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Patrol Scheduling Methods in Texas Police Agencies

Police managers are presented with a vast array of scheduling options. These plans have no concrete definitions because various departments use them in a variety of ways. This bulletin examines the advantages and disadvantages of scheduling plans that are currently in greatest use.

Basic Scheduling Plans

8-5 Plan: An officer works five 8-hour days and gets two days off.

10-4 Plan: An officer works four 10-hour days and gets three days off.

12-4 Plan: An officer works four 12-hour days and gets four days off.

Issues Surrounding Patrol Scheduling

Plans/Shifts

The number of shifts (watches) and shift length varies with the type of plan chosen. The three most common plans are 8-5, 10-4, and 12-4. The first number represents the hours worked and the second number represents the days worked. The number of days off are two, three, and four, respectively. The first two plans have three shifts everyday while the last plan has two shifts everyday. There may be additional shifts for each plan if the agency elects to modify the basic plan format [see scheduling methods for examples of modified plans].

Staffing

Staffing levels can either be equal on each shift or proportional to calls for service. Equal staffing makes scheduling easier, but with obvious productivity loss. (For information on proportional staffing a future TELEMASP Bulletin will address patrol allocation.) An additional method (see scheduling methods) of increasing staffing levels during heavy periods is to overlap shifts or to have a jump (power) shift.

Shift Rotation

There are many variables that merit consideration in deciding whether to employ fixed or rotating shifts. Permanent shifts may facilitate community policing efforts. The Fraternal Order of Police in Philadelphia (1988) and the Chicago Police Lieutenants Association (1990), in separate studies, recommended that if shifts rotate they should rotate in a clockwise (day to evening to night) direction, and the minimum rotation should occur no less than every three weeks. Managers must decide how to assign officers and command staff to shifts whether they are rotating or permanent.

If seniority dictates officer assignment to permanent shifts, there is a risk that senior officers will fill the prime day shifts and leave the less experienced officers to work the more active night shifts. To encourage senior officers to work night shifts, some departments offer a night differential pay incentive. An additional method of distributing senior officers among the shifts is to require that a certain percentage of officers on each shift be senior officers or specialists, such as field training officers.

Morale and Health

Officers are concerned with their family and social life. A key issue for many officers is the equity of schedule assignments and the number of weekends off each year. Many schedules give officers a high proportion of weekends off or provide for three to four days off in a row. Secondary concerns for officers are schedules that allow them to attend school or take second jobs.

Officer health is important to both the department and the officers. A study conducted for the Fraternal Order of Police in Philadelphia indicates that frequent shift rotation and counter-clockwise (day to night to evening) rotation is detrimental to the health of an individual (CDIS 1988). The circadian rhythm is the built-in biological clock(s) that regulate(s) all bodily functions and is the major problem officers must face in rotating shift work (O'Neill and Cushing 1990). Research indicates that it takes at least one week for a person's circadian rhythm to adjust with a shift change (O'Neill and Cushing 1990). In addition, a person's ability to adjust to shift rotation declines with age. Two other issues related to shift work are sleep deprivation and domestic problems. Officers who rotate shifts are frequently more fatigued, suffer increased levels of sleep disorders, are more likely to have traffic accidents, and have an increased risk of cardiovascular disorders (O'Neill and Cushing 1990).

Shift length may play a role in an officer's ability to perform his or her job. Extremely long shifts can cause fatigue, reduced alertness, reduced productivity, and increased stress. However, a study of Everett, Washington's 12-hour shifts found that officer performance on the 12-hour shift was similar to the 8-hour shift (Davis and Tracy 1980).

Technical Considerations

Overlapping and heavy shifts can drain equipment and resources. Patrol scheduling may conflict with the scheduling of officers to other departmental (special) units. Another area not to be overlooked is the scheduling of training time. All scheduling plans should include policies that explain how vacation time is scheduled and how the department will cover officers who are on vacation or sick leave.

Implementing new schedules may cause a great amount of friction between both the upper-level police management and the patrol officers because changes often create stress and resentment. Brown (1993) suggests that opposition to change can be overcome by involving officers in the decision making process. An ad hoc task force or committee with members from all levels in the department is a way of involving the officers in examining problems and possible solutions. Another method is to educate the officers as to the need for a new schedule and use limited implementation. By

initially limiting the implementation, the department can evaluate the schedule and identify possible problems. Additionally, through informal communication networks, officers involved in the implementation can spread the word to other officers in the department that it is a good schedule.

Texas Agencies

During March 1995, 41 Texas police agencies responded to a questionnaire concerning patrol scheduling methods in their agencies. A breakdown of the size of the responding agencies is provided in Table 1. It is interesting to note that the agencies with 1000+ officers use either the 8-5 plan or a combination of the 8-5 and 10-4 plans. The smaller agencies have a greater variety of scheduling plans. This is probably due to the fact that when an agency has a limited number of resources, plans such as the 10-4 put more officers on duty during peak periods of activity.

Table 1
Size of Responding Agencies

<u>Agency Size</u>	<u>Number of Agencies</u>	<u>Percent</u>
1000+ Officers	6	14.6
250 to 999 Officers	7	17.1
150 to 249 Officers	14	34.1
Less than 150 Officers	14	34.1

Sixty-three percent of the responding agencies utilize a 8-5 plan, 17 percent utilize a 10-4 plan, and 10 percent use a combination of the 8-5 and 10-4 plans. Two agencies utilize a 9-5 plan. One agency uses a variation of the 8-5 plan, 5 on - 2 off / 5 on - 3 off. The remaining agency uses a variation of the 12-4 plan, 12-4/12-3/12-4. The oldest current working plan among the Texas agencies dates back to 1949. Two agencies adopted new plans this year.

In order to increase staffing levels during peak periods or to keep officers on the street during shift changes, 68 percent of the responding agencies utilize a jump shift, while 37 percent use overlap shifts. Fifteen agencies reported a shortage of patrol cars available for officers during the overlap periods. In addition, six agencies indicated a shortage of portable radios during overlap periods.

Fifty-four percent of the agencies have permanent shift assignments for officers, and 83 percent have permanent shift assignments for command staff. For those agencies that rotate shift assignments, the most common rotation occurs quarterly. Three agencies rotate shift assignments every month, and two agencies rotate patrol officers every week.

Six agencies rotate clockwise and six agencies rotate counter-clockwise.

Table 2 is a breakdown of the methods Texas agencies employ to make shift assignments. The majority of the departments use seniority as their primary method, and 81 percent of the agencies do not offer any night differential pay. For those agencies that do compensate officers to work the night shift, the range of compensation varies from a low of .15 cents more an hour in some agencies to \$350.00 a month in San Antonio.

Table 2
Shift Assignments

<u>Criteria</u>	<u>Frequency</u>	<u>Percent</u>
Seniority	18	45.0
Equity	6	15.0
Random	6	17.5
Multiple Methods	9	22.5

Fifty-two percent of the agencies have either a lieutenant or a captain in charge of the department's scheduling plans. Sergeants and a combination of sergeants and lieutenants make up 24 percent of the officers in charge of patrol scheduling for the agencies.

Patrol Scheduling Methods

Stenzel and Buren (NIJ 1983) stress that changing patrol schedules should be treated as a major management issue. The department should first examine the current schedule to identify problems with the schedule. The next step is to develop **realistic** objectives that the department wants to meet with a new schedule. Finally, a committee should examine a variety of schedules and select the one that best fulfills the department's needs.

There are numerous ways to represent work schedules (Stenzel and Buren 1983). The majority of work schedules fall into three primary categories: duty cycle, bracket, and calendar. Duty cycles, shown below, represent repeating patterns of on- and off-duty work days. A duty cycle can represent either an individual officer's cycle or the cycle of a group of officers with the same duty schedule. Duty cycles repeat themselves each time the starting day is repeated. Both rotating and non-rotating shifts can be represented by duty cycles.

Bracket representations of police work schedules show on- and off-duty assignments displayed in segments, termed brackets, which are usually one week in length—the day of week corresponding to each duty assignment is indicated, but specific dates are not (Stenzel and Buren 1983:34). A bracket may represent a group of officers with the same work schedule or an

Duty Cycle Example:

Based on El Paso P.D. duty cycle of 5 on - 2 off/5 on - 3 off.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
W	W	W	W	W	R	R	W	W	W	W	W	R	R	R

W=Workday

R=Day Off

5W - 2R / 5W - 3R

Duty Cycle Example:

Based on Euless P.D. duty cycle of 4 on - 4 off/3 on - 3 off/4 on - 4 off.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>
W	W	W	W	R	R	R	R	W	W	W	R	R	R	W	W	W	W	R	R	R	R

W=Workday

R=Day off

4W - 4R/3W - 3R/4W - 4R

individual officer's work schedule. Table 3 is an example of the bracket method of an 8-5 plan that is currently being used by a Texas agency. The table represents the day shift and the "R" represents a day off for the officers.

Table 3
Example of Bracket Method

Officer	M	T	W	T	F	S	S
Lieutenant A	R						R
Sergeant A					R	R	
Officer A						R	R
Officer B	R						R
Officer C	R	R					
Officer D		R	R				
Officer E			R	R			
Officer F				R	R		
Officer G					R	R	

Calendar representations of police work schedules show officers' daily assignments for specific dates up to a full year (Stenzel and Buren 1983:37).

Schedules in Texas

The following are examples of the various scheduling plans that are currently being utilized by Texas police agencies. The 8-5 plan is typically known as the traditional three shift plan. With this plan, all officers work five days a week and have fixed days off. Departments adjust shift starting times to best meet their needs. As depicted in the examples, departments can utilize overlapping or jump shifts to increase the number of officers on the street during peak periods. Some agencies are now using a combination of 8-5 and 10-4 plans in order to increase staffing levels in the busiest districts. The names of each shift vary from agency to agency.

Basic 8-5 Plan with 3 Shifts

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
Day	0700	1500
Evening	1500	2300
Night	2300	0700

Basic 8-5 Plan with a Jump (Power) Shift

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
1st	2200	0700
2nd	0600	1500
3rd	1400	2300
Power	1900	0300

8-5 Plan with Overlapping Shifts and a Jump Shift

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
1st	2300 0000	0700 0800
2nd	0700 0800	1500 1600
3rd	1500 1600	2300 2400
4th	1900	0300

Combination 8-5 and 10-4 Plans

The 3 Primary Shifts Are Standard 8-5 and the Jump Shift is a 10-4 Plan

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
Days	0600	1400
Eve	1400	2200
Mids	2200	0600
4th Watch	1700	0300*
*(4 x 10 staffing)		

The 10-4 plan is designed to put more officers on the street during peak periods. Overlapping of the ten hour shifts is the primary reason that the numbers of officers on duty is increased so dramatically. In addition, this plan gives officers three days off every week.

10-4 Plan with Overlapping Shifts

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
A	0600	1600
	0800	1800
B	1600	0200
	1800	0400
C	2000	0600
	2200	0800

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
Day 1	0600	1600
Day 2	1000	2000
Eve	1600	0200
Mid	2000	0600
Relief 1	*	*
Relief 2	*	*
*Depends on day of week		

The 12-4 plan basically divides the patrol division into four platoons. One-half of the division is working while the other half are on days off. This plan gives the officers three to four days off depending on how the agency sets up their schedule. In some cases the officers will work three 12-hour days and one 4-hour day ("Kelly Day") in order to work a 40-hour week. Forty-five percent of the Texas agencies surveyed have an emergency schedule based on 12-hour shifts that they can implement when necessary.

Basic 12-4 Plan

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
Days	0600	1800
Nights	1800	0600

12-4 Plan Variation

SHIFT (WATCH)	BEGIN SHIFT	END SHIFT
Days "A" Shift	0700	1900
	0730	1930
Nights "A" Shift	1900	0700
	1930	0730
Days "B" Shift	0700	1900
	0730	1930
Nights "B" Shift	1900	0700
	1930	0730
*12-4 Plan - 12-3 Plan - 12-4 Plan (within every two week period, officers work one 8 hour day) (work 4 off 4 - work 3 off 3 - work 4 off 4)		

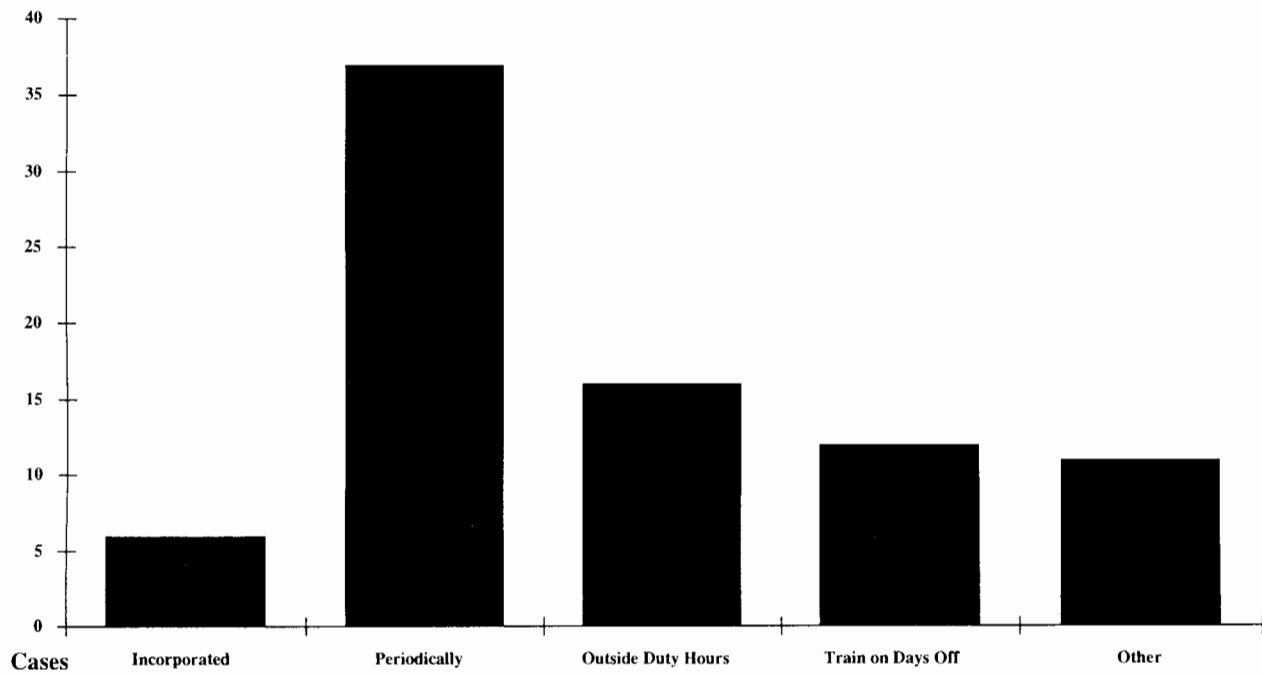
Abilene P.D. 10-4 Configuration**Sunday - Wednesday**

- Company A is day shift. Squad 1 works 6:00 a.m. - 4:00 p.m. Squad 2 works 7:00 a.m. - 5:00 p.m.
- Company C is evening shift. Squad 1 works 3:00 p.m. - 1:00 a.m. Squad 2 works 4:00 p.m. - 2:00 a.m.
- Company E is midnight shift. Squad 1 works 8:00 p.m. - 6:00 a.m. Squad 2 works 9:00 p.m. - 7:00 a.m.

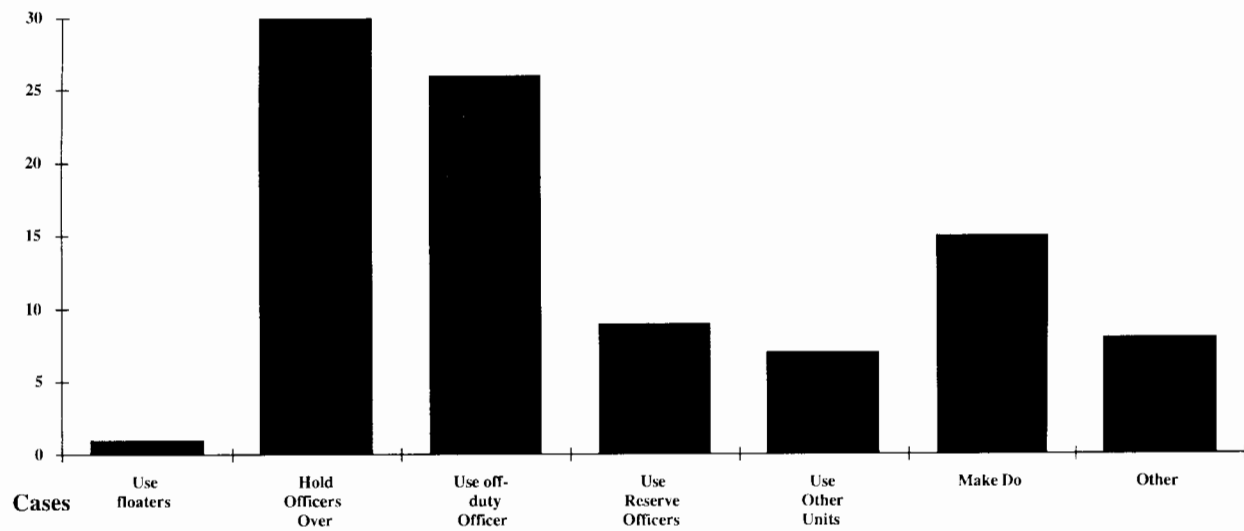
Wednesday - Saturday

- Company B is day shift. Squad 1 works 6:00 a.m. - 4:00 p.m. Squad 2 works 8:00 a.m. - 6:00 p.m.
- Company D is evening shift. Squad 1 works 4:00 p.m. - 2:00 a.m. Squad 2 works 5:00 p.m. - 3:00 a.m. Squad 3 works 7:00 p.m. - 5:00 a.m.
- Company F is midnight shift. Squad 1 works 8:00 p.m. - 6:00 a.m. Squad 2 works 9:00 p.m. - 7:00 a.m.

With this schedule every officer works four 10-hour days and has 3 days off each week. Abilene P.D. does not rotate shift assignments or days off. Everyone in patrol works on Wednesday. This allows half of the patrol officers to participate in training sessions or special duty assignments every Wednesday (Moore 1995). There is a significant amount of shift overlapping which helps increase the number of officers on the street during peak periods. In addition, company D utilizes an extra squad (similar to a jump shift) to increase the number of officers on the street during peak days and hours.



Scheduling Training Times



Methods for Filling Low Shifts

Conclusion

Each basic scheduling plan can be customized to meet an agency's needs. The basic plans outlined here have met the test of time. No one schedule will work for all agencies. Police departments need to find a scheduling plan that meets their needs. Scheduling plans should be reviewed periodically to determine if the plan is meeting the workload and requirements of the agency, the officers, and the community.

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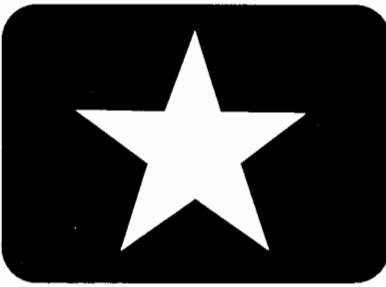
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Texas Police Agencies that responded to the survey:

Abilene Police Department
Austin Police Department
Addison Police Department
Amarillo Police Department
Arlington Police Department
Beaumont Police Department
Carrollton Police Department
College Station Police Department
Dallas County Sheriff's Department
Dallas Police Department
Deer Park Police Department
Duncanville Police Department
El Paso Police Department
UT El Paso Police Department
Euless Police Department
Fort Bend County Sheriff's Department
Fort Worth Police Department
Galveston Police Department
Garland Police Department
Harris County Sheriff's Department
Houston Police Department
Irving Police Department
Jefferson County Sheriff's Department
La Marque Police Department
Laredo Police Department
Lubbock Police Department
Mesquite Police Department
Midland Police Department
N. Richland Hills Police Department
Odessa Police Department
Pasadena Police Department
Plano Police Department
Randall County Sheriff's Department
Richardson Police Department
San Antonio Police Department
Texarkana Police Department
Texas Dept. Public Safety
Travis County Sheriff's Department
Waco Police Department
White Settlement Police Department
Wichita Falls Police Department



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