

INDIVIDUAL TECHNICAL ASSISTANCE REPORT

*In Response to a Request for Technical Assistance*

*By the*

Haltom City, Texas, Police Department

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August 3, 1973

37629

*Prepared by:*

Public Administration Service  
1313 East 60th Street  
Chicago, Illinois 60637

(Per Contract J-LEAA-015-72)

I. PRELIMINARY INFORMATION

A. **Consultant Assigned:**

Denny F. Pace  
Criminal Justice Consultant

B. **Date Assignment Received:**

May 29, 1973

C. **Date of Contact with LEAA Regional Coordinator:**

May 29, 1973

D. **Dates of On-Site Consultation:**

June 1-3, 1973

E. **Individuals Contacted:**

Roy Moffatt  
City Manager

James D. McGuire, Jr.  
Chief of Police

Frank N. Bortmas  
Assistant Chief of Police

Additional members of the Police Department in each of the operating units.

II. STATEMENT OF THE PROBLEM

- A. **Problem as per Request for Technical Assistance:**  
Additional assistance in personnel management and allocation of personnel.
- B. **Problem Actually Observed:**  
As stated.

III. FACTS BEARING ON THE PROBLEM

See attached Consultant's Report.

IV. DISCUSSION OF POSSIBLE COURSES OF ACTION

See attached Consultant's Report.

V. RECOMMENDED COURSES OF ACTION

See attached Consultant's Report.

CONSULTANT'S REPORT

## I. Introduction

The assessments and recommendations made in this report have been made on the basis of the initial report submitted by Dr. John Webster and from this consultant's observations within the Haltom City, Texas, Police Department. The time spent in these efforts has been of short duration; and some observations have not taken into account personal preferences, activities designed to meet the specific needs of the community, and the work habits acquired through years of routine growth. This report is one man's assessment of the problems as they now exist with some logical solutions as to how they may be minimized or resolved. The recommendations made in this report are designed to serve as a guide to City Council members and city administrators in their attempts to resolve the problems of the Police Department. The recommendations do not represent a panacea but a compilation of what many, including Haltom City administrators, believe to be the most desirable ways to achieve superior police services for the community.

It is logical to assume that there are differing philosophies and that many recommendations will not precisely fit the wishes of the community. The consultant can only identify areas of apparent deficiencies based upon the knowledge gained from a brief exposure to questions that may have complex solutions.

*Police Environment.* The police of Haltom City function in a reasonably favorable environment. Mayor Johnnie B. Lee and the City Council are supportive of the Police Department. City Manager, Roy L. Moffatt, is an outstanding administrator who thoroughly understands the role and function of the Department. Like Mayor Lee and the City Council, he is also highly supportive. Mr. Moffatt was formerly the Chief of Police of Haltom City.

The police appear to be respected and well-liked by the citizens of Haltom City, according to a limited sampling of school officials, business people, and other citizens.

The median income of Haltom City residents is \$10,159 according to the 1970 census. The top salary for police officers is approximately \$8,500; for dispatchers, \$8,949; for sergeants, \$9,923. Haltom City has many of the characteristics that contribute to a higher than average crime rate and are conducive to only reasonable working conditions for the police. The population is predominately white, but increased numbers of blacks and other minorities are moving into the City. Major minority areas border the City, and there are four low-rent housing tracts in the City which are starting to integrate.

The Police Department budget for 1972—1973 is \$389,023 from a city budget of \$1,755,464, or more than 20 percent of the total. Five new 1973 automobiles have been provided the Department, augmenting seven 1972 models, a 1967 model, and a 1961 pick-up truck—a total of 14 vehicles. Floor space for the Department is generally adequate; however, the architectural layout is less than satisfactory. The main desk, dispatcher's quarters, jail, and offices are not functionally located for efficient operation. There is a need for expanded roll call and locker room space. Police officers who receive permission may "moonlight" on extra jobs outside the Department. Presently, there are eight policemen who hold extra jobs. Most of the jobs are at school events, therefore fulfilling a need that would otherwise fall to on-duty officers.

Liquor is prohibited in Haltom City except in five or six private clubs. Four major traffic arteries pass through the City, contributing to the problem of DWI's (Drunken Drivers). A local curfew ordinance restricts young people under 21 years of age from being on the streets after 12:30 a.m. on Friday and Saturday nights and after 11:30 p.m. other nights. This curfew ordinance can also penalize the parents for permitting curfew violations by their children.

## II. Statement of the Problem

The city administration has recognized a need for formalizing criteria that contribute to the orderly growth of the Police Department—to collect data on increased police activity, to analyze the data collected, and to secure recommendations for improvement.

There is a need to secure more and better data in order that a logical analysis may be made of the identified problems. City police services throughout the years have experienced steady growth. As the City increased in size and the police function became more complex, adequate data were not available, and manpower and financial resources were limited.

This report is a beginning effort to make recommendations that will identify police needs based upon documented data, and it deals exclusively with the single area of manpower. There are other problem areas, however, such as the preparation of procedural manuals, work-flow and work simplification, position classification, survey of files and records, analysis of communications systems, quality control, and budget analysis, which are not in the scope of this study.

*Objectives of the Report.* This report has three main objectives: (1) to identify demographic data that will help establish standards for the allocation of police manpower; (2) to analyze work loads, personnel deployment, and general data to establish a level of personnel need; and (3) to make recommendations, both short-term and long-range, so that city government may, in logical steps, ensure a high level of police service to the citizens of the community.

*The Need for Change.* Haltom City is being thrust into an era of rapid growth because of the development of the Dallas—Fort Worth Regional Airport and accompanying industrial expansion. The city administration has expressed a desire to maintain a high level of community police services. The administration has stated an interest in the following areas dealing with personnel needs:

1. To maintain an adequate level of manpower based upon increased police activity.
2. To increase the manpower efficiency through improved management techniques and the improvement of personnel capabilities.
3. To maintain pay scales and personnel benefits commensurate with general regionwide levels.
4. To place in the Department new technology that will increase personnel efficiency.

*How the Study was Conducted.* In the initial period an on-site study of the Department was conducted and basic data was given in a draft document. This document was reviewed for accuracy, and appropriate corrections are a part of the final report. The follow-up on-site study elicited new data from the Police Department, verified procedural statements, and examined the need for more specific and positive recommendations.

*How the Report Should be Used.* Technical assistance is provided the City in order to aid in identifying problem areas, to provide tentative recommendations, and to reduce those recommendations to writing so that police administrators may then make necessary decisions for addressing the problems.

*This report cannot and should not attempt to replace a thorough and comprehensive management study.* The recommendations have been made so that such a study, funded by the Texas Criminal Justice Council through the North Central Texas Council of Governments, will become a reality.

Police goals are defined in police literature and the Department's role is congruent with such stated goals. The broad goals of the Department are to prevent crime, apprehend offenders, and render services to the community not otherwise provided. To accomplish these goals the following mission statement is appropriate.

"The police department's mission in Haltom City is to prevent crimes, apprehend criminals, control traffic, recover stolen property, promote bicycle and traffic safety in schools, prevent crimes such as burglaries and narcotics violations through education, provide animal control, and supply other emergency services not handled by another government agency."

As a Department's role becomes more formal through the adoption of a manual of procedure, the precise function of an officer will become more clearly defined. Thus, this report will attempt to begin the analysis of issues that define how goals are tailored to meet the needs of the community.

There are indications that the Haltom City Police Department performs a slightly different role than that of most small police departments—patrol service as a preventive crime activity is minimized. Departmentwide traffic enforcement, investigative activities, and warrant service receive heavy emphasis. These differences are not unique, and crime data may in fact validate the approach for other departments in the future. In the absence of a task analysis based upon more comprehensive data, certain observations will emphasize the norm rather than the ideal.

### III. Facts Bearing on the Problem

There has been an expressed need for data to support changes in manpower allocations, functions, and employee benefits so that the services rendered to the community are compatible with similar communities. Basic support data have been taken from events and changes transpiring within the community, from activities being performed by the Department, and from other sources that may bear upon the issues to be addressed.

In determining the issues of greatest concern in the area of manpower needs, the following criteria have been used as the bases:

1. The type of mission delegated to the Department by city charter and the governing bodies as stated in the mission statement.
2. Geographic and demographic features of the City, including such factors as relative urbanization levels and population characteristics.
3. Rates and trends of criminal activity measured in absolute numbers and the community's impression of the severity of criminal activities.
4. Community expectations for police services other than those related to criminal activity.
5. The economic ability of the community to provide police services.

While these are the key considerations not all will be fully addressed because of the time limitations on the study.

*Demographic Data: Developing a Standard for the Allocation of Manpower.* The issues addressed in this study are influenced by many changes that are not measurable. There are some areas that do lend themselves to simple evaluation. Two key areas are: (1) the projected rate of growth for the City; and (2) basic crime trends and special problems that consume police personnel time.

*The Projected Rate of Growth.* Haltom City has grown rapidly because of proximity to the new Dallas-Forth Worth International Airport. There is little question that the City will become an important urban community in the regional metroplex. In 1950, the City had a population of 3,000 while by 1960 this count was 23,000; and the 1973 projection estimates the population at 30,000. By 1980, it is estimated that some 58,000 people will reside in the City.<sup>1</sup> In the immediate future there are five subdivisions with 1,300 houses started and approximately 200 acres of commercial development. The minority population is expected to increase from the present estimated population of 150 to 200.

<sup>1</sup> Haltom City Area Chamber of Commerce.

These growth problems are compounded by the existence of large apartment complexes which give the City a median rental of \$87 per month with an 89 percent occupancy rate. Low rent and high occupancy rates historically contribute to the crime problems of a city.

*Basic Crime Trends and Special Problem Areas.* Because of the structure of records reporting, it is difficult to establish any projected trends in crime patterns. Present data would indicate that the City suffers from the same crime problems as most of the urban cities in the area. Haltom City's specific problems relate to its closeness to Fort Worth and such other cities as Arlington, Grand Prairie, and Dallas.

Table 1 indicates that there are approximately 5,799 recorded offenses reported to the Department in a six-month period. (Traffic violations are not included in this total.) Based upon this semiannual tabulation, the estimated crime rates for the City are: burglary, 154 per 100,000 population; robbery, about 7 per 100,000; felony theft, 53 per 100,000; misdemeanor theft, 147 per 100,000; and auto theft, 53 per 100,000 population. Other Part I offenses are not significantly high. Based upon national crime data figures, the rates, with the exception of burglary, are not excessively high. However, all major offenses reported, except robbery, constitute a significant crime problem. The miscellaneous offenses such as bicycle theft, vandalism, and certain sex offenses are not reported in a form comparable to uniform crime data.

Subdistrict data indicate higher trends in District 1-A and 1-B for both types of burglary (42 percent), drunkenness (56 percent), domestic and civil complaints (51 percent), prowlers and suspicious persons (42 percent). These trends were discussed with the assistant chief; the Department responds to these crime trends by the assignment of extra units to the high crime districts. The Department was not familiar with computer programs in the area of resource allocation. With the use of computers in the records system, a simple program can be purchased to chart more readily crime trends for the City.

### **Organization and Personnel Deployment**

The organization of a department, the deployment of its personnel, and the administrative activities used in evaluating personnel are all indicators of efficient operation. This section of the report is structured to identify differing philosophies in the operation of this police agency. While some deficiencies may be pointed out that are general administrative weaknesses, the consultant has sought to determine various justifications for differences in organizational structure and manpower deployment. The reader should keep in mind there is no single rule for the best organizational structure. Some general recommendations are made in this report which give latitude for administrative interpretation.

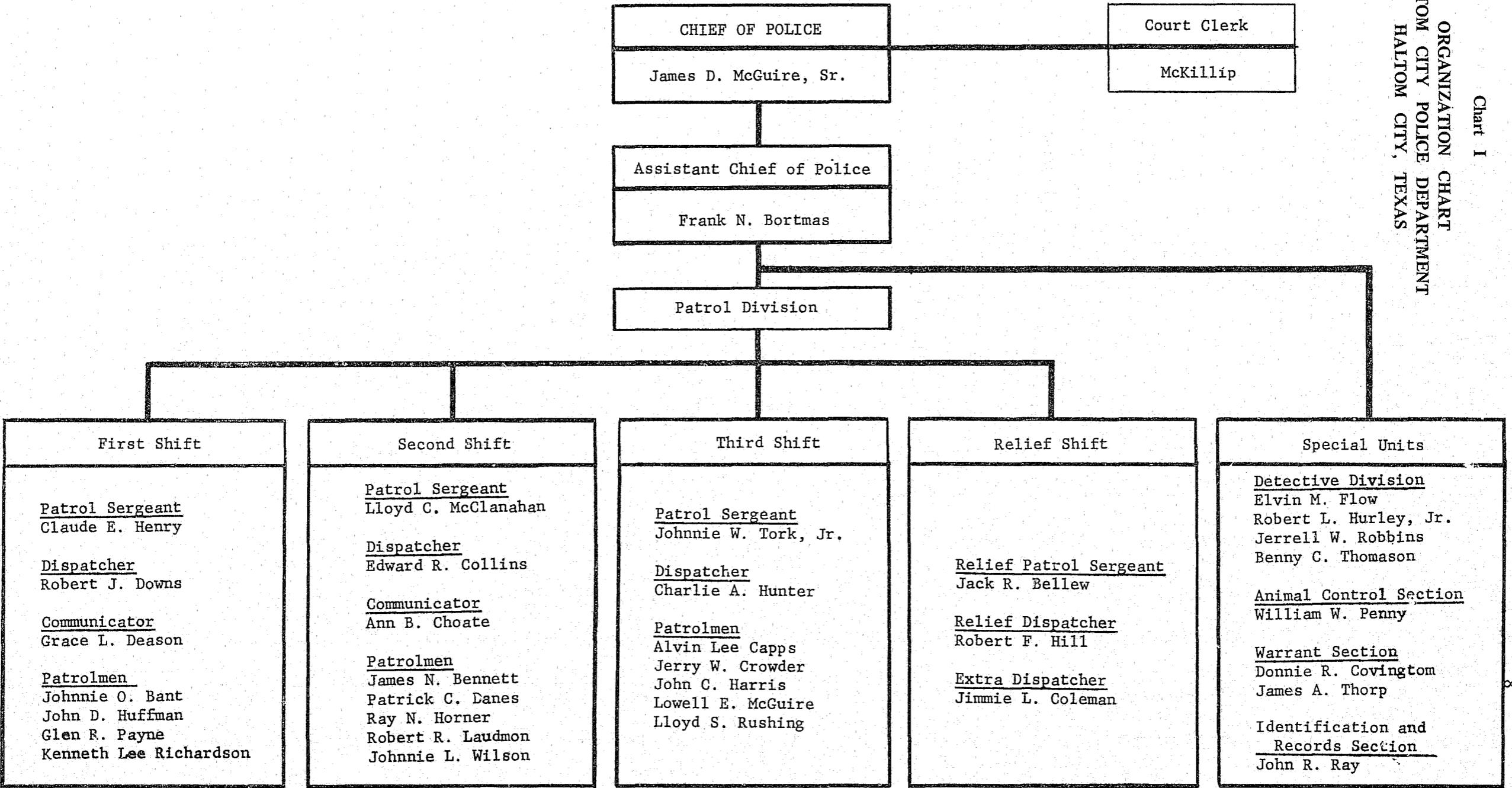
*Organization.* In Haltom City there are 36 sworn personnel. Chart I shows the deployment of personnel by function. The Chief heads the Department with considerable operational responsibility delegated to the assistant chief. Because the Chief will be retiring in about a year, the assistant chief is being assigned increased responsibility. Fourteen of the personnel are assigned to patrol, with 4 working supervisors, making 18 of 36 men or 50 percent of the Department's authorized strength committed to full-time patrol activity.

Table 1

A SIX MONTH TABULATION OF CRIME ACTIVITY BY DISTRICT  
 July 1, 1972 through December 31, 1972

Offense	Total	District-1			District-2			District-3		
		1-A	1-B	Total	2-A	2-B	Total	3-A	3-B	Total
Robbery	10	4	1	5	1	1	2		3	3
Burglary Business: House	121	28	26	54	20	24	44	13	10	23
Burglary Private: Residence	110	25	16	41	17	11	28	17	24	41
Theft Over \$50	111	28	18	46	15	14	29	15	21	36
Theft Under \$50	141	18	36	54	11	31	42	15	30	45
Auto Theft	79	27	6	35	9	18	27	8	11	19
Theft From Auto	174	32	31	63	25	31	56	20	35	55
Assaults	25	4	10	14	2	2	4	1	6	7
Sex Offenses	12	5	3	8	2		2	1	1	2
Drunkenness	100	30	26	56	15	14	29	6	9	15
Bicycle Thefts	110	7	12	19	20	11	31	34	26	60
Disturbances	466	85	96	181	62	54	116	72	97	169
Domestic and Civil	213	54	54	108	33	16	49	28	28	56
Prowlers and Suspected Persons	481	108	94	202	74	43	117	70	92	162
Vandalism	348	49	43	92	32	47	79	63	114	177
Traffic Violations										
Accidents	542	109	117	226	50	81	131	51	134	185
All Others	2,756	522	584	1,106	455	312	767	369	514	883
Total	<u>5,799</u>	<u>1,135</u>	<u>1,173</u>	<u>2,308</u>	<u>843</u>	<u>710</u>	<u>1,553</u>	<u>783</u>	<u>1,155</u>	<u>1,938</u>

ORGANIZATION CHART  
HALTOM CITY POLICE DEPARTMENT  
HALTOM CITY, TEXAS



*Personnel Qualifications.* Closely allied with the structure of the organization and deployment of personnel are the qualifications of individual employees. Unless employees have basic qualifications, all of the other administrative techniques to improve the system are of little importance. The Personnel Qualifications Survey in Appendix I gives an overview of the qualifications of departmental personnel. The survey shows all officers are certified by the State with two officers having advanced certification.

In assessing employee quality there are some objective criteria that may contribute to better work performance, such as training, education, and the like. There are also many intangibles, such as motivation and integrity, that are indicators of performance. In this brief evaluation only passing observations will be made.

*The Patrol Division.* The Haltom City Police Department has evolved over many years. Additional functions in the specialized areas have been added as the need was perceived until currently the Patrol Division does not have a dominant number of personnel.

Present staffing gives the City a ratio of 1.2 officers per 1,000 population. If the national standard of 1.4 is to be maintained, the census estimate for 1980 would indicate that the City should have 81 officers by that year.

Although manpower needs of a department are all too often allocated on the basis of so many officers per 1,000 population, no measurement could be more misleading. Thus, in this study there has been an attempt to make a more definitive evaluation of personnel needs. For example, recent research from the High Impact Cities Programs shows that no prescribed personnel ratio is possible without the comprehensive analysis of work load data. Many departments are in the process of reassessing the value of the uniformed patrol as apprehenders. The Impact Cities Studies also indicate that patrol forces are said to account for the apprehension of only about 1 percent of "crimes in progress." Thus, patrol as a means for apprehending criminals is being questioned. The value of visible patrol as a crime deterrent is another untested matter.<sup>2</sup> Thus, before any positive decisions can be made about a deployment ratio (patrol vs. specialized) there needs to be additional study of the City's work load data. In order to assist the Department in refining its deployment techniques, the guidelines from the National Conference on Criminal Justice, January 15, 1973, are included as Appendix II.

*Field Reporting.* With 50 percent of the Department's strength assigned to patrol, the reporting of incidents in the field becomes an important consumer of an officer's time. At present an incident report is prepared by the field officer, it is checked for accuracy by a field supervisor, and typed by the dispatcher. A preliminary survey revealed that an officer may complete from three to six formal reports per shift. Thus, there is a need to make the original written field report the final document for reporting crime incidents.

In the survey of operating personnel, there were indications that the procedures of the field reporting system should be improved. The initial written field report should be of sufficient quality to eliminate the necessity of a typewritten report.

<sup>2</sup> The Kansas City, Missouri, Police Department in cooperation with the Police Foundation is presently studying the relationship between preventive patrol and the incidence of crime.

**Shift Rotation.** A problem experienced by all work routines that cover a 24-hour span is the equitable assignment of working hours. Haltom City rotates its patrol shifts on a bi-monthly basis, the rationale being that officers should be able to share evenings with their families at least during a part of the year. The logic of this decision is supported by the need to give a new officer the variety of experiences available through shift rotation. Supervisors and men maintain the same rotation sequence.

**Wearing of the Uniform.** All patrol officers wear the prescribed uniform while on duty. All dispatchers, and personnel of the station generally accessible to the public, are in uniform. Detectives and warrant officers, because of the nature of their work, wear street clothes. Both chiefs wear street clothes.

**Allocation of Personnel.** The Patrol Division is dependent upon proper deployment techniques to maximize patrol efforts; yet, the organization chart indicates the Division's lack of responsiveness to data on incidence of crime. As shown in Tables 2, 3, and 4, the incidence of crime does not reflect the even distribution of patrol resources indicated in the organization chart.

While the City is relatively small in area, 21.6 square miles, there has been a need to establish areas of high police activity so that available patrol time is wisely spent. The patrol plan is informally based upon:

1. Geographical features, traditional neighborhood patterns, and patterns of police activity.
2. Examination of the types of calls emanating from the various areas.
3. Response time and patrol work loads (this is done manually and is not comprehensive).
4. Shifts with high police activity.

The following data further identify the deployment of various specialized divisions and summarize the total work effort of the Patrol Division by shift.

The data contained in Table 2 were taken from the officers' daily logs and verified against the monthly reports. The work load data cited in the table give an overview of the total work activity for each division for the past 12 months. The data reflect a heavier work load on the second shift, with 49 percent of all radio calls, 51 percent of all criminal field contacts, 67 percent of all moving citations, and 40 percent of all arrests. Based upon this data, it appears that patrol deployment should be based upon a more selective method.

**Shifts.** In determining the called-for services to establish a shift schedule, a three-month base was used. The results were plotted on a 24-hour graph to indicate the hourly distribution of the problem. The present shift schedule of 6:00 a.m., 2:00 p.m., and 10:00 p.m. closely coincides with called-for services.

Table 2

## A COMPILATION OF MONTHLY STATISTICS SHOWING POLICE ACTIVITY

For the Twelve Month Period, May 1972 thru April 1973	Basic Work Load Survey								Compilation of Monthly Work Loads					
	Arrests		Response to Calls		Investi- gations		Public Contracts		Citations		Reports Processed		Prisoners Printed Mugged	Other
	Misdemeanor	Felony	Radio	Citizen	Crime Reports	Initiated	Criminal Field Contacts	Speeches	Moving	Other	Crime	Other		
Work Units														
Patrol	84	11	2,931	109		283	782	11	1,153	1,043	782	2,261		
First Shift														
Second Shift	356	40	5,107	211		260	1,204	16	2,552	1,920	858	4,118		
Third Shift	497	24	2,537	101		315	453	0	557	883	462	2,176		
Investigation			← 3,364 →											
Warrant Section	3,093													
Identification and Records Section							42				2,444	10,171	738	
Animal Control			1,148	174						28		1,619		
Juvenile					734			6						
Other														

Table 3  
 DISTRIBUTION OF CALLS FOR SERVICE  
 BY SHIFT AND DAY OF WEEK  
 (Week of May 20-26, 1973 used as Sample)

Percentage of Recorded Police Activity by Day and Shift

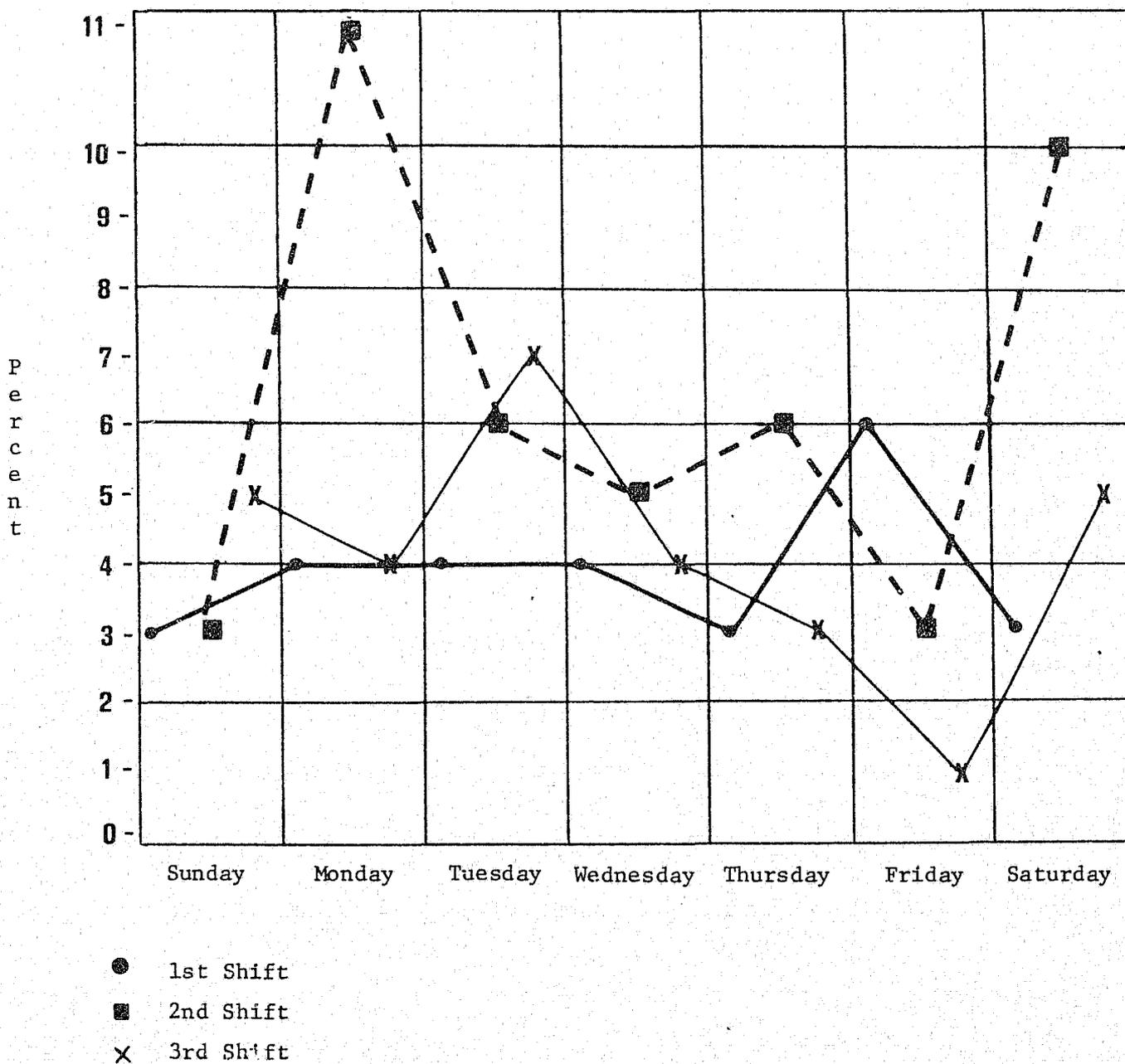
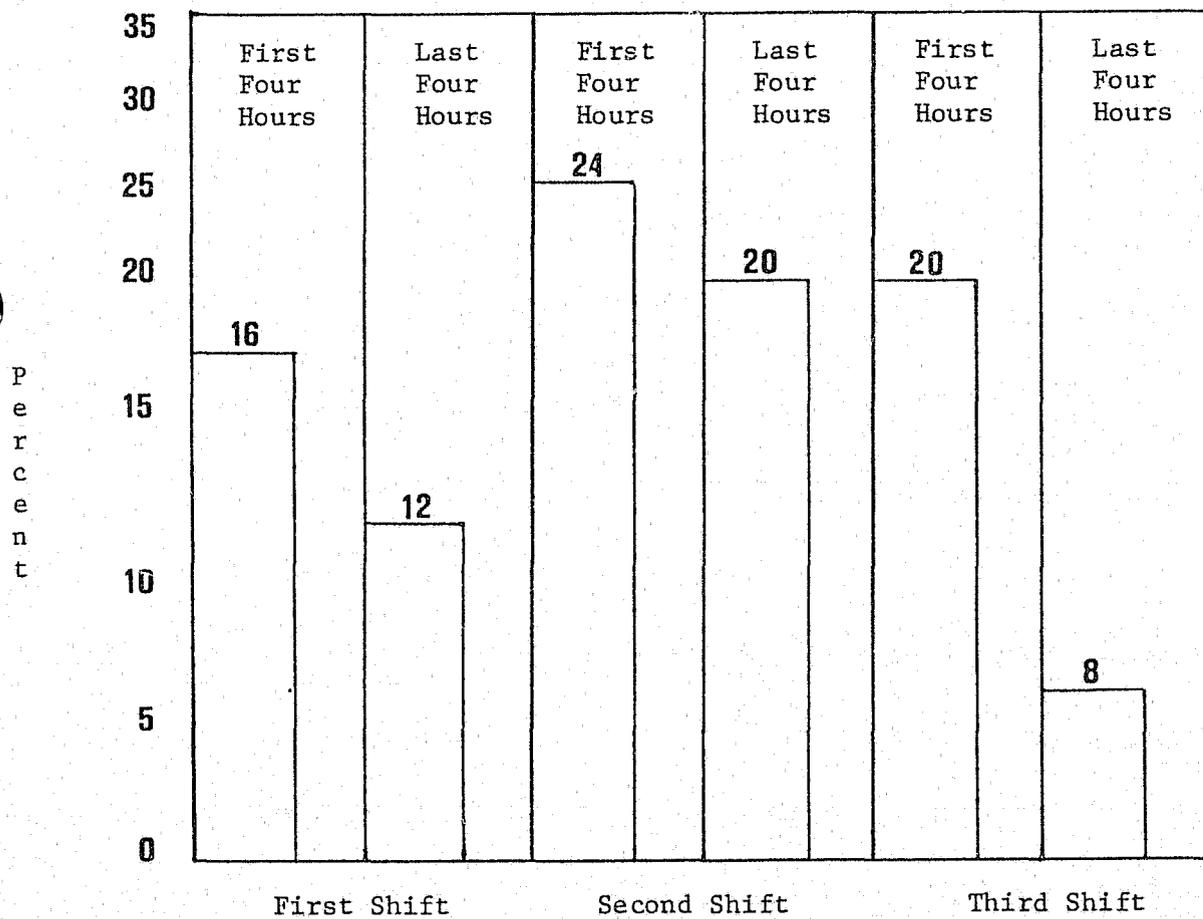


Table 4  
DISTRIBUTION OF CALLS  
FOR SERVICE BY FOUR-MAN PERIODS

Percentage of Recorded Police Activity by one-half Shift



The data from Table 4 further refine the distribution of the work load by four-hour increments. With 44 percent of the work load on the second shift, it would appear that personnel redeployment rather than shift changes should be sought to equalize the work load.

Deployment by day of week, shown in Table 3, indicates that with the exception of the second shift on Monday and Saturday, the work load is fairly evenly distributed. The assignment of days off within the Department should consider this trend.

Distribution of field officers by beat has been based upon work loads assessed within the district boundaries. The minimal work loads and the short distance from one beat to another argue against any complex deployment plan. The sustaining of one to three vehicles on a "fixed post" patrol pattern is, in the absence of continuous management data, about as sophisticated as the system can become.

The work load of the animal control specialist, who is not a sworn police officer, shows a response to 1,448 radio calls. Those calls would normally be handled by uniform patrol forces if the animal control specialist were not available. A survey of calls going to this specialist indicates many calls are valid police activities not requiring the intervention of highly trained police officers. Many of the calls handled by this specialist are service calls to citizens (174 recorded). The service rendered by this specialist supplements the police effort in community relations.

*The Detective Division.* The Detective Division has four full-time investigators, 11 percent of the total department strength. The value of the detective is always suspect simply because the investigative talent going into a case cannot be measured in terms of hours spent or the actual quality of work accomplished. Satisfactory evaluation standards have yet to be developed for investigative units. The number of Part I offenses committed alone would indicate a need for specialization within the Department. In Tables 2 and 5 pertinent work load data for the Detective Division have been shown.

In this department, the detective performs follow-up investigations and conducts public education programs about specialized police activity. Much of the good will shown by the public is attributed to the many contacts made by this division.

The Detective Division with 3,364 cases has a heavy work load. A substantial number of these are burglary cases which are difficult and time consuming to resolve. Based upon the number of personnel assigned to investigations the clearance rates cited in Table 5 are nationally, with the exception of thefts over \$50, above average clearance rates.

In assessing the work load of the detectives and in interviews with field personnel, there are indications that in order to affect a higher clearance rate, the Patrol Division should be conducting more extensive and more thorough preliminary investigations.

The burglary rate, while not higher than the norm for cities of this size, still constitutes a substantial crime problem and should receive special attention by the detectives.

*Warrant Section.* The Warrant Section is assigned to two men, approximately 5 percent of the Department's strength. A survey of warrant activities indicates a high percentage of work outside the City. This kind of work should more logically be performed by nonuniformed officers. The work load involved in the service of 3,093 warrants during the past 12 months would reasonably justify these two positions.

Table 5  
 INVESTIGATION ACTIVITY OF MAJOR FELONY CRIMES

Detective Division

Offense	Reported	Cleared	Open	Unfounded	Arrest
Murder	1	1	0	0	1
Rape	2	2	0	0	2
Robbery*	19	6	8	4	8
Burglary B&E**	304	104	208	39	82
Theft over \$50***	133	34	113	5	21

Crimes were taken from the monthly reports May 1972 to April 1973. Clearance rates:

- \* 31%
- \*\* 34.2%
- \*\*\* 15.7%

The question of having warrant officers in a small department goes back to the statement of mission. If traffic enforcement, and the concomitant high rate of unserved warrants are to receive priority consideration, there should be an explicit policy statement made to this effect.

*General Personnel Data.* Haltom City has the following employee benefits: (1) pay schedule; (2) city civil service benefits; and (3) miscellaneous benefits, such as clothing allowances and educational benefits.

The salary schedule is based upon a classification system for all city employees. A position classification is designated by pay grades 1 through 25. The year in grade is designated by the letters A through F.

*Civil Service Benefits and Personnel Evaluations.* Effective June 10, 1971, amendments to the City Charter established a Civil Service Commission to administer the Municipal Civil Service. A review of the amendments indicates police officers are fully protected under traditional civil service laws. In addition to the standard salary schedule, fringe benefits are paid for special investigations, overtime, longevity, and holidays and a cost of living adjustment is provided. The total budget for these fringe benefits amounts to approximately \$40,000 annually. The City furnishes uniforms to patrol officers and provides a \$10 per month clothing allowance to plainclothes officers. The Chief draws no clothing allowance.

Personnel evaluations are of two types. First, traditional semiannual evaluation forms are completed with the subjective ranking of each person in the Department. Second, the Assistant Chief keeps a running tabulation of work performed by the individual officer. A point system for evaluating work effort is maintained as an administrative tool to assist in making the semiannual report more precise.

#### IV. Miscellaneous Data and Activities

There are a number of specific areas of concern dealing with personnel utilization that have surfaced during this study.

**Identification and Records Section.** The individual assigned to the identification officer's function is a fingerprint expert with a knowledge of firearms, photography, and other specialized identification tasks. This officer is responsible for both the records function and criminalistics investigations. While present records are comprehensive, they are not consistent with the uniform crime reporting system. The Department expresses a desire to upgrade the records function. Thus, in the course of the technical assistance, alternatives were discussed.

The city data processing system is capable of providing to the Department: (1) readily accessible individual reports and (2) basic management data with input from the Police Department.

The City's 3 model 10 IBM system has a multifunctional card unit which reads 250 cards per minute and will punch 60 cards per minute. There is a printer with a 96-line position, capable of 100 lines of print per minute, and a CPU with 8,000 bytes of memory which could be easily expanded. The City contracts with IBM for 176 hours of machine time per month. Time is available, without increased cost to the City, to put all police records and reports on-line.

**Microfilm.** The Police Department has recommended to the City that police records be put on a microfilm system. This system has been proposed to improve the retrieval of mug shots and full report reproduction. The manual file system is in need of purging, and this should be done in conjunction with the upgrading of the total records process.

**Computer Processing of Warrants.** The City has its data system fully operational in the processing of warrants. Income to the City in 1972-1973 for "courts and fees" was estimated at \$110,000 or more than 6 percent of total city revenue.

The capability of the System 3 to process all traffic citations is described in the IBM General Information Manual that is on file in the City's Data Processing Department. The System 3 Citation Processing System effectively manages the handling of moving and parking violations for the City. The computer is now programmed to place "holds" for warrants for 21 neighboring cities and this capability can be expanded.

**Outside Employment.** Eight police officers are listed as having outside jobs: two detectives, two sergeants, two dispatchers, and two patrolmen. These employees work with city permission, the rationale being that, with the median income for the City at \$10,159 annually, the top officer salary of \$8,537 does not offer the patrolman a wage necessary to maintain more than a minimum living standard.

*Planning.* Because of its limited size, the Police Department does not have a formal planning program. It is important that a planning process be designed to include such activities as short- and long-range planning, the preparation of manuals covering all operations, and emergency plans that may be needed to coordinate other governmental agencies. The Police Department does not contribute to the FBI Uniform Crime reporting system.

*Traffic.* The City has recruited a traffic safety coordinator. The individual has planning skills and will be responsible to the City Manager—he should have some beneficial effect on the traffic responsibilities of the Police Department.

## V. Conclusions and Recommendations

Each paragraph of the report has been considered so that specific recommendations may be made on a given problem. In the more difficult areas of personnel policies, the recommendations have been personalized and in some instances the recommendations are not supported by documentation.

A department goals-and-mission statement has been formalized and reduced to writing by the Assistant Chief of Police during this study. The consultant recommends that the political administrators of the City further refine the mission of the Department and, based upon their recommendations, develop a manual of procedures and policies. A 36-man police department, if it is to operate effectively, should have work tasks and procedures fully documented.

Haltom City, like many cities, is traffic enforcement oriented and depends upon this revenue for its operating budget. Because of this budgetary need, it is most difficult to argue against an apparently excessive emphasis upon traffic enforcement. It would appear that with the hiring of a traffic safety specialist more emphasis will be placed on engineering and education than on punitive enforcement.

The projected population growth of 52 percent in the next decade presents the City with the need to establish a long-term personnel projection rate and prepare to hire approximately three to four new personnel per year for the 10-year period.

The geographical location of the City with reference to minorities is misleading. This city adjoins a section of Forth Worth that has a high racial mix and also a high crime incidence. Because of the proximity of this area to Haltom City, future projections will give Haltom City an increased minority population. The condition of housing in the older sections of the City will attract a low income, transient population and, very likely, the crime rise that tends to follow this condition. The City through a strong Building and Health Ordinance can regulate growth patterns in these older areas. For example, the City should require that older buildings which are subject to criminal attacks on a repeated basis be "hardened" so that they serve as a deterrent rather than as an attraction to the criminal. Financial assistance to develop a communitywide program in this area should be requested through the Council of Governments from the Texas Criminal Justice Council in the 1974 fiscal year.

The pattern of development arising from the new airport will bring Haltom City into a metroplex that has not previously existed. There are going to be increased demands for specialized police services. For example, surrounding cities should be encouraged, through an improved communications network, to make arrests on warrants from other jurisdictions. The City should be encouraged to participate in a regional data system so that every department would be mutually supportive in apprehending violators.

A feasibility study to standardize reporting and information exchange between agencies should be included as part of a complete management study for the City.

The economic growth rate of the City will probably be insufficient to support increased demands by the Police Department for specialized services. The City should cooperate with two or three other cities in an effort to increase planning capabilities and to secure outside funding. Funds from the Texas Criminal Justice Council are not available to a city unless a planned need is shown. The crime rate and associated problems in Haltom City will qualify the City for these funds if such justification is shown.

The recommendation involves the employment of a qualified police researcher (with CJC assistance) and in cooperation with two or three other nearby cities.

From data supplied, the Department appears to have a very thorough manual reporting and records system; it would seem, however, that reporting volume alone has consumed much personnel time and effort. For example, in April of 1973 there were 27 thefts valued at under \$50; 23 auto thefts; 18 thefts from autos; 12 assaults; 17 bicycle thefts; and 28 missing persons reported to the Department. This was in addition to the Part I crimes reported in Table 2.

Two recommendations are suggested from the analysis of this data. Too much sworn personnel time is spent processing paper. The Department should consider establishing at least two secretarial positions, thus relieving sworn personnel for other activity requiring their specialized training and talents. These positions could be tied into the communicator position as discussed later.

In the analysis of criminal work load data, the City has indicated that about \$290,000 per year is lost to criminal activity. There were 304 burglaries; 133 thefts over \$50; and 240 auto thefts reported in the past 12 months. (With that number of stolen cars, the \$290,000 loss does not seem realistic.) In summary, some 3,364 criminal investigations were conducted. The figures indicate that the City has substantial crime problems. Based upon the analysis of the data available there is a need for:

1. A survey of "proper" investigators' case loads.
2. An analysis of the auto theft problem and investigator case loads.
3. A study of the criteria for setting case priority for investigators.
4. A survey of special antiburglary programs for possible funding by the Texas Criminal Justice Council.
5. A reorganization of the report flow and records-keeping system in the Special Units Division so individual field investigators are not swamped with paper.

Once the records are systematized for automation a secretary should be assigned to the Special Units Division. The salary differential, if the savings are passed along to investigative time, would in the long term increase field efficiency at a lower cost to the City.

Formal presentations for public information are not documented by the Detective Division. If public information programs are given, they should be documented.

Work load data for the Patrol Division indicate that a total of 10,575 radio calls and 421 citizen calls were answered during the past 12 months. In addition, patrol units have initiated 858 criminal investigations and made 2,439 criminal field contacts. These units have written 4,262 moving and 3,846 nonmoving citations. There has been a total of 10,657 crime and other reports processed. The reported amount of activity would indicate a reasonable level of field activity. Based upon this amount of activity the following recommendations are made:

1. An evaluation of officer efforts in specific patrol districts should be made. (This should be done only after the new communications system is installed.)
2. An assessment of patrol car and individual officer equipment should be made with emphasis upon uniform maintenance, standardization of side arms, and consideration of the level of communications equipment necessary to keep an officer in constant touch with the station.
3. A review of deployment by shifts based upon a *detailed analysis* of crime occurrence should be conducted. A preliminary survey of deployment by shifts was made based upon available data. Because of the limited size of the Department and the knowledge of crime possessed by the administrators, this problem did not appear to be critical to the operation of the Patrol Division.
4. The feasibility of roll call training to review crime trends, report writing, and other problem areas should be considered.

The basic organizational structure of the Department appears to be sound in terms of lines of authority. The assignment of an equal number of men on each shift is misleading because one man, on a nearly permanent basis, is assigned to school from the third shift. Officers going on vacation are also often assigned to the third shift so that in reality personnel deployment is consistent with the work load.

The issue of personnel deployment was discussed extensively with the Assistant Chief. It appears that a reasonable "rule of thumb" deployment technique is now in use in the Department. Until there is a more sophisticated records system which can be aided by resource allocation techniques, the present system is reasonably adequate. Because of the techniques now in use and the strong possibility that the City may be able to utilize a preprogrammed resource allocation system, comments regarding deployment techniques are not belabored in this study.

The structuring of the Department with an Assistant Chief has left a void in the middle management ranks. With the retirement of the Chief in about a year, some consideration should be given to the feasibility of having a stronger mid-management structure. Logically, the present Assistant Chief will be the leading contender for the Chief's position. In the event the Assistant Chief's position is vacated, that position should be reassessed. It would be this consultant's position that a stronger organization would be possible if two lieutenant positions were created to fill the mid-management void. One lieutenant would serve as the assistant to the Chief and as the Chief in the Chief's absence. The second position would be the Assistant to the Chief for the second shift. This second position would allow more responsible decision making during the time period when the Department is conducting nearly 50 percent of its business with the public. The creation of these positions would be based upon the assumption that projected growth patterns are reasonably accurate. The two new positions would probably be funded at about the same budget level as at present.

The Department has a built-in inflexibility with too many specialized positions. This problem was discussed with the Assistant Chief, and it was suggested that the positions as they presently exist be analyzed in terms of work content and possibly be retitled. For example, the communicator's position could be handled by a secretary who would handle both communications and typing tasks. The warrant officer, dispatcher, and the detective classifications should probably be eliminated as civil service classifications. These tasks might be slotted at a higher pay schedule, but there should be the flexibility of allowing the Chief to assign these jobs to any sworn position within the policeman rank. In the present organization, the Chief has no authority of assignment based upon quality of performance. These suggestions need further study, but the present classification system is detrimental to good management practices.

Because of the lack of secretarial services, patrol officers and administrators are having to do too much detailed paper work. A task analysis would probably show that much of the paper work could be more economically done by a secretary at a lower salary level.

The dispatcher position is in reality that of a "desk man" who takes charge of the station when the Chief and sergeants are not on the premises. This position should be retitled to reflect his specific function. The position should not be a separate civil service classification but should be a requisite assignment for prospective sergeants because of the variety of supervisory and administrative duties performed by this position.

Data in Appendix I setting forth the qualifications of departmental personnel indicates that progress is being made to upgrade personnel with training and education. It appears the Department is supporting short-time training efforts, but only a few of the officers are taking advantage of the nearby educational opportunities. With training so costly in terms of lost manpower, the City should encourage technical education for all officers on their own time. The salary incentive for additional education has been successful for many agencies in upgrading personnel and should receive consideration in this department. A level of training of 240 hours, basic and short-term specialized training, is the bare minimum for an officer to function. In order to be effective, individual officers must be encouraged to secure outside training and education.

Apparently there is a reluctance on the part of the citizens of Haltom City, and consequently the Council, to support higher salaries in a department that has such a large number of minimally qualified officers. Only after officers have improved the image of the Department are the citizens going to demand better benefits for its police officers.

In the Patrol Division there is a need for a study of reporting practices. The patrol officer should generate one, and only one, document necessary for input into the records system. The Department presently has a reporting form which, with only slight modification, could serve as the input document for an automated records system. Until the system is adopted, care in report writing should be stressed by administrators. A short course (six to eight hours) should be offered to all departmental members to emphasize the necessity of neat, brief, and accurate reporting. Very few modifications and a short training period would bring all records up to the same efficiency as that maintained for traffic citations.

The rotation of shifts has been given considerable administrative thought in the Department. The two-month rotation has been considered the best possible answer to a perennial police administration problem. In the shift rotation, supervisors and men both rotate together; however, because of shift change by officers, an officer will rarely work for the same supervisor for more than a year. Neither issue appears to present any real problems.

The wearing of the uniform does not appear to be a problem. Those station personnel who meet the public wear uniforms as do members of the Patrol Division. The overall appearance and maintenance of the uniform should be given some administrative consideration.

Preliminary data indicate that there may be a need to analyze further the patrol plan with regard to shift time changes. In conference with the Assistant Chief, this question was thoroughly discussed. The Chief's tabulation of the work load data gave strong support for present shift schedules. In the absence of an automated system it is felt additional analysis of present data will lend very little to the present work plan. While the 2:00 p.m. to 10:00 p.m. shift handles 40 percent of the recorded daily work load, examination of the work sheets indicate that special details, training schools, and vacations are assigned from shifts with lesser crime incidence.

The Detective Division has a heavy case load. The detectives maintain good records, but differences in the classification of crimes incompatible with the Uniform Crime Reporting System mean that the Department cannot relate its crime data to other departments in the state and nation. There is need for further study of the internal procedures of the Detective Division before logical comment can be made about its effectiveness.

The Warrant Section has a heavy case load as indicated in Table 2. With fine monies going into the general fund of the City, there is an obvious demand for the service of warrants. It is suggested that greater emphasis be placed upon communicating with other departments so that they will be of more assistance in the service of warrants upon suspects living in their cities. It is also suggested that the warrant officer function be assigned to a regular policeman rather than to someone with higher paid civil service rank. There is a need to maintain greater flexibility of manpower in both the Detective and Warrant Divisions.

Personnel information seems to indicate that the Civil Service System is a good one. In the opinion of the consultant there are only a few deficiencies that should be noted: (1) The salaries appear to be about 5 to 7 percent below that for officers in comparable departments in the region. Administrators' salaries should be raised substantially. The Chief's salary based upon departments of similar size throughout the country should be in the \$15,000 to \$18,000 range. (2) There is a need for a salary and benefits study based upon merit performance and educational and training qualifications. While all officers have met minimum state standards, there is a need for a further upgrading of the qualifications of most of the officers in the Department, thereby encouraging pay raises. (3) All personnel of the Department should draw a clothing allowance, the City should purchase leather equipment and standard side arms and see that officers maintain their equipment in top condition. (4) The "28-day point system evaluation" needs considerable analysis to determine if it is accomplishing what it was designed to do. With this type of evaluation system, work quality often suffers for the sake of "work points." A major time consuming investigation, for example, is avoided because it offers only one point. The issuance of a traffic citation is much easier to accomplish and brings as many points. It seems apparent that if this system is used as a basis for establishing criteria for officer performance, it may tend to limit overall departmental productivity.

The ID officer and dispatchers should all have additional training on the development and operation of a simple automated records system.

The Department should begin to contribute to the Uniform Crime Reporting System. The great mobility of criminals emphasizes the need for information from departments across the country. If the City is to seek funds from the Texas Criminal Justice Council, it is a requirement that the Department be a contributor to the Uniform Crime Reports. The Texas Criminal Justice Council can assist in revitalizing the records-keeping capability.

The automated records system should include not only traffic warrants but all general police information so printouts can be secured for administrative analysis. This information is presently tabulated by hand and is a tedious, time-consuming operation. A work process analysis of the records system should be conducted.

Microfilm for both active and obsolete records is an appropriate investment only if the basic system of records keeping is established. Prior to purchasing microfilm equipment a feasibility study should be done to assess utilization figures against cost factors. Many systems, newly purchased in Texas, have been found to be excessively expensive to maintain properly.

Outside employment, because of the salary level and the diverse hours the officers work, is often a healthy way for the Department to relieve the manpower squeeze. Permission to work outside the Department should be granted in writing to the officer, setting forth specific responsibilities regarding compensation and conflict of interest. The Department should not assign a man for work outside the Department at a salary rate less than his comparable salary in the Department. The permitted length of time devoted to outside employment should be clearly set so that an officer will be rested when on duty for the Department.

The Department should have a research and planning specialist. A logical plan would be to share such a specialist with two or three nearby cities. If the Criminal Justice Council would fund a joint effort, these cities could obtain staff services at little cost.

In summary, the consultant is of the opinion that the Department should either commission an administrative management study or request individual studies covering two or three key areas such as the development of a procedural manual, an automated records system, and a survey of internal operations. The Department is most cooperative and interested in viable suggestions to assist in bringing good police service to its citizens.

APPENDIX I

Name	State Certification			Supervision	Other Training
	Basic	Intermediate	Advanced		
J. Ballew	220		40		L 16, P 40
Jo Bantau	140				T 40, I 40
J. Bennett	140	3 semester college <u>a/</u>			P 35
F. Bortmas			800	398	N 35, T24, B35, RP65, C48, R12
A. Capps	350				F104, L16
A. Choate	Grandfathered				C24
J. Coleman	420				C21
E. Collins	140				R20, C21, T20
D. Covington	160	35 semester hours of college <u>a/</u>			I26, T35
J. Crowder	140	74 semester hours of college AA			T55
P. Daves	350	Enrolled in 12 hours college			T40
R. Downs	280				X20, B80, C40
E. Flow		400		285	T34, N21
J. Harris	350	Enrolled in 9 hours college			T40
C. Henry			800	40	RP28
R. Hill	360				B18
R. Horner	Grandfathered				T80. Will retire this year
J. Huffman	640	Enrolled in 6 hours college			T40
C. Hunter	Grandfathered				T80
R. Hurley	140	Has AA from Jr. College			T35, J21, C26
R. Landman		Will start in academy next month			T60
L. McClanahan	200			80	F40
L. McGuire	350	Enrolled in 9 hours college			
G. Payne	350				
J. Ray	140				F8, C40, X40, FI80
K. Richardson	350				H160, RP40
J. Robbins		400 Has College English			B35, T35, N61
B. Thomason	324				
J. Thrope	350	Has 3 semesters of college			
J. Tork	290				T35, C16
J. Wilson	360	Has 3 semesters of college			

a/ Now enrolled in college

CODE

P-Patrol	L-Legislation	T-Traffic	I-Investigation	H-Handwriting Examinations
N-Narcotics	C-Communications	F-Firearms	X-First Aid	PR-Police Records
J-Juvenile	FI-Fingerprint	B-Bombing	R-Community Relations	

APPENDIX II

# POLICE

## STANDARD 8.3

### DEPLOYMENT OF PATROL OFFICERS

Every police agency should immediately develop a patrol deployment system that is responsive to the demands for police services and consistent with the effective use of the agency's patrol personnel. The deployment system should include collecting and analyzing required data, conducting a workload study, and allocating personnel to patrol assignments within the agency.

1. Every police agency should establish a system for the collection and analysis of patrol deployment data according to area and time.
  - a. A census tract, reporting area, or permanent grid system should be developed to determine geographical distribution of data; and
  - b. Seasonal, daily, and hourly variations should be considered in determining chronological distribution of data.
2. Every police agency should conduct a comprehensive workload study to determine the nature and volume of the demands for police service and time expended on all activities performed by patrol personnel. The workload study should be the first step in developing a deployment data base and should be conducted at least annually thereafter. Information obtained from the workload study should be used to:
  - a. Develop operational objectives for patrol personnel;
  - b. Establish priorities for the types of activities to be performed by patrol personnel; and
  - c. Measure the efficiency and effectiveness of the patrol operation in achieving agency goals.

#### Commentary

Most police activities are separated into line, staff, and auxiliary services operations. Patrol, traffic, and detective line operations account for the largest part of the work of any police agency. Accordingly, the largest portion of police manpower resources traditionally are allocated to these line operations. The staff and auxiliary services operations are designed to support the line operations, directly or indirectly.

In recent years the pressure upon police agencies to make changes and implement new programs, particularly in community relations, has caused a disproportionate increase in the number of personnel assigned to administrative and staff support functions. The practice in many agencies is to expand administrative and staff support activities by drawing personnel from other units within the agency. Because of the relatively large number of personnel assigned to them, the line operations usually provide a convenient source of "bodies" for administrative assignments. Even when the personnel are drawn from a source other than line operations, the ripple effect ultimately produces a vacancy in the line operations, often in the patrol force. The most promising

solution to this problem, is using civilian police personnel in certain staff and administrative positions.

Additionally, in many agencies the line officer's basic duties have been altered to require that at least a portion (and sometimes a considerable portion) of his time be devoted to community relations activities. The need for effective police-community interaction is clear, and the expenditure of a reasonable amount of manpower resources in this endeavor is certainly justified as long as the primary objective of such a program is to reduce crime. The secondary objectives of these programs, such as increased mutual understanding or improvement of the police "image," are admittedly desirable. However, these considerations cannot be allowed to diminish the unavoidable reality of a police agency's responsibilities to reduce crime, maintain public order, apprehend criminals, and respond effectively to other legitimate demands for police service. A reasonable balance must be maintained, particularly with respect to the assignment of patrol personnel to achieve secondary community relations objectives. The resources expended on community relations should have a demonstrated effect on crime. If they do not, they should be directed where they will have such an effect.

There is currently no universally accepted scientific methodology for determining either the total number of personnel needed to police a given jurisdiction or the percentage distribution of personnel within an agency's organizational structure. Officer-to-population ratios are often used to indicate total manpower needs. However, there have been no compelling scientific arguments offered in support of police-to-people ratios, and these ratios differ widely from one jurisdiction to another.

Formulas for the percentage distribution of personnel to functions within police agencies are similarly lacking in justifiable rules or concrete guidelines. The typical agency deploys approximately 80 percent of its total sworn strength in patrol, traffic, and detective assignments. The remaining 20 percent are divided among the staff and auxiliary services functions. Within the line operations, the patrol function accounts for approximately 70 to 80 percent of available line personnel. The remaining 20 to 30 percent are deployed in traffic and investigative assignments.

Most existing systems for allocating patrol personnel distribute available manpower over space and time on the basis of hazard or workload formulas. Certain factors that present a greater police problem or are particularly time consuming usually are weighted accordingly.

An essential requirement of a deployment data collection and analysis system is that it enable administrators to determine the proportional distribution of pertinent data by area and time. Spatial and temporal variations in selected types of deployment data are critically important when evaluating crime, requests for services, and other vital patrol deployment factors.

Determining geographic distribution of deployment data is greatly facilitated by a permanent grid, census tract, or reporting district system. Standard United States census tracts provide a convenient base for large jurisdictions, although smaller jurisdictions may require subdivision of census tracts into sectors or reporting districts. Permanent grid systems have been developed and used to advantage by agencies in Tampa, Florida and Tucson, Arizona.

Chronological distribution of the demands for services and the resultant workload experienced by patrol field officers will vary on a seasonal, daily, and hourly basis. Deployment data must reflect these variations so that shift and day-of-week assignments are founded on real need.

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Any agency will have difficulty in justifying equal time and area assignment of patrol personnel unless it can be demonstrated that the problems affecting patrol deployment are distributed in the same manner. Regardless of the size of an agency, deployment data can be collected and analyzed manually or by computer. The system must be tailored to the agency's needs and objectives.

8.3(2) Workload Study. The first step in developing a deployment data base is to determine the distribution of patrol personnel workload. The workload study must include a comprehensive assessment of the demands for patrol services in the community and the types of activities, services, and duties routinely performed by patrol personnel. Three fundamental patrol operation responsibilities must be considered in determining workload distribution: crime, called-for-services, and arrests.

Reported crimes should be analyzed by type, date, time, and location of occurrence. Crime repression activities by patrol officers should be analyzed by assigned area, date, shift, and average time expended.

Called-for-services (public requests for police services) should be analyzed by type, date, time, and location. Patrol officer time expended on calls should be analyzed by assigned area, type, date, and shift. An analysis should also be made of delay time in dispatching calls and response time.

Arrests by patrol personnel should be analyzed by type, date, time, location, and average time expended. Comparisons of apprehensions to reported crimes should be made by assigned area and type.

The crime, called-for-services, and arrest data, alone, will not provide a complete picture of patrol supply and demand. To evaluate patrol effectiveness, it is necessary to determine what percentage of patrol time is spent on nonemergency and noncriminal matters not directly connected with the primary duties of crime repression, criminal apprehension, and handling called-for-services. A workload study should include an analysis of factors influencing field unit availability, such as time spent on community interaction meetings, vehicle maintenance, court appearances, and all other miscellaneous public service and administrative activities.

Furthermore, the collection and analysis of traffic workload data is necessary whether an agency's traffic functions are performed by traffic specialists or by patrol personnel. A traffic workload study must at least include analysis of data on reported traffic accidents by type, date, time, location, and primary cause. In agencies using traffic specialists, this data is the criteria for distributing accident investigation and traffic enforcement personnel to geographic areas, shifts, and beats. Where traffic specialists are not used, traffic data should be considered as a part of the patrol called-for-service workload. The analysis should include an assessment of the average time expended on traffic accident investigations by type (fatal, injury, and property damage) and should provide information necessary to the application of selective enforcement techniques by patrol personnel.

The collection and analysis of workload data need not be a continuous process. But a workload study should be conducted at least annually. The extent of analysis required should be consistent with the volume and nature of local demands for patrol services and with the size and resources of the agency. The information obtained from the workload study should form the basis for establishing patrol operation objectives and priorities and for measuring patrol effectiveness.

Operational objectives and priorities should be measured against the fundamental patrol responsibilities to reduce crime, handle called-for-services, and apprehend criminal offenders. Crime workload data may indicate the advisability of implementing special crime repression techniques or deploying a crime tactical force.

Called-for-service workload data may identify the need for establishing response priorities on calls and deploying specialized response units to service certain types of calls, such as family disputes. Arrest data combined with called-for-service data may be used in adjusting personnel assignments and developing innovative patrol patterns and techniques to move field units closer to crimes in progress and reduce travel time to calls in general.

Examining miscellaneous activities of patrol personnel may reveal the need to establish priorities on the types of services rendered by patrol and to eliminate certain nonenforcement and nonemergency services from the patrol responsibility.

8.3(3) Personnel Allocation System. Effective deployment of patrol personnel must begin with distribution of personnel on a proportionate-need basis. Through careful study of crime occurrences, called-for-services, and other selected factors, available manpower must be systematically distributed geographically and chronologically according to the relative needs for police service throughout the community. While this process in itself will not guarantee the best use of patrol personnel, it forms the foundation for developing and implementing the most effective deployment strategy.

There are two primary needs for the selective distribution of patrol officers. First, in dealing with the problems of crime repression and assigned activities (such as called-for-services), the police chief executive must deploy his patrol officers where and when the problem exists. Second, it is desirable that each officer or team of officers have approximately the same workload.

In determining the proportionate-need distribution of patrol personnel, the police chief executive must decide what factors to include in an allocation system. For the purpose of illustration in an example of an allocation system, three basic factors will be used: selected repressible crimes, called-for-services, and arrests.

An analysis of reported crimes is essential to the administrative decisionmaking process of any police agency. Most allocation systems tend to emphasize crimes that are believed to be more susceptible to repression by the presence of uniformed patrol personnel or that indicate a serious need for police service or both.

There are differing opinions and a lack of empirical research on the extent to which patrol deters crime. There is evidence that some so-called crimes of passion are not deterred by police presence. However, the "nonrepressible" nature of a particular crime does not eliminate its value as an indicator of a police problem. Aggravated assaults are to a certain extent repressible, especially those occurring in public places. Murders and rapes indicate the need for the presence of patrol personnel in those areas where a higher proportion of crimes of violence occur. Moreover, the geographic location and time of occurrence of nonrepressible crimes are predictable to a certain extent when considered in bulk. These types of crimes can be reduced by the application of special crime control techniques, particularly through community interaction programs that encourage citizen involvement in neighborhood anticrime campaigns.

Called-for-services are included because they represent a clear-cut, recognizable, and readily measurable demand for police services. The apprehending of suspected offenders and the

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processing of arrestees are included because these activities involve a need for patrol manpower which is distinguishable from the need which arises from crime occurrences and called-for-services workload.

Experience has shown that using the number of called-for-services and the number of arrests without consideration for time expended is of little or no value in determining workload. For example, called-for-services and arrests may occur on two different shifts. All the activities on one shift, however, may take twice as long to complete as the same number on the other shift. Therefore, using only the number of incidents would erroneously indicate that the workload was the same on both watches.

Called-for-services and arrests should be weighted on the basis of the average elapsed time by watch for each of the activities. The selected crimes should not be weighted.

Another concern in establishing an allocation system is the frequency of tabulation of the various factors. In most agencies, a quarterly tabulation generally provides the information required. Consequently, the months of January, April, July, and October have been used successfully to represent the 4 quarters. The factors are calculated by category for these 4 months and then totaled. In agencies with more than one precinct or division a percentage allocation should be determined for each geographic division and applied to the allotted patrol personnel. A certain number of fixed posts must be manned in each patrol division, regardless of the number of officers on patrol duty in the field. That is the "overhead" or basic operating manpower for the division. It includes jailers, desk officers, and other fixed posts and specialty assignments. These positions are deducted from the total number of personnel to determine the final number available for field patrol deployment.

**Determining Shift Hours.** The first step in the distribution of personnel (at the divisional level in decentralized agencies) is to determine the shift hours. Because of the variables involved, neither arrests nor elapsed time should be used in determining watch hours.

Using the four topic months, the number of called-for-services and the number of selected crimes should be totaled by hour of day for each of the two factors. The 24 hourly totals should be added to obtain a grand total for the 24-hour day, from which a percentage for each hour can then be obtained. The percentage of the total for each hour can then be plotted on a graph to indicate the hourly distribution of the problem.

The selection of shift hours should be made with the beginning times set at the start of the greatest sustained rise of the problem. When the times have been selected, the average percentage of the problem during each 8-hour period should be plotted on the chart. The chart is used only as a guide, for there are several considerations in determining shift hours. For example, establishing certain shift hours may require changing from 2-man cars to 1-man cars or the reverse on a specific watch. Another possibility is that a correct choice of shift hours may eliminate the necessity for a midwatch (a 4th overlapping shift). A midwatch should be considered only when the upward certain shift hours may require changing from 2-man cars to 1-man cars or the reverse or a specific problem would require additional personnel for the last part of one watch and first part of another. The human element must also be considered. People do not like to go to work at 3 or 4 a.m.

Once the choice of shift hours has been made, the shift hours of adjoining divisions should be determined to ensure that both divisions have not selected the same times. Should the hourly fluctuation of the problem indicate a major change is not feasible, each division can remedy the problem by moving the watch hours forward or backward 15 minutes.

When shift hours have been established, consideration must be given to the fact that the amount of time required in proper disposal of a call or an arrest will vary from watch to watch. A 1-month tabulation of elapsed time can be used to obtain a weight factor for called-for-services and arrests. The number of called-for-services and arrests and the number of minutes consumed handling these activities can be determined and a weight factor obtained by determining the average number of minutes per activity for each shift.

**Distribution of Personnel by Shifts.** The distribution of policemen by shift is accomplished first by determining the percentage of the total problem on each shift and then distributing a proportionate percentage of field policemen to each shift.

To determine the percentage of the problem, each of the three factors (selected repressible crimes, called-for-services, and arrests) is totaled by hour of day for the 4 topic months and the hourly totals for called-for-services and arrests multiplied by their respective weight factors. Again, the selected crimes are not given a weight factor. Finally, respective percentages of the problem should be computed on a shiftwide basis.

After the percentage of the workload for each shift is determined, the total number of available field policemen should be computed. This is done by subtracting the fixed post positions from the total number of available patrol officers. Available field policemen should then be deployed to the three shifts according to the distribution of the problem.

**Distribution of Field Policemen by Day of Week.** Once the number of policemen assigned to each shift is determined, the appropriate day-of-week distribution of field policemen on each shift can be determined. The first step is to analyze the distribution of the police problem by day of the week within each of the three shifts. Such an analysis may show a marked increase in workload on Saturday but not on Thursday nights, for example. Under these circumstances, if the watch commander has the same number of officers working each day of the week, officers working Saturday nights would be overworked while officers working Thursday nights would be underworked.

The daily variation of crime problems and the demands for police services should be measured to provide data necessary for the distribution of field policemen proportionate to the problem on each day. The data needed for determining workload by day of week are obtained from tabulating the number of called-for-services, arrests, and crimes by day of week and by hour of day.

**Distribution of Field Policemen by Beats.** The geographic size of each beat should be based upon the percentage of the police problem in that area. The assignment of comparable workloads for each beat on a given shift on a given day can be accomplished by assembling the census tract grids or reporting districts in such a way that the combined percentage of the problem is approximately equal in each patrol district or beat.

In distribution of field policemen by day of week and by beat, the workload must be measured separately for each of the three selected 8-hour shift periods. Using the same deployment plan for all three shifts would result in a 24-hour measurement of the workload governing the distribution of radio cars manned by policemen working only a particular 8 of those 24 hours. Measuring the workload during each of the three 8-hour shifts precludes the possibility of overdeployment in certain districts and provides more equitable distribution of the workload among the officers assigned to the various shifts.

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The selected crimes, arrests, and called-for-services should be separated by hour of day and day of week within each reporting district, grid map, or census tract. The reporting district totals for each shift should then be weighted by average number of minutes required to handle each of these activities on the various shifts.

In a separate reporting district or grid map for each shift, the percentage of the workload should be entered in each reporting district. With the geographic distribution of the police problem depicted in this manner, a separate set of car plans can be prepared for each shift, taking into consideration not only workload but also geographic traffic flow, and other features that might affect access to certain areas. Adding the workload percentages shown in each reporting district of each unit's beat or area of assignment will show the workload of the assigned personnel. If there is a discrepancy, reporting districts may have to be added to or subtracted from the area to equalize the workload.

**Fixed Posts, Availability, and Relief.** Fixed-post assignments may be divided into two groups: assigned positions and specialized positions. An assigned position must be manned on a full-time basis, and additional personnel must be used in relief. Examples would be desk or jailer positions. A specialized position is manned by a constant number of personnel. If they are not available, no one will normally be assigned in their stead.

Since the number of men required for an assigned position may fluctuate daily due to workload but will rarely fluctuate an appreciable amount weekly, it is sufficient to compute the need for a week. The number of officers assigned to fixed posts should be reviewed periodically to insure that such assignments are minimal and in keeping with agency policy.

Most assignments in patrol must be manned 7 days a week. Therefore, a formula should be devised for determining availability and relief factors for any given patrol assignment. The most commonly accepted formula is a statistical model of the average policeman's working year; this model can be applied with an acceptable degree of reliability to any position or assignment.

The factors which comprise the formula are:

1. Regular days off per man per year;
2. Vacation days off per man per year;
3. Average sick days per man per year;
4. Average injured-on-duty (IOD) days per man per year.

The following is an example of the method used to obtain the availability and relief factors:

1. Regular days off per man per year, including holidays.

$$\begin{array}{r}
 \text{a. } 11 \text{ deployment periods} \\
 \quad \times 9 \text{ days per deployment period} \\
 \hline
 99 \text{ days}
 \end{array}$$

- b. 2 deployment periods  
x8 days per deployment period

16 days

- c. 99  
+16

115 days

2. Vacation days off per man per year.

14 days

3. Average sick days per man per year.

3.8 days

4. Average injury days per man per year.

2.5 days.

Availability Factor

$$\frac{365 - [A(115) + B(14) + C(3.8) + D(2.5)]}{365} =$$

$$\frac{365 - 135}{365} = \frac{230}{365} = .63 \text{ Availability Factor}$$

$$1.00 - .63 = .37$$

$$\frac{.37}{.63} = .5873 \text{ or } .6 \text{ Relief Factor}$$

The availability factor is the average percentage of time a policeman can be expected to be available for duty per year. If a position must be manned 100 percent of the time, then more than one man must be assigned to that position. This is the "Relief Factor" and is a mathematical function of the availability factor.

With an availability factor of 63 percent, as in this example, 37 percent must be made up by another man. However, the other man is also available only 63 percent of the time. As the formula for relief factor shows, this translates to 37 percent of a man's 63 percent available time or 60 percent of his total working time.

Continuing with the example, a position which must be manned constantly on a given shift and which requires one man present at all times will require one man plus .6 man for the position. This formula will work for any number of positions. For example, 3 positions require  $3 + (3 \times .6)$  or 4.8 men.

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The average agency will find a relief factor of .6 is sufficiently accurate for its needs. Large agencies may determine that a relief factor of .58 will be needed for greater statistical accuracy.

8.3(4) Deployment System Procedures . The success of a patrol deployment system depends directly upon the support afforded by all personnel involved in the program. The active participation and willing cooperation of all personnel is greatly enhanced if representatives of all levels within the agency are included in the planning and implementation of the system.

Procedures for the implementation and ongoing operation of the system should be established and distributed in the form of agency directives from the police chief executive. These directives should provide procedural guidelines and detailed information on the need for an adequate and accurate deployment data base, the purpose of proportional-need distribution of patrol personnel and the objectives and goals of the deployment system.

Procedures should include periodic deployment system evaluation based upon time information derived from an analysis of current patrol deployment data. Personnel allocations by geographic divisions or precincts in decentralized agencies should be evaluated and appropriate revisions made at least yearly. Shift, day-of-week, and beat configurations and personnel complements should be evaluated at least quarterly.

Appropriate training programs should be established for all personnel involved in the system. The training should be tailored to the needs of personnel responsible for the various facets of the system, including the reporting, collection, and analysis of deployment data and the use, evaluation, and revision of the deployment system.

**END**

*7. 26/10/1950*