

# The “48/96” Work Schedule – Fire 24-hour Shifts

## What is the “48/96” work schedule?

The 48/96 is simply this: each shift works two consecutive shifts for a total of 48 hours, and then has 96 hours off before repeating the rotation. On this schedule each shift still works a 56 hour work week (53 after Kelly Days are figured in).

**A A B B C C** in place of **A B C A B C**

## What is the history of the “48/96” work schedule?

According to a study conducted by San Jose Firefighters Local 230, the 48/96 schedule has been used by professional fire departments since the early 1990’s. Many departments have switched to the 48/96 as a means of providing better utilization of days off, more weekends off and increased family time as well as a way to improve morale and provide relief from long commutes.

As the San Jose report notes; “this is not a theoretical experiment in the fire service, but a proven and valid schedule option.”

Fire departments that considered this schedule change first voted for a six month or one year trial period. This was a risk free way to test the schedule as both management and labor had an “escape clause” that stated that either side could opt out of the trial any time. **No department has ever exercised this clause.** After the trials, all but one of the agencies voted to retain the 48/96 schedule.

## What other departments use this schedule?

**85** departments have switched to the 48/96 schedule and many others are investigating and considering it. (See attached list)

## How does it work?

As stated above, each shift works two consecutive shifts for a total of 48 hours, and then has 96 hours off before repeating this pattern again. One shift is considered to be 24 hours. If a firefighter takes a day off, he/she uses 24 hours of vacation leave and works the remaining 24 hour shift. Personnel would still be allowed to take time off in half shifts, or 12 hour increments. (I.e. if a firefighter takes the first half of his/her first shift off, he/she comes back in that evening and works out the remaining 36 hours.)

# 2006 Shift Calendar

Jan-06						
Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Feb-06						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

Mar-06						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Apr-06						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

May-06						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Jun-06						
Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Jul-06						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Aug-06						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Sep-06						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Oct-06						
Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Nov-06						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Dec-06						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Red = A Shift

Blue = B Shift

Green = C Shift

# Comparison of 24/48 Schedule to 48/96 Schedule

## Four Consecutive Days Off

### 24/48

- 0 per year

### 48/96

- 60 per year

## Mornings at Home (not traveling to or from work)

### 24/48

- 1 of every 3
- 33% of mornings at home
- 120 per year

### 48/96

- 3 of every 6
- 50 % of mornings at home
- 180 per year
- 60 more (50% increase)

## Full Weekends off (Sat. & Sun.)

### 24/48

- 17 per year
- 1 out of 4

### 48/96

- 26 per year
- 3 out of 6
- 9 more (50 % increase)

(Stated another way)

### 24/48

- only 1/3 weekends free, 2/3 tied up working at least one day

### 48/96

- 1/2 weekends free, 1/2 tied up working one or more days

### Work One Weekend Day (Sat. or Sun.)

24/48

- 35 per year

48/96

- 17 per year
- 18 less (50 % reduction)

### Work Both Saturday and Sunday

24/48

- None

48/96

- 9 per year

### Days per Month Commuting to Work

24/48

- 10 (120 days a year)

48/96

- 5 (60 days a year)
- 50% less commute time, fuel, and miles on vehicle

\*Based on a 30 minute, 20 mile one way commute:

Personal yearly savings: 60 hours of drive time (2 & ½ days), 2500 miles, 166 gallons of gasoline, lower insurance costs.

- Environmentally friendly and responsible (reduces vehicle emissions and pollution by 50%)

### (24 Hour) Overtime/Trade shifts that can be worked per year without resulting in a 48 hour shift

24/48

- 0

48/96

- 60

**Days off that a flip-flop trade provides**

24/48

- 3

48/96

- 6
- 

Example: (A shift flip-flops 48 hrs with C shift—A shift gets 2 days off, then 6 days off.)

**A A B B A A C C B B C C A A**  
 (2 days off)      (6 days off)

**Vacation Usage**

	<b><u>24/48</u></b>	<b><u>48/96</u></b>	
0 shifts off=	2 days off	4 days off	(2 extra days)
1 shift off=	5 days off	5 days off	
2 shifts off=	8 days off	10 days off	(2 extra days)
3 shifts off=	11 days off	11 days off	
4 shifts off=	14 days off	16 days off	(2 extra days)
5 shifts off=	17 days off	17 days off	
6 shifts off=	20 days off	22 days off	(2 extra days)
7 shifts off=	23 days off	23 days off	
8 shifts off=	26 days off	28 days off	(2 extra days)
9 shifts off=	29 days off	29 days off	
10 shifts off=	32 days off	34 days off	(2 extra days)
11 shifts off=	35 days off	35 days off	
12 shifts off=	38 days off	40 days off	(2 extra days)

**You get 2 extra days off whenever taking an even number of shifts off!!**

\*Even though the 48/96 schedule is still a 56 hour work week (53 hours when Kelly Days are figured in) it results in better utilization of time off.

## Kelly Shifts

Kelly Shifts could remain the same still providing a 5 day break. (example for C shift)

A A B B C ks A A B B C C  
(5 days off)

or

Kelly Shifts could be adjusted to be 2 shifts together giving a **10 day break**. (Example for C shift. This would provide three 10 days off segments a year.) \*Every 3<sup>rd</sup> year it would be four sets of 10 days off.

C C A A B B ks ks A A B B C C  
(10 days off)

## Benefits of the 48/96 Schedule

### 1. Significantly reduces long term fatigue/sleep deprivation.

- Increases rest periods (4 days off) by 600%, increasing the number from 0 to 60 a year.
- Increases the number of “sleep in days” (days waking up at home with family and not going to work) by 50%, increasing the number from 10 to 15 per month. (from 120 to 180 per year = 60 extra mornings a year)
- Reduces the number of days/hours an employee spends getting ready for work and time in the commute by 50%.
- Is more forgiving for employees working overtime or trades? The 48/96 schedule allows employees to work an overtime shift or trade without it resulting in a 48 hour shift. Because this schedule has segments of “4 days off”, the employee has 10 days a month to work additional shifts without them resulting in a 48 hour shift.

### 2. Employees have more time at home with family and friends – better family life.

- Employees will have 60% more mornings at home free to help get the kids to school, sleep in, go fishing, etc...
  - Employees will have more opportunities and more weekends per year to connect with family and friends who are on Monday thru Friday schedules.
  - Employees have 60 “four-days off” a year to spend time with family and friends.
- \* According to organizational psychologist Susan L. Koen, PhD., the off time pattern of shift employees is the most significant determinant of family well-being. “In other words,” says Koen, “is the firefighter at home...often enough and long enough to be a viable family member?” [Koen identifies several factors in the 48/96 schedule that enhance family life](#). First, the schedule

provides more time “when the firefighter can attend to his/her family unencumbered by work concerns,” she states. Next, the 48/96 schedule affords twice as many weekends off. “Weekends have become ‘primetime’ for families,” she notes. Especially now “with so many North Americans living in dual-earner households, where the non-shift working spouse most often has a weekday, day-shift job.”

### 3. Cuts commute in half

- 5 vs. 10 times commuting to work per month. Simply put, this means half the number of days/hours spent on the road, half the mileage put on personal vehicles each year, **half the cost of gasoline**, half the wear-and-tear. (Auto insurance rates may also be reduced, as most companies base rates, in part, on formulas factoring in miles traveled to and from work.) **This puts money back in our pockets!**
- \* **Based on a 20 mile commute, this would save approximately 166 gallons of fuel.**

**166 gallons x \$2.50/gallon = \$415.00/year on gas alone.**

- Employees with an average commute will gain an average of 20 hrs/month since their commute and time getting ready in the morning will be cut in half. **Over a 25 year career this is 6,000 hours saved – the equivalent of 8.3 months.**
- Employees living locally will gain an average of 10 hrs/month.
- Environmental pollution impact is reduced by 50%. (LA County is doing research on the possibility of qualifying for a federal grant based on reducing air pollution.)

### 4. Sick leave use remains the same and in some cases has decreased significantly.

- None of the departments that are currently on this schedule have reported an increase in sick leave use. And they have seen no increase in injuries or disabilities resulting from the schedule change.
- Many departments have seen a reduction in sick leave use.
  - Pacifica Fire Dept. – 20% reduction
  - Manhattan Beach Fire Dept. – 80% reduction
  - Half Moon Bay Fire Dept. – 10% reduction
- \* Reasons for the reduction could be the result of the following; improved morale decreases in long term fatigue or simply that the 48/96 schedule eliminates the majority of sick leave abuse (which has been speculated to be 50% of all sick days).

- It is estimated that 95% of illness and disease is caused by stress. This work schedule greatly reduces stress by alleviating sleep deprivation, burn out, long periods of time with out extended time off, etc.

#### **5. Ability to build up depleted vacation accounts and contribute to PHEP accounts.**

- With 60 “4 days off” segments a year, employees who have depleted their vacation days due to injury, illness, pregnancy, etc. will be better able to build back their vacation amounts.

\*It is highly likely that most employees, during the course of a 20-25 year career, will encounter some type of extenuating circumstance in which their vacation accounts will be depleted. It is a significant benefit to have a schedule that has so much “built in time off” to enable employees to build accounts back up.

- Employees will have more opportunity to contribute 60 hours to their PHEP fund every year if so desired with this schedule since it offers so much “built in time off”.

\*This has become more of a priority with the rising cost of health care.

#### **6. Employees have more choices on where they can live, more qualified applicants.**

- Because the commute to work is only 5 days a month, employees having the option live further away.
- The department can draw from a larger pool of applicants. (Brings more diversity to TVF&R.)
- Employees can choose where to raise their families. (I.e. Bend, the Coast, Seattle, etc.)
- Employees have the option of purchasing more affordable homes in outlying areas while cutting their commutes in half. (The average home price in the Portland metro area is \$239,000 according to The Oregonian. It is becoming increasingly difficult to “live where we work”.)

#### **7. Increased productivity and project follow through on duty.**

- This schedule allows more flexibility in scheduling daily work schedules over two days.
- Members with program responsibilities can leave paperwork on their desk to work on for two days.
- Follow-up meetings and phone calls are easier to follow through on the second day.



## **7. Better communication between shifts**

- Fewer transitions between shifts means more day to day continuity.
- Less lost information at shift changes.

## **8. Less duplication of work**

- Shopping can be done once on the first day for both shifts.
- Shifts can use leftovers to reduce food costs on the second shift.
- Deep cleaning of station can be done once every two shifts.
- Rig checks and EMS kit checks can be done the first shift of the 48.
- This frees up time for training, maintenance, and work projects.

## **9. It is still possible to work the same amount of overtime hours in a week on the 48/96.**

- The 48/96 still affords members the opportunity to work two 24 hour overtime or trade shifts a week, as well as two 12 hour shifts. (the same as the 24/48)
- Employees have 10 possible days to work a month that will not result in a 48 hour shift.

## **10. Improved Morale**

- Employees are well rested after “4 days off” and are eager to come to work.
- Employees felt more productive and better organized on and off duty.
- Fewer transitions between shifts made for less duplication, better communication, and more operational continuity.

## **11. This 48/96 schedule will save the department money in “holdover time”.**

- Due to the fact that most overtime and trade shifts must be scheduled on the 2<sup>nd</sup> and 3<sup>rd</sup> day of the employee’s “4 days off”, there will be considerable less holdover time. People will be coming from home and not from other stations.
- This will benefit the department as far as paying for 15-30 minutes of overtime holdover, and will also benefit union members who are holding over for trades (for free). See attachment for savings.

## **12. 60 additional “4 days off” a year**

- Every time you go home, you are going home to a 4-day break.
- More opportunities for home projects, travel, camping, hunting, fishing, ski trips, etc. without using up your vacation days.

### **13. 13 additional full weekends off a year**

- Members with children in school or spouses on a Monday-Friday schedule find this feature especially appealing
- Half of the weekends in a year are free for sports activities, travel, church, etc.

### **14. Increased productivity at home**

- Projects can be left out for 4 days at a time.
- More mornings for an early start on projects.
- Employees can accomplish much more on a project with 4 days to work on it than just 2 days.

### **15. Week to week pattern**

- Under the current schedule, personnel work, for example, one out of every 3 Mondays. With the 48/96, a firefighter works two consecutive Mondays, then has the next four Mondays off. For those who participate in regular activities—college courses or sports leagues—which fall on certain days of each week, this is a significant benefit. (Over a 16 week period, we work 5 Mondays on the current schedule and would only work 4 on the 48/96.)

### **18. This schedule cuts down on the need for trades since the time off is more usable.**

- Employees don't have to utilize as many trades since there are 60 "4 days off" segments a year.
- This enhances shift continuity and the ability to meet mandatory training and compliance with more ease as there is not as much shuffling of crews.

### **19. More opportunities to interact with the other shifts outside of work.**

- Currently if an A-shifter and a B-shifter want to go out fishing, one person will have just gotten off work, and one will have to be going back in the morning. This makes it impossible to have either an early morning or late evening out. The new schedule would allow each person to be in the position of being fresh since neither has just gotten off work, nor will be going to work the next day.

## Negative Aspects of the 48/96 Schedule

### 1. Away from family for 48 hours.

- This was the biggest concern voiced by line personnel of other departments considering this schedule.

\* However, the majority of the firefighters already working this schedule found the benefits the 48/96 schedule offered more than compensated for the negatives of the 48 hours in a row. (i.e. 60 “four day off” segments a year, 26 weekends a year for family, 60% more “sleep in” days at home with the family, reduction in long term fatigue so they were more available to their families, etc.)

\* Many members who now work this schedule have found their concerns about being away much less significant than originally thought.

### 2. Complications of child care or elderly care.

- These can be difficult and challenging issues under any circumstance.

\* Most families have found acceptable alternatives with the 48/96. For many, the 48/96 schedule improved their situation, in part because the schedule is more regular and predictable, and results in less exchanges of children when care issues or custody are involved.

\* Firefighters with young children, whose spouse’s works Monday-Friday will still have to find 1-2 days a week of childcare. The days will be consecutive instead of split up like they are now, which will theoretically make it easier to arrange and explain to care providers.

\* Employees who share child custody will benefit significantly from the 48/96 since there are twice as many weekends off and most custody is given over the weekends while the children are out of school.

### 3. There is potential for “short-term fatigue” while working a 48 hour shift at a busy station. Will productivity and cognitive function be affected?

- E90, E91, Rescue 35 and 53 are already working a schedule similar to this, but over three days instead of two. They work a revolving 36 hour shift with a 12 hour shift before or after in a 3 day period. They work these consecutive hours weekly with no discernable loss in productivity or cognitive function. This is most likely due to the fact that they have 4 days off to rest and recover. (Whether or not people enjoy working the PAU, the majority have stated that they love the 4 days off in a row.)

- Several Battalion Chiefs consistently work a 48 hour weekend shift trade to give themselves more time off on the other weekends.
- 99% of the department already works overtime and trade shifts that result in 48 consecutive hours. The biggest difference is that many people are suffering from short term and long term fatigue due to the fact that after working a 48 hour shift they only have one day to recover before coming back to their scheduled shift. On the 48/96 they would have four days to recover.

#### 4. “I don’t like working double’s!”

- Most people don’t enjoy working 48’s because of only having one day to recover. This is a day in which they will not be able to sleep in and may feel overwhelmed at the prospect of everything they want to do at home in that short 24 hour period between shifts. (I.e. Sleep; spend time with family and friends, house projects, and errands.)
- With 4 days off to recover and 3 mornings to sleep in or wake up at home, 48 consecutive hours may feel very different than it does now.

#### 4. Shifts falling on December 24 & 25.

- This schedule uses an adjustment that assures no shift will have to work both Christmas Eve and Christmas Day.

Example: many departments remedy the situation by “flip-flopping” 12/23 & 12/24

December        22 23 24 25 26 27

Scheduled       C C A A B B

Changed to       C A C A B B

\*This adjustment is needed 3 out of every 8 years.

- With the 48/96 each shift will work the same number of holidays as with the current schedule.
- A similar adjustment can be made for New Years Eve and New Years Day if the membership wishes.

#### 5. Mandatory Training

- Once departments have gone through an adjustment period and have become accustomed to this new schedule they have seen no negative impact on training. (This is due to the fact that there is no change to the amount of days we work per month.)

- The 48/96 schedule will likely have a positive effect on scheduling because of increased continuity of companies, due to a reduction of employees regularly shift trading and possible reductions in sick leave use.
- Many departments routinely schedule busy companies for mandatory training on the first shift of the 48 and slower companies on day two.

**6. Difficulty for administration to contact personnel when working Sat. /Sun. rotation.**

- This only occurs once every 6 weeks, a total of 9 times a year.
- This has become less of a problem with the use of e-mail and voice mail.

**7. How will the 48/96 affect our current policies and procedures?**

- Expectations and standards will not change.
- For the purposes of daily work routines, vacation leave, sick leave, overtime, mandatory staffing and other policies and procedures, each 24 hour shift is considered one shift.

**8. Telestaffing**

- Telestaff can easily be adapted to the 48/96 schedule.
- There is no change in the FLSA payout schedule.
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**Departments on or once on 48/96**

1. Albuquerque City Fire, Albuquerque NM
2. American River Fire
3. Atascadero City Fire
4. Atwater Fire
5. Auburn City, CA
6. Barstow Fire
7. Big Bear Lake Fire
8. Brisbane
9. Burlingame Fire
10. Cathedral City Fire
11. Central Fire
12. City of Folsom Fire
13. City of San Mateo, CA
14. Chino Valley Fire
15. Colton
16. Corte Madera Fire
17. Covina Fire
18. Donner Summit
19. Ebbetts Pass Fire
20. Eagle River Fire Protection District, CO

21. El Segundo Fire, CA
22. Foster City
23. Fort Irwin Fire
24. Fremont Fire
25. Gardena Fire
26. Half Moon Bay
27. Hawthorne Fire
28. Hermosa Beach Fire
29. Hesperia Fire
30. Hillsborough
31. INEEL (Idaho Nat'l Engineering & Environmental Lab Fire)
32. Inglewood Fire
33. Kern County Fire
34. La Verne
35. Lake Valley
36. Larkspur
37. Loma Linda Fire
38. Los Alamitos
39. Manhattan Beach
40. Marinwood Fire
41. Marion County Fire District, Salem OR
42. Menlo Park
43. Mesquite Fire Rescue, NV
44. Millbrae
45. Mill Valley Fire
46. Montebello City Fire
47. Norco City Fire
48. North County Fire
49. North Tahoe Fire
50. Northstar
51. Novato Fire
52. Orinda Marago Fire District
53. Pacifica
54. Paso Robles
55. Piedmont City Fire
56. Piner Ambulance
57. Provo City Fire, Provo UT
58. Rancho Cucamonga Fire
59. Redondo Beach Fire
60. Rocklin Fire
61. Ross Valley Fire
62. Sacramento County
63. San Bernardino, CA
64. San Mateo Fire
65. San Mateo County
66. San Rafael Fire

67. Santa Barbara City Fire
68. Santa Fe Springs Fire
69. Sausalito Fire
70. South Marin Fire
71. South Pasadena Fire
72. South Placer Fire Protection District
73. South San Francisco
74. Squaw Valley
75. Tahoe Douglas
76. Tiburon Fire
77. Torrance City Fire
78. Truckee Fire
79. Union City
80. University of California at Davis Fire
81. Utah Fire Authority of Greater Salt Lake (Salt Lake County Fire)
82. Vallejo
83. Valley of the Moon
84. Victorville
85. Woodside Fire

### **Departments Researching / Researched Implementation**

1. Los Angeles County Fire
2. Lost Angeles City Fire
3. Eugene Fire, OR (vote passed for a 1 year trial; is currently waiting for approval from the Chief)
4. Sacramento County (Metro Fire)
5. Downey City Fire
6. Burbank City Fire
7. Beverly Hills Fire
8. Santa Clara County Fire
9. Palo Alto Fire
10. Corte Madera
11. Culver City
12. Stockton
13. Carson City
14. Big Bear City Fire
15. Central Pierce Fire
16. Bellevue Fire, WA
17. San Jose City Fire
18. Santa Barbara City Fire
19. Woodinville Fire, WA
20. Eastside City Fire, WA
21. Fremont City Fire
22. Duvall City, WA

23. Breckenridge Fire, CO
24. Sparks, NV
25. South Placer
26. Woodside
27. West Metro Fire, CO
28. Grand Junction Fire, CO

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