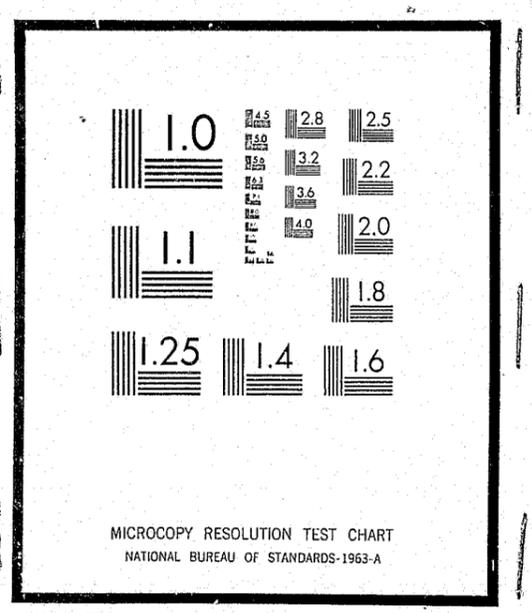


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U.S. DEPARTMENT OF JUSTICE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
NATIONAL CRIMINAL JUSTICE REFERENCE SERVICE
WASHINGTON, D.C. 20531

5/2/77
Date filmed

LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
POLICE TECHNICAL ASSISTANCE REPORT

SUBJECT: Frankfort, Kentucky; Law Enforcement Needs Analysis

REPORT NUMBER: 76-176

FOR: Frankfort, Kentucky, Police Department
 City Population: 25,000
 Police Strength (Sworn): 47
 Total: 55
 City Area: 7.5 square miles

CONTRACTOR: Westinghouse Justice Institute

CONSULTANT: G. Hobart Reinier

CONTRACT NUMBER: J-LEAA-003-76

DATE: January 1977

NCJRS

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ACQUISITIONS

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FOREWORD

This request for Technical Assistance was made by the City of Frankfort, Kentucky. The requested assistance was concerned with performing an analysis of the Frankfort Police Department's manpower needs; physical plant facilities equipment; and recruitment, training, and promotional procedures directed toward developing a 5-year plan.

Requesting Agency:

City of Frankfort, Mr. Paul Royster;
Frankfort Police Department, Chief of
Police Douglas L. True.

State Planning Agency:

Kentucky Department of Justice, Capt.
Leo Reynolds; Bluegrass Area Development
District, Inc., Mr. Michael Diehl,
Criminal Justice Coordinator

Approving Agency:

LEAA Region IV (Atlanta), Mr. John A.
Gregory, Police Specialist.

1. INTRODUCTION

Frankfort, the capitol city of Kentucky, had a 1970 census population of 21,902 and an area of 7.1 square miles. The population is estimated now to be over 25,000 and the area of the City is approximately 7.5 square miles. Frankfort is located in Franklin County, which had a 1970 population of 34,481 and an estimated 1974 population of 36,500.

The 1975-76 budget for the Frankfort Police Department authorized a strength of 49.5 persons: 42 sworn and 7.5 civilian personnel. The 1976-77 budget authorizes a total of 55: 47 sworn and 8 civilian personnel. The 1974-75 expenditures were \$512,791; the estimated 1975-76 expenditures are \$532,850; and the proposed 1976-77 are \$655,886. These figures do not include school crossing guards and parking enforcement. They are supplemented by revenue sharing funds for each year of \$46,707; \$31,136; and \$120,505, respectively. Revenue sharing funds are committed to equipment and supplies.

Frankfort is considering annexation that may approximately double the geographic size of the City. Most of the area being considered for annexation is rural. There are seven residential subdivisions located in the areas under consideration with approximately 533 homes. There are an estimated 23 miles of road that will require patrol attention.

Mr. Paul Royster, recently appointed City Manager, requested Chief of Police Douglas True to estimate the police resources that would be required to provide an appropriate level of police services in the annexation areas. In addition, both Mr. Royster and Chief True are interested in determining the long-range (5-year plan) needs of the Police Department in the areas of personnel staffing; physical plant facilities; equipment; recruitment, training, and promotional procedures. The City is in the process of acquiring a vacant supermarket building of 9,000 square feet for the use by the Police Department. The Department presently occupies about 2,900 square feet, some of which is shared with other City departments.

The original request for technical assistance was predicated on a desire for obtaining precise answers to the above issues so that the 5-year plan could be developed. The Consultant reviewed the available data and discussed the processes of planning required to address these issues. It was agreed by all parties that the Consultant should conduct all assessment of the present data and plans and develop recommendations either for specific actions that could be supported by the available data or for collection and analysis where data was not available.

Data were collected directly from Department records, the Bluegrass Area Development District annual program plan, and through interviews with the following persons:

- Chief Douglas True
- Detective Kenneth Ball
- Desk Sergeant Paul J. Riddle
- Mr. Paul Royster, City Manager

2. UNDERSTANDING OF THE PROBLEM

The Consultant reviewed the data regularly recorded by the Frankfort Police Department and determined that, while much of the data needed for assessment of manpower assignments were recorded either on the radio log or officers' activity reports, they were only partially accumulated and summarized. For example, calls for service are recorded on the radio log by address, but they are neither routinely coded regarding type of call (10 series and signal codes are usually recorded, but this is more of a "short-hand" expedient than means for data analysis), nor are the addresses translated to geographic location codes such as beats or other discrete reporting areas. Crimes are pinned on a map; and burglaries (i.e., Residential/Storehouse, and Larceny to Auto) are listed monthly for the crime prevention program by day of week, time, location (address), value of property, and description of method of entry. Officers' activities are recorded daily (some of which is a duplicative of the radio log) and recently a change was made from annual to weekly summarization of activities. Even so, location data, which is recorded on the daily activity report by address, is not used.

Chief True, who has served on the Frankfort Police Department since January 1, 1956, and as Chief since June 1, 1968, reported that recent City Councils and administrations were not receptive to Departmental innovations and improvements. This has changed under the present Council and administration. Mr. Royster has encouraged the Department to look ahead and some minor reorganizations have taken place (e.g., assignment of a sergeant to traffic supervision and a lieutenant to training and crime prevention /The crime prevention program is supported by LEAA block grant funds/).

Mr. Royster and Chief True advised that the most pressing concerns were how annexation would impact on the future needs of the Police Department and how the space that would be available in the newly acquired building could best be used. Of course, any spin-off regarding present administration and operations would be appreciated.

Therefore, the following products were included in this report:

- Proportional workload requirements for calls-for-service (CFS) derived from 14 weeks data showing CFS by hour of day and day of week. It does not include a preventive patrol factor.
- Partial space layout (suggested) for use of new building. This is supplemented with discussion of issues that should be considered in finalizing space layouts.
- Recommendations for phased alternatives for data collection and analysis to be used in future planning.

3. ANALYSIS OF THE PROBLEM

3.1 Resource Allocation

Chief True previously developed recommendations for police services in each of seven geographic areas being considered for annexation, based upon the number of homes and miles of road that would require police services. (There are no significant industrial or commercial developments in the areas.) He also identified necessary improvements such as street lighting, signs, markers, and house numbering. The seven areas are contiguous to the present city limits and, as a group, extend around nearly the entire City. Chief True's estimate of personnel required to provide police services to all seven areas was 2.25 officers, which would cost \$35,824.76. The Department assigns a vehicle to each officer, which was included in the above cost.

The data do not give any guidance about the viability of Chief True's recommendation for 2.25 additional officers. Potential CFS cannot be calculated because historical data cannot be segregated for comparable areas within the present police service area. Furthermore, because each of the seven areas is being considered individually for annexation, the final configuration of the City can only be speculated. However, it appears reasonable that none of the areas, in themselves, warrant consideration as a separate beat. Therefore, it will be necessary to review the existing four beat structures (a different structure for five, six, seven or eight 1-man patrol units) to determine how the additional areas will be incorporated into beats. Moreover, depending upon the patterns of annexation, it appears reasonable that at least one additional "beat" will be necessary to assure rapid response to urgent calls simply because of the potential travel time involved. If it is necessary to create an additional beat, then the estimate of an additional 2.25 officers would fall short of the actual need, which would be five officers to man a beat around the clock. Therefore, it seems more practical to plan for five additional officers but to acquire only those additional officers actually required to maintain a satisfactory service level as experience regarding the new areas is gained and analyzed. The impact of the variable of differentials in workloads by shift is not clear at this time. It may not be necessary to staff all three shifts to cover the annexed areas.

Cursory review of radio logs indicated that present response time are within a very acceptable level of less than 5 minutes. The Consultant is conducting a low-order queuing analysis using 14 weeks actual CFS data by hour of day and day of week to estimate the probable saturation point given existing patrol resources. Calculations are based on the estimated factor of 45 minutes average call handling time for all calls-for-service. This is a conservative upper limit (established in the literature and found to be true in most police departments) which accommodates travel

time as well as time at scene. The results of the analysis will be forwarded as soon as it is completed.

The 14 weeks of CFS data (July 11- October 16, 1976) were accumulated by hour of day and day of week for "Quick," "Routine," and Total Calls-for-Service. Histograms (see Figures 3-1 through 3-6) were prepared for each. Shifts are 0700-1500, 1500-2300, and 2300 to 0700 hours. Distributions of total CFS by shift are 26.3, and 48.7, and 25.0 percent, respectively. Patrol personnel rotate monthly in groups of nine with two officers assigned permanently to both the 1500-2300 and 2300-0700 hour shifts, giving a net assignment to the three shifts of 9, 11, and 11 patrol officers. (All ranks are considered equally in this analysis because all patrol personnel, including the captains, perform patrol duties when needed.) Distribution of personnel is 29, 35, and 35 percent, respectively. As can be seen by comparing the CFS and personnel distributions, they are relatively close for the 0700-1500 shift, but not so close for the other two. Further examination of Figure 3-4 shows a significant decrease in the number of CFS during the five hours of 0200 to 0700 making these the lowest CFS activity hours of the entire day. This suggests that the "extra" two officers are not needed as much during this five-hour period as perhaps some other period. Therefore, considering that some extra preventive patrol effort may be desired during the late evening and first two hours of the morning, the percentage of CFS workload occurring during the eight hours from 1800 to 0200 was calculated--49.8 percent. These eight hours include the four hours of highest CFS activity (2000-2400 hours) and are hours usually considered for high preventive patrol coverage. Percentage distributions of CFS for all 24 eight-hour periods are shown in Table 3-1. Figures 3-1 through 3-6 and Table 3-1 were included so that the Department can conduct its own review of the analysis results to consider other alternatives, and as a guide for future basic analyses. The relationships between patrol staffing and CFS as presently structured and as recommended are illustrated in Figures 3-7 and 3-8, respectively.

3.1.1 Rank

The Consultant was queried regarding how many assistant chiefs were justified for the Frankfort Police Department. City ordinance provides for three assistant chiefs; however, there is only one officer at that rank. The assistant chief works the 1500-2300 hour shift, basically performing the function of "Night Chief." The following factors on this issue:

- Detectives presently report directly to the Chief, but work some evening hours when the Chief is off duty. There is an informal working arrangement among the three detectives regarding case assignments. Detectives do not have rank authority, although they can progress to the pay grade of lieutenant with

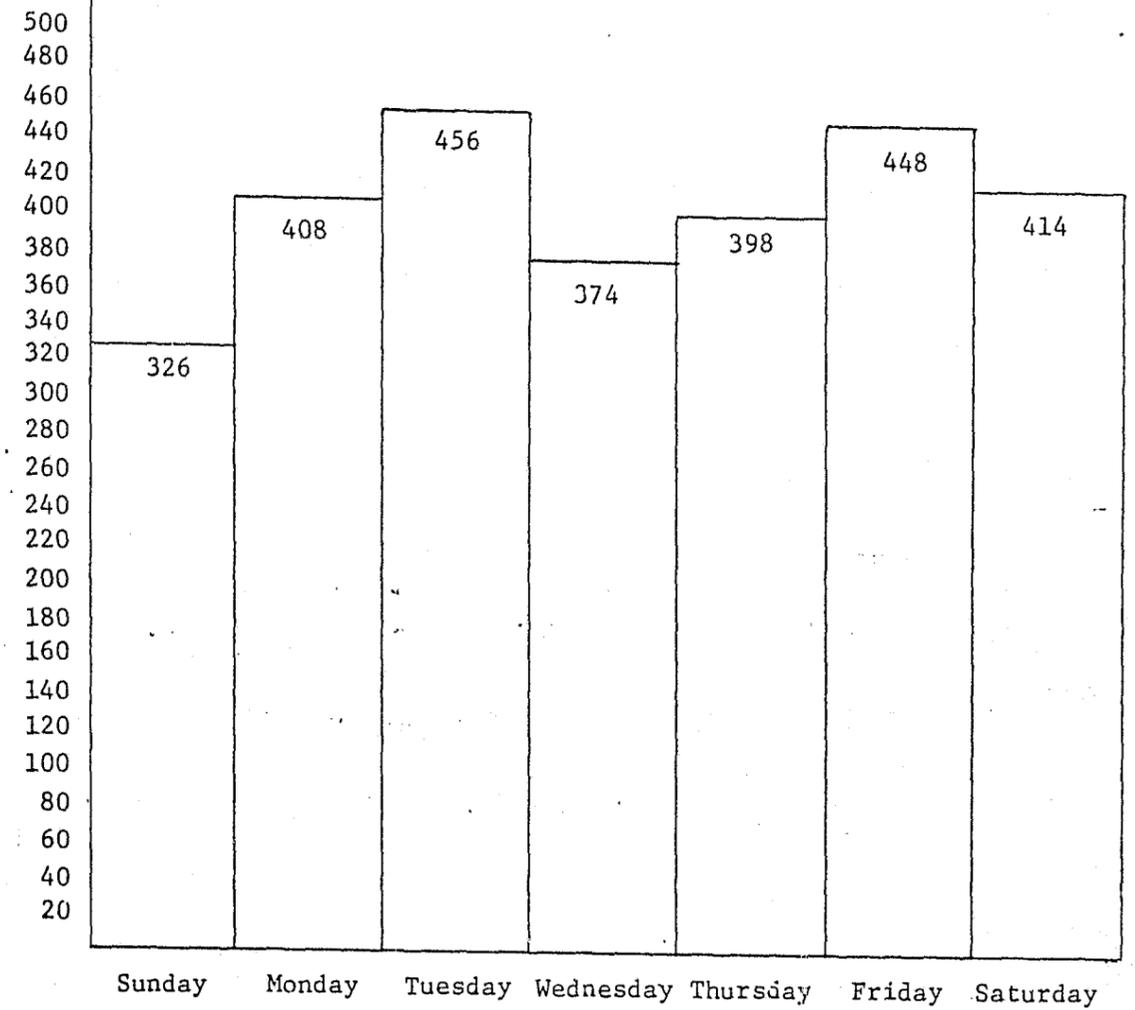


Figure 3-1. Total Calls by Day of Week

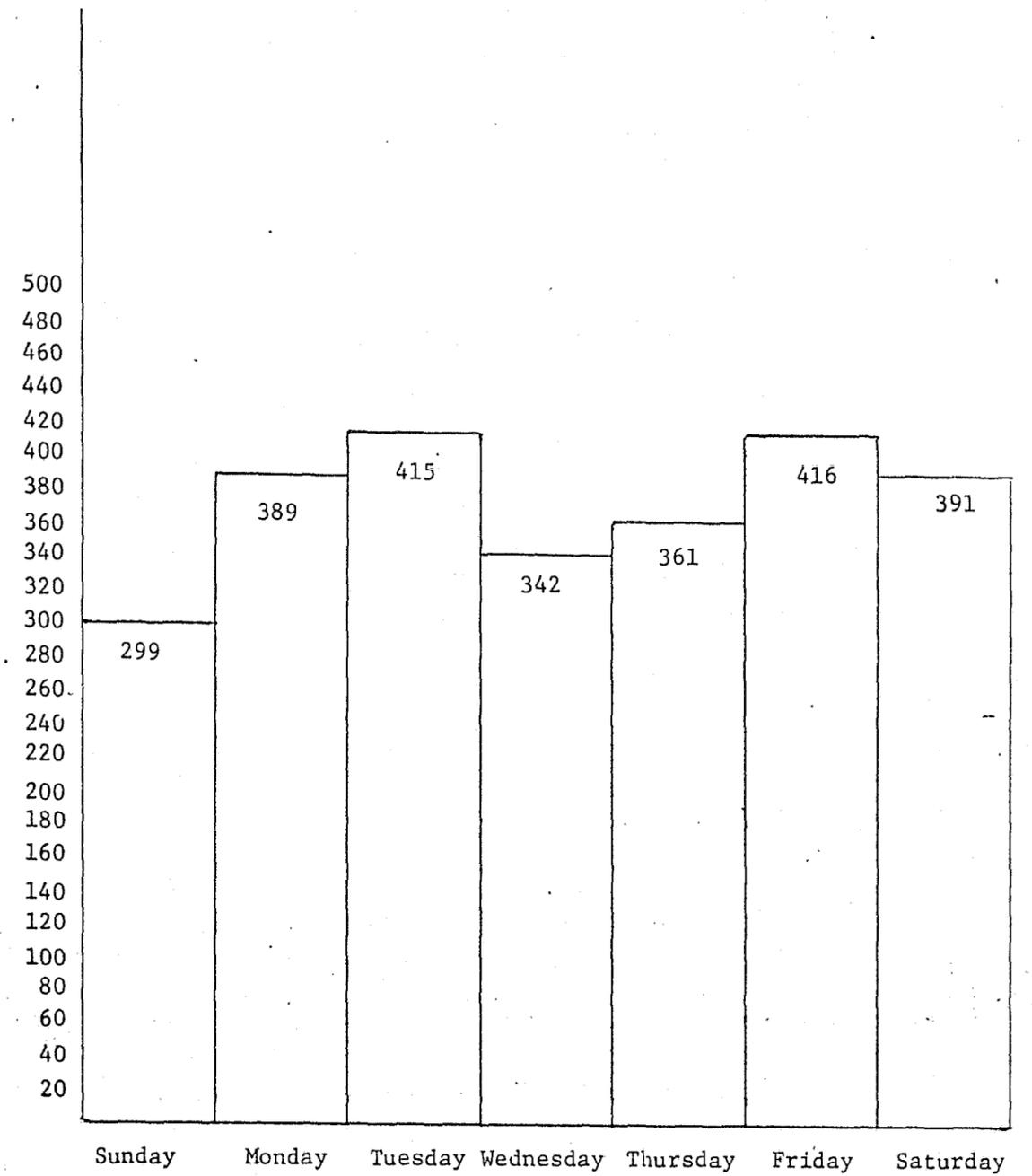


Figure 3-2. Routine Calls by Day of Week

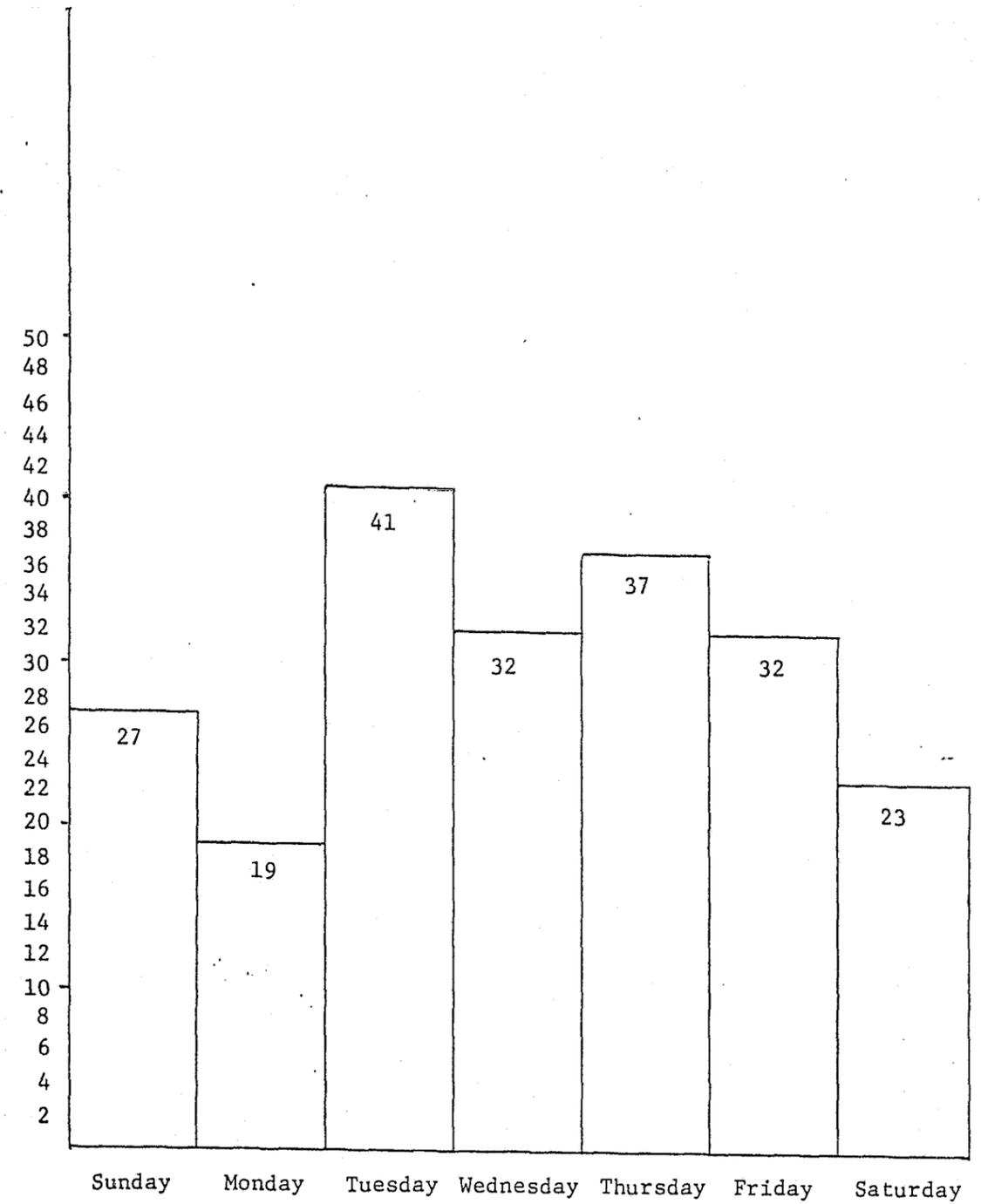


Figure 3-3. Quick Calls by Day of Week

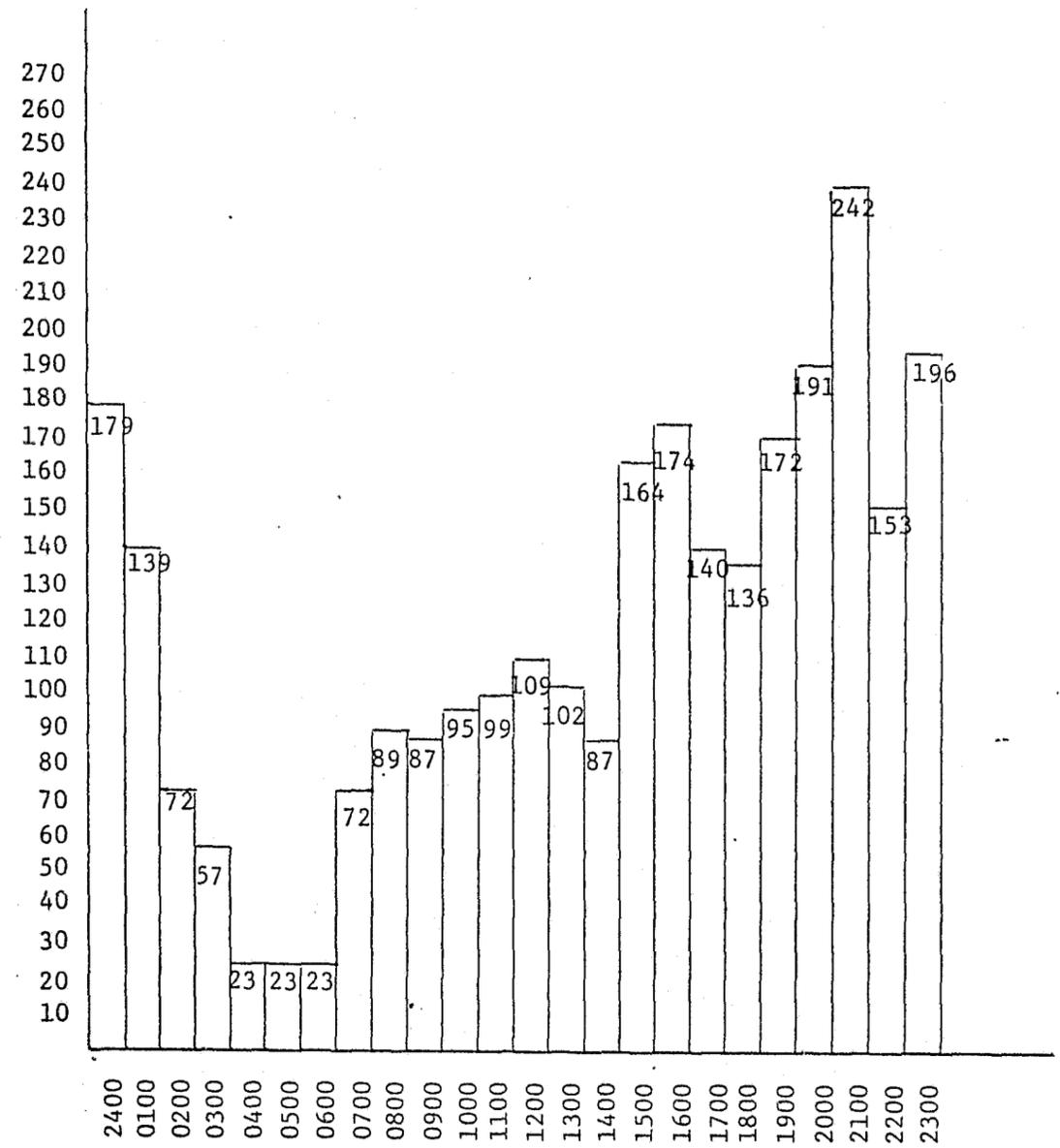


Figure 3-4. Total Calls by Hour of Day

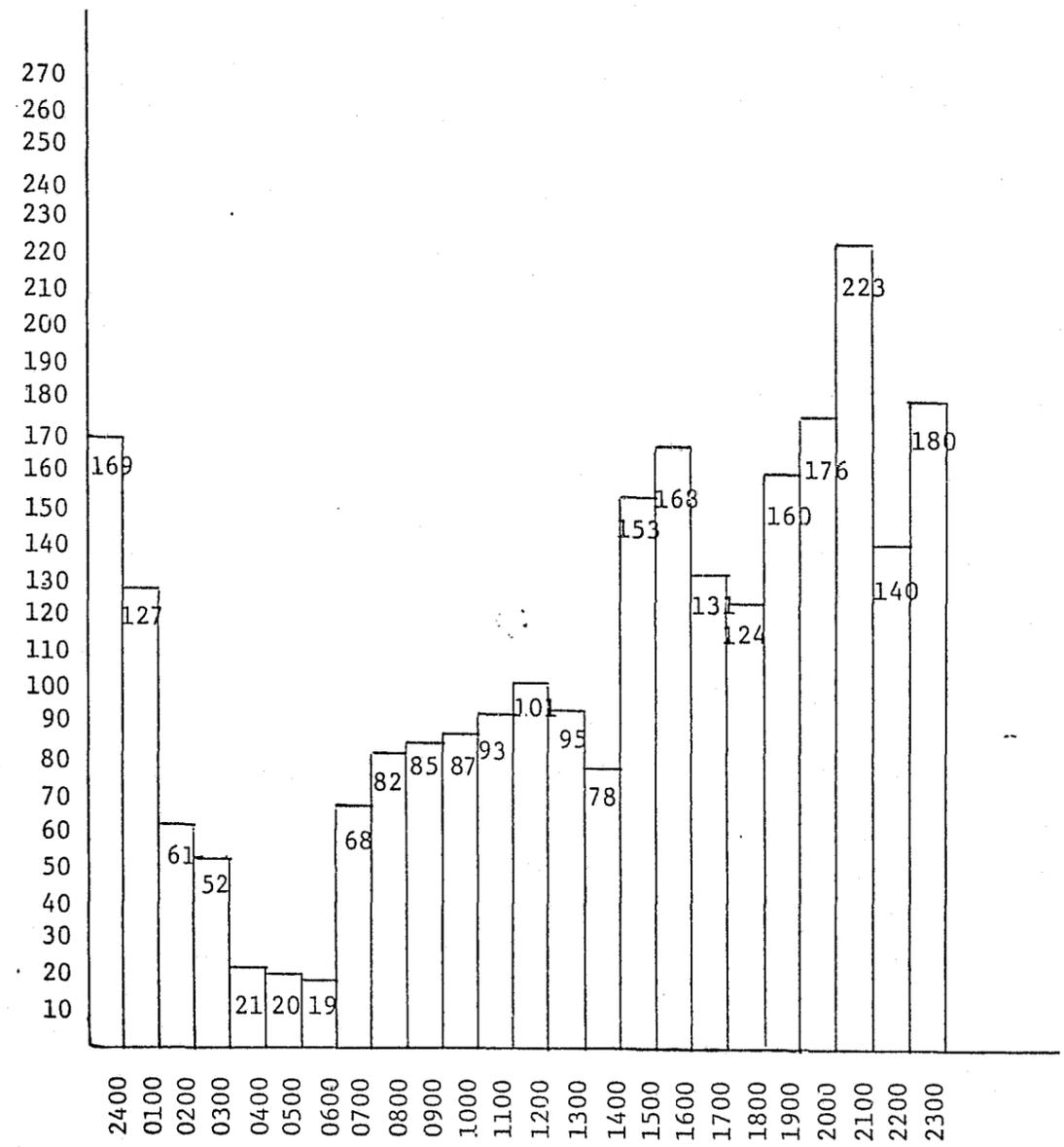


Figure 3-5. Routine Calls by Hour of Day

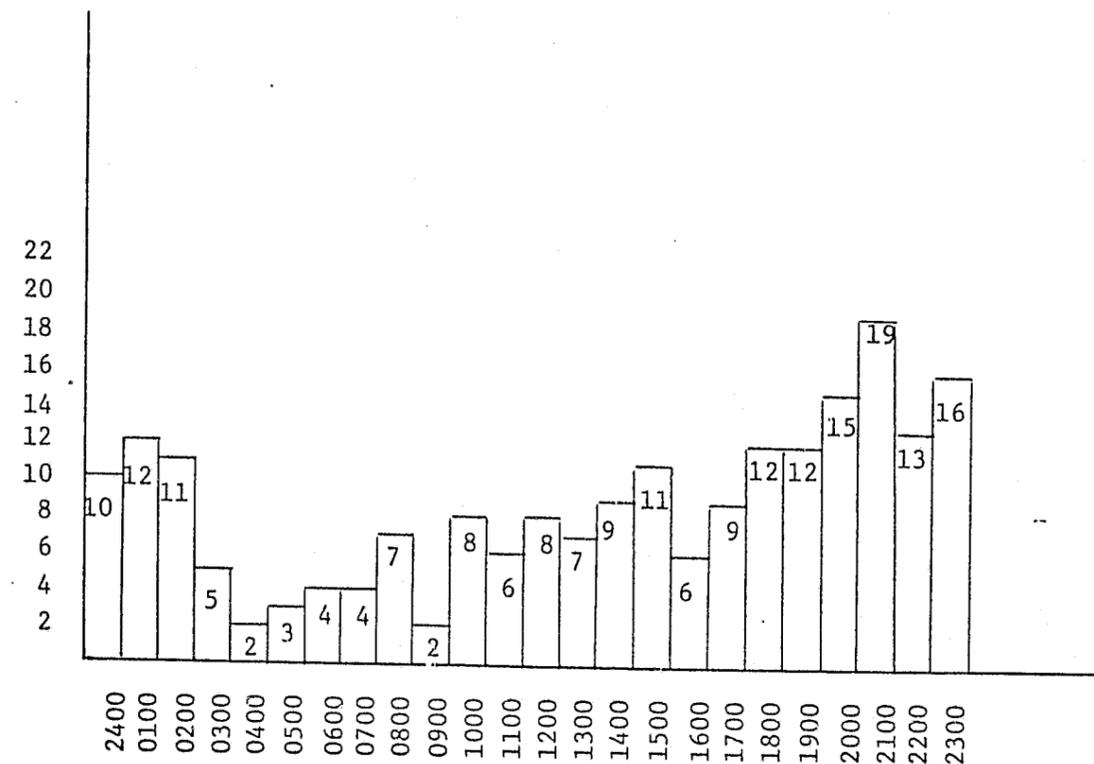


Figure 3-6. Quick Calls by Hour of Day

TABLE 3-1

Percentage Distribution of Calls for Service

8 Hr. Period	% 1st Hour CFS*	% Total CFS**
2400-0759	6.3	20.6
0100-0859	4.9	17.5
0200-0959	2.5	15.7
0300-1059	2.0	16.6
0400-1159	.8	18.1
0500-1259	.8	21.2
0600-1359	.8	24.0
0700-1459	2.5	26.3
0800-1559	3.2	29.6
0900-1659	3.1	32.6
1000-1759	3.4	34.5
1100-1859	3.5	35.9
1200-1959	3.9	38.5
1300-2059	3.6	41.4
1400-2159	3.1	46.4
1500-2259	5.8	48.7
1600-2359	6.2	49.8
1700-2459	5.0	49.9
1800-0159	4.8	49.8
1900-0259	6.1	47.5
2000-0359	6.8	43.4
2100-0459	8.6	37.4
2200-0559	5.4	29.6
2300-0659	6.9	25.0

*Percent of total CFS occurring during the first hour of the 8 hour period.

**Percent of total CFS occurring during the 8 hour period.

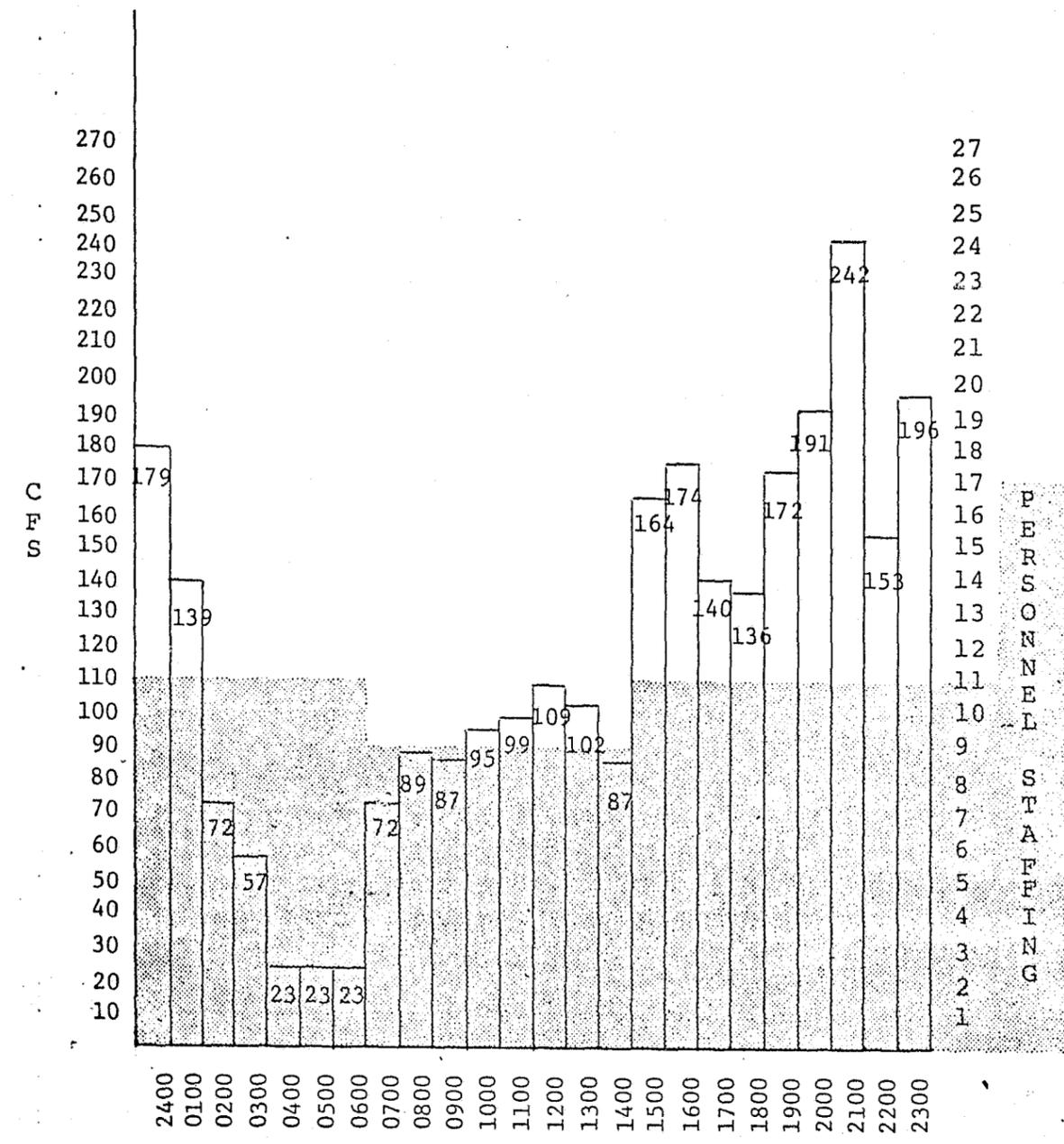


Figure 3-7. Present Patrol Staffing

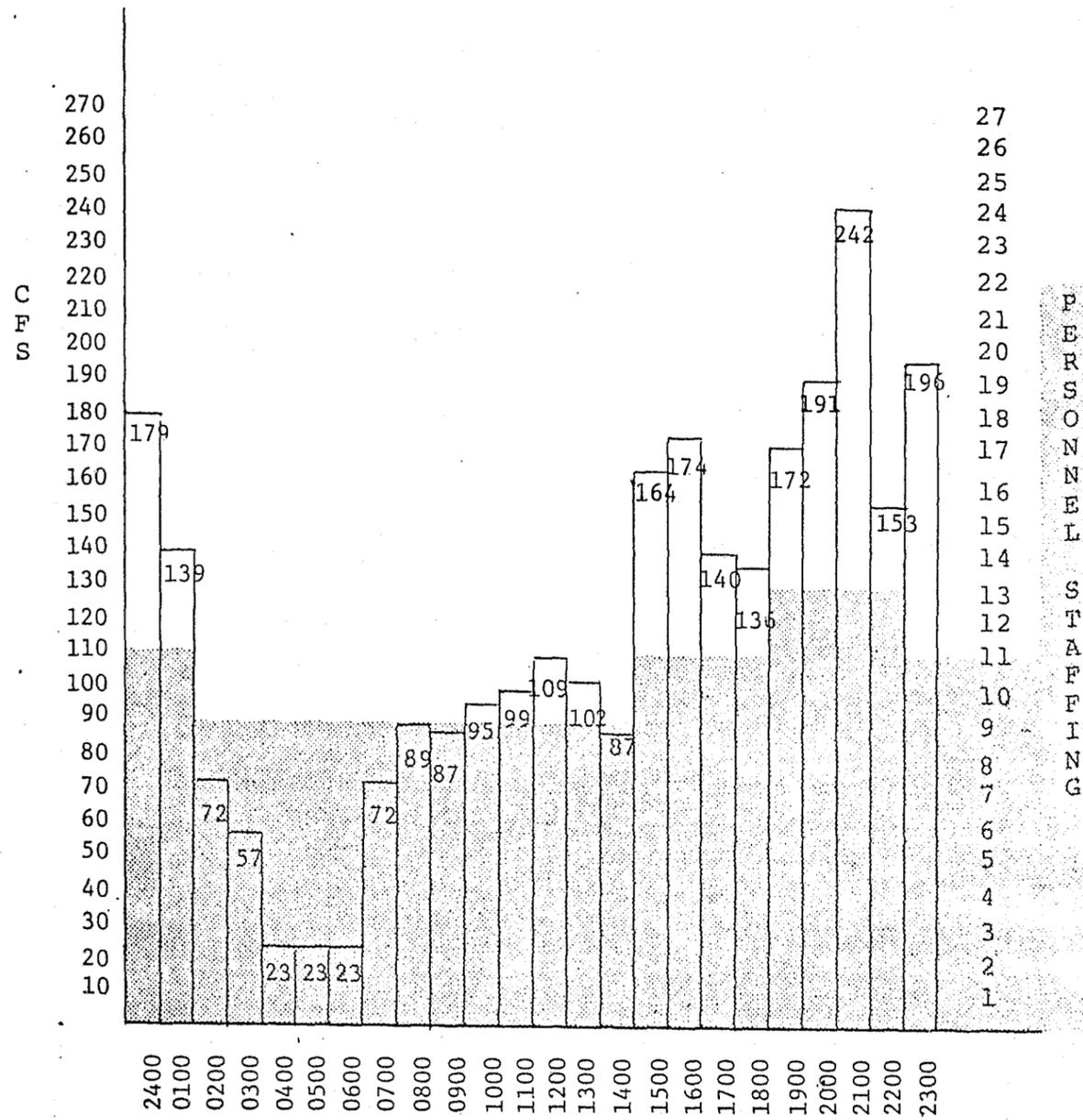


Figure 3-8. Proposed Patrol Staffing

satisfactory service. The detectives are potentially supervised in the evening by the assistant chief.

- The assistant chief could theoretically relieve a captain of station duty on days when both are on duty; however, he would not relieve the captain of administrative duties, such as schedule preparation and activity summarization.
- The rank of assistant chief can legitimately assume certain perquisites, which tends to limit flexibility of assignment particularly when there is only one person holding that rank. This can be overcome to some extent through effective job descriptions.
- The Department has 46 sworn personnel. Of these, 15 or 32.6 percent, hold the rank of sergeant or higher. Even so, with the recent assignments of a lieutenant to training/crime prevention and a sergeant to traffic supervision, Chief True feels that he is short of supervisory/command personnel.
- Ordinance No. 89, 1974 Series, restricts selection for appointment to the rank of Chief to those holding the next lower rank. This restricts selection, at present, to a choice of one -- the assistant chief.

Serious consideration should be given to eliminating the rank of assistant chief through attrition. That "slot" could then be used for a lieutenant or sergeant.

3.2 Facilities

At the time of the Consultant's site visit, it was not possible to gain access to the building into which the Police Department will move. Therefore, only general issues could be addressed regarding use of the facility. The external dimensions of the building are approximately 60 by 150 feet. The building has a corner entrance and the entire front is glass enclosed. Access to the building, otherwise, is restricted to the rear dock receiving area. The building is a shell with exception of some partitioning and a walkin cooler toward the rear. The Department plans to use the cooler for large item secure storage. Arrangements for plumbing and electrical services were undetermined.

The Department expects that the remodeling will be phased over a period of years and there are no definite plans about priorities or layout. The

Consultant developed a partial layout (see Figure 3-9) for the sole purpose of indicating possible space utilization for selected functions. This layout was discussed with Chief True while on site. The following observations are pertinent to this phase of the assignment.

- The dispatch position should be located near the main entrance for 24-hour access control by the public from that position. Chief True is concerned about the security of the dispatch position itself, tending to favor a more internal location for dispatching with public access and service to be handled either by a desk officer (probably the commanding officer of the shift) or through remote monitoring by the dispatcher and call-in of a patrol unit when service is required. Whatever the final arrangement, greatest flexibility in use of personnel will be achieved by minimizing the need to tie personnel down to the station who could otherwise be in the field.
- The detectives express a need for unobtrusive entrance to their offices for informants (i.e., an entrance other than the main entrance from the street). The detectives advise that having their office located off the garage area of the present building, accessible from the alley, proved beneficial in getting people who did not want to be seen entering the building from the street to come in to see them.
- The records area should be located so that it is accessible to both the general public and police officers, preferably at different "windows." This permits the police officers to turn in reports and request information without having to jostle with the public for position at the counter and facilitates maintenance of confidentiality of their requests and responses. It should also be arranged to minimize the separation of the records from the various working areas (e.g., patrol squad room). Moreover, the records area should be constructed so that only authorized (the fewer the better) personnel can access the files. Since it is unlikely that 24-hour staffing of records is desirable, the records section should be located contiguous to a 24-hour operation such as dispatch or the station duty officer. In this way, control can be maintained over the records, minimizing the chance of unauthorized removal or accidental loss.

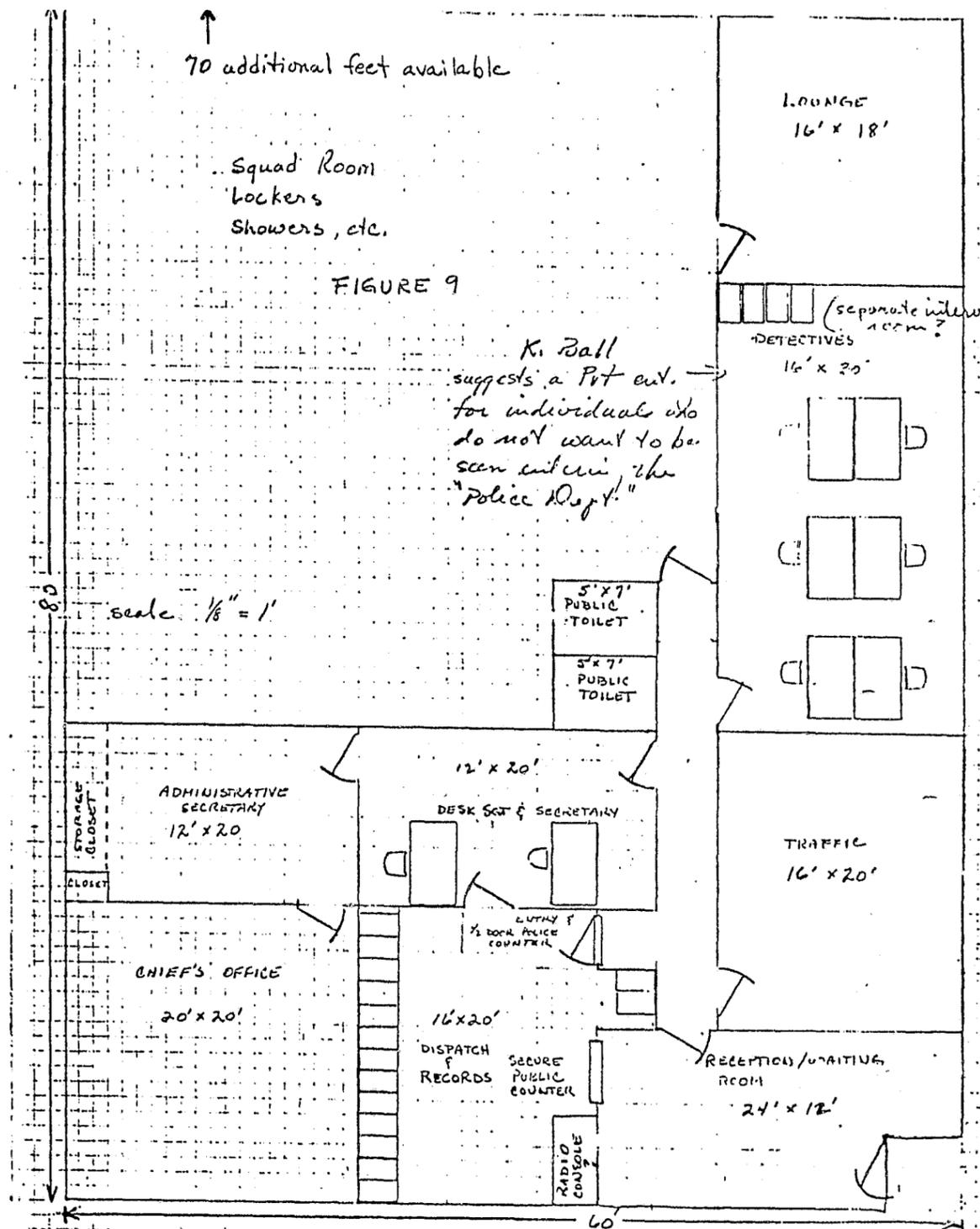


Figure 3-9. Partial Layout for New Facility

- Consideration should be given to coordinating the various functions through physical location. The records and dispatch functions, which are the core of Departmental operation, should be accessible to all personnel with a minimum of conflict. For instance, attention should be given to assure that it is not necessary for detectives to pass-through the patrol squad room to get to the records. At the same time, however, it should be recognized that there is legitimate need for interaction between patrol and detectives in sharing and coordinating information. The physical location of these two functions can either enhance or inhibit this interaction.

With the opportunity afforded by the new space, each decision regarding construction should represent a balance between the needs of security and privacy of each operation and the needs of interaction and coordination between operations. As indicated previously, only these general observations can be made within the context of this assistance effort. Details will necessarily be dependent upon available funds and existing characteristics of the "new" building. It does not appear necessary to consider specialized facilities, such as laboratories, given the availability of State services. The National Clearinghouse for Criminal Justice Planning and Architecture, at the University of Illinois at Urbana-Champaign, Urbana, Illinois, originally funded by LEAA to provide assistance in facilities design, may be of help in this area.

3.3 Data Collection and Analysis

The Frankfort Police Department records and processes data in much the same way as similar-sized departments. The primary concern is with operational information. Administrative information is developed in some form but usually stops short of being really useful because of limited resources for analytical activity, failure to perceive its usefulness, or lack of awareness of how to organize the data into useful form. Frankfort has gone further than many departments in organizing and using data for management but still falls short of the potential. The issues related to data analysis and use have been discussed generally with Chief True, and he is receptive to improving his information base. The recommendations discussed here take into consideration existing capabilities and provide for phased implementation as additional resources become available and more sophisticated planning is desired.

3.3.1 Observations

It was noted previously that key data elements were not readily accessible for use in analysis. With regard to patrol allocation, locations are recorded only by address. While this is useful in intuitively assessing

the characteristics of calls-for-service in a relatively small city and is essential to pinpointing crime occurrences on maps, it is of little use in assessing the quality of geographic allocation in a technical assistance situation or as the size of the city, department, and volume of activity growth.

In addition, the types of calls are not routinely coded, which is necessary for analyzing the distributions of different types of activities. The data are recorded at the dispatch position on a log and follow in chronological sequence with minor exceptions, which are probably the result of the dispatcher occasionally handling more than one item or task at the same time. Duplication is built into the system because much of the activity of patrol officers is recorded on both the radio log and the officers' daily activity reports. The dispatcher summarizes all CFS on a weekly "Citizen Calls for Service" form for each hour of each day of the week by "Quick," "Routine," and "Total" calls. This report was the source for the workload distribution analysis discussed previously.

In the past, Officers' Daily Activity Reports were used to accumulate annually selected activity/productivity data. However, a weekly summary report, prepared by the shift captains, was instituted recently. The data categories are: Accidents, Warrants Executed, Arrests, Citations, Contacts, Calls, B & E's, and B & E's Found. While it is appropriate to emphasize transfer of routine clerical tasks from line personnel, continued performance of this particular task by the captains is encouraged. It has the dual function of maintaining alertness of patrol officers to the fact that the captain will be regularly reviewing his activities and forcing the captain into acute awareness of the activities through the accumulation and recording of the data. If the report was prepared by someone else, the captain could ignore it or simply not give it as intensive attention as would be necessary to grasp fully such important issues as trends and low or high productivity. Furthermore, in a small department there are important trade-offs that tend to make impractical complex data processing systems (including manual systems). The trade-offs in this case are time and inconvenience to the officers in maintaining the activity report plus the possibility of inaccurate reporting in some categories, compared to the cost of recording all activities by the dispatcher (or other independent source) in a form transcribed and summarized easily for each officer. The Department should acknowledge these trade-offs for future planning but not make any change at this time.

During the site-visit, the issues of how many detectives are needed and appropriate hours of assignment were raised. Data to answer the questions could not be found. The detectives' daily activity reports were not completed with sufficient specificity about types of activities or times. The present assignment of three detectives to work overlapping shifts of 0600-1400, 1000-1800, and 1400-2000 hours with one detective

on call during the night and on weekends was intended to reduce overtime hours and provide quicker investigative response to major crime scenes. "Before" and "after" overtime figures should be examined to determine to what degree the first objective is being met, and more precise data regarding activities and times must be recorded by detectives to determine whether the time is being spent effectively. Although this tends toward over simplification, it is a cost-benefit issue regarding the cost of the investigators' time for different hours of the day, in either regular assigned time or overtime, measured against the potential and actual activity/productivity of the investigators for those hours. The "potential" activity/productivity determination should be based on information that includes review of crimes not presently being responded to by detectives.

3.3.2 Recommendations

The recommendations for data collection and analysis changes anticipate three phases. Phase I involves minimum modifications to the present system for recording, accumulating, and summarizing data that is necessary for allocation analysis. Phase II expands upon Phase I by changing the method of recording the data identified as necessary in Phase I. Phase III, which is discussed only briefly, is a computer-assisted dispatch (CAD) system designed and priced explicitly for a small police department.

3.3.2.1 Phase I

Phase I is concerned with redesigning the Radio Log and procedures for use of the data recorded on the log. It requires division of the City into small, homogenous geographic reporting areas. The Radio Log draft layout is included as Figure 3-10. The functions of the redesign are to record service needs and related activities with more precision than they are recorded presently, to incorporate coding necessary for further processing in close proximity to the actual times of the events, and to analyze the data to provide the information necessary to address the issues of concern to the Frankfort Police Department.

- Geographic Reporting Areas -- The City should be divided into 45 to 60 small geographic reporting areas, which are numbered sequentially starting with 01. Each area should have the following characteristics.
 - It should be homogenous. This means it should have a single outstanding characteristic throughout. The distinctions usually made are between residential, commercial, and industrial typologies. Further breakdown may be by housing subdivision developments, and so on.

It should not overlap a natural beat boundary (e.g., river, railroad, major thoroughfare).

- It should be about 1/8- to 1/6-mile square. This is only a guide. The actual size will be dependent upon judgment regarding the potential number of CFS and crimes that will occur within the area, balanced against the logistics of data handling.

- The shape should be as close to square as is reasonable given the limiting factors regarding boundaries.

An alternative to creating reporting areas is to use Census Tracts. Census Tracts are usually created according to many of the above characteristics. A map showing the tracts should be available through the City's Planning Office. Because Census Tracts have four digits, it is recommended that a separate two-digit number system be used by the Department. This would permit inclusion of more than one Census Tract in a reporting area providing greater flexibility in meeting Departmental needs. A crossreferenced index list of which Census Tract numbers are included in each reporting will be useful for future reference. A cross-referenced index list also should be created on which reporting areas are included in each beat. Furthermore, a reference table indexing street address (or unique location such as park or apartment complex) to reporting area or a map with the reporting areas drawn on it will be required. For example:

Address		Reporting Area
Street Name	Number	
Ashbury	0100 - 1098	01
" "	1100 - 1643	02
Washington	2500 - 2778	05
" "	2800 - 3699	31

Incident and Activity Codes -- The Department should modify its coding system to record more logically radio dispatches and officer activities. (Space for recording codes is provided on the recommended Radio

Log. By using codes, it will be easier to extract the data from the Radio Log for analysis and to maintain audit control of the incident reporting system. A recommended code structure is included in Table 3-2 and detailed in the Appendix.

- Complaint/Incident Number -- The Department should consider assigning Complaint/Incident Numbers at the time the investigating patrol unit clears and returns to service (10-8). The number could be given to the patrol unit and placed on the report by the officer. A six-digit, automatically advanced "number machine" can be purchased for \$50 to \$55, which will assure proper control of the number sequence. The number machine is a hand-operated stamp that can be used to record the number on the radio log, advancing to the next sequential number automatically.
- Procedures -- Two basic issues must be considered in designing an information system:
 - Only data that has been recorded can be used in analysis.
 - Recorded data must be reasonably accessible before it will be used.

The recommended Radio Log, as the Phase I approach, takes both of these issues into consideration with a minimum change in existing procedures.

- Dispatch -- At the time of receipt of the citizen request or officer-initiated activity, the dispatcher records the same information as is recorded presently:
 - Unit.
 - Time received.
 - 10-7.
 - Message (narrative description of type of call and location.) Dispatch Code can be recorded instead of narrative description.
 - Officer/Dispatcher.

When the unit comes 10-8, the time and Case Number are recorded. The Case Number is given to the

TABLE 3-2
Radio Dispatch/Activity Codes

10	Rape
20	Robbery
21	Armed
22	Unarmed
23	Purse Snatch
30	Assault
31	Shooting
32	Stabbing
33	Other weapon
40	Burglary
41	Commercial/Business
42	Residential
50	Larceny
60	Stolen Auto
70	Disturbance
71	Fight
72	Loud noise
73	Property destruction
74	Drunk
75	Person down
76	Barking dog
80	Miscellaneous
81	Auto accident
82	Other accident/injury
83	Fraud
84	Sex Offense (other than rape)
85	Traffic violation
86	Fire
87	Animal case (other than barking dog)
88	Sick case
89	Death
90	Suspicious person/circumstance
91	Alarm
92	Other
93	
94	
95	
96	
97	
98	Assist
99	Administrative activity
	- auto service
	- lunch, etc.

patrol unit over the radio; also record disposition code. When the dispatcher has slack time, he records the following on the Radio Log:

- Dispatch Code (if not recorded previously).
- Reporting Area using either the map or reference table to find the correct reporting area for the address.

- Analysis -- Analysis is a matter of accumulating or summarizing the data from the Radio Log as is done presently with "Quick," "Routine," and "Total" Citizen Calls for Service. It is more detailed because it will be summarized by reporting area, beat, and citywide by shift by day. If desired, it can be summarized by hour of day, but this should only be necessary when the other summaries indicate changing distributions that require further analysis to determine if shifts, personnel assignments, or beats need to be changed. This additional work (i.e., summarizations) is necessary at this time to determine what the beats should be in comparison to what they are. After one year (maximum) of data are accumulated and analyzed, then the summarizations and analyses only need to be done occasionally for the hourly data. A sample summarization form is included in the Appendix as well as a sample specific analyses and use of it. Most of the accumulations can probably be performed daily or weekly by the dispatchers. The Consultant strongly recommends that redundant activities, such as typing the "Citizen Calls for Service" report, be discontinued. This should be a working report: It is prepared by hand routinely by the dispatcher. Typing it not only uses clerical time that might be used on something else, it also introduced chance for errors during the transcription. Moreover, the hand-prepared report is perhaps more "readable" than the typed report. This was discussed with Chief True.

3.3.2.2 Phase II

In Phase II, a radio ticket is used for each dispatch or patrol unit self-initiated out-of-service situation, and the Radio Log is discontinued. The same basic information is recorded on the Radio Ticket as on the Radio Log. The advantages to the Radio Ticket are:

- Tickets can be used more quickly to review current status of patrol units.

- Times can be stamped on the tickets very quickly to ensure greater accuracy.
- Tickets can be manipulated for data retrieval more easily than the Radio Log. Rather than tallying item by item onto separate sheets, the tickets can be separated into categories--call type, reporting area, beat, time, unit-- and counted. This is faster and more accurate than tallies.
- Radio Tickets introduce Department personnel to the discipline required of automated systems.

Examples of different kinds of Radio Tickets used in other Departments will be found in Figure 3-11. In designing a Radio Ticket, the following points should be considered in order of importance:

- Location for automatically advanced time stamp.
- Location for automatically advanced Complaint Number stamp.
- Location of "unit assigned" for quick reference on status and retrieval of card for entering additional status information.
- Entering data in the sequence in which it is normally received or referenced according to the Department's judgment.
- Either checklist entry for items such as type of call or written entry according to Department's judgment. In any case, a code for item type is necessary for easy analytical processing. For instance, the Gary card requires checking of "30 - Other" for such things as rape, assault, murder, or anything else not listed specifically. Even though the type of call may be written quite specifically, during processing a good many calls would fall into the "Other" category and be bumped together.

Some departments use a different colored radio ticket for administrative out-of-service situations for both better visual awareness of status at the dispatchers' position and for separate analytical processing. For accurate workload accounting by patrol unit, a separate "assist" radio ticket should be prepared for each unit assisting on a call. The units assisting can also be recorded on the original dispatch ticket.

Figure 3-11. Sample Radio Tickets (page 1 of 2)

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3-25

SIGNAL		BEAT		UNIT ASSIGNED	
COMPLAINT NUMBER A					
DISPATCHER & POSITION		AMBULANCE CALLED WRECKER CALLED		BACK-UP UNIT S	
DISPOSITION A G K N E J M X		<input type="checkbox"/> BAD ADDRESS <input type="checkbox"/> CANCELLED <input type="checkbox"/> NO REPORT		DISPATCH CARD FRONT	
INCIDENT LOCATION					
HOUSE NO	ST. NAME	TYPE	DIR	M.U.D.*	
BLOCK NO.	ST. NAME or INTERSECTION ADD.		TYPE	DIR	
NATURE of COMPLAINT					
COMPLAINANT'S NAME			PHONE		
ADDRESS		APT NO		CITY	
OPERATOR	911	AGENCY	AMBULANCE CALLED	ADDITION ON BACK	
*Show 1st floor Apartment etc. under M.U.D. single ALPHA character for Apartment after house No					

BACK-UP UNIT 10-23	BACK-UP IN SERVICE	WRECKER/AMBULANCE CALLED/ LOCATION CHANGE	WRECKER OF AMBULANCE CALLED/ LOCATION CHANGE
DISPATCH CARDS BACK			
DESCRIPTIONS			

SIGNAL	CODE	UNIT
10		
DISPATCHER POSITION PURPOSE		
Court		Repair
Reports		Wash
Supplies		Refuel
Relief		Training
Est		Other
DISPOSITION A G K N E J M X		
ADMINISTRATIVE CARD		
LOCATION		
01 City Hall	11 Univ. Hosp	
02 Court House	12 Mercy Hosp	
03 Ensley Hq.	13 Children's	
04 East End Hq.	14 V A Hosp	
05 Tac Hq.	15 BMC Princeton	
06 City Jail	16 BMC Montclair	
07 Academy	17 Cerraway	
08 Garage	18 East End Hosp	
09 Radio Shop	19 So. Highland	
10 Range	20 St. Vincent	
OPERATOR	POSITION	TELEPHONE

Birmingham Police Dept. Radio Dispatch 20000-4-78d
Police 26 Rev.

Birmingham, Alabama

MISCELLANEOUS INCIDENT
ORAL REPORT GUIDE

- A - Alpha Assisted stranded motorists
- E - Echo Directed traffic
- F - Foxtrot City shop for repairs
- G - Golf Issued Traffic Citation
- J - Juliette Out of City jurisdiction
- K - Kilo Wreck-less than \$50.00 damage
- M - Mike Unfounded.
- N - November Unable to locate complainant

POLICE-7232

MISCELLANEOUS DISPOSITION CODES
BIRMINGHAM

CAR ASSIGNED	BACK UP	DISTRICT	REC'D BY	DISPATCHER	DISPOSITION	1 <input type="checkbox"/> Report	2 <input type="checkbox"/> Sent to Hospital	
					4 <input type="checkbox"/> Arrest	5 <input type="checkbox"/> Advised	6 <input type="checkbox"/> Ticket Issued	
					7 <input type="checkbox"/> Unable to Locate	8 <input type="checkbox"/> Alarm or Car Checked OK		
LOCATION					<input type="checkbox"/> Business <input type="checkbox"/> Residence			
COMPLAINT					PHONE			
32 <input type="checkbox"/> Abandoned	52 <input type="checkbox"/> Used	50 <input type="checkbox"/> Mental	REC	DISP	ARRD	COPI	How Rec'd: <input type="checkbox"/> Phone <input type="checkbox"/> Field <input type="checkbox"/> Adm d.	
79 <input type="checkbox"/> Acting Susp.	72 <input type="checkbox"/> Disturbance	80 <input type="checkbox"/> Missing					<input type="checkbox"/> Other	
58 <input type="checkbox"/> Alarm	70 <input type="checkbox"/> Domestic	10 <input type="checkbox"/> Molesting					84 <input type="checkbox"/> PI Car Struck	
38 <input type="checkbox"/> Assist	68 <input type="checkbox"/> Down	74 <input type="checkbox"/> Nude					85 <input type="checkbox"/> PD Car Struck	
42 <input type="checkbox"/> Animal Bite	66 <input type="checkbox"/> Drunk	78 <input type="checkbox"/> Peeping Tom					86 <input type="checkbox"/> City Vehicle Involved	
23 <input type="checkbox"/> Auto Theft	76 <input type="checkbox"/> Exposing	77 <input type="checkbox"/> Prowler					87 <input type="checkbox"/> Hit And Run	
27 <input type="checkbox"/> Bike Theft	08 <input type="checkbox"/> Fighting	02 <input type="checkbox"/> Purse Snatch					82 <input type="checkbox"/> Car Blocking	
46 <input type="checkbox"/> Bleeding	64 <input type="checkbox"/> Fire Explosion	06 <input type="checkbox"/> Robbery					88 <input type="checkbox"/> Parking Violation	
56 <input type="checkbox"/> Break in Now	34 <input type="checkbox"/> Found Property	05 <input type="checkbox"/> Shooting					36 <input type="checkbox"/> Escort	
16 <input type="checkbox"/> Broken Window	28 <input type="checkbox"/> Holding	20 <input type="checkbox"/> Stolen					89 <input type="checkbox"/> Speed no or Racing	
54 <input type="checkbox"/> Burglary	48 <input type="checkbox"/> Injured - Sick	26 <input type="checkbox"/> Theft from Auto					18 <input type="checkbox"/> Motor Check	
12 <input type="checkbox"/> Call for Help	14 <input type="checkbox"/> Larceny	24 <input type="checkbox"/> Vandalism					OUT OF SERVICE	
40 <input type="checkbox"/> Child Playing	30 <input type="checkbox"/> Other						90 <input type="checkbox"/> Court	95 <input type="checkbox"/> Radio Repair
04 <input type="checkbox"/> Cutting							91 <input type="checkbox"/> Car Wash	97 <input type="checkbox"/> Special Assignment
<input type="checkbox"/> Property <input type="checkbox"/> Car <input type="checkbox"/> Bike <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Child <input type="checkbox"/> Juvenile							92 <input type="checkbox"/> PD Garage	98 <input type="checkbox"/> Other
Notified: <input type="checkbox"/> Tow <input type="checkbox"/> Ambulance <input type="checkbox"/> Fire <input type="checkbox"/> Utility <input type="checkbox"/> Coroner <input type="checkbox"/> Supervisor							94 <input type="checkbox"/> PD Station	
Who was Notified?							95 <input type="checkbox"/> Personal	(Phone or Location)

RADIO DISPATCH CARD
GARY

Figure 3-11. Sample Radio Tickets (page 2 of 2)

3.3.2.3 Phase III

In Phase III, a minicomputer is used for computer-assisted dispatch (CAD). In a sense, this is a misnomer because a computer would not provide very much improvement, in the way of dispatching assistance, over the manual systems enhanced by Phases I and II in the Frankfort Police Department. Its greatest value lies in the fact that it is used to capture data at the time of the occurrence, data that can be processed automatically for management information purposes.

At the operational level, it eases the burden on the dispatcher somewhat by maintaining and displaying automatically status information such as:

- Calls waiting for dispatch.
- Units busy and type of activity.
- Units available for assignment.
- Time sequences.
- Case numbers.

Administratively, there would no longer be a need for hand-tallying and summarizing data. In addition, because the data files can be processed in many different ways, analyses can be made that are impractical for a manual system because of the amount of detail involved. An example would be the analysis of a single reporting area by any dimension:

- Units handling calls in the area.
- Types of calls.
- Times of occurrence.
- Elapsed times for handling calls.

The system could also handle personnel accounting and many other applications.

Phase III, CAD, is suggested for long-range planning. Relatively straight-forward management analyses first should be undertaken with the manual systems. As experience is gained in determining which types of analyses are useful then consideration can be given to specifying what is wanted of a CAD system. The first step in the procurement process is setting forth the system specifications. Based on the assumption that it will be 3 or more years before the Frankfort Police Department could justify a CAD system, many changes can be anticipated in the market. Systems that would provide the capability anticipated for the Department are presently

available in the purchase range of \$75,000 - \$90,000. This includes both hardware and software and would be good for at least 5 years. Therefore, the prorated annual cost would be \$15,000 to \$18,000. A system like this is comprised of a video screen for dispatch control, a minicomputer processor, random access storage, and a printer for report production. Software includes the dispatch and management report applications.



APPENDIX

R-77-101
A-1

BOSTON POLICE DEPARTMENT

ROUTINE MISCELLANEOUS INCIDENT REPORTING PROCEDURE

This procedure may be used only in those cases involving the routine police investigations listed in the following table and which can be adequately reported on through use of the appropriate Police Action listed in the table. After completion of the investigation of a Routine Miscellaneous Incident, return to service by announcing your car designation, then state to the dispatcher "Missle," and the appropriate incident number and police action letter code from the Miscellaneous Incident Reporting Table. One incident number and police action letter will usually describe the incident and the service rendered. It may be necessary occasionally to use two or more police action letters. Use the phonetic alphabet when reporting letter codes. For example:

- To report a False Fire Alarm - state "Missle-Five Ocean."
- To report Illegal Parking - Issued Parking Citation - state "Missle-Fourteen-Lincoln."
- To report Family trouble - Peace restored and Advised Warrant - state "Missle-Six-Frank George."

The number-letter code will be written on the Complaint Message Card which together with the District Control Log shall serve as the official department record of such investigations.

ROUTINE MISCELLANEOUS INCIDENT REPORTING TABLE

<u>No.</u>	<u>Incident</u>	<u>Phonetic</u>	<u>Police Action</u>
1.	ADT And/Or Burglar Alarm	A-Adam	Not Bona Fide Incident
2.	Citizen Alarm	B-Boy	No person can be found
3.	Citizen Calling for Help	C-Charles	No such address
4.	Escort Duty	D-David	No police service necessary
5.	Fire Alarm	E-Edward	Perpetrator gone on police arrival
6.	Family Trouble	F-Frank	Peace restored
7.	Gathering Causing Annoyance-Outside	G-George	Advised warrant
		H-Henry	Advised to recontact police if repeated or returned
8.	Investigation Persons, Routine	I-Ida	Taken to district station
9.	Investigation Premises, "	J-John	Field interr.Report prepared
10.	Landlord-tenant Disturbance	K-King	Issued traffic violation
11.	Lock-out	L-Lincoln	issued parking citation
12.	Noisy party, Radio, TV, etc.	M-Mary	Advised legal help
13.	Prowler (No description)	N-Nora	Accidental or defective alarm
14.	Police Services, traffic, etc.	O-Ocean	False - no prosecution
15.	Disturbance, Drunk	P-Paul	Service rendered
16.	Distrubance, Inside		

DISPOSITION CODES

Disposition codes provide for audit of the reporting system. A call, originally dispatched as one type of case may be reported by the officer as unfounded, changed to another classification requiring a report, or remain the same as the original dispatch which may require a report. The disposition code is a shorthand way of recording the results of the patrol officer's preliminary investigation. There are several alternatives for recording disposition codes, but whatever method is decided upon it should be consistent.

The following procedure is recommended:

1. In all cases where a report will be submitted by the officer he should advise the dispatcher as follows:

"(unit) 10-8-Report on (burglary, auto theft, etc.)"

The dispatcher records the code for the type of report, using the same list as used for the dispatch code.

2. In all cases where a report will not be submitted by the officer he should advise the dispatcher of the "Miscellaneous disposition" as follows:

"(unit) 10-8 (code for disposition).
The dispatcher records the code given him by the patrol unit. Two examples of miscellaneous disposition codes are attached.

REPORTING AREA ANALYSIS

The attached form can be used in a variety of levels of analysis. In its broadest form it can be used daily for accumulation of monthly totals. In this form, each day the calls can be tallied onto a master worksheet and at the end of the month the tallies can be summed up and entered onto a new sheet. Any sub-grouping of reporting areas can be summed and at the end of the year the monthly totals can be summed for the year.

The more complex uses would require separate tally sheets for any one or combination of time periods listed across the top of the form. It does not appear to be beneficial to consider a breakdown of less than four hours duration. The fifteen weeks data available for preliminary analysis show a maximum of ten CFS in any one-hour period. (That hour was 2000 on Sunday, July 4th which was a very unusual occurrence for a Sunday; therefore, that week was dropped and not used in the analysis.) There was one hour with nine CFS, two with eight CFS, three with seven CFS, eighteen with six CFS, and twenty-three with five CFS. During slightly more than 98% of the one-hour periods during the fourteen weeks there were four or fewer CFS. Obviously, when these small quantities are broken down from city-wide occurrences to much smaller geographic areas, the probability of a call falling into any specific reporting area becomes quite small. Therefore, it is recommended that initially data be accumulated by reporting area on a monthly basis by shift, or at most by four-hour periods: 0700-1100, 1100-1500, 1500-1900, 1900-2300, 2300-0300, 0300-0700 hours. Shorter time periods can be used if the monthly accumulations show an unusual pattern.

The monthly or annual totals would be posted to a map and beat boundaries reviewed to approximate equal workloads balanced by other considerations such as desire for preventive patrol time, etc. Review of Appendices "J" and "K" in Wilson and McLaren, Police Administration, Third Edition, 1972: McGraw-Hill Book Co., New York; will provide guidance in development of allocation methodology.

The Reporting Area summaries should be used in conjunction with the existing "Citizens Calls for Service" report. This report should be summed for day-of-week and/or hour-of-day totals as shown in Figures 1 through 6. The variety of ways in which the data can be manipulated are endless once they have been recorded. The analyses included in this report are only examples of what can be done with it. They answer basic questions regarding allocation, which may be sufficient at this time for the Frankfort Police Department. Hopefully they will generate other ideas on how the data can be used.

REPORTING AREA ANALYSIS

DAY _____ HOUR(S) _____ MONTH _____ YEAR _____ DAY OF WEEK _____

AREA OR BEAT	QUICK	ROUTINE	TOTAL	AREA OR BEAT		ROUTINE	TOTAL
1				24			
2				25			
3				26			
4				27			
5				28			
6				29			
7				30			
8				31			
9				32			
10				33			
11				34			
12				35			
13				36			
14				37			
15				38			
16				39			
17				40			
18				41			
19				42			
20				43			
21				44			
22				45			
23				46			

END

7. 11. 1944