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Schedule Matters: The Movement to Compressed Work Weeks

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A compressed work week (CWW) is a schedule in which officers work longer but fewer days in a work cycle. These schedules are not new in policing; since the early 1970s, this topic has been the focus of numerous articles in *Police Chief* magazine and in other professional publications. As early as 1970, an article appeared in *Police Chief* magazine regarding a pilot test of the 10-hour shift in Huntington Beach, California.¹ Authors of a separate article regarding four-day workweeks in Inglewood, California, which was published in *Police Chief* magazine in 1979, noted that many law enforcement agencies had established, experimented with, or considered a four-day workweek.² In the 1970s and 1980s, agencies that had adopted compressed work schedules reported the various advantages and disadvantages to them. Most found that officers preferred them; some reported advantages such as reductions in overtime and sick leave; but some also reported concerns about fatigue and supervision. Nevertheless, much of the early findings were based on anecdotal information and limited scientific evidence.

While there has continued to be considerable conjecture about the benefits of compressed schedules in policing, until very recently little scientifically derived information had been known about CWWs in policing.

There has been extensive research on CWWs across a variety of industries dating back to around the early 1970s, but much of it had its limitations. Scholars have emphasized the need for more research in the area of CWWs, as well as more experimental research and more scientifically rigorous, well-designed studies.³ Indeed, many past studies have relied primarily on surveys or examinations of agencies that have implemented a compressed schedule and then examined changes over time. Studies like these can lead to improper conclusions because without random assignment to various shifts, other factors occurring around the same period could impact the outcomes being examined. Additionally, survey responses may have inherent biases because, if employees know that their responses may lead to changes, they may alter their responses accordingly based on their preferences for particular shifts. Some law enforcement personnel might be motivated to work longer hours for a variety of reasons, including monetary gain; encouragement from the occupational and organizational culture; and the enjoyment of being part of a dangerous, exciting, and stimulating job.⁴

Some law enforcement leaders have, for example, implemented CWWs with the expectation of an efficiency gain.⁵ Clearly, the current economic climate has led law enforcement leaders to seek out efficiency improvements in whatever ways possible while not limiting services provided to the community. The purported benefits of CWWs espoused by some law enforcement personnel have included increased staff

coverage at peak hours of service requests, increased performance, reduced response time, lowered costs for both officers and the agencies themselves, reduced crime, improved teamwork, improved ability to schedule training, and reduced accidents and complaints against officers. However, many of these claims have yet to be soundly supported by scientifically rigorous studies in policing.

It is not just the supposed benefits of CWWs that have not been fully supported by good scientific data; it is also the alleged detriments. Some have noted a number of potential problems such as patrol car shortages during overlapping shift periods, officer fatigue leading to greater risks, and difficulties in schedule administration.⁶ Indeed, the findings of a survey of 104 police departments in California that had implemented the four-day, 10-hour schedule suggested some potential drawbacks to 10-hour shifts, such as problems with unity of command and supervision, increased costs, lack of personnel to provide sufficient coverage, and the need for more equipment.⁷ Concerns about CWWs raised by managers in Canadian law enforcement agencies included increased citizen complaints, potentially higher costs, a lack of investigative continuity, and lessened identification with the police profession because of time away from the job.⁸ Others have noted potentially deleterious effects on communication among officers or between officers and their supervisors as well.⁹

The Need for More Scientific Evidence

While he was the chief of the Pasadena, California, Police Department, Bernard K. Melekian (currently director of the Office of Community Oriented Policing Services, U.S. Department of Justice) critically examined many potentially negative issues associated with 12-hour shifts. He identified a number of potential drawbacks such as increased fatigue, reduced communication across shifts, lessened ability to deal with neighborhood problems, and—most importantly—disengagement from the job and reduced ability or time to establish and maintain relationships with the community, which he believed could detract from community policing and job involvement.¹⁰ Because there had not been sufficient studies examining these potential concerns, he called for increased research on the impacts of such schedules. Consistent with Melekian's call for more research on CWWs in law enforcement, Bryan J. Vila, an esteemed expert on fatigued officers, noted that "both police executives and officers need hard information about the risks and benefits of such schedules."¹¹ Others have also made similar calls for increased research because of the unknown impacts of compressed schedules.¹² Finally, in the March 2008 issue of *Police Chief* magazine, Captain Jon Sundermeier of the Lincoln, Nebraska, Police Department reported on an in-house survey conducted after implementation of 12-hour shifts for a subgroup of officers.¹³ While the survey allowed the agency to examine a number of issues including satisfaction, overtime, sick leave, and performance, Captain Sundermeier cautioned that a more scientific approach might provide more conclusive data.

Background

The Police Foundation was interested in examining compressed work schedules: those in which officers work fewer days but the same overall number of hours on average. As such, the foundation set out to conduct a scientifically rigorous study to examine the impact of shift length on various outcomes. As part of this study, it was important to understand the extent to which agencies had implemented compressed schedules, yet it had been almost 30 years since a national survey of shift schedules had been conducted. In that survey of 160 agencies, researchers reported that 25 percent of departments had implemented shifts of nine hours or longer.¹⁴

Random National Survey of Police Departments

In November 2005, a survey was conducted with a random sample of police departments comprising more than 50 sworn officers.¹⁵ To examine any trends in shift scheduling, the same agencies were again surveyed in November 2009.¹⁶ With

a 96 percent response rate in 2005 and a 100 response rate in 2009, it was clear that the biggest change was a trend *away* from traditional, eight-hour schedules (from 40 percent of agencies down to 29 percent of agencies).¹⁷ As shown in table 1, the size of the agency had an influence on the shift lengths chosen; while the largest agencies (201 or more sworn officers) opted primarily for 10-hour shifts in both 2005 and 2009 (35 percent and 33 percent, respectively), the smaller agencies (50–100 sworn personnel) had a strong but decreasing preference for 8-hour shifts (41 percent and 32 percent, respectively). While small and midsize agencies (101–200 sworn personnel) demonstrated increases in 12-hour shifts over the period, there was a reduction in large agencies relying on 12-hour shifts.

Sworn Officer Total	November 2005 ^a				November 2009 ^b			
	8-hr shifts (%)	10-hr shifts (%)	12-hr shifts (%)	Total	8-hr shifts (%)	10-hr shifts (%)	12-hr shifts (%)	Total
50 to 100 (small)	41.2	22.4	28.5	92.1	32.0	19.5	30.8	82.3
101 to 200 (medium)	41.5	32.9	19.5	93.9	26.7	22.1	25.6	74.4
201 + (large)	32.5	35.0	15.0	82.5	24.4	33.3	11.1	68.8
Total	40.1	27.2	24.0	91.3	29.3	22.3	26.3	77.9

^a Other shifts employed in 2005: 9-hr shifts (1.7 percent); 11-hr shifts (1 percent); multiple shifts (5.9 percent)

^b Other shifts employed in 2009: 9-hr shifts (4.7 percent); 11-hr shifts (5.3 percent); 13-hr shifts (1.3 percent); multiple shifts (5.9 percent)

Please note: The data in the table are in the form of percentages derived from the raw data. As such, the "Total" row is based on the totals in each column as a portion of the total. Because the number of responding agencies was different for small, medium, and large, the percentages in the cells in the bottom row are not averages of the averages but rather averages of the raw data.

Interestingly, the percentage of agencies employing a combination of shifts almost doubled over the four-year period, and there was also a significant increase in the percentage of agencies opting for other shift lengths (for example, 9 hours, 11 hours, and 13 hours). While only 25 percent of agencies adopted compressed schedules (9 or more hours) in 1983,¹⁸ by 2009, that figure had grown to more than 70 percent. There has been a substantial amount of conjecture and anecdotal evidence regarding the impact of various shift schedules but little scientifically rigorous examination of this issue in policing.

The Experiment

Because of the need for greater scientific understanding of the organizational and individual impacts of various shift lengths, a randomized experiment was conducted in two agencies—Detroit, Michigan; and Arlington, Texas—between 2007 and 2009. More than 300 nonsupervisory patrol officers were randomly assigned to 8-, 10-, or 12-hour shifts for a period of six months. The study's measures were captured before their assignment to these shifts (the pretest) and then again during the sixth month of the study (the posttest).

The measures reflected five basic outcome categories:

- work performance and safety;
- health and stress;
- quality of life;
- sleep, fatigue, and alertness; and
- overtime and off-duty work.

The sources for the data measures included work simulations administered on site at the police departments during the last three hours of the shift; agency data (for

example, self-initiated activities and sick leave); and surveys and other self-report instruments (for example, quality of work life, stress, and sleep diaries).

The Findings

At the end of six months, the Police Foundation completed an analysis of the three shift schedules. The findings suggested that 10-hour shifts offered advantages over 8-hour shifts, but these benefits did not necessarily extend to the 12-hour shifts; in fact, there were potential risks associated with 12-hour shifts. The results that follow indicate statistically significant findings from the research.

Benefits of 10-hour shifts over 8-hour shifts

- Increased sleep (more than 30 minutes more per 24-hour period)
- Improved quality of work life (based on satisfaction, commitment, and involvement)
- Considerably reduced overtime hours (those on 8-hour shifts worked five times as much overtime as those on 10-hour shifts)

Effects of 12-hour shifts

- No improvement in sleep compared to workers on 8-hour shifts
- No overall improvement in quality of life compared to those on 8-hour shifts
- Reduced overtime hours (those on 8-hour shifts worked three times as much overtime as those on 12-hour shifts)
- Higher rate of subjectively reported fatigue or sleepiness compared to those on 8-hour shifts (fatigue researchers argue that people tend to underestimate their fatigue levels¹⁹)
- Reduced levels of alertness compared to those on 8-hour shifts

Failure to substantiate many past claims

- Sick leave was not significantly different across the three shift lengths
- A comprehensive index of stress did not reflect differences across shift lengths
- Performance (via simulations) was not significantly different across shift lengths
- Self-initiated police activities did not vary significantly as a function of shift length

Regardless of flaws or limitations with past studies, some of the findings from this scientifically rigorous experimental research are consistent with some past research and conjecture regarding compressed schedules in policing and other industries. For example, Captain Sundermeier concluded that in the Lincoln Police Department study, fatigue was a factor for officers but not to the degree that it affected job performance. Indeed, this same finding was confirmed in this experiment. The fact that 75 percent of officers on 12-hour shifts in Lincoln reported being somewhat tired after the end of a shift indicates the need for concern regarding longer shifts, especially in light of the assertion that people tend to underestimate their levels of fatigue. Indeed, it could be argued that such underestimations may be greater in occupations requiring a degree of toughness and invulnerability, including policing. Based on self-reported fatigue, those on 12-hour shifts in this experiment were significantly sleepier than those on 8- or 10-hour shifts—something that should also be reason for concern. Yet in Lincoln, 100 percent of those working 12-hour shifts wanted to continue doing so. This certainly underscores the fact that what officers want, while important, may not be in the best interest of the officers or the public they serve. However, it is important to note that at least in this study, no decreases in performance accompanied this lowered level of alertness, although it does raise concerns about the activities of officers after the 12-hour shift (for example, while driving home from the job).

The lack of differences in sick leave related to the length of the shift could be explained by this more rigorous design and is consistent with past research indicating initial decreases in sick leave after initiation of a compressed schedule,

followed by a return to the previous amount of sick leave over time—or even an increase.²⁰

Implications of the Current Study

The potential cost savings resulting from reduced overtime may be a meaningful benefit to agencies that choose to implement, or already have implemented, compressed schedules. At the same time, there is little known evidence about the costs of implementing such schedules, which, if more expensive, may offset some of these overtime benefits. Many agencies have indicated either increased or decreased costs associated with both 10- and 12-hour shifts. For example, many argue that 12-hour shifts offer the most cost savings, whereas those promoting the use of 10-hour shifts argue a greater benefit in terms of increased coverage at the times of peak demand. Neither of these conclusions has been sufficiently documented, nor has any thorough cost-benefit analysis been conducted. Is the downside risk of 12-hour shifts (potential accidents, for example) offset by a cost gain? This and related questions have yet to be thoroughly examined in the scientific community.

Given the concerns about increased fatigue and lowered alertness associated with 12-hour or longer shifts, agencies considering or currently employing these shifts should consider closer examination of commute times, off-duty work hours, and overtime use and policies. Many have argued that compressed schedules allow for greater recovery time and are therefore not concerning; however, if the days off work result in officers taking on additional outside employment or off-duty jobs, then the issue of recovery time becomes troublesome.

Importantly, the increased level of sleep for officers working 10-hour shifts in this study may represent an important benefit to law enforcement officers, their agencies, and the community. Sleep deficiency and disorders have been identified by some as particularly problematic in policing,²¹ although officers in the Police Foundation study averaged almost 7.5 hours of sleep per 24-hour period. However, based on these findings, officers on 10-hour shifts could gain as much as 175 hours of sleep per year, which may lead to substantive benefits to officers in terms of health and safety, as well as potentially carry over into savings and other benefits for agencies who adopt these schedules.

These findings, combined with research conducted across industries for many decades, seem to suggest that there are key advantages and disadvantages to implementing compressed schedules. Indeed this study indicated no specific benefits of working 8-hour shifts as compared to 10- or 12-hour shifts. However, the fact that subjective fatigue is greater for those on 12-hour shifts was concerning. Across industries, many have documented issues and problems associated with particularly long shifts or when 12-hour shifts are combined with more than 48 hours of work weekly. Agencies should examine these issues thoroughly when deciding which shift lengths may best suit a particular agency's needs, while being aware of the potential areas of concern associated with the shift lengths they choose. ■

Notes:

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For the complete study, see *The Shift Length Experiment: What We Know about 8-, 10-, and 12-Hour Shifts in Policing* at <http://www.policefoundation.org/shiftexperiment>. This study was completed by the Police Foundation, 1201 Connecticut Avenue, NW, Washington, D.C. 20036-2636. For information, email pfinfo@policefoundation.org.

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