

In the Matter of Factfinding Between )  
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International Association of Fire Fighters, )  
Local 8 (Union), )  
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and )  
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City of Great Falls, )  
(City). )  
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FACTFINDER'S REPORT

BEFORE: David W. Stiteler, Factfinder

APPEARANCES: For the Union:  
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For the City:  
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PROCEEDING LOCATION: Great Falls, Montana

PROCEEDING DATE: January 7, 2014

RECORD CLOSED: January 7, 2014

REPORT ISSUED: January 27, 2014

# REPORT

## INTRODUCTION

The parties started negotiating a successor to their 2010 – 2013 collective bargaining agreement in March 2013. In the fall of 2013, the Union declared impasse. At that time, there were still a number of unresolved issues.

The parties were unable to resolve the impasse through mediation and they moved the dispute to factfinding. Through the procedures of the Board of Personnel Appeals, the parties selected David W. Stiteler as the factfinder.

The Factfinder met with the parties on January 7 in Great Falls. The parties had met the previous day and resolved two of the three remaining issues. The sole issue presented to the Factfinder concerned work schedules. The parties offered documents and testimony, and thoroughly explained their respective positions on the issue. After they finished their presentations, the Factfinder closed the proceeding.

## ISSUE

The issue is whether the Union's proposed changes to Article 12, Work Schedules, should be recommended for inclusion in the parties' successor agreement, or whether the current schedule should continue for this contract period.

## FINDINGS OF FACT

1. The Union represents a bargaining unit of about 60 firefighters employed by the City's fire department (Department). David Van Son is a captain in the Department and the president of the Union. He has worked for the Department for around 18 years.
2. Greg Doyon is the city manager. He has been in that position since 2008. Randy McCamley is the fire chief. He started with the Department in 1983, worked his way through the ranks, and eventually was appointed chief.
3. The Department operates four fire stations. There are three platoons.
4. City fire fighters currently work a 10/14 schedule. Under that schedule, fire fighters work two 10-hour day shifts, then two 14-hour night shifts, followed

by four days off. The time between the two night shifts is 10 hours. Fire fighters average 42 hours a week.

5. The 10/14 schedule has been in place for the Department since at least 1971, with the exception of a five-year period from 1989 to 1994.
6. In 1989, the City had budget problems. It laid off eight fire fighters and closed one station. The parties agreed to change the fire fighters' work schedule because they expected it to save enough money to reopen the closed station.
7. The schedule they adopted in 1989 was a 24/48 schedule with a Kelly day every fifth shift. As under the 10/14 schedule, this meant a fire fighter worked an average of 42 hours in a workweek.
8. There was no information available about the impacts of the 1989 schedule change on either the Department or the fire fighters. McCamley is the only one of those present at the factfinding who worked for the Department during that period. He personally did not like the 24/48 schedule.
9. For reasons not entirely clear on this record, the parties switched back to the 10/14 schedule in 1994.
10. Over the years, members of the Union talked about proposing a return to the 24/48 schedule. Until a few years ago, the membership was about evenly split on the matter so the Union did not make a proposal.
11. As the Union got ready to open negotiations for a successor to the 2010 – 2013 agreement, there had been both demographic and cultural shifts in its membership. The current membership unanimously favored returning to the 24/48 shift schedule.
12. Fire fighters' individual reasons for wanting the change varied. The most commonly cited concerns with the current schedule were safety issues and the negative impacts on family life.

13. The current schedule limits the time fire fighters can spend with their families, particularly on weekends. As they rotate through the schedule, they spend about half the year working every weekend day.
14. Fire fighters also believe that it is often not possible to get adequate rest between the two 14 hour night shifts. It can be difficult to sleep during the day, and the demands of family life regularly interfere with their ability to rest.
15. In addition, the Department's call volume has increased each year, and the pattern of calls shows that night calls occur regularly. Currently, every time there is a call, the alarm rings at all four stations. This makes it difficult to get any meaningful rest during the night shifts.
16. The schedule change was the Union's number one priority in bargaining. However, either the Union did not clearly identify this issue to the City as its main priority, or the City did not hear the message the Union was sending.
17. For its part, the City approached the negotiations cautiously. The City was in the process of trying to settle a legacy financial liability issue related to its involvement in an electric cooperative. Doyon met with representatives of the Union and other labor organizations representing City employees in the spring of 2013 to let them know that the City's financial position was not good.
18. The Union made concessions in other areas during negotiations, dropping all economic demands and accepting a wage freeze, in hopes of getting the City to agree to the schedule change. Again, however, the City did not understand that the Union believed that its acceptance of the wage freeze was a quid pro quo for the City's agreement to a schedule change.
19. None of the six most comparable fire departments in Montana uses the same schedule as Great Falls. Four of them use a schedule based on 24-hour shifts. The schedule in Helena is 24 hours on, 48 off, with a Kelly day each sixth shift. In Billings, the schedule is 24 hours on, 48 off, for seven shifts, followed

- by six days off. The schedule in Kalispell is 24 on, 48 off, with 10 Kelly days per year. In Butte, it is 24 on, 72 off.
20. Bozeman uses a 48-hour shift. The schedule is 48 on, 96 off, with 10 Kelly hours per work period.
  21. The only comparable department that uses 10/14 schedule is Missoula.
  22. Missoula is also the only comparable department where fire fighters average 42 hours a week. The remaining five comparables average 43.5 to 53 hours per week.
  23. From the Union's perspective, switching to its proposed schedule would be relatively seamless. Fire fighters would average the same number of hours per week. There would be no change in staffing or significant cost increases.
  24. The City raised concerns during bargaining about possible increases in overtime costs. The Union back-tested its proposed schedule against overtime records for the preceding year. According to the Union, the results indicate that the Union's proposed schedule would have increased the City's overtime costs by around \$3,600 for the year, if its assumptions were accepted. The City believes that the Union's estimate is too low, and that the number would be closer to \$18,000. The Union attributes the difference in calculations to the fact that the City's number includes emergency callback overtime while the Union's includes only minimum manning.
  25. In response to the Union's proposal, McCamley did considerable research on the topic. That research, discussed below, convinced McCamley that there would be potential health and safety risks for fire fighters and the City in switching to a 24 hour based schedule. McCamley felt the research showed that sleep deprivation was less of an issue on a 10/14 schedule, since the effects of sleep deprivation do not usually manifest until someone has been awake more than 16 hours.

26. McCamley's second reason for opposing the schedule change was operational needs. He was concerned that the change would lead to a loss of structured hours, which are used for training, maintenance, and inspections, among other things. He also thought there would be a loss of productivity in a 24-hour shift.
27. McCamley also opposes the schedule change for financial reasons. In addition to increased overtime expense, he is concerned there could be increased costs in sick leave and acting pay, and issues with callback. He thought there might be a potential increase in liability.
28. Because the City determined that it was not prepared to move to a 24-hour schedule, it did not make a counter-proposal. As a result, the parties did not discuss the topic as thoroughly as they might have otherwise.
29. In addition to the specific concerns raised by McCamley, the City was reluctant to consider the change because of possible unintended or unanticipated consequences. From Doyon's perspective, it would be better for the City to have a year to stabilize its finances after the legal settlement before considering a major change like this.

## CURRENT CONTRACT LANGUAGE

### Article 12 – Work Periods

- 12.1 It is mutually agreed to work a forty-two (42) hour work week consisting of two (2) ten (10) hour day shifts and two (2) fourteen (14) hour night shifts followed by (4) days off. Inspectors will be scheduled to work a forty (40) hour work week consisting of five (5) eight (8) hour shifts followed by two (2) days off. However, Inspectors may be required to work one (1) ten (10) hour day shift per week. The Fire Chief shall establish schedules designating work periods.
  - A. Work periods on the day shift shall be eight (8) hours for each shift Monday-Friday with one full hour off for noon and evening meals. If

emergencies occur during meals, members will receive the remainder of the meal time after the emergency is over.

On Monday – Friday normal work periods on night shift will conclude at 10 PM. Activities after 10 PM will relate to life safety issues, i.e. response to complaints of blocked or locked exits, violation of occupancy requirements or inspections of special events to ensure the public's safety. This does not eliminate the option of the Company Officer, Battalion Chief or Assistant Chief from using the time between 10 PM and 2 AM to complete tasks that they determine should have been completed during normal week hours. Make work will not be used to fill this time period.

- B. Saturday's work period will be 8:00 AM – 5:00 PM with one full hour off for lunch. Administration can request members to perform customer service on Saturday night. These members will be granted hour for hour self-improvement time for hours worked. Repayment of this time will be coordinated with the Captain and Battalion Chief and forwarded to the Assistant Chief.
- C. One hour will be required during each shift for physical conditioning.
- D. On Sundays, all four (4) Stations will be available to perform customer service/training for two (2) hours. At least one (1) Engine Company will be available to attend special training course not available during normal work week. Engine companies not assigned to perform customer service activities or special training courses may choose to participate in them if their crews so desire, and the Battalion Chief approves. Sunday night shift shall be self-improvement time.
- E. Holidays and hours outside the designated work periods shall be self-improvement time.
- F. Self-improvement time is defined as being that time members must be at their assigned stations for fires, other emergencies, and life safety issues, and all facilities for rest and rehabilitation are at their disposal.

Except for the hours as provided in Section D, work details, classes, and drills are not included in the definition of "self-improvement time", and these and related functions properly fall into the classification of a work period.

- G. There shall be a fifteen (15) minute break in the first half of a work period and a fifteen (15) minute break in the second half of a work period.

## UNION'S PROPOSAL

### Article 12 – Work Periods

12.1 It is mutually agreed to work a forty-two (42) hour work week consisting of one 24 hour shift followed by 48 hours off and an additional 24 hour shift followed by 96 hours off. ~~two (2) ten (10) hour day shifts and two (2) fourteen (14) hour night shifts followed by (4) days off. Inspectors will be scheduled to work a forty (40) hour work week consisting of five (5) eight (8) hour shifts followed by two (2) days off. However, Inspectors may be required to work one (1) ten (10) hour day shift per week. The Fire Chief shall establish schedules designating work periods.~~

- A. Work periods will be from 0730 till 1730 Monday – Sunday with one full hour off for noon meal. ~~on the day shift shall be eight (8) hours for each shift Monday Friday with one full hour off for noon and evening meals.~~ If emergencies occur during meals, members will receive the remainder of the meal time after the emergency is over.

~~On Monday – Friday normal work periods on night shift will conclude at 10 PM.~~ Activities after ~~10 PM~~ 1730 will relate to life safety issues, i.e. response to complaints of blocked or locked exits, violation of occupancy requirements or inspections of special events to ensure the public's safety. This does not eliminate the option of the Company Officer, Battalion Chief or Assistant Chief from using the time between ~~10 PM~~ 1730 and ~~2 AM~~ 1930 to complete tasks that they determine should have been completed during normal week hours. Make work will not be used to fill this time period.

- B. ~~Saturday's work period will be 8:00 AM – 5:00 PM with one full hour off for lunch.~~ Administration can request members to perform customer service on ~~Saturday night~~ Self-improvement time. These members will be granted hour for hour self-improvement time for hours worked. Repayment of this time will be coordinated with the Captain and Battalion Chief and forwarded to the Assistant Chief.

\* \* \* \* \* [The parties agreed on a new subsection C regarding the fire inspector's work schedule. That provision is not at issue.]

- D. One hour will be required during each shift for physical conditioning.
- ~~E. On Sundays, all four (4) Stations will be available to perform customer service/training for two (2) hours. At least one (1) Engine Company will be available to attend special training course not available during normal work week. Engine companies not assigned to perform customer service activities or special training courses may choose to participate in them if their crews so desire, and the Battalion Chief approves. Sunday night shift shall be self-improvement time.~~
- F. Holidays and hours outside the designated work periods shall be self-improvement time.
- G. Self-improvement time is defined as being that time members must be at their assigned stations for fires, other emergencies, and life safety issues, and all facilities for rest and rehabilitation are at their disposal.  
  
~~Except for the hours as provided in Section D, work details, classes, and drills are not included in the definition of "self improvement time", and these and related functions properly fall into the classification of a work period.~~
- H. There shall be a fifteen (15) minute break in the first half of a work period and a fifteen (15) minute break in the second half of a work period.

## SUMMARY OF PARTIES' POSITIONS

The Union argues the evidence shows that the City is an outlier on firefighter schedules, both in Montana and across the country. Changing the schedule would have no impact on operations or staffing, and minimal financial impact, if any. The Union made concessions to the City in other areas of bargaining, particularly on economic terms. The current shift is unreasonable in its negative impacts on firefighters' quality of life and morale.

The City argues that the Union, as the party proposing a change in the status quo, has the burden of proof. The current schedule has existed for many years. Recent studies have shown that sleep deprivation can lead to health issues, and that a

24-hour schedule causes more sleep deprivation and sleep inertia issues. The City also has concerns about possible financial and operational issues. The Union did not show a compelling need to make the change, nor did it establish that the current schedule is unworkable or inequitable.

## **DISCUSSION**

I find that the Union made a case for its proposal to change the schedule. For the reasons explained below, however, I will not recommend that its proposed schedule be included in the contract at this time. Instead, I offer an alternate suggestion for the parties' consideration.

Both parties addressed the burden of proof. That concept may be a key part of interest arbitration, but I do not find it of much use in this proceeding. The goal of factfinding is to try to pave the way for the parties to settle their contract, not to write the contract for them.

The City raised three main objections to the Union's proposal.

First, the City contends there could be economic consequences to making the change. The information on this point does not paint a clear picture. It does appear, even from the Union's calculations, that there may be an increase in overtime costs, however.

The Union argues that any overtime increase would be small and that the City could easily afford it. The City's position is that, given the precarious state of its budget following the legal settlement, no increase in costs is insignificant.

In addition to overtime, the City also is concerned about increased sick leave and acting pay. Neither side offered any estimates for those subjects.

There is no serious debate that the City's budget is not in great shape. It is understandable that City officials are reluctant to make such a significant change when its economic impacts are unknown. That said, it is worth keeping in mind that the Union agreed to accept a wage freeze and abandoned other economic proposals in

light of the City's budget. Whether the Union communicated to the City that its concessions were a trade off for the schedule does not matter in this context.

It is also worth remembering that when the parties adopted a 24-hour schedule in 1989, it apparently was done at the City's behest, and done because the parties expected it to save money.

With that latter point in mind, I factored the City's feared, but unknown, economic concerns into my recommendation.

Second, the City has operational concerns, particularly about the possible loss of structured time.

Structured time is certainly important, and it is a legitimate City interest to make sure that it is not diminished. The problem is that no one can say with any certainty whether implementing the Union's proposal would result in less structured time. The same is true for other possible operational concerns, such as night drills.

The available information indicates that about 70% of the fire departments in the U.S. use some variation of a 24-hour shift schedule. Those departments must have some of the same operational issues as the Department. Yet, they apparently have managed to address those issues and function with a 24-hour schedule.

I do not believe this issue is a serious impediment to a 24-hour schedule for the Department. It did not play a significant role in my recommendation. However, the parties would have the opportunity under the recommendation to determine if the City's operational concerns are justified and/or to make adjustments to address any concerns that arise.

Finally, the City objected to the Union's proposal for health and safety reasons. Those reasons include not only concerns about City liability and on-the-job safety and performance, but also concerns about fire fighters' personal health and well-being.

Fire fighters' work schedules have been the subject of some debate in recent years. Underlying much of the debate about schedules has been a discussion about the negative effects on health caused by sleep deprivation.

It is reasonably well settled at this point that not getting enough sleep is unhealthy. Among the health problems linked to insufficient sleep are increased risk of cardiovascular disease and heart attacks, high blood pressure, stroke, diabetes, obesity, depression, and certain forms of cancer.

Studies also show that inadequate sleep can have an effect on a person's performance at work. Among the work problems associated with a chronic lack of sleep are increases in accidents, diminished alertness and attention, and reduced capacity to learn and remember.

Studies of these health and safety issues have become more common in the past decade. That has led to increasing discussions in the fire suppression industry about the wisdom of the 24-hour shift.

It has also led to labor and management raising disputes in interest arbitration proceedings about which schedule is the most appropriate. The Union provided two such decisions in support of its proposal.

In the first, Arbitrator Marc Greenbaum granted a union proposal for a 24-shift schedule. The city in that case had presented an expert witness who offered testimony about the health and safety issues associated with sleep deprivation, and his view that a 24-hour schedule would increase sleep deprivation problems. The arbitrator did not discount that evidence, but noted that the trend was that departments in the region were abandoning the 10/14 schedule in favor of some version of a 24-hour schedule. He further noted that none of those departments, having made the switch, had switched back. He concluded that the experience of these other departments indicated that the 24-hour schedule could be safely adopted. That fact, coupled with the lifestyle and family benefits for fire fighters, convinced him to award the union's proposal. *Local 1992 and Town of North Attleboro* (2003).

The other case was *The City of Airdrie and Airdrie Professional Fire Fighters Association*, a 2012 interest arbitration decision from Alberta, Canada. The dispute between those parties ran along the same lines as the *North Attleboro* case, though

there was also a complex legal issue involving Alberta's Employment Standards Code. In *Airdrie*, however, there was already a 24-hour schedule in place, and the city proposed to change it, to either a 12/12 or a 10/14. The panel considered the city's arguments, including all the evidence about sleep deprivation, and decided to continue the status quo of the 24-hour schedule.

The City presented two papers that have been done on the subject. The first, *The Effects of Sleep Deprivation on Fire Fighters and EMS Responders*, was produced by doctors from Oregon Health & Science University in 2007 in cooperation with the International Association of Fire Chiefs. The report explains the physiological impacts of sleep deprivation and discusses studies done in other industries (transportation, medical interns). The authors acknowledge the limited number of studies on fire fighters, but nonetheless offered the following conclusions:

- Fire fighters have documented increases in their risks for cardiac disease and malignancies, which are also illnesses that may be promoted by the chronic sleep deprivation associated with long work hours.
- Fire fighters and EMS responders are at risk for the decrements in mental and physical performance that have been well documented among others working long hours and during the night.
- Fatigue among fire fighters may be related to the disproportionately higher fireground injury rates observed for the early morning hours.
- Fatigue when driving may increase the risk of crashes when driving following long work hours. Long commutes following work may be a particular hazard.

The final section of the report addresses various measures that employers can take to manage work hours to combat sleep deprivation issues.

The second paper is from 2011 and was prepared by the Ontario [Canada] Association of Fire Chiefs and Ontario Municipal Human Resources Association.<sup>1</sup> The authors make clear that their purpose is not to evaluate different shift patterns, but to provide information on the health and safety impacts of long hours and the implications for fire departments. After chronicling the human body's response to shift work and the impacts on performance and health from sleep deprivation, the paper recommends that further research be done to determine if a 24-hour shift poses a greater health and risk for fire fighters than the 10/14 shift.

In addition to those papers, the information provided by the parties, including the arbitration awards, discusses the competing opinions of two sleep researchers, Dr. Steven Lockley and Dr. Linda Glazner.

Lockley, who testified for the employer in both arbitration cases, is of the opinion that a 24-hour shift would increase health and safety risks because it would increase the amount of sleep deprivation. He based his opinion mainly on studies of doctors and truck drivers.

On the other side, Glazner believes that the 24-hour shift would be less damaging to health than the 10/14 schedule. She based her conclusion on the fact that there would be more recovery time following the 24-hour shift, and there would not be the disruption that comes from switching between day and night shift.

The materials also reference a 2005 study by Defence Research and Development Canada on fire fighter work schedules. As relevant here, the study concluded that a 24 on, 72 off schedule was best. According to the research, the length of recovery time between shifts is the most critical factor. The study also found that having to switch between day and night shift every few days was one of the worst schedules for causing sleep deprivation.

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<sup>1</sup> This has been a trending topic in Canada in recent years. That is in part because, unlike the U.S., most Canadian fire departments have used the 10/14 schedule. There has been a push by fire fighters in Canada within the last decade to switch to some version of the 24-hour schedule, and there is a growing trend for departments to do that.

In addition to sleep deprivation and its attendant problems, the City also mentioned sleep inertia. That condition occurs when one awakes from sleep, particularly suddenly. It can take 20 to 30 minutes to be fully alert.

I considered that issue, and reviewed the discussions of it in all the materials provided. It did not factor in my recommendation for several reasons. Most importantly, sleep inertia is a potential problem under either schedule. If fire fighters are awakened from sleep, whether on a 14-hour night shift or during the night portion of a 24-hour shift, they will have to deal with sleep inertia.

The upshot is that all this information is inconclusive. It is clear that sleep deprivation is bad for health and can cause work problems. It is also clear that working long hours at night can lead to sleep deprivation. There is also research indicating that *any* shift work can cause health problems. Missing is definitive research about which schedule, one based on a 24 work shift or the 10/14, causes less of these problems.

In the end, I based my recommendation on other factors.

This is a significant issue for the Union. A common theme from those present at the proceeding was that the current schedule undermines family life and is bad for morale. Though neither side talked about recruitment and retention issues, continued use of a schedule perceived as unfriendly to families may become a problem in recruiting and/or retaining fire fighters in the future, especially if the City is unable to stabilize its finances to keep wages and benefits competitive.

I agree with the point that since the City has no control over what fire fighters do on their off time, there is no guarantee that fire fighters showing up to work the second of the 14-hour night shifts will be fully rested. The testimony of the fire fighters here was consistent with that view.

I also agree with Glazner's conclusion that a schedule, such as the 10/14, that requires employees to switch between a day and a night shift every few days is more

disruptive to natural circadian rhythms than one which is fixed. That is, I believe, a logical and intuitive conclusion given the nature of normal human sleep patterns.

I note that some version of the 24-hour schedule is the predominant schedule for fire departments in this country. The studies produced so far do not establish that a 24-hour shift based schedule is inherently more dangerous than a 10/14. From a health perspective, neither schedule is ideal.

Another reason to look at a 24-hour schedule over a 10/14 is that the 10/14 requires fire fighters to sleep during the day between night shifts in order to be adequately rested for work. In a small study released this week, researchers found that sleeping during the day is so contrary to the body's natural sleep-wake cycles that it disrupts gene activity. Moreover, the researchers noted that the study showed a bigger impact on gene activity from daytime sleep than an earlier study on sleep deprivation.<sup>2</sup>

Nonetheless, I appreciate the City's concerns about the unknowns and unforeseeable consequences resulting from a change of this magnitude. I am also mindful of the City's struggles to bring stability to its budget.

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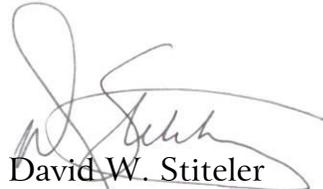
<sup>2</sup> Results of the study, titled "Mistimed sleep disrupts circadian regulation of the human transcriptome," were released on Monday, January 20, and will be published in the Proceedings of the National Academy of Sciences.

**RECOMMENDATION**

Having considered all the information presented by both parties, I offer the following recommendation to resolve their bargaining impasse.

The City should implement a pilot program of the Union's proposed schedule. The schedule should be put into effect in one of the four fire stations, using neither the least nor the most busy station. This pilot program should be in effect for the remainder of the current fiscal year and the next fiscal year. The parties should use the time under the pilot program to determine what impacts, if any, there would be on the Department's budget if the schedule was implemented in all stations. The parties should also study the impacts, if any, on operations and safety issues.

Respectfully issued this 22th of January, 2014.



David W. Stiteler  
Arbitrator