The critical evaluation purported to demonstrate that the Rand study contains "procedural errors," has a "fatally limited" data base, and "presents conclusions that do not follow from the data presented." In their response, the Rand researchers, while acknowledging some instances of "imprecise or misinterpretable wordings," contend that no contradictory evidence has been brought forth that suggests that their basic conclusions are erroneous. Because of the importance of the issues involved, the National Institute has compiled its report, which includes the original summary of the criminal investigation study, the critical analysis, the researchers' response, and a revised summary prepared by the researchers.

_____. Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. An Alternative Approach in Police Patrol: The Wilmington Split-Force Experiment.

By J. M. Tien, J. W. Simon, and R. C. Larson. Cambridge, Massachusetts, Public Systems Evaluation, Inc. U. S. Government Printing Office, 1977. 246 p.

(NCJ 43735)

Stock No. 027-000-00668-0

An 18-month study--including a 6-month design and 12-month evaluation period--of the split-force concept as implemented by the Wilmington (Delaware) Bureau of Police. The split-force experiment is based on the separation of the call-for-service (CFS) response and crime prevention functions into separately organized groups: the Basic Force and the Structured Force. The evaluation methodology used was based on a one group pretest-posttest design with observer-participant surveys, as well as use of quantitative measurement tools including the Patrol Car Allocation Model (PCAM) and the Hypercube simulation model. The formal evaluation concluded that CFS response efficiency defined in terms of an officer workload index was increased by 20.6 percent with no adverse effect on officer effectiveness; the quantity of Patrol Division arrests and clearances was also increased at the expense of these rates in the Detective Division; the increase in arrests was primarily attributed to immediate incident-oriented followup investigation. Management of police demand was identified as a potentially effective approach in the delivery of police services and was highlighted by the positive citizen attitude response to a formal 30-minute delay to noncritical calls for service during peak workload hours. The evaluation has provided reinforcement to certain questions raised by the Kansas City Preventive Patrol Experiment and the Rand Investigation Study in terms of resource allocation and efficacy of manpower deployment models. In addition, this evaluation has identified some potential problems that organizations considering implementation of the split-force concept should address: the divisiveness engendered by the conflict between the Structured Unit and the Detective Division; the concern over the lack of sector identity (due to changing sector configurations and first-come, first-served dispatching procedure); and the boredom with fixed-post assignments. As a result of the evaluation and the measured significant increase in efficiency without adverse impact on effectiveness, the Wilmington Bureau of Police has decided to continue using the concept indefinitely.

71. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Felony Investigation Decision Model: An Analysis of Investigative Elements of Information. By B. Greenberg, C. V. Elliott, L. P. Kraft, and H. S. Procter. Menlo Park, California, Stanford Research Institute. U.S. Government Printing Office, 1977. 237 p.

MICROFICHE (NCJ 35741)
Stock No. 027-000-00467-9

Research was performed in Oakland (Calif.) to develop decision models for felony classes which would identify cases having sufficient probability of clearance to warrant intensive investigation. The felonies involved were robbery, rape, assault with a deadly weapon, and car theft. Data were coded for these four crimes for a 3-month period in Oakland. It was only found feasible to construct a decision model for robbery. Primary case-solution factors, such as victim knowledge of offender, statistically dominated other random factors. The findings showed that, unless offender identification was made by the responding officers, case solution at the detective level was minimal. Therefore, it was concluded that patrol and investigative functions cannot be viewed as completely separate. Documentation of relevant crime scene information by patrols was found to heavily influence case solution by investigators. The findings reinforced the importance of the issue of habitual offenders. Analyses of the felony case sample drawn showed 80-88 percent of the suspects had prior offenses. Confronted by similar experience, many police agencies have turned to computerbased M.O.-type investigative systems to assist in tracking and identifying known offenders. Such systems have not yet demonstrated marked success.

72. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Full-Service Neighborhood Team Policing: Planning for Implementation. St. Petersburg, Florida, Public Safety Research Institute, Inc., 1975. 201 p.

MICROFICHE (NCJ 27934)

This manual contains 10 articles which provide comprehensive information on the organization, operation, planning, and implementation of team policing services. One promising approach to improving police productivity that has gained considerable support is team policing. However, to be implemented successfully, the full-service neighborhood team policing concept requires careful planning and extensive management and operational training. This manual provides information which should be helpful in planning and implementing full-service neighborhood team policing. Original and reprinted articles are included and the subjects covered are definitions of team policing, the integration of the full-service and neighborhood team policing concepts, organizational development for team policing, team policing

and unionism, and factors to consider in planning for team policing. Also discussed are the fullservice model of policing, the potential uses of police middle management in effecting police change, and the democratic model of police organization. The appendixes include reports and materials from three team policing or full-service programs in the United States.

73. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Implementing and Evaluating Police Program Performance Measures: Proposal To Conduct Phase 2 of the National Project To Develop Police Program Performance Measures. Sacramento, California, American Justice Institute, 1976. 125 p. MICROFICHE (NCJ 38696)

Phase 1 research was designed to develop a comprehensive, valid, and practical set of effectiveness and productivity measures for police program performance. Research efforts produced tools which, when combined, form a system of measures. These tools include basic program objectives, a specification of desired police objectives converted to measurable outcome form, a schedule of recommended police program performance measures, objectives-related effectiveness, and productivity measures, and formulas and specifications of data needed to compute measures. Piloting, evaluating, refining, and packaging the set of measures for dissemination are the proposed objectives of Phase 2. This proposal outlines in detail these Phase 2 objectives, project methodology, participant cities, project schedule, organization, staffing, and project evaluation. Appended materials include a description of the Phase 1 project, a representative listing of implementation, operation requirements and issues, and a major tasks work plan.

74. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Improving Patrol Productivity, Volume 1: Routine Patrol. Prescriptive Package. By W. C. Gay and S. Schack. Washington, University City Science Center, U.S. Government Printing Office, 1977. 204 p. (NCJ 42500)
Stock No. 027-000-00560-8

Patrol operations are the single most costly aspect of policing. Improvements in patrol productivity depend upon the efficient utilization and management of patrol officers' time. Focusing on the general patrol division, the first volume of this report recommends specific steps that departments of all sizes can take to improve the efficiency and effectiveness of their operations. The ideas and information presented in this Prescriptive Package were drawn from a variety of sources. A review was made of literature relating to patrol operations, and site visits were made to 26 different depart-

ments in order to review innovative patrol programs and to develop an understanding of the departmental context in which they were implemented. Included in the volume are detailed discussions of patrol workload analysis as the basis for developing efficient and effective deployment schemes and management of call-for-service workloads and the prioritization of calls-for-service. Also covered are the use of crime analysis in support of routine patrol operations and the conducting of preplanned and directed prevention, deterrence, and apprehension activities. The volume concludes with the presentation of selected case studies of departments which have implemented many of the approaches outlined and with a discussion of the major issues faced in planning, implementing, and evaluating changes in the patrol function. For volume 2 relating to the same subject, see NCJ 42501.

75. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Improving Patrol Productivity, Volume 2: Specialized Patrol. Prescriptive Package. By S. Schack and W. G. Gay. Washington, D.C., University City Science Center. U.S. Government Printing Office, 1977. 157 p.

(NCJ 42501)

Stock No. 027-000-00561-6

This is the second part of a 2-volume Prescriptive Package which is directed toward assisting police departments in improving the productivity of their patrol operations, the most costly aspect of policing. Recommendations in the report are based on a state-of-the-art review of patrol operations in many police departments throughout the country and an assessment of recent research and commentary on patrol. Presented is a discussion of the appropriate use and effective operation of specialized patrol. The authors point out that specialized patrol should be considered when the best efforts of routine patrol officers to cope with particular crime problems are being frustrated due to frequent interruptions by call-for-service demands and the inability of uniformed officers to employ certain types of tactics. Specialized patrol tactics are covered, including decoy operations, stake-outs, and covert surveillance. The volume further provides recommendations regarding the planning, implementation, deployment, tactics, and evaluation of specialized patrol operations. An annotated bibliography is appended. For the first part of the report, see NCJ 42500.

76. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Increasing Police Productivity: A Study of Patrol Cars, Communications, and Operations. By R. G. Pfefferkorn and A. J. Bruckheim. McLean, Virginia, Mitre Corporation, 1974. 115 p.

MICROFICHE (NCJ 28479)
Pub. No. MTR - 6731

This study reports the results of a 16-month study of patrol cars, patrol operations, and supporting equipment performed onsite at the Indianapolis Police Department. Improved policy and management practices and resource utilization and control methods which can lead to increased productivity are discussed. Major factors bearing on patrol unit costs are identified. The one-man, take-home car policy is shown to provide the best return for the investment. Recommendations are made for design, production, and procurement of improved cars and vehicular subsystems, and for improvement of communications and patrol equipment, based partly on results of an analysis of Indianapolis patrol operations reported in the appendixes.

77. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Measuring Police Effectiveness and Productivity, Volume 1: Concepts and Tools. Draft. Sacramento, California, American Justice Institute, 1976. 171 p.

(NCJ 44735)

The first phase of a 3-part project concerned with measurement of police effectiveness and productivity and the development of tools to perform this measurement is described. The project was initiated to supply measures which would enable police agencies, their parent governments, and public constituencies to assess police effectiveness and productivity more definitively and meaningfully. In addition to the actual system of measures which were developed during the project, a series of interrelated capabilities and tools are supplied for use by police in conjunction with the measures of effectiveness and productivity: measurable police objectives; corresponding objective-specific measures of effectiveness and productivity; instructions and procedures for computing the measures; standards for establishing definitive assessments of performance; and readily identifiable and tested program responses. A chapter is devoted to the description, discussion, and evaluation of each tool and its development and implementation. Guidelines are given for the immediate application of the two tools actually provided as a result of the Phase 1 research (measurable objectives and corresponding measures of effectiveness and productivity). Ways in which police may use these tools to fulfill both measurement and nonmeasurement purposes are outlined. The authors emphasize that the products of this phase of the research are still subject to field testing, refinement, and evaluation. Appendixes provide a summary of the project guidance committee's evaluation of the

objectives developed, their evaluation of the measures, and a methodology for estimating the time and cost of the measures' computation. For volumes 2 and 3 of this report, see NCJ 44736 and 44737.

78. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Measuring Police Effectiveness and Productivity, Volume 2: Measurable Police Program Objectives and Measures of Police Effectiveness and Productivity. Draft. Sacramento, California, American Justice Institute, 1976. 110 p. (NCJ 44736)

The results of a project concerned with the development of measures of police effectiveness and productivity are reported and explained. This volume details two major tools necessary for police to measure their effectiveness and productivity. The first is a structure of measurable police program objectives which consists of a police mission statement, 5 basic objectives, 17 transitional objectives, and 59 measurable objectives. It outlines the most general police responsibilities in the mission statement and indicates their specific tasks in the basic objectives. Charts are given which list these objectives and illustrate their relationships. The second major part consists of the system of measures. It is composed of 369 effectiveness measures divided into core, internal trend, external trend, internal norm, and external norm measures; and 60 productivity measures with the same divisions. The core measure evaluates the degree of effectiveness (level of objective accomplishment) or the degree of productivity (cost of objective accomplishment), with regard to the measurable objective. The measures are presented in charts without commentary; their placement indicates their interrelationships. For volumes 1 and 3 of this report, see NCJ 44735 and 44737.

79. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Measuring Police Effectiveness and Productivity, Volume 3: Survey Research Instruments and Methodology. Draft. Sacramento, California, American Justice Institute, 1976. 155 p. (NCJ 44737)

Methodology and survey instruments used to assess contemporary police performance measurement practices and those used to gain consensus on police program objectives and related measures are reported. A national survey of police and municipal administrators was undertaken to assess the nature and extent of current police performance evaluation practices; identify performance measurement deficiencies as indicated by police and city administrators; and ascertain the attitudes of police agencies and local governments toward, and resources

available for, police program performance evaluation. Representatives of 40 police agencies and 38 local governments were interviewed. The survey was essentially exploratory in nature; the sample was not necessarily representative. The methodology associated with the project guidance committee's review of the structure of police program objectives and related performance measures were developed to permit a structured review of the project's products by its guidance committee. The samples, questions, and analysis of the surveys are briefly described. The six actual survey instruments are reproduced, including those designed for police, city managers and mayors, and the project guidance committee. An appendix provides a copy of the police and city administrator interview confirmation letter. For volumes 1 and 2 of this report, see NCJ 44735 and 44736.

80. _____ . Law Enforcement Assistance Administration. National Institute of Law Enforcement and Criminal Justice. Neighborhood Team Policing: National Evaluation Program. Phase 1 Summary Report. By W. G. Gay, H. T. Day, and J. P. Woodward. Washington, D. C., National Sheriffs' Association. U. S. Government Printing Office, 1976. 54 p.
MICROFICHE (NCJ 35296)
Stock No. 027-000-00480-6

The results are presented of a critical review of efforts to evaluate the effectiveness of team policing programs, expand the role of the patrol officer, combat crime, and improve community relations. The information contained in this report relies heavily upon formal evaluations of team policing programs in 14 cities. The report describes characteristics of team policing programs, assesses the state-of-the-knowledge about team policing, and indicates what additional information is needed to fully evaluate team policing. This review of team policing programs indicates that several team policing programs have failed because of the inability of departments to implement the most basic components of the program. Where team concepts have been operationalized, however, several departments have demonstrated that team policing can improve the performance of patrol, investigative, and community service activities. Because evaluators often fail to carefully monitor the extent to which planned program activities are implemented, it is difficult to determine whether the concepts of team policing or extraneous variables are responsible for the evaluation results reported.

81. WHISENAND, P. M. Police Supervision: Theory and Practice. 2nd Ed.
Englewood Cliffs, New Jersey, Prentice-Hall, 1976. 463 p.
(NCJ 38286)

This book presents training material for local law enforcement officers utilizing a combined behavioral and practical orientation to directing human behavior. The text incorporates pertinent behavioral research findings with proven applicable supervisory action. Part I emphasizes the fact that a supervisor is not isolated and must interact with his subordinates in face-to-face situations. Also explored are the structure and goals of police organizations. The next section examines organizational control, including behavioral control, supervising by objectives, performance appraisal, and measuring and evaluating productivity. The third part of the text covers the police supervisor's role as personnel trainer. The final topic covered is leadership as a role component of supervisors.

82. WOLFLE, J. L. and J.F. HEAPHY, Eds. Readings on Productivity in Policing.
Washington, Police Foundation, 1975. 154 p.
(NCJ 31282)

This is a collection, prepared at the request of the Police Foundation, which deals with various aspects of police productivity. Topics include the planning and implementation of productivity programs, unions, productivity and crime control, and police accountability. For individual articles, see NCJ 31283-31287.

APPENDIX—LIST OF SOURCES

1. American Bar Association
1800 M Street, NW.
Washington, DC 20036
2. Urban Institute
2100 M Street, NW.
Washington, DC 20037
3. International City
Management Association
1140 Connecticut Avenue, NW.
Washington, DC 20036
4. Holt, Rinehart and Winston
383 Madison Avenue
New York, NY 10017
5. Police Foundation
1909 K Street, NW.
Washington, DC 20006
6. International Association
of Chiefs of Police
11 Firstfield Road
Gaithersburg, MD 20760
7. Same as No. 6.
8. Northwestern University
Traffic Institute
405 Church Street
Evanston, IL 60204
9. National Technical Information
Service
5285 Port Royal Road
Springfield, VA 22151
10. Stichting Tijdschrift Voor
Openbare Financien
The Hague
La Haye, Netherlands
11. Social Development Corporation
4905 Del Ray Avenue
Bethesda, MD 20014
12. Same as No. 9.
13. Dallas Area Criminal
Justice Council
2008 Jackson Street
Dallas, TX 75201
14. Available only through
NCJRS Document Loan Program.
15. New York City Police Department
240 Centre Street
New York, NY 10013
16. New York City Rand Institute
545 Madison Avenue
New York, NY 10022
17. Rand Corporation
1700 Main Street
Santa Monica, CA 90406
18. Same as No. 5
19. Holbrook Press
470 Atlantic Avenue
Boston, MA 02110
20. Same as No. 5.
21. Same as No. 5.
22. Northwestern University
School of Law
357 East Chicago Avenue
Chicago, IL 60611
23. Same as No. 22.
24. Same as No. 5.
25. Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

26. D. C. Heath and Company
125 Spring Street
Lexington, MA 02173
27. Same as No. 14.
28. Same as No. 3.
29. Same as No. 6.
30. Public Systems Evaluation, Inc.
929 Massachusetts Avenue
Cambridge, MA 02139
31. Same as No. 30.
32. Justice Systems Development,
Inc.
P.O. Box 24649
San Jose, CA 95154
33. Same as No. 5.
34. Anderson Publishing Company
646 Main Street
Cincinnati, OH 45201
35. Same as No. 5.
36. Same as No. 9.
37. Same as No. 2.
38. National Commission on
Productivity
1750 K Street, NW.
Washington, DC 20006
39. Same as No. 25.
40. Same as No. 2.
41. Same as No. 38.
42. Same as No. 38.
43. Labor-Management Relations
Service
1620 I Street, NW.
Washington, DC 20006
44. National Science Foundation
1800 G Street, NW.
Washington, DC 20550
45. Same as No. 44.
46. Same as No. 44.
47. Same as No. 6.
48. Pennsylvania State University
Institute of Public Administra-
tion
211 Burrowes Building
University Park, PA 16802
49. Law and Order
37 West 38th Street
New York, NY 10018
50. Same as No. 6.
51. Lehigh University
Department of Industrial
Engineering
Bethlehem, PA 18015
52. Same as No. 6.
53. San Jose Police Department
P.O. Box 270
San Jose, CA 95103
54. Vera Institute of Justice
30 East 39th Street
New York, NY 10018
55. American Society for
Public Administration
1225 Connecticut Avenue, NW.
Washington, DC 20036

- 56. Charles C. Thomas
301-327 East Lawrence Avenue
Springfield, IL 62717
- 57. Same as No. 6.
- 58. Fremont Police Department
39710 Civic Center Drive
Fremont, CA 94538
- 59. Same as No. 16.
- 60. Same as No. 16.
- 61. Koepsell-Girard and
Associates
210 East Broad Street
Falls Church, VA 22046
- 62. Westinghouse Justice Institute
1911 Jefferson Davis Highway
Arlington, VA 22202
- 63. Available only through NCJRS
Document Loan Program and NCJRS
Microfiche Program.
- 64. Transatlantic Arts, Inc.
North Village Green
Levittown, NY 11756
- 65. Denver Regional Council of
Governments
1776 South Jackson Street
Denver, CO 80210
- 66. Midwest Research Institute
425 Volker Boulevard
Kansas City, MO 64110
- 67. Same as No. 63.
- 68. Same as No. 25.
- 69. Same as No. 25.
- 70. Same as No. 25.
- 71. Same as No. 25.
- 72. Public Safety Research
Institute, Inc.
8000 12th Avenue South
St. Petersburg, FL 33707
- 73. American Justice Institute
1007 7th Street
Sacramento, CA 95814
- 74. Same as No. 25.
- 75. Same as No. 25.
- 76. Mitre Corporation
Washington Operations
1820 Dolley Madison Boulevard
McLean, VA 22101
- 77. Same as No. 73.
- 78. Same as No. 73.
- 79. Same as No. 73.
- 80. Same as No. 25.
- 81. Prentice-Hall
Englewood Cliffs, NJ 07632
- 82. Same as No. 5.