

**The Bill Blackwood
Law Enforcement Management Institute of Texas**

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**Human Resource Allocation Analysis
for patrol in the Missouri City Police Department**

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**An Administrative Research Paper
Submitted in Partial Fulfillment
Required for Graduation from the
Leadership Command College**

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ABSTRACT

The City of Missouri City, Texas has a current estimated population of approximately 55,000. The city is anticipating significant population increase following a trend where the city has seen a 20,000-person increase in population in the past decade. The police department has a responsibility to utilize available resources in an efficient manner so it may continue to provide the high level of service the citizens have come to expect.

The research project is intended to provide the policy makers of the Missouri City Police Department with relevant information to assist them in identifying a feasible staffing plan for the patrol division of the Missouri City Police Department. Identify a staffing plan that would consider the expectations of the citizens, the goals of the department and the individual officer.

Research has shown improved service can be accomplished through efficient use of available personnel. An efficient staffing plan is one that will reduce operational costs, improve police service and allow for retention of quality officers. The information contained in the research was obtained through literature review, department surveys and other research projects related to police personnel staffing.

Research has shown the implementation of four-day/10 hour workweeks split between five overlapping shifts of eight officers would provide for the most efficient use of human resources of the Missouri City Police Department. The implementation of such a staffing allocation allows for a manageable span of control for supervisors and greater control of operational costs.

TABLE OF CONTENTS

	Page
Abstract	
Introduction.	1
Review of Literature	2
Methodology	5
Findings	6
Discussions/Conclusions	13
References	17

INTRODUCTION

The City of Missouri City, Texas has a current estimated population of approximately 55,000. The city is anticipating significant population growth from new residential subdivisions and commercial development under construction throughout the city and in the city's extra territorial jurisdiction. Empirically, this trend is supported through the 20,000-person population increase since 1990. In addition, Missouri City shares a border with the city of Houston, the fourth largest city in the nation, which results in increased commuters traveling through Missouri City. The Missouri City Police Department's ability to provide a high level of service in a prompt and professional manner has diminished as a result of the department being unable to maintain proper staffing levels to serve a growing population. This research project will examine alternative staffing methods for the allocation of human resources in the patrol division so the available resources may be utilized efficiently for maximum effectiveness. Specifically looking for an answer to: What would be the most efficient system to allocate human resources for the Missouri City Police Patrol Division?

Currently, the Missouri City Police Department has 39 sworn officers assigned to the patrol division. The patrol division, under the command of a lieutenant, operates with three patrol shifts. There is one sergeant and one corporal assigned to supervise each patrol shift. The five-day/eight hour workweek is currently used to schedule patrol division personnel.

The findings of this research project will provide a feasible staffing plan for the Missouri City Police Department. Other law enforcement agencies, encountering

the same or similar staffing issues along with a rapidly growing service area, may be able to utilize this research for their staffing needs. The information contained in the research project will be gathered from books, articles, journals and other research projects related to police personnel staffing.

The intended outcome of this research project is to provide the policy makers of the Missouri City Police Department with relevant information to assist them in making sound decisions for the efficient allocation of available police personnel in the patrol division. This research project will identify a strategic staffing plan for allocation of police patrol personnel. The implications of the research conclusions could be far reaching. The efficient use of available human resources creates an environment conducive for higher morale, employee retention, and improved police service. The efficient use of human resources will reduce operational cost through the reduction of avoidable overtime and fatigue or stress related absenteeism. The individual officers, the Missouri City Police Department, and the community served, would benefit from efficient use of available human resources.

Review of Literature

Stenzel (1983) asserts that an average person working a nine to five hour job with weekends off in the private sector would not normally concern himself or herself with the idea of working any other type of schedule. They tend to view it as just the way things are done, yet for persons working in an emergency service type of job are responsible for providing emergency service 24 hours a day, seven days a week, thus the task of personnel scheduling is tantamount to the

effectiveness of the organization (p.xvii). According to Stenzel (1983), effective personnel schedules can:

- reduce the amount of sick leave used by personnel,
- decrease the amount of wasted effort,
- allow for more efficient use of available equipment,
- lessen the amount of overtime personnel would work,
- increase the level of service,
- reduce fatigue by allowing more relaxation time,
- improve the level of morale,
- boost recruitment capabilities (p.121)

An examination of each of the issues by aforementioned research is the foundation in the area of personnel allocation/scheduling. It is common for an officer to call in sick due to actual illness sometimes induced by factors directly related to long or varied work hours, or to use a sick day as a means to obtain extended time off for a personal endeavor. Swank (1983) points out efficient allocation of an organization's human resources has a direct influence on the overall efficiency and effectiveness of the organization (p.336).

The reduction of overtime is an issue facing any administrator who is charged with getting the most out of available funds. Overtime for a police department is not always an issue that can be controlled by establishing restrictions or prohibitions on use of overtime. Often times, circumstances determine when an officer must work in an overtime capacity. Complex crime scenes, criminal activity, multiple arrests arising out of one criminal episode, court appearances,

and training courses all could have a direct effect on the utilization of overtime. The administrator would not necessarily have direct control over some of the issues previously listed, but with efficient use of human resources some of the areas above would limit the use of overtime. The use of overlapping shifts would limit the number of overtime hours used by allowing personnel tasked with completing paperwork involved with an arrest or complex criminal investigation in some cases, by affording them the opportunity to complete the work during scheduled work hours. The on-coming overlapping shift personnel would assume the responsibility of answering calls for service during the later portion of the officer tasked with paperwork from the arrest or complex investigation.

Improved service can be accomplished through efficient use of available personnel. Often citizens who request police service are generally more appreciative of a prompt police response to their request for service than to the actual service rendered by the officer. Criminals observe the service provided by the police as much or more than the average citizen. Bristow (1969) states a police department shall utilize their resources in a manner in which law abiding citizens and criminals alike would feel the police could be anywhere at anytime (p. 79-80).

A review of written materials shows officers in today's police society often seek out leisurely pursuits not related to their role as a police officer. The fact that police officers need time to seek out non-police related activity is vital to the overall well being of the individual officer. The high stress environment police officers are routinely subjected to wears on an officer's mental and physical well

being if not properly managed. If not afforded the opportunity to seek out stress release activities, the officers suffer and ultimately the organization will suffer through the loss of quality personnel.

Methodology

The question the research will attempt to answer is: What would be the most efficient system to allocate human resources for the Missouri City Police Department Patrol Division? It is hypothesized that utilizing an alternative scheduling plan, other than the five-day/eight hour schedule deployed in three shifts, would allow for a more efficient use of available patrol personnel. A survey questionnaire regarding patrol staff allocation was distributed to attendees of the Bill Blackwood Law Enforcement Management Institute module 1, September 2002. There was a 100% rate of return of the distributed questionnaire. The attendees were from a cross section of the Texas police community representing departments consisting of four to 1500 sworn personnel serving small rural communities to large cities.

The City of Missouri City has characteristics of a rural community as well as characteristics of a large city with an official population of 54,219 and a service area of 30.5 square miles (Missouri City 2003). The perceptions of officers from such a broad base provided insight that could have possibly been missed if the survey was limited to personnel from smaller agencies or to just larger agencies. The City of Missouri City is a medium sized city as far as cities are concerned, yet sharing borders with a city as large as the City of Houston, Texas adds to the

complexity of the types of issues the Missouri City Police Department has to be prepared to deal with.

The information gathered from the survey will be used in determining what has worked or has not worked for the agencies represented by the personnel involved in the survey questionnaire. Along with the survey information, journals, and books concerning human resource allocation for patrol will be examined to determine what would be the most efficient method for the allocation of personnel for the Missouri City Police Department.

FINDINGS

The complexity of police personnel scheduling is an arduous task of police administrators. The research in the area of police personnel scheduling has identified numerous complicated issues that must be examined to determine what method would be the best for the respective agency. There were advantages and disadvantages to all scheduling models reviewed. The questionnaire/survey returned by the attendees of the Law Enforcement Management Institute of Texas module one noted several advantages and disadvantages of the five day/eight hour work week, the four day/10 hour work week, and the three day/12 hour work week. The respondents gave the following advantages and disadvantages for the four-day/10 hour workweek schedule:

3/12 Advantages

More days off per week

Higher morale

3/12 Disadvantages

Increased officer fatigue

Rotating schedule

4/10 Advantages

More days off per week
 Reduction of officer absences
 Higher morale
 Reduction of overtime

4/10 Disadvantages

Increase of sick leave usage
 Increased officer fatigue
 Decreased shift coverage

5/8 Advantages

Increased shift coverage
 Requires fewer vehicles
 More time off per day
 Fixed days off
 Reduced officer fatigue

5/8 Disadvantages

Increase in overtime
 Increase in sick leave
 Frequent staffing shortages
 Fewer days off per week

The Galveston County, Texas, Sheriff's Office maintains a three-day/12 hour schedule for the 40 deputies assigned to the patrol division that serves the county's approximate 200,000 population in the limited and unincorporated areas of Galveston County. The deputies work three days on and three days off. The deputies' scheduled days off rotate every week. The shifts run from 6:00 am to 6:00 PM and 6:00 PM to 6:00 am. The deputies view the increase in time off as a positive.

The City of Georgetown, Texas, uses a two days on, two days off; three days on, two days off; two days on and three days off schedule to deploy the 26 officers assigned to the patrol division, which serves a population of approximately 30,000. The officer's work a 12 hour day, 6:00 am to 6:00 PM or 6:00 PM to 6:00 am shifts. The officers are scheduled to work 84 hours every two

weeks. One week working five days and the second week working two days. The officers view the seven-day, two-week work period as being more beneficial than the 10 or eight-day, two-week work periods associated with the 5/8 to 4/10 workweek schedules. Officer fatigue has not been identified as an issue at the Georgetown Police Department.

The City of Midland, Texas, population of 100,000, utilizes a four-day/10 hour schedule to manage the 62 sworn officers assigned to the patrol division. The first shift runs from 7:00 AM to 5:00 PM. The second shift runs from 2:00 PM to 12:00 AM, overlapping the first shift and the third shift, which runs from 4:00 PM to 2:00 AM. The fourth shift overlaps the second and third shift beginning at 8:00 PM and ending at 6:00 AM. The survey indicated the patrol officers are highly satisfied with the three-day weekends. Officer fatigue was not identified as a problem in working the 10-hour shifts.

The City of Tyler, Texas, has a population of approximately 85, 000 and has approximately 100 sworn officers assigned to the patrol division. They use a personnel allocation plan involving a combined five-day/eight hour schedule combined with a four-day/10 hour schedule. The day shift is broken into three overlapping shifts. The first shift runs from 6:00 PM to 2:00 PM with an overlapping 7:00 AM to 3:00 PM shift. The third shift runs from 3:00 PM to 11:00 PM. A fourth shift runs from 11:00 PM to 7:00 AM. These four shifts of eight hours are overlapped by two 10-hour shifts. The first 10-hour shift last from 7:00 AM to 5:00 PM and the second 10-hour shift runs from 5:00 PM to 3:00 AM. The

overlapping shift provides additional manpower during peak call-for- service times.

Survey information, returned by Tyler Police Department officers, noted there was little benefit to the addition of the 10-hour shifts to augment the level of personnel during peak call times. Negatives noted included increased officer fatigue and abuse of sick time by officers assigned to the 10-hour schedules. However research was unable to determine if the officers assigned to the longer shifts relate the identified problems to the combination of the two shift lengths having any relevance to the increased fatigue felt by the officers. The abuse of sick time may be more of a management issue and not necessarily a direct result of the shift length.

The City of Austin, Texas population of 800,000, utilizes a four-day/10 hour schedule to deploy the patrol division personnel. The first shift runs from 6:00 AM to 4:00 PM, the second shift runs from 3:00 PM to 1:00 AM. Third shift overlaps the second shift running from 5:00 PM to 4:00 AM. The fourth shift overlaps all the shifts running from 9:00 PM to 7:00 AM. The overlapping of the shift allows for addition manpower during peak call-for-service times. The issues of officer fatigue and abuse of sick time has not been an issue at the Austin, Texas Police Department. The Austin officers viewed the three days off during the workweek as a positive.

The City of Arlington, Texas, Police Department, population of 350,000, uses a five day/eight hour schedule, with a four day/10 hour shift to supplement the eight hour shifts during peak call-for-service times, for the 270 officers assigned

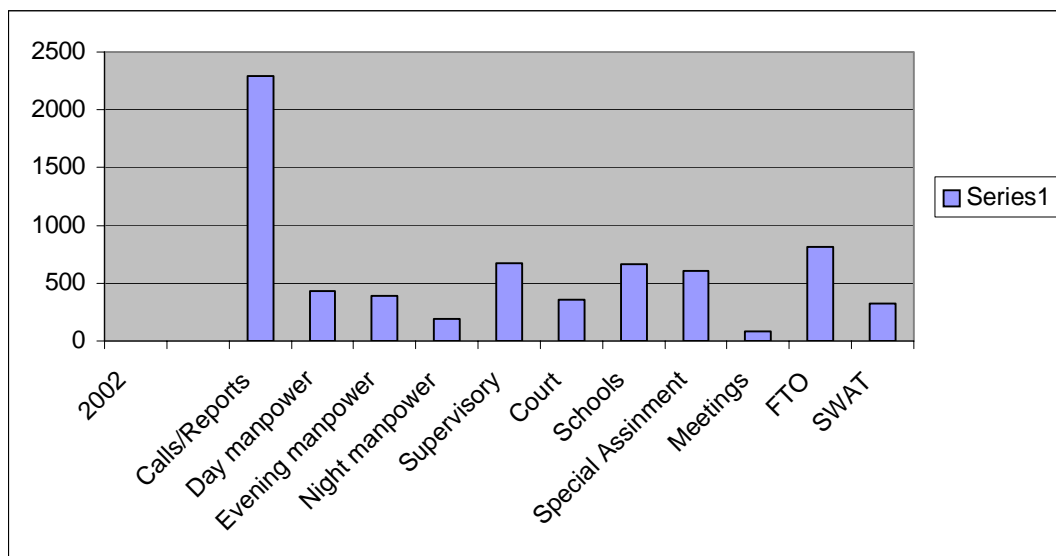
to the patrol division. Six five day/eight hour shifts are implemented from 6:00 AM to 2:00 PM and 7:00 AM to 3:00 PM (day shift); 2:00 PM to 10:00 PM and 3:00 PM to 11:00 PM (evening shift); 10:00 PM to 6:00 AM and 11:00 PM to 7:00 AM (night shift). The four-day/10 hour shift referred to as the fourth watch runs from 6:00 PM to 4:00 AM. The advantages seen with the personnel allocation used by the Arlington Police Department is the availability of personnel to handle increased calls-for-service during peak hours and attend community policing programs such as crime watch meetings and civic organization meetings. The negatives identified by the survey included the limited days off and the increase in the use of sick time by officers assigned to the five-day/eight hour workweek schedule.

The Cities of Alvin, Texas and Deer Park, Texas use five day/ eight-hour workweek schedules to deploy their patrol officers. Both agencies day shifts run from 6:00 AM to 2:00 PM, evening shift from 2:00 PM to 10:00 PM, and night shift from 10:00 PM to 6:00 AM. Surveys from both cities identified the short eight hour work day allowed for more time off per day, but allowed for only two days off per week. Officer fatigue was not identified as a problem by agencies using the five-day/eight hour workweek.

The current five day/eight hour work week the Missouri City Police Department uses has one sergeant assigned to a shift with as many as 13 officers under his command. Each patrol shift has one corporal to assist the shift sergeant with the span of supervision. The research reviewed by the author has recommended the span of supervision sometimes referred to as span of control,

should be limited to no more than eight subordinates. Anything greater than the maximum number of eight subordinates cannot be effectively supervised or evaluated. The implementation of an alternative staffing model different than the one currently in use should be implemented to regulate the span of supervision issue.

Statistical overtime data for the Missouri City Police Department revealed the patrol division incurred 6,816 hours of overtime during the 2002 calendar year; 2,296.25 hours were the result of officers staying past their scheduled work hours to complete reports, arrests or handling late in the shift calls for service.



The use of overlapping shifts would ease the number of times officers must wait until the end of their tour of duty to complete paperwork picked up early in their tour of duty. On-coming officers on the overlapping shift would take calls that would be considered late calls for the overlapped shift, thus reducing the

number of times officer on the overlapped shift would have to stay overtime to complete a late call for service.

The author has seen officers who feel the organization sees them as a vital contributing member of the organization have a feeling of self-worth and loyalty to the organization and its goals. Utilizing a schedule in which the officer can perform assigned tasks without the feeling of being overloaded by the daily demands of the job increases the productivity and self-initiative of the officer. Officers network well throughout the law enforcement community. Officers with positive attitudes toward the organization attract others interested in joining the organization.

The issue of sick time use and holiday compensation often came up during the research of the subject. The City of Missouri City Personnel Rules and Procedures Manual (1994) allows for the use of sick time to be used in two-hour increments (p.23). This would have no bearing on the number of hours an officer is scheduled to work. According to Cohen (1978), employees are less likely to utilize larger percentages of banked sick or compensatory time in a three or four day work period as opposed to the five day work period (p.55).

Holiday time awarded by the city would have a bearing on a shift schedule involving a work day longer than eight hours. The City of Missouri City awards eight hours of holiday time per recognized city holiday. Patrol officers working a longer than eight hours on a city recognized holiday would only receive credit for eight holiday hours in addition to the hours they actually worked.

DISCUSSION/CONCLUSIONS

As the population grows in Missouri City the demand for service increases, putting demands on staffing levels. The objective of the research is to identify the most efficient system for the allocation of available personnel assigned to the patrol division of the Missouri City, Texas Police Department. Members of the Missouri City Police Department have indicated for some time the police department is understaffed for the population in its service area based on the national average of 2.2 officers per 1,000 persons, as established by the Federal Bureau of Investigation. The Missouri City Police Department does not recognize any national standard average. They use a workload analysis plan based on the staffing model outlined Local Government Police Management. According to Garmire (1982), the optimum patrol force is determined on a formula based on three equal areas of responsibilities of the patrol officer, calls for service, preventive patrol and administrative duties (p.128). The Missouri City Police Department's formula of determining staffing levels is not under review in the research. The focus of the research is to identify a staff allocation plan that will tend to reduce overtime and reduce sick time usage among patrol officers. Implement a staffing plan that would make the Missouri City Police Department more appealing to potential candidates for employment.

It was hypothesized that utilizing an alternate scheduling plan other than the five day/eight hour workweek deployed in three shifts would allow for a more efficient use of patrol personnel. The use of alternate schedules would enhance

individual officer morale by allowing more time of during the week. The use of alternate schedules would allow more officers to be available to handle the additional calls-for-service during peak work hours which would provide relief for the individual officer who feels he/she is overwhelmed by the call-for-service and paperwork volume during peak times. A positive boost to department morale begins with the individual officer and the empowering of the individual officer to perform their job without the constant feeling of being overwhelmed; therefore improving the morale of the individual officer. According to Ronen (1984), quality employees are drawn to organizations that utilize alternative work schedules (p.33-34).

The author concludes the implementation of four-day/10 hour workweeks split between five shifts of eight officers would provide the most efficient use of the human resources of the Missouri City Police Department's patrol division. The five shifts will overlap each other, thus providing opportunity for officers to complete paperwork without having to put in overtime hours. There will be times, at minimum staff level, when there will be as few as four officers available to patrol the streets of Missouri City, under the current 5/8 schedule. A 4/10 schedule reduces the number of hours the number of available officers would be four. On average, at minimum staffing levels, the 4/10 schedule has more officers available.

Crime does not slow down during shift changes, overlapping shifts provide coverage during shift change. The division of three large shifts into four small, but overlapping shifts minimum staffing levels are equivalent at times to the current

staffing method. The smaller shifts establish a manageable span of supervision the current larger shifts don't. Bristow highlights having available police units on the street 24 hours a day to respond to emergencies is always best (p.91).

Change does not come without some type of investment or cost-additional personnel that would be needed if 4/10 shift were implemented can be kept to a minimum of one patrol officer, sergeant and corporal. One officer added to the division brings all shifts to ten officers. A sergeant and corporal to be assigned - therefor each patrol shift has command personnel staffing. Span of supervision limited to eight on duty subordinate personnel.

The measurement of how efficient the patrol personnel allocation method used is determined by evaluating how effective it is in reducing overtime and creating a span of supervision that allows for the effective supervision of the line personnel. The overall job satisfaction or morale of the personnel working under the system is not solely dependent on the personnel allocation method used, but on the individual perception of each officer. The individual officer would certainly benefit from an allocation system that takes into account the individuality of the officer. Any system that has daily impact on the operational efficiency of an organization needs a measurement device that determines its effectiveness in accomplishing the organization's goals.

The research is intended to provide insight for the Missouri City Police Department, as well as other law enforcement agencies that have experienced growth similar to that of Missouri City. The research will allow agencies to review

what has been an efficient staffing plan for other agencies that have been faced with the same or similar personnel issues.

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Patrol Staff Allocation Survey

Please complete and return to Mike Berezin. Thank you.

Name: _____

Agency: _____

- 1. What is the approximate number of personnel assigned to your patrol division?**
- 2. Population of the area your agency provides service to.**
- 3. Type of workweek your patrol division personnel work?**
5/8 4/10 3/12 Other_____ (explain)
- 4. What are the advantages of the workweek your patrol division works?**
- 5. What are the disadvantages of the workweek your patrol division works?**
- 6. Please list the hours each shift works (i.e. 6a-2p, 2p-10p, 5a-3p).**

Please list any agencies you are aware of that use a workweek other than the standard five day/ eight hour work week.

Minimum staffing comparison graph. Vertical column indicates number of officers at minimum staffing with 10 hour shifts compared to 8 hour shifts.

Time	eight	ten
1am	4	4
2am	4	4
3am	4	4
4am	4	8
5am	4	8
6am	5	8
7am	5	8
8am	5	8
9am	5	8
10am	5	8
11am	5	8
12pm	5	8
1pm	5	8
2pm	7	8
3pm	7	8
4pm	7	8
5pm	7	8
6pm	7	8
7pm	7	8
8pm	7	8
9pm	7	8
10pm	4	8
11pm	4	4
12am	4	4

