PRODME

Development of a Productivity Measuring System For Patrol Officers Within A Municipal Police Agency

GARY K. TYLER HARLES HASTORE 1976



(415) 796-3232

May 6, 1976

United States Department of Justice Law Enforcement Assistance Administration National Criminal Justice Reference Service Washington, D.C. 20531

Dear Sir:

I would like to share a completed project on measuring work productivity for Patrol Officers. We would appreciate any comments.

Lt.

Lt. G.K. Tyler Fremont Police Dept. SNI #255J115



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ACQUISITIONS

By

GARY K. TYLER Lieutenant Fremont Police Department

CHARLES HASTORF Sergeant " Fremont Police Department

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PREFACE

Responsibilities of Researchers

Gary K. Tyler Lieutenant City of Fremont Police Department

<u>Major Responsibility</u>: Application of manual data gathering instruments.

Line responsibility for day-to-day management of the project, Coordination of efforts of communications technicians, selected officers, sector team leaders and supervisors.

Charles R. Hastorf Sergeant City of Fremont Police Department

Major Responsibility: Application of automated data gathering instruments.

Staff responsibility for management of the data gathering and processing.

Both researchers are responsible for the decision-making regarding project design, monitoring and evaluation.

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LIST OF ILLUSTRATIONS

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1.	Productivity Index
2.	Officer's Daily Log Report
3.	Daily Productive Log
4.	Officer's Monthly Achievement Report 5
5.	Project Model ,
6.	Communications Flow
7.	Project Model (PRODME figures included)
8.	Productivity Index Points Graph



PURPOSE

The purpose of this project is to develop a system of productivity measurement for patrol officers within a city police department. The productivity of the individual police officer, and how to measure it, is the researcher's prime concern; however, it is also apparent that productivity in the police department as an entity, and in the special units (investigative, traffic, etc.), is equally important. In this pecuniary setting of increased costs and limited new resources, Police management needs to try to institute new and more exact methods for determining what is done and how it can be done better without increasing costs. Of equal importance is the insurance of proper recognition for productive workers. The measurement of an officer's activity, therefore, provides a side benefit toward improving the rating and recognition system. It is also possible to monitor the officer's response to departmental goals and objectives on a reduced time-span basis.

STEP I - APPLICATION OF MANUAL INSTRUMENTS

This step involved conducting meetings with a group of twenty-one patrol officers (swing shift). The primary objective of this meeting was to obtain a consensus on a manageable list of measurable activities.

A secondary objective was to obtain the officers consent and commitment to participate in the project. This involvement is extremely important, because without officer input and commitment, productivity improvement would probably be impossible. In these meetings, the importance of productivity was discussed in relation to improving the efficiency of the Swing Shift (Operations Division) and recognition of the good producer by the department. The officers were requested to indicate areas in which they were working and believed credit should be awarded. After several general meetings with all officers, two separate meetings were conducted with the team leaders. The information was compiled, and list of nineteen activities was formed to begin the project.

The final procedure, and probably the most controversial, was utilizing the awarding of points for activity.¹ The purpose of the points is twofold: (a) to give a total or overall indicator for several different activities, and (b) to use as a management tool to direct emphasis as conditions on priorities change. This is a new approach because an expanded base of Police Service Activities are measured.

Each officer in the project was given a copy of the "Productivity Index" which he helped create. (See Figure No. 1.)

PRODUCTIVITY INDEX

	ACTIVITY	POINTS	RADIO
1.	Reports (Excluding write-offs)	4	R
2.	Traffic citations (moving)	2	c
з.	Traffic citations (non-moving)	1	N
4.	Bicycle violations	2	в
5.	Traffic warnings (license & reason)	1	w
6.	Felony arrests (on view)	15	
7.	Misdameanor arrests (Adult on view) All Juvenile arrests	10	
8.	Citizen arrest	5	
9.	Warrant arrest (all)	5	
10.	Community contact meeting Romeowner Business School	10	H B S
11.	Citizen Observer program	3	
12.	Organizing C.C. meeting	5/10	
13.	Physical evidence	1	8
14.	F.I. cards & search	1	S=search I=F.I.card
•	Special		•
Case	Development	10	

-2-

GPW

Physical Fitness Zero Sick time 1/10 25 25 Utiliging the index, he can see areas which emphasize recognition. All "points" awarded are of a postive nature and are accumulated on a daily basis. Nothing in the index subtracts from the officer's Productivity Index total. Using the index, the researchers intend to place emphasis on Police functions which are effective in preventing crime, maintaining order, and fulfilling a more positive police role.

Manual data-capturing methods were utilized in the first-step process. This system places increased responsibility on team leaders, and this gives supervisors another opportunity to observe "Team Leader" leadership/management potential. The individual officer begins the data-capturing process using his daily log. (Figure No. 2)

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1520	С	1520	1525	11-54 ABC 123 MOWRY & BLACON	05	-	
1527	C	1530	1630	10-14 V/ARDS	60	R	
		1630	1730	PC459 10-15 WARDS	60	R	
		1730	1800	10-07R HUB PARKING LOT	30		2
		200	1830	CODE 7A	30		3
		1840	1855	VC20001 F/4 45325 OAK STR	15	-	
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Form No. 1084 FPD

A single column is drawn down the right side of the log and numbered 1 through 14. The numbers correspond to the numbered activity on the productivity index. At the conclusion of a shift, the officer goes through his log and indicates the number of each activity he has accomplished (i.e., if he wrote five reports, he puts the number 5 in the first position, etc., for position number 2, 3, and so forth). The log is then turned into the team leader for the sector.

The team leader transfers the information from each officer's log to the daily productivity log. (Figure No. 3)

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V# Vacation S* Sick

ML= Military leave POT= Paid over time

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At the end of each month the daily productivity log is turned into the supervisor. Each activity is totaled, the point value multiplied, and a subtotal obtained. The entire range of activities are then grand-totaled.

Next, the supervisor takes the Daily Productivity logs for each officer and completes the "Monthly Achievement Report". (Figure No. 4)



This is accomplished by filling in the bar-graph for each officer. The master copy is then reproduced so that each officer has his own copy. The individual officer has his individual position high-lighted on the graph so he can easily see his total activities in relationship to his fellow officer.

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STAGE II - APPLICATION OF AUTOMATED INSTRUMENT

In the researcher's opinion, an overflow of officer activity data was being collected by the Fremont Police Department computer but not completely evaluated nor utilized. With this in mind, a decision was made to further develop the automated data-capturing instruments so they could be utilized in productivity measurement. This was accomplished with minor enhancements on the current computer program. The automated instruments consist of Radio Activity Cards, completed by Communication Technicians, keypunch record layouts, computer programs, and computer output reports.

The design phase covered the months of October, November, and December, 1975. During this period, the "Productivity Index" was developed, evaluated, altered and reapplied. In January, 1976, the researchers completed the first phase in the valuation of the project, including the establishment of the Productivity Index, the Officers Monthly Achievement Report and the possible inclusion of automated data-capturing instruments in the project. The monitor phase will be considered through the months of February, March, and April, 1976. The final evaluation will be completed in May, 1976. The officer's monthly achievement report (bar-graph) will reflect his productivity in comparison with the other officers. The report bears no individual identifying information. The productivity of the individual officer is highlighted. The officer can compare his productivity with the other officers for the reported month.

At the conclusion of this project, the researchers hope to develop a system that can be utilized by any agency with or without a computer capability.

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PROBLEM

It is very difficult to assess human interaction; however, Law Enforcement professionals must attempt to devise new and more exact methods of analyzing what is done and how efforts can be more effectively directed toward this medium. Of equal importance, is properly identifying productive workers. At the present time, a rational system of measuring the effectiveness of police patrol activity is virtually unattempted.

The Law Enforcement Assistance Administration in their "<u>Prescriptive</u> <u>Package on Neighborhood Team Policing</u>"², suggested the establishment of a productivity index based upon arrest data. The researchers believe that by utilizing arrest data only in the establishment of a productivity index, the index would be focused upon too limited an area of officer activity.

The Law Enforcement Assistance Agency takes a negative approach to officer activity as illustrated in their productivity index. Their system allows the subtraction of points from the individual officer's cumulative point totals. This approach - a "demerit" system by virtue of its negative orientation - is counter-motivational and would ultimately prove to be counter-productive.

The researchers proposal is to take a more positive approach to the productivity index through the awarding of points and person-to-person verbal commendation, in the presence of peers, to the high achievers. In the past, Police management has focused their attention primarily to the low producers. Under that system, very little attention is directed to the high achiever.

In Section I, "Purpose of the Project" the prescription for the productivity measurement system is fully described. It is crucial to determine to what

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extent this project will prove to be successful. The manual data collection instruments can only be applied to active participants within the project. To measure effectively the behavioral changes of the participants, a control group must also be simultaneously monitored and evaluated. This should occur without the knowledge of the control group.

The researchers believe that the Fremont Police Department has developed an automated information system, that with minor enhancements, can effectively identify, compile, sort and display sufficient officer activity data to monitor a "Productivity Management System." The existent data elements that will be utilized in this project are as follows:

File Position	Data Element	English
33-36	ENO	Employee Number
33-36	ENO	Arresting Officer Number
01-09	RNO	Report Number
32	RDISPO	Report Disposition
37-70	OLOC	Report Location
81-102	ODATE/OTIME	Report Day/Date/Time
11-18	RCODE	Offense Code
75-80	ADOB	Arrestee's Date of Birth
112	ASEX	Arrestee's Sex
Tran/lation Tape		Arrest Level (Felony, Misdemeanor, Delinquent Tencency)
32	ADISPO	Arrest Disposition
241-256	DTIME	Dispatch Day/Date/Time
		Arrival Day/Date/Time Completed Day/Date/Time
272	INFROGRESS	In progress Code

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File Position	Data Element
273	INITIATED
260-267	DCODE
257-258	KEY CODES

English

Initiated Code

Dispatch Code

01 Serious Offense

02 Other Crime

03 Traffic Accident

04 Non-Crime

05 Assistance

06 Follow-up

07 Meal

08 Coffee Break

09 Transportation

10 Subpoena Service

11 Warrant Service

12 Report Writing

13 Security Check

14 Traffic Stop

15 Suspicious Vehicle/Person

16 Traffic Direction

17 Court Appearance

18 Miscellaneous

19 Vehicle Maintenance

20 Personal

ENHANCEMENTS

File Position

Data Element

257-258

KEY CODE

Enhancement

If Key Code 14, then in

File Position

Data Element

Enhancement

Column 63 add: B = If bicyclists64 add: W = if warning C = if citationIf Key Code 15, then in Column 64 add: S = if searchI = if fieldinterrogation card If Key Code 18, then in Column 64 add: B = if Community Meeting with business group H = if community meeting with homeowners group S = if community meetingwith school group Column 53 through 64 add: license number Column 63 add: B = Bicyclist V = Vehicle P = PedestrianColumn 64 add:

Key Code 14

File Position

Data Element	Enhancement
	W = warning issued
	C = citation issued
Key Code 15	Column 64 add:
	S = search
	I = Field interrogation
	card prepared
Key Code 18	Column 64 add:
	B = Community meeting-business
	H = Community meeting-home
	S = Community meeting-school

3. PROJECT TITLE, LOCATION, AND DURATION

A. Title: Developing a Productivity Measuring System for Patrol Officers within a City Police Department

B. Location: Jurisdictional boundaries of the City of Fremont

C. Duration:

Design Phase - October through December, 1975

1st Stage Evaluation - January, 1976

Monitor Phase - February through April, 1976

Final Evaluation Phase - May, 1976

4. PARTICIPANTS

A. Persons Conducting the Project:

 Gary K. Tyler, Lieutenant of Police, City of Fremont Police Department.

a. Responsibility: Line responsibility for the day-to-day management of the project, coordination of efforts of

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Communications Technicians, Selected Officers, Sector Team Leaders and Supervisors.

- 2. Charles R. Hastorf, Sergeant of Police, City of Fremont Police Department.
 - a. Responsibility: Staff responsibility for the management of the data gathering, processing, and outputs.

Both participants are responsible for the decision-making regarding project design, monitoring and evaluation.

B. Persons Involved in the Project:

1. Target population (Group I): 21 Police Officers assigned to the Operations Division, Patrol Section, Swing Shift, City of Fremont Police Department. The profile analysis of the target population is:

а.	RACE :	95% White
		5% Mexican
b.	SEX:	95% Male
		5% Female
c.	AGE:	Average 28.8 years
d.	MARITAL STATUS:	86% Married
		14% Unmarried
e,	EDUCATION:	Average 2.29 years of completed
		college

f. POLICE EXPERIENCE: Average 44.67 months
g. POLICE EXPERIENCE
WITH ANOTHER

DEPARTMENT:

5% Prior experience 95% No prior experience h. MILITARY:

33.3% Military experience

66.7% No military experience

- 2. Control population (Group II): 21 Police Officers assigned to the Operations Division, Patrol Section, various shifts, City of Fremont Police Department. The profile analysis of the control population is:
 - a. RACE: 81% White
 l9% Mexican
 b. SEX: 95% Male
 5% Female
 c. AGE: Average 29.9 years
 d. MARITAL STATUS: 71% Married
 29% Unmarried
 - e. EDUCATION: Average 2.29 years of completed

college

f. POLICE EXPERIENCE: Average 56.3 months

g. POLICE EXPERIENCE

WITH ANOTHER

DEPARTMENT:

h. MILITARY:

24% Prior experience76% No prior experience62% Military experience38% No military experience

3. Patrol Section: 58 Police Officers assigned to the Operations Division, Patrol Section, various shifts, City of Fremont Police Department. The profile analysis of the Patrol Section is:

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a.	RACE:	91% White
		7% Mexican
		2% Other
b.	SEX:	97% Male
		3% Female
с.	AGE:	Average 32.3 years
d.	MARITAL STATUS:	83% Married
		17% Unmarried
e.	EDUCATION:	Average 2.36 years of completed
		college
f.	POLICE EXPERIENCE:	Average 63.7 months
8.	POLICE EXPERIENCE	
	WITH ANOTHER	
	DEPARTMENT :	19% Prior experience
۲		81% No prior experience
h.	MILITARY:	53% Military experience
		47% No military experience

4. Confidentiality: The researchers believe that professional ethics, and the risk of reaction to the project by the participants, dictate that the confidentiality of the individual participants be strictly protected. Throughout the project, the participants will be identified by an alphabetical letter, referenced to either Group I (target population) or Group II (control population).

C. Random Sampling:

The City employee numbers of 21 Patrol Section officers were selected using a table of random numbers provided by the Institute for Professional Development (1975). These 21 officers constitute the project control population. City employee numbers of control population are:

0631	0993
0644	1033
0750	1040
0768	1047
0804	1049
0910	1051
0914	1081
0916	1088
0962	1131
0972	1154
0987	

- D. Instrumentation and Scoring:
 - 1. The data collection instruments to be utilized in this project comprise:
 - a. Radio Activity Cards
 - b. Police Reports
 - (1) crime reports
 - (2) non-crime reports
 - (3) traffic collision reports

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- (4) consolidated arrest report
- 2. The data will then be punched onto keypunch cards.
- The data from the keypunch cards will then be transferred to two (2) files within an IBM 360 computer.
- Monthly computer printouts will contain the following information:
 a. Officer activity data
 - b. Officer arrest data
- 5. The data will be evaluated and various arrest and activity data will be "weighed" (scored) and supervisory awarding of discretionary points (GPW) using a numerical scale.

The scores will be transferred to the "Officer's Montly Achievement Report." The "Officer's Monthly Achievement Report" will be reviewed and discussed by the supervisor during monthly evaluation conferences between the supervisor and targeted officers.

To test the validity of the project, the scores of the "Target Population" and the "Control Population" will be determined and compared in January, 1976 and in April, 1976.

The scores of the "Target Population" will be compiled in January, February, March, and April, 1976 to monitor expected behavioral changes as reflected in the aggregation of "Productivity Index" values. 6. Limitations of Project/Report Findings

The researchers believe that the validity of the data is extremely high and should not present a significant limitation to the reliability of the project. The factor which does concern the researchers is that the most important goal of the project is to effect behavioral change. Apprehension is that three months is not an adequate timeframe measurement to conclude, with any degree of certainty, that behavior has been altered.

It is the intent that the project continue indefinitely, ultimately to become a model system for other city police departments.

7. Definition of Terms - Not applicable.

- Timeline January, 1976 First week receive automated printouts of officer 1975 activity/arrest data
 - a. Target population
 - b. Control population

January, 1976 - Second week evaluate date, develop a tentative weighing scale.

January, 1976 - Fourth week obtain staff consensus on the final weighing scale.

February, 1976 - First week:

a. Receive automated printouts of officer monthly activity/arrest data of target population

b. Score data

c. Produce "Officer's Monthly Achievement Report"

February, 1976 - Second week individual conferences with members of the targeted population.

March, 1976 - Same as February.

April, 1976 - Same as February.

April, 1976 - Receive automated printouts of officer activity/ arrest data on "Control Population."

April, 1976 - Third week compare productivity scores of target and control populations, compare monthly productivity scores of "Target Population."

April - May, 1976 - Prepare final project report.

9. Budget

To be determined at a later time.

OBJECTIVES

 Develop a productivity measurement plan that can be evaluated on a monthly basis.

One main goal is to widen the base of criteria used to monitor productivity. By doing this, the total range of police services can be covered. The researchers hope to increase officer awareness in crime prevention programs as well as other specified activities not researched in the past.

The development of the productivity index will be over the months of October, November, and December, 1975. An evaluation phase will be conducted in January, 1976. The researchers will then monitor 21 selected officers during the months of February, March, and April, 1976. The outcome will be measured by periodic meetings with the 21 officers to update, correct, and modify the test index measurement.

 Develop feedback instrument to insure recognition of productive workers.

The design, evaluation, and monitor phase will be the same as #1 above. By displaying to the officer, on a monthly basis, how he is doing compared to his peers, an increased awareness of job performance would hopefully be achieved. In this way, and by supervisory counseling, the researchers hope to improve production in specified areas with the same manpower allocation.³ The

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researchers will monitor the changes, monthly, by tracking the total number of points an individual officer achieves. By comparing these totals from month to month, a supervisor can evaluate the officers' progress and monthly identify the most productive workers.

 Develop a management tool to direct employee efforts toward obtaining department goals.

Duration of project treatment is the same as 1.

The researchers intend to develop a system where points would be awarded for defined activities. By emphasizing one activity over another by increasing its "point" value, an effective management tool will be developed that will direct an officer toward department goals and objectives.

The same 21 selected officers will measure the changes on a monthly basis to see how each individual is meeting the goals.

4. Develop computer data-gathering instruments for automated productivity measurement:

a. Same as Objective 1.

- b. Utilize department computer to compute officer productivity
- on a daily basis. Compile data for a monthly report.

c. 21 selected officers.

d. Comparing the computer results with officers' daily logs.

e. Evaluation of monthly computer report.

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ABSTRACT

FRODME is essentially an internal police management tool for examining monthly, individual police officers. Its purpose was to develop a system of productivity measurement for patrol officers. The researchers established a "Productivity Index" whereby points were awarded for defined police activities. The prime concern was to take the first step in defining a quantitative index that contained a manageable list of measurable activities. Of equal significance was the insurance of proper recognition for productive workers; it was also considered important to monitor the individual officer's response to department goals and objectives.

To accomplish these objectives, the researchers designed and implemented several activity instruments. Those used for the manual application of the project were 1) the "Daily Productivity Log" utilized to record the frequency of activities for each officer on a daily basis, and 2) the "Officer's Monthly Achievement Report" utilized as a feedback instrument for the officer to display his total point accumulation in comparison with other officers.

Step II 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 date 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.

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The officer, upon receipt of his "Monthly Achievement Report," can observe his own progress as compared with the others'. His total point activity is displayed on a bar graph, and his position in the group is identified by a numerical rating, officers therefore remain anonymous.

Through the use of PRODME, any Police Department can effectively record, monitor, and evaluate a patrol officer on an expanded basis. Officers are given credit for a range of police activities which, until the inception of this project, have not been measured. Through measurement of these activities, attention is drawn to them. Through this productivity consciousness, there is an increase in officer output in these areas.

PROJECT PARTICIPANTS

The target population, used to set up the design and early evaluation phase of the project, remained basically the same for the time period of October through December, 1975. However, the number of participants did fluctuate between eighteen and twenty, due to on-the-job injuries.

In January, 1976, the Patrol Section changed shifts. Ten officers were transferred from the swingshift and replaced by ten new officers. One officer resigned from the department, making the final count of Group I at twenty (20). The profile analysis of this Group I was described in the project proposal. This Group I was used to monitor the final evaluation phase of the project.

The researchers used the month of January to evaluate the manual design instruments and to set up the program for the automated system.

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There were no changes relative to the participants of the control population (Group II) during the entire time span of the project.

PLANNING & IMPLEMENTATION ACTIVITIES

The planning phase began in the months of August and September, 1975, when the idea of developing a productivity measurement system was first conceived. The first major step was to meet with the officers involved in the project and explain the concept of productivity measurement. In these general meetings, all types of police activities were discussed. In establishing the first Productivity Index list, items were added and subtracted in an effort to establish a final manageable list of activities. After the list was established, a meeting was held with the first-line supervisors (Sergeants) to set up the point value for the activities. This was accomplished by keeping the goals and objectives of the department in mind. It was the researcher's plan to award more points for accomplishing activities that emphasized the goals of the department.

The next step consisted of determining how the information would be gathered and recorded. It was decided that each officer would record his total activities on a daily basis and submit this information to his team (sector) leader. The team leader would then transfer this information to the "Daily Productivity Log." This log, designed by the researchers, records the activities listed in the Productivity Index.

The researchers felt it was vital that each officer understood the project and have feedback from the system indicating his accomplishments. The "Officer's Monthly Achievement Report" was then devised so that each officer could see his output in comparison with his peers.

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After three months of testing (October, November and December), and one month for evaluation (January), the researchers felt confident to enlarge the project to the automated phase. Meetings were held with the Communication Technician Supervisor and Key Punch personnel. It was determined that the additional necessary information could be captured by an addition of extra radio codes. The officer would add the ausigned letter code to his radio transmission at the conclusion of his assignment. This information would be recorded by the Communications Technicians and keypunched by clerical personnel for the computer. Arrests were already being tabulated by the computer and did not have to be included in the radio code.

During the automated phase, the researchers developed a project model to display why a productivity measurement system is important and to monitor the effects of the implementation of a measurement system.

The model will prove whether or not a productivity measuring system is 1) possible, and 2) beneficial. The proof of possibility in an automated system will be if productivity can be articulated in a calculative language, i.e., numbers of arrests, type of arrest, eircumstance of arrest, numbers of moving citations, etc. Subjective elements of productivity, like quality, would require additional study for application to a total overall officer evaluation program.

The researchers approached the problem of police productivity measurement utilizing a cybernetic project model (see Figure 5). The project model is a graphic representation of the flow of communications, information, and quality standards of the PRODME experiment.

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(Figure 5) -25-



The flow of communications (see Figure 6) can originate with any, or a combination of, four sources: 1) the site contact, 2) the test group of 21 officers on the swing shift, identified as GI, 3) Researcher Charles Hastorf, and 4) Researcher Gary Tyler. Communications to and from the site contact must flow through either, or both, of the researchers. Communications to and from the test group (GI) must flow through either Researcher Gary Tyler or the project PRODME. Communications to and from Researcher Charles Hastorf must flow through either the site contact, Researcher Gary Tyler, the project PRODME, and/or the automated data management. Communications to and from Researcher Gary Tyler must flow through either the site contact, Researcher Charles Hastorf, the project PRODME, and/or the test group (GI).

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Presently some data is gathered on patrol activity, including the test (GI) and control (CII) officers. This data is stored and processed by an automated computerized system under the management control of Researcher Charles Hastorf.

Other patrol activity data is not automated, and this data is shared more or less in classical police management methods throughout the organization via official and unofficial media of communications, i.e., chain of command, memoranda, reports, logs, word-of-mouth, etc. Much of this non-automated patrol activity data remains within the immediate work group. In this experiment with which the researchers are concerned, the work group is the swing shift officers (GI), supervisors and commander. Researcher Gary Tyler is the work group commander.

Patrol officers were requested to indicate areas of patrol activity which they believed to be productive and establish measurement activity. The information was compiled, and a list of nineteen activities was formed. The list was entitled the "Productivity Index."

The "Productivity Index" data was compared with the "Automated Data" to ascertain whether or not some or all of the data was identical. If identical data (productivity data) could be determined, then the performance of a control group (GII) could be simultaneously monitored and compared with the test group (GI), without the control group's (GII) knowledge, and hence minimize the risk of influencing the control group's (GII) behavior, and a subsequent distortion of the results of the experiment.

The comparison of "The Productivity Index" and the on-file automated officer activity produced a one-to-one match of only arrest activity data.

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Since the researchers were faced with the prospects of being unable to monitor both Groups I and II in all productive activities, an hypothesis was developed.

PRODME Hypothesis

The total productivity can be interpolated from a subset (arrest activity) of the total productivity; if there exists a significant correlation, in which the probability of similar correlations arising by chance are less than once in ten trials.

The researchers accepted this hypothesis, and PRODME was implemented in January, 1976.

The project model is also designed to test: 1) if Groups I and II are similar (i.e., have no significant differences, and are therefore valid for comparison purposes); 2) if PRODME effects a change in patrol productivity activity; 3) if a significant correlation exists between total productivity and a subset (arrest activity data); and 4) if PRODME is productive or counter-productive.

It is one of the intentions of the researchers that if PRODME proves to be successful, then PRODME will serve as a model for other municipal police agencies. It is, therefore, incumbent upon the researchers to utilize impeccable proofs to this end. It is germane to this report that the logic of these proofs be articulated.

The researchers have based the proofs of this project (PRODME) upon an objective cybernetic project model, constructed from established mathematical building blocks.

The researchers submit the following logic and mathematical principles for scrutiny. This is the project model upon which PRODME is based:

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The first axiom is that an experiment can only prove something which actually happens; no finite number of trials can prove that something will <u>not</u> happen, for there is always the possibility that it will happen on the very next trial. In order to permit a decisive conclusion to an experiment, then the question put to test by the experiment must therefore seek an affirmative (yes) answer.

As an example: suppose that a man desires to know whether or not gunpowder explodes when struck by a hammer; he asks the question, "Does it?" and he can then proceed with the experiment. He can nurse his wounds, knowing that he found the truth if the answer is "yes", but he must forever doubt whether or not he struck hard enough if the answer is "no."

In this experiment, the logic is as follows: before the experiment is begun, it is tentatively assumed that the outcome will be negative. "There is no difference between the productivity of the test group (GI) and the control group (GII)."

This assumption is then put to the test by the experiment (strike the gunpowder with the hammer or implement PRODME on the test group, GI). If proved wrong ("It did explode," or "There is a difference between the productivity of the test group (GI) and the control group (GII)"). The result is clearly decisive if, however, it is not proved wrong, ("There was no explosion" or "There was no difference between the productivity of the test group (GI) and the control group (GII)"). The result is "not proved" under the conditions of the experiment, and the researchers would welcome any future patrol productivity measurement experiments by other researchers.

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The second axiom is that all experiments are fundamentally comparisons. This comparison factor is quite obvious when the productivity outputs of the Groups I and II are tested to see which is the most productive group. But the comparison factor is also present (although obscure) in the gunpowder experiment, or in any other similar one, which is performed to see what happens. Why? Because in such experiments the outcome must be compared with the phenomenon of chance. Before any useful conclusions could be drawn from the gunpowder experiment, one would have to know whether the gunpowder was likely to explode spontaneously, i.e., by chance, regardless of whether or not it was struck by the hammer.

The project model is constructed to test the following questions:

- 1. What is the probability that prior to PRODME implementation that the arrest data results from the test group (GI) and the control group (GII) could have arisen from the same parent group (i.e., similar/dissimilar)?
- 2. What is the probability that the observed arrest data results of the test group (GI) and the control group (GII) could have arisen by chance from the same parent group, after the implementation of PRODME?
- 3. Is there a significant (i.e., beyond the probability of chance) correlation between the "productivity index" activity and "arrest data"?

The first requirement is to test whether or not the control group (GII) is scientifically a valid control group to serve as a base of comparison to subsequently determine if any change in the activity of the test group (GI).

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The project model then depicts the processing of the arrest activity data from the entire year 1975 as extracted from the automated data base, for each officer in both groups. The total data regarding officers of these two groups (GI and GII) comprise the data of the parent group. The next depicted step is to determine whether the "arrest productivity data" of the test group (GI) differs significantly from the parent group. It should be noted that some differences are normal and to be expected, simply as the result of chance.

In the PRODME experiment, it must be taken as a possibility, as frequently occurs in the biological and other sociological experiments, that data may be crowded over the low values of the experiment. Or, in other words, a left-skewed asymmetrical data distribution.

The PRODME model is designed to test for any skew, utilizing Professor George Davies' test for the "coefficient of skewness."⁴ If the data is asymmetrical, the data will have a logarithmic distribution.

The next procedure is to test the arrest data of the test group (GI) and to calculate the probability of no significance because of the phenomenon of chance. If the difference is greater than ten percent, it can thus be concluded that the two groups are reasonably similar, for the purpose of continuing the experiment. The next designed step is to implement PRODME. The arrest productivity group can then be compared, utilizing the "arrest productivity data" of the months of February and March, 1976. The model then depicts the calculation and determination of the probability of no significant difference due to chance between the two groups. After the calculations of the "arrest Productivity data," the two tests remaining are to test 1) whether or not the "arrest productivity data" has a correlation to other identified

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productive activities as determined in the "productivity index," and 2) if there is a correlation between "arrest productivity data" and the "productivity index" data; and is the correlation direct (productive) or inverse (counter-productive)?

To determine whether or not a correlation exists between the "arrest productivity data" and the "productivity index" data, the project model utilizes Professor Charles Spearman's correlation test.⁵ If the probability of no significant correlation due to chance between "arrest productivity" data and "productivity index" data is calculated to be less than ten percent, the two data sets are probably correlated. The next determination must be if the correlation calculations indicate a tendency toward directness, i.e., productive, or inverseness, i.e., counter-productive. The PRODME project model is simply designed to evaluate data empirically, utilizing as its cybernetics standard, the E. S. Jearson and H. O. Hartley Normal Probability Formula.⁶ In the project model, the standard is applied to testing the control group for comparison validity, changes in "arrest productivity data" and whether a correlation es is between "arrest productivity data" and "productivity index" data. The project model is formulated to depict only the aggregation of data, and then to perform some relatively simple mathematical calculations with the data, involving nothing more complex than squares, square roots, and logarithms. The researchers present this explanation of the if and how the project model either proves or denies the occurrence of a correlation. The model also implicitly tests whether the deliberate act of the implementations of PRODME, i.e., high visibility, positive feedback, productivity consciousness, etc., effect a change in the behavior of the project participants in the test group (GI), and, if so, then to test whether

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the behavioral change is productive or counter-productive.

To test rationally for behavioral change, it is necessary to have two groups to equal composition, i.e., all things must be equal. In the composition of the two project groups of the project participants. the researchers considered as potential variables of productivity output such factors as age, race, sex, education, work experience, police experience, marital status, and military experience. This list of potential variables is strictly hypothetical and could be an appropriate thesis for future research if the adequate data were available. Sufficient data clearly was not available within the project participants of this research, e.g., only one officer without some college education, only two female officers, both of whom had less than two years police experience. This inability to determine objectively whether or not "variable" productivity factors exist does not deny that variable factors could exist, and, if so, potentially distort the results of the comparison. This assumes that the test group (GI) and the composition of the control group (GII) disproportionate in the group members possession of these hypothetical variable factors. The PRODME project does not affirm nor deny the existence of "variable" factors. What the project does do, is test the outputs of the total arrest productivity of both the test group .(GI) and the control group (GII) and ascertains if both groups are similar or dissimilar in arrest productivity output. The alternatives are clearly decisive. Either there are no variable differences between the officers (intuitively unlikely), hence it does not make any difference what the composition of the control group (GII) is, or, more than likely, by the phenomenon of chance, both groups will contain a similar distribution of the "variable" factors, regardless of

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which of the alternatives is true. If the chances of the observed output "arrest productivity data" distribution of the two groups exceeds the normal probability of differences by chance, then the decision must be to reselect the control group and test again. This result would seem to be unlikely, but in the theory exists as a possibility. It, also, would imply that some bias and consciousness should be a source of information for the re-selection of the control group. This result would also indicate a good case for believers in the "variable" factor hypothesis.

The first criterion to be met for the continuation of the experiment is the condition of no difference between the test and control groups.

After the establishment of the no-difference condition, at this point in the experiment a variable is added. The variable is the consciousness of being a participant in the experiment. The project model then tests for observed differences in arrest productivity data. If none, then PRODME does not effect change. If there are observed differences, then the model tests whether the observed differences can or cannot be attributed to chance alone. If not, then the implication is that PRODME is the variable factor responsible for the difference. The model then depicts whether or not a correlation exists - to confirm the PRODME hypothesis.

At this point, the crucial proof is in actuality a negative proof, that is, to prove that "Arrest Productivity Data" is <u>not</u> an inverse correlation to "Productivity Index Data." To prove that "Arrest Productivity Data" is inversely correlated, the probability of no significance due to chance would have to be less than once in twenty, i.e., five percent. The researcher's model seeks even more conclusive

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evidence. The project model accepts as conditions of proof not only a high likelihood of correlation, i.e., nine times out of ten, but this likelihood of correlation must then be a direct correlation to conclude that a measurement system is feasible.

PRODME is a cybernetic goal seeking system. The goal is simply that there either exists a correlation between "Arrest Productivity Data" and "Productivity Index Data" or not, and if there does exist a correlation, then either the correlation is direct or inverse.

PROJECT EVALUATION

Design

The target and control group are basically identical to those described in the proposal. The entire Patrol Section changed shifts in January, 1976. Several officers from the first group remained with the target group for the entire five-month evaluation period. There was a resignation from the Department, which changed the number of participants from twenty-one to twenty.

The schedule for data collection remained basically consistent. September, 1975, was used to acquaint the participants with the proposed project. The months of October, November, and December were utilized by the first target population for the design, initial data gathering and early evaluation. January, 1976, was utilized for the evaluation of Stage I, including the finalization of data capturing and feedback instruments. The final phase of evaluation for the second target population (Group I) covered the months of February and March, excluding April, due to the time constraints in reporting the results.

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The data collection instruments, which were designed by the researchers for the manual application of the project, consisted of the "Daily Productivity Log," the "Officer's Monthly Achievement Report" and the "Productivity Index." The "Daily Productivity Log" is an instrument to record the frequency of activity each officer completes during his daily shift. (See Appendix A). The "Officer Monthly Achievement Report" is a feedback instrument completed monthly by the supervisor, displaying each officer's total point achievement in comparison with his peers. (See Appendix B). The "Productivity Index" is a list of the range of activities measured with point values assigned. (See Appendix C).

The instruments used for the automated application of the project, also designed by the researchers, consisted of the computer printout for the months of February and March. The printout was a matrix of officer activity data, and arrest data for each officer of the two groups. (See Appendix D.)

A questionnaire was submitted to the patrol officers after the final evaluation of the PRODME project, in March, 1976, was completed. This questionnaire was used to evaluate the officers' opinions concerning the PRODME project. They were tabulated in three groups:

- <u>Design Group</u>. The former Swing Shift personnel (eleven officers) who helped create and design the project.
- <u>Group I</u>. The current twenty officers assigned to Swing Shift and utilized in final evaluation.
- 3. <u>Group II</u>. Individuals who had worked under the PRODME system and were selected at random from the control group. Their understanding of the system was gained through word-of-mouth and discussion with officers working under PRODME. (See Appendix E.)

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EVALUATION QUESTIONS/OBJECTIVES

To develop a productivity measurement plan that can be

evaluated on a monthly basis.

Activity Instrument - Daily Productivity Log



Grand Total Points

The researchers believe they have accomplished a productivity measurement plan in the development of PRODME. The individual officer's daily productivity is logged after the completion of each shift. At the end of the month, the supervisor totals the number of activities each officer has accomplished. He multiplies this total by the point value and obtains the point sub-total. The sub-totals are then added for all activities and a grand total (points) is obtained. The supervisor can, at a glance, see in what activities the officer is weak or has neglected. This can be monitored and evaluated on a monthly basis. The supervisor can see very quickly how the officer is responding to Department goals and direction. This is especially helpful when rating an officer. The supervisor now has hard data upon which to base his aunual evaluation of an officer, rather than relying on the uncertainty of his memory.

To develop a feedback instrument to insure the

recognition of productive workers.

Activity Instrument - Officer's Monthly

Achievement Report



The researchers have developed a feedback instrument entitled "Officer's Monthly Achievement Report," which is completed at the monthly conclusion of each evaluation period.

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Each officer is identified by a numbered position on the achievement report. When PRODME began, the numbered position did not reflect ranking order and the officers were placed at random. After several trial periods, it was suggested that the numbered positions reflect ranking order so that an officer could quickly identify his position in relation to other officers. This was accomplished, and the numbered position then reflected the ranking order of the officer. The officer remained anonymous so that no one had a position identified except his own. The researchers felt this was important so that competition was not overly stressed by the Adr/inistration or Watch Commander. It was realized that many officers compared achievement reports, indicating that peer pressure did play an important part in productivity improvement.

On the report form, the Supervisor places the officer's name, month, and year. The officer's ranking position is highlighted, and comments on his work activity are entered in the appropriate space. Through these comments, the individual officer can see the areas in which he has improved or needs improvement. The researchers found it helpful to retain a copy of the report for future reference and evaluation.

The five top point achievers were announced at squad briefings by the Watch Commander. Their point/activity total was discussed and they were given positive verbal compliments for the work they accomplished. This was a positive change from the traditional method of announcing the low producer (i.e., low citation count.)

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To develop a management tool to direct employee efforts toward obtaining department goals. <u>Activity Instrument</u> - Productivity Index

PRODUCTIVITY INDEX

	ACTIVITY	POINTS	RADIO
1.	Reports (Excluding Write-offs).	4	R
2.	Traffic citations (moving)	2	с
з.	Traffic citations (non-moving)	1	N
4.	Bicycle violations	2	В
5.	Traffic warnings (license & reason)	1	₩.
6.	Felony arrests (on view)	15	
7.	Misdemeanor arrests (Adult on view) All Juvenile arrests	10	
8.	Citizen arrest	5	
9.	Warrant arrest (all)	5	
10.	Community contact meeting Wrmeowner Business School	10	H B S
11.	Citizen Observer program	3	•
12.	Organizing C.C. meeting	5/10	
13.	Physical evidence	1	E
14.	F.I. cards & search	1	S=search I=F.I.card
	Special		
Case	Development	10	•

Case Development Citizen Commendation G P W Physical Fitness Zero Sick time

The researchers feel they have developed such a management tool in their design and implementation of the "Productivity Index." The officers working under the PRODME program were given the opportunity to contribute to the activity list. The final index consisted of fourteen main

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measurement activities, plus five special supervisor input areas. It should be noted that the point allotment is an arbitrary decision and can be adjusted to fit the management needs of the department.

The fourteen main measurement activities were accounted for on a daily basis by each officer. At the end of each shift, they would report their "total" of work performed to the team leader, who would record this information on the officer's "Daily Productivity Log."

The description of the Index is as follows:

1. Reports (excluding write-offs) - 4 points

The officer received points for every completed written report he finished during the shift. This excluded "write-offs" (details that were handled without written report, gone on arrival, adjusted at scene, etc.). The "R" designation under the radio heading was used when the officer was to receive credit for a report. For example, when the officer came back on the air after completing a detail, he would indicate 10-8 R meaning he was back in service from the detail and received credit for a report. The dispatcher would log this information on the dispatch card. Key punch information was obtained from this dispatch card.

2, Traffic Citations (Moving) - 2 points

Used to record the number of citations issued during the officer's shift. Radio designation "C."

3. Traffic Citations (Non-Moving) - 1 point

Used to record parking, pedestrian violations. Radio designation "N."

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4. Bicycle Violations - 2 points

Used to record the number of warning violations issued. Since the implementation of the Bicycle Enforcement Program where warning citations are issued for bicycle violations, there had been a marked decrease in bicycle thefts and accidents. In the first year of the program, bicycle thefts alone were reduced forty-two percent from 1,413 in 1974 to 817 in 1975. This was an important Department program and therefore the same credit (points) were awarded for bicycle violations as for moving traffic citations.

5. Traffic Warnings - 1 point

This activity and traffic citations work together. If an officer stopped a vehicle and issued a warning, he would return to service 10-8 W; if he wrote a citation, he would radio 10-8 C (Traffic citation - moving).

6. Felony Arrests - 15 points

All on-view or officer-initiated arrests.

7. Misdemeanor Arrests - 10 points

This section includes all on-view adult misdemeanor arrests and all juvenile arrests, regardless of the disposition, i.e., arrest, notice to appear, citation, or admonishment. The researchers felt this allowed the officer discretion in the handling of the juvenile offenses.

8. Citizen Arrest - 5 points

All details where a citizen has arrested a suspect and turned him over to the Police.

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9. Warrant Arrests - 5 points

All warrant arrests, whether on-view or assigned and regardless of the offense.

10. Community Contact Meetings - 10 points

Points are awarded for presenting Department programs in the area of crime prevention or other Community Relations presentations. 11. Citizen Observer Program - 3 points

These points are awarded for participating in the Department Ride-A-Long program.

12, Organizing Community Contact Meetings - 5 to 10 points

If the meeting was assigned by a supervisor to be planned, an award of five points was granted. If the officer set up the meeting himself he was awarded ten points.

13, Physical Evidence - 1 point

Any physical evidence secured at the scene of the crime (finger prints, etc.).

14. Field Interrogation Cards and Field Searches - 1 point

Any Field Interrogation Card completed and turned in, and

all the Field Searches where a report was completed.

The description of the special activities is as follows:

Case Development - 10 points

Points were awarded for an involved report or when the officer assisted the Detectives in handling a case. The supervisor awards the points after a review of the report.

Citizen Commendation - 6 points

Awarded upon receipt of the telephone call, letter, or in-person compliment of an officer. This also includes mail-ins from the Burglary and Accident information forms.

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G.P.W. (Good Police Work) - 1 to 10 points

Awarded by the supervisor for good police work procedure followed by an officer, i.e., directing officers in a field operation, good observations, etc. The award can be from one to ten points.

Physical Fitness - 25 points per month

Points are awarded on a monthly basis for participating in physical fitness activities. Current programs consist of running one mile and performing sit-ups, pull-ups, and push-ups.

Zero Sick Time - 25 points per month

Points are awarded on a monthly basis for zero sick time. On-the-job injuries are not counted against the officer.

To develop computer data-gathering instruments for automated measurement.

The fourth objective of the project was a qualified success. The fundamental objective of monitoring officer productivity via an automated process was successful. The plans to implement the monitoring phase had to be modified in the face of day-to-day reality. The assumption that the test Group (GI) would remain stable proved to be short-sighted, as previously explained.

The inability to differentiate the circumstances of the arrest in the "Automated Arrest Data" output, produced some minor differences in the comparison between the computer and manual reports,

The "Automated Arrest Data" outputs were calculated utilizing the project model. The data qualified for a logarithmic distribution, hence the appropriate figures represent logarithmic equivalents. (See Figure 7).

The calculations are decisive. The test and control groups were valid for comparison, i.e., no significant difference in 1975 "Automated Arrest Data" productivity. In February and March, 1976, the test group (GI) "Automated Arrest Data" productivity was significantly different from the control group (GII).

The calculations to determine if any significant correlation between the "Automated Arrest Data" productivity, and the "Productivity Index" data resulted in a probability of no significance between five percent and ten percent (Z = 1.81), indicating that it is reasonable to believe that "Automated Arrest Data" and "Productivity Data" are correlated.

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(Figure 7)

The correlation also indicated a tendency to be direct.

$$\frac{p^2 + T}{1/6 (n^3 - n)} = 0.71 \text{ or less than } 1$$

The goal of developing an Automated Monthly Officer's Productivity Report was accomplished. (See Appendix F.)

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CONCLUSIONS

Former Secretary of Commerce Peter G, Peterson said in 1972 that productivity improvement without productivity measurement is not possible.⁷

With this thought in mind, the researchers believe PRODME is a positive step forward in developing a Productivity Measurement System for Patrol Officers. With an accurate and reliable measurement system identified, productivity improvement can then be addressed.

Now that the instruments used in PRODME have been described, tested, and evaluated, an objective review is in order.

The Productivity Index - This is a flexible device used to center officer attention and activity. The criteria concerning the activities used for evaluation can be changed, added to, or deleted by Police Management without any difficulty. The researchers suggest that activities first be initiated that are familiar to police personnel, i.e., arrests, reports, citations, etc. As the system becomes more familiar, items can be included that reflect other goals of the Department and improve public relations, i.e., crime prevention programs, Citizen Ride-A-Long programs. The point value awarded each activity is also flexible and lends itself to change. It is obvious that the quality of the Productivity Index, and the means by shich it reflects the Department objectives, is most important. It would be counter-productive to increase time spent on meaningless activities,

The Daily Productivity Log - This log sheet is easy to read and is utilized for recording the frequency of activities. When the log is completed manually, the officer can see daily how he is doing

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for the month. Many of the officers set a work (or point) goal for each day. At the end of the month, the supervisor can readily see what areas are in need of attention or where high achievement has been accomplished. Also, the supervisor can see how the officer is responding to Department goals. The supervisor can then make suggestions for corrections, or give commendations, and monitor the response on a reduced time span basis. The log can, also, serve as a resource document for evaluating the officers during the annual rating time.

Officer Monthly Achievement Report - For the first time, a monthly comparison report was fed back to the officer displaying his work accomplishments. This proved to be highly motivational since each month the officer attempted to out perform himself. The top achievers were identified in squad briefings and were verbally praised for their work accomplishments. The researchers felt this was positive reinforcement for the officers working under PRODME.

Each month that PRODME was monitored, productivity (total points) increased over the previous month. This increase occurred during both the initial target group, covering the months of October through December and the second target group (Group 1) covering the months of February and March. The numerical increase in points was 1,481 for a five-month period. In October, 1975, the total points calculated were 7,113, which increased every month and hit a peak at 8,594 points in March, 1976 (see Figure 8). Undoubtedly, some of this increase was due to the Hawthorne Effect, i.e., a group may increase productivity if they know they are being measured. The researchers find no problem with this phenomenon. If PRODME increases officer output through the mere act of measuring the work load, it obviously should be incorporated into

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PRODUCTIVITY INDEX POINTS (Figure 8)



the Department. The analysis of the February and March arrest data had a direct correlation with the "Productivity Index" data which confirmed project purpose of increasing productivity.

In order to show officer reaction to PRODME, the researchers designed a questionnaire and divided the responses into three areas:

- 1. Those officers currently working under PRODME, identified as Group 1. Total responses: 19 out of 20.
- 2. Those officers who worked under PRODME during the initial testing phase Design Group. Total responses: 8 out of 10.

3. Those officers who had never worked under PRODME, from the control group (Group II). Total responses: 7 out of 10. The questionnaire consisted of seven statements, the results of which are as follows:

1. Police officers should be evaluated on the basis of the frequency of their various activities on duty. The possible responses were: Strongly Agree, Mildly Agree, Disagree, and Strongly Disagree. From the current group (Group I), 89% (17 officers) either strongly or mildly agreed with the question. From the past group (Design), 100% (8 officers) either strongly or mildly agreed with the question. From the past group (Josef Strong), 100% (8 officers) either strongly or mildly agreed with the control group (Group II), 83% (5 officers) either strongly or mildly agreed.

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2. In question #2, the researchers have reproduced that portion

of the question for clarity,

RESPONSES FROM DESIGN GROUP

2. In your opinion, which of the following should be used to evaluate officer performance?

		Should be Used	Should Be Used But Not Given Much Weight	Should Not Be Used	No Opinion
1. 2. 3.	Reports Traffic Citations (moving) Traffic Citations (non-	6-4-	~ 3	<u> </u>	anytty valie gala ya
4. 5. 6. 7. 8. 9. 10. 11.	moving) Bicycle Violations Traffic Warnings Felony Arrests Misdemeanor Arrests Citizen Arrest Warrant Arrest Community Contact Meetings Citizen Observer Program Organizing Community	432773461	3 3 4 3 3 3 3 3 3	$\frac{1}{2}$	
13. 14. 15. 16. 17. 18. 19. 20.	Meetings Physical Evidence F.I. Cards and Search Case Development Citizen Commendation Good Police Work Physical Fitness Zero Sick Time Officer Attitude	6628454-	2 4 1 2 2		
21.	Toward Public Officer Attitude Toward Supervisors	_ <u>4</u>	2	2	
23.	Projects (Task Force, P.A.C.T., etc.) Officer Appearance	3	2 4	<u> </u>	and a state of the

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RESPONSES FROM GROUP I

2. In your opinion, which of the following should be used to evaluate officer performance?

		Should be Used	Should Be Used But Not Given Much Weight	Should Not Be Used	No <u>Opinion</u>
1. 2. 3.	Reports Traffic Citations (moving) Traffic Citations (non-	15 12	3		
4. 5. 6. 7. 8. 9. 10. 11.	moving) Bicycle Violations Traffic Warnings Felony Arrests Misdemeanor Arrests Citizen Arrest Warrant Arrest Community Contact Meetings Citizen Observer Program Organizing Cormunity	11 6 10 18 19 11 15 7 3	9 9 9 1 7 4 9 9 1 7 4 9 9	7 	
13. 14. 15. 16. 17. 18. 19. 20.	Meetings Physical Evidence F.I. Gards and Search Case Development Citizen Commendation Good Police Work Physical Fitness Zero Sick Time Officer Attitude	7 10 11 19 17 18 11 18	9 49 9 144	2	3
21	Toward Public	12	5	3	
22.	Toward Supervisors Involvement in Special	9	_3	Ĩ	، معاليان ورواييا و
23.	Projects (lask force, P.A.C.T., etc.) Officer Appearance	9	7	3	

RESPONSES FROM GROUP II

2. In your opinion, which of the following should be used to evaluate officer performance?

		Should be Used	Should Be Used But Not Given Much Weight	Should Not Be Used	No <u>Opinion</u>
1. 2. 3.	Reports Traffic Citations (moving) Traffic Citations (non-	4	2 4	•	10.00 100000000000000000000000000000000
4. 5. 6. 7. 8. 9. 10. 11.	moving) Bicycle Violations Traffic Warnings Felony Arrests Misdemeanor Arrests Citizen Arrest Warrant Arrest Community Contact Meetings Citizen Observer Program Organizing Community		53-1-4523	3 2 2 1 2 2 2	
13. 14. 15. 16. 17.	Meetings Physical Evidence F.I. Cards and Search Case Development Citizen Commendation Good Police Work	365 GN 4		2	
18. 19. 20.	Zero Sick Time Officer Attitude	3	3	<u> </u>	المعدولة ، يون ، الكامري
21. 22.	Officer Attitude Toward Supervisors Involvement in Special	_4	<u> </u>	· · ·	
23.	Projects (Task Force, P.A.C.T., etc.) Officer Appearance	2	2	2	

- 3. Regarding the current Productivity System being used in Swing Shift:
 - a. The existing system is comprehensive and fair and should be continued as is.

Group I	Design Group	Group II
67% agree	57% agree	60% agree

b. The existing system needs revision regarding the specific areas being measured.

Group I	Design Group	Group II
71% agree	57% agree	75% agree

c. The existing system is fine; what needs to be changed is the way it is used in officer evaluation.

Group I	Design Group	Group II
53% agree	71% agree	67% agree

4. The general concept of using a point system to measure officer productivity is a good one.

Group I	Design Group	Group II
72% agree	62% agree	60% agree

5. If you believe other methods should be used to measure officer effectiveness in place of the Productivity (point) System, please describe them:

(This question allowed officer input for improvement, change, or replacement of the PRODME system.)

Some comments were as follows:

"I don't really have an alternative." "The system's integrity is vulnerable." "I think it (the PRODME system) is better than just measuring an officer on arrests or citations,"

6. The productivity system obligates the supervisor to be objective in evaluating the performance of patrol officers.

Group I	Design Group	Group II
72% agree	75% agree	60 % agree

7. How long have you been working under the Productivity Measurement System?

Answers varied for each officer.

In the final analysis, it was obvious that the majority of officer responses, eighty-eight percent (88%) or thirty out of thirty-four (30 out of 34), felt that they should be evaluated on the frequency of their various work activities. Over half of the responses, sixty-three percent (63%) felt that the PRODME system was comprehensive and should be continued as designed. There was a response of sixty-eight percent (68%) agreeing to the statement concerning needed revisions regarding the specific areas being measured of the system. This response indicated that the point value of specified activities needed change. This response enforces the fact that management needs to articulate the goals of the 'department, Emphasis has been placed upon completing "real" police work rather than addressing the service aspects of the profession.

There was a total response of sixty percent (60%) agreeing with the statement, "The existing system is fine; what needs to be changed is the way it is used in officer evaluation." This response emphasizes the fact that PRODME was not in use for all shifts, but only for the Swing

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Shift. Therefore, PRODME should be used throughout the entire department, to insure equal evaluation criteria.

Sixty-eight percent (68%) of the officers responding felt that the general concept of using a point system (PRODME) to measure productivity was a good one.

Finally, seventy-one percent (71%) felt that the PRODME System obligates a supervisor to be objective in his evaluations of an officer.

The researchers feel that the total response was a positive one. Any program can be revised; however, it is obvious not everyone will be entirely pleased with any one particular system.

Implications

The researchers believe that any municipal police agency would benefit from utilization of the PRODME System. Some police activities have gone in too long under the lable "unmeasurable." Granted that human interaction is difficult upon which to place quantifiable measures, but that should not stop police professionals from trying to improve service or efficiency of operation. The researchers would like to stress the point that PRODME is only a <u>beginning</u> in the process of measuring officer productivity. It is obvious that <u>total</u> quality of work is not addressed nor are many subjective areas (how an officer handles family crisis intervention, how he handles citizens, etc.). PRODME is the beginning of a more realistic and comprehensive system of productivity management. The researchers believe that sharing of information in this field is very important if we are to advance the total police profession. A police agency attempting to utilize PRODME will undoubtedly have some officers who will react negatively, as well as positively, to the system.

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The basic feeling of the researchers is that productive individuals will welcome an instrument that rewards them for work accomplished. It was very apparent to the researchers when the project began that many officers would react negatively to intrusions of their "free time," i.e., time between assigned details. The researchers feel that PRODME gives direction to officers for that free time toward obtainment of department goals.

RECOMMENDATIONS

Further Research and Implementation

- Further analysis of PRODME on an extended basis is recommended by the researchers. After several months of measurement, a standard band (range of point value) could be developed. For example, the Swing Shift could have a range of points from 425 to 475 as standard or acceptable work performance. Any range above that standard would be exceptional work performed. Conversely, any position below that would be substandard work. This band or range of activity could be established for each shift.
- 2. Points awarded under the PRODME System could be changed monthly to emphasize different activities; however, in order to establish a sound basis for evaluation, the researchers suggest that the same index be used for a specified time period. Points could vary for the same activity, for example, awarding more points for a moving citation when issued at an identified high accident location than for a citation issued at random.

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- 3, If PRODME is begun in the department, it should be initiated department-wide. This would alleviate the feeling of isolation that prevails when only one shift works under the system.
- 4. Special work assignments, promotions, and other areas of specialization should contain procedures for assessing productivity performance. This would show the officers that top police administrators were taking notice of their work performance. The researchers believe PRODME would provide hard data on productivity measurement and get away from the traditional, "He's doing a good job," or "He's doing a bad job," method of assessing work performance.
- 5. If PRODME were implemented, the researchers would recommend careful preparation of the shifts, department, and sections utilized. Even though the researchers held several meetings and discussed the intended project carefully, there were some officers who misinterpreted or misunderstood the concept. In these cases, one-on-one meetings would probably be in order.
- 6. The Department goals and objectives should naturally be identified and disseminated to all officers before they are incorporated as activities in the "Productivity Index."

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FOOTNOTES

¹Joan L. Wolfle and John F. Heaphy, gen, ed., <u>Readings on Productivity</u> <u>in Policing</u>; <u>Wrestling with Police Crime Productivity Measurement</u>, by Harry P. Hatry, (Washington, D.C.: Police Foundation, 1975), p. 113.

²Peter B. Blotch and David Specht, gen. ed., <u>Police Crime Analysis</u> Unit Handbook: Neighborhood Team Policing - Prescriptive Package, (Washington, D.C.: U.S. Department of Justice, 1973), Table 6-2, p. 97.

 3 A side benefit will be the improvement of the departmental officer evaluation system.

⁴George Davies, "Coefficient of Skewness," <u>Journal of American</u> Statisticans, 1929, pp. 349-66.

⁵Charles Spearman, "Correlation Test," <u>American Journal of Psychology</u>, 1904, pp. 72-101.

⁶E. S. Pearson and H. O. Hartley, "Normal Probability Formula," <u>Biometric Tables for Staticians</u>, vol. 1, Table 4, CUP, 1966.

⁷Joan L. Wolfle and John F. Heaphy, gen. ed., <u>Readings on Productivity</u> <u>in Policing</u>; <u>Wrestling with Police Crime Productivity Measurement</u>, by Harry P. Hatry, (Washington, D.C.: Police Foundation, 1975), p. 86 APPENDIX A

DAILY PRODUCTIVITY LOG

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(Reduced in size)



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APPENDIX C

PRODUCTIVITY INDEX

	ACTIVITY	POINTS	RADIO
1.	Reports (Excluding write-offs)	4	R
2.	Traffic citations (moving)	2	С
3.	Traffic citations (non-moving)	1	N
4.	Bicycle violations	2	В
5.	Traffic warnings (license & reason)	1	W
6.	Felony arrests (on view)	15	
7.	Misdemeanor arrests (Adult on view) All Juvenile arrests	10	
8.	Citizen arrest	5	· · ·
9.	Warrant arrest (all)	5	
9. 10.	Warrant arrest (all) Community contact meeting Homeowner Business School	5 10	H B S
9. 10. 11.	Warrant arrest (all) Community contact meeting Homeowner Business School Citizen Observer program	5 10 3	H B S
9. 10. 11. 12.	Warrant arrest (all) Community contact meeting Howeowner Business School Citizen Observer program Organizing C.C. meeting	5 10 3 5/10	H B S
 9. 10. 11. 12. 13. 	Warrant arrest (all) Community contact meeting Homeowner Business School Citizen Observer program Organizing C.C. meeting Physical evidence	5 10 3 5/10 1	H B S
 9. 10. 11. 12. 13. 14. 	<pre>Warrant arrest (all) Community contact meeting Howeowner Business School Citizen Observer program Organizing C.C. meeting Physical evidence F.I. cards & search</pre>	5 10 3 5/10 1 1	H B S S S=search I=F.I.card

Special

2

1

Case Development	10
Citizen Commendation	. 6
GPW	1/10
Physical Fitness	25
Zero Sick time	25

REPORT NO. AIRF291

FREMONT POLICE DEPARTMENT

DATE RUN 04/06/76

.

PERIOD - MONTH 0376

ARREST ACTIVITY -- TOTAL GROUP 2

PAGE 42

OCL THOUS AT	ADULT MALE	NHITE	MEXICAN	NEGBO	INDIAN	CHINESE	JAPANESE	OTHER	TOTAL
HISDEMEANIR FELONY		31	6 7	22	1	-		-	40 17
PELEASED OTH AGEN COMP. MI	CY SD.	2 25 5	15	1	1	-	-	-	2 8 32 14
PRABATIO INTERNAL UNKNOWN	N	-	1		-	-		- - : - :	1. 1
· · · · · · · · · · · · · · · · · · ·	ADULT FEMALE	39 WHITE	13 MEXICAN	A NEGRÚ	1 INDIAN	CHINESE	JAPANESE	OTHER	57 TOTAL
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DELINQUENT MISSEMEANOR	JUVENILE FEMALE	WHITE 5 4	MEXICAN	NEGRO	INDIAN	CHINESE	JAPANESE	OTHER	TOTAL 5 5
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The purpose of this questionnaire is to ask your opinion about the productivity measurement system currently being utilized on swing shift.

Your response will be anonymous, and your complete honesty in answering these questions will be appreciated.

1. Police officers should be evaluated on the basis of the frequency of their various activities on duty.

Strong	ly Mile	dly		Strongly	/	
Agree	Agr	ee Disa	agree	Disagree	9	
	<i>C</i>	7 [シ	Ĩ		
In your opinio performance?	n, which of a	the following	should be	used to e	evaluate d	officer

2.

		Should be Used	Should Be Used But Not Given Much Weight	Should Not Be Used	No Opinion
1.	Reports				
2.	Traffic Citations (moving)				
3.	Traffic Citations (non-				
	(moving)				
4.	Bicycle Violations	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
5.	Traffic Warnings				
6.	Felony Arrests				
7.	Misdemeanor Arrests				
8.	Citizen Arrest				<u>.</u>
9.	Warrant Arrest			· ·	
10.	Community Contact Meetings	tangan jipi cida mengapanan	and the second se		
11.	Citizen Observer Program				
12.	Organizing Community				
10	Meetings Dhusical Fuidence		Concentration (State State Sta	-	
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17	Good Police Work	·			
18	Physical Fitness	an a da waxaya a ta			
10.	7ero Sick Time				
20	Officer Attitude				
L V.	Toward Public				
21.	Officer Attitude				
	Toward Supervisors				
22.	Involvement in Special			· · · · · · · · ·	
	Projects (Task Force.				
	P.A.C.T., etc.)				
23.	Officer Appearance				÷
					State of the Owner, where
3. Regarding the current productivity system being used on swing shift:

		Strongly Agree	Mildly Agree	Disagree	Strongly Disagree	
Α.	The existing system is comprehen- sive and fair and should be con- tinued as-is,		, 			
Β.	The existing system needs revision regarding the specific areas being measured.					
Ç.	The existing system is fine, what needs to be changed is the way it is used in officer evaluation.		<u> </u>			
The sys is	e general concept of using a point tem to measure officer productivity a good one.				-	
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5. If you believe other methods should be used to measure officer effectiveness, in place of the productivity (point) system, please describe them.

6. The productivity system obligates the supervision to be objective in evaluating the performance of patrol officers.

4.

7. How long have you been working under the productivity measurement system?

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