



U.S. Department of Transportation  
Federal Railroad Administration  
Office of Research and Development  
Washington, D.C.20590

## **Work Schedules and Sleep Patterns of Railroad Signalmen**

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Survey Data and Description Associated with Report  
DOT/FRA/ORD-06/19



Survey Data and Description Made Available via FRA Web March, 2008

## **DATA FILES:**

### **Work Schedules and Sleep Patterns of Railroad Signalmen**

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## **Description of the Survey Data**

The Federal Railroad Administration (FRA) sponsored a study of the work schedules and sleep patterns of railroad signalmen. The purpose of this document is to describe the study's data files that are available at [www.fra.dot.gov](http://www.fra.dot.gov). A separate technical report describes the study methods and findings in detail (see reference below). The Office of Management and Budget approved this collection of information under OMB control number 2130-0558 on October 2, 2003. Data collection for this study occurred in October 2003.

## **Survey Methodology**

The study collected data from a random sample of actively working U.S. railroad signalmen. The study used two survey instruments, a background survey and a daily log. Copies of both instruments are in the appendix to this document. The background survey gathered demographic information, descriptive data for the signalman's job type and work schedule, and a self-assessment of overall health. Study participants used the daily log to record sleep and work periods on both regular workdays and planned days off for a 2-week period. The response rate for the survey was 49.9 percent. The accompanying data files contain data for the 389 usable responses.

## **Content of the CD**

Data from each participant's background survey and daily log are available in two files. The file *Signalmen background data.xls* contains the background survey data, and the daily log data is in the file *Signalmen daily log.xls*. A unique participant identification number appears in both files.

## **Adjustments to the Data**

Protecting the identity of the survey participants necessitated some modifications to the original dataset. A few categories of data are reported as ranges rather than as the raw reported data. For example, this is the case with the age data. For others, such as years of experience, top coding was employed to prevent identification of respondents with over 35 years of experience. Comparison of the survey instruments with the data file will reveal where these adjustments were made. The sex of the respondent does not appear in the data because of the extremely small number of women in the sample.

## **Description of the data items in each file**

Each Excel file contains two sheets, one with the data and one with a description of each of the data items in that file. Blank fields indicate missing data.

## **Use of the Data**

These data files are the property of the FRA. The data is being made available for researchers and others who are interested in the safety and health of the study population and in the relationship between work schedules and fatigue. Use of the data in books, journal articles, dissertations, theses, and other publications (print or electronic) is authorized provided that the data is cited as "Federal Railroad Administration. (2008). *Data Files: Work schedules and sleep patterns of railroad signalmen*. Washington, DC:

U.S. Department of Transportation.,” and that FRA is notified of the publication (ATTN: Thomas G. Raslear, Federal Railroad Administration, Mail Stop 20, 1200 New Jersey Avenue, SE, Washington, DC 20590).

### **Reference**

Gertler, J., & Viale, A. (2006). *Work Schedules and Sleep Patterns of Railroad Signalmen*. (DOT/FRA/ORD-06/16). Washington, DC: Federal Railroad Administration. Available at <http://www.fra.dot.gov/downloads/Research/ord0619.pdf>.



ID Number: \_\_\_\_\_

## **Railroad Signalman Background Survey**



Form FRA F6180.107

**About Yourself**

1. Age: \_\_\_\_ years
2. Sex: \_\_\_\_ male \_\_\_\_ female
3. How long have you been a signalman?  
\_\_\_\_ years and \_\_\_\_ months
4. How long have you been a signalman at your current railroad?  
\_\_\_\_ years and \_\_\_\_ months
5. What type of signalman job do you currently work?  
\_\_\_\_ construction  
\_\_\_\_ maintenance (other than yard)  
\_\_\_\_ yard maintenance  
\_\_\_\_ other (please explain) \_\_\_\_\_  
\_\_\_\_\_
6. What is your marital status?  
\_\_\_\_ single \_\_\_\_ divorced \_\_\_\_ other  
\_\_\_\_ married \_\_\_\_ widowed
7. How many children or other dependents do you have (not including your spouse)? \_\_\_\_\_
8. How many of your dependents are under the age of 2 years? \_\_\_\_\_
9. a) Do you drink caffeinated beverages?  
\_\_\_\_ yes \_\_\_\_ no  
b) On average, how many cups and cans of these beverages do you drink per day? \_\_\_\_\_



**Your Health**

1. How many times have you called in sick in the last 6 months? \_\_\_ days
2. In general, how would you rate your health?  
Circle one:  
    Excellent    Good    Fair    Poor
3. Some people feel younger or older than their biological age. How old do you feel? \_\_\_ years
4. Have you been diagnosed as having a sleep disorder?  
\_\_\_ Yes    \_\_\_ No (skip question 5)
5. Are you receiving medical treatment for this condition?  
\_\_\_ Yes    \_\_\_ No

**Your Work Schedule**

1. Please describe your job characteristics.
  - a) Circle the days you are scheduled to work over a two-week period:  
    S M T W Th F S S M T W Th F S
  - b) Start time \_\_\_\_\_
  - c) End time \_\_\_\_\_
  - d) Length of meal break \_\_\_\_\_ minutes
2. On average, how many hours do you work per week? \_\_\_\_\_
3. Do you file an FRA Hours of Service Report?  
\_\_\_ Yes    \_\_\_ No

4. How often do you feel well rested and alert over the course of your work period? Circle one:

Never    Occasionally    Frequently    Always

5. How often do you feel physically drained at the end of your work period? Circle one:

Never    Occasionally    Frequently    Always

**Stress at Work**

Use the following scale to rate how much each factor below contributes to your stress at work:

No Stress	A Little Stress	Stressful	Very Stressful
1	2	3	4

Please assign a rating to *each* of the following items:

- On call schedule
- Responding to emergencies
- Lack of control over work schedule
- Loss of sleep
- Coordination with other departments
- Pressure to finish a job
- Ambiguous operating rules or procedures
- Management policies and decisions
- Travel to work site
- Job security
- Work rules
- Inadequate staffing
- Responsibility for safety of others
- Other (please specify) \_\_\_\_\_  
\_\_\_\_\_

**Life Events**

Please indicate with a ✓ whether any of the events listed below has occurred to you in the last 6 months:

- Personal illness or injury
- Marital difficulties
- Birth of a child
- Death of a spouse
- Change in sleeping habits
- Difficulty with the law
- Illness/injury of family member or friend
- Financial difficulties
- Change in living conditions
- Change in social activities
- Death of a close family member

*This collection of information is completely voluntary, and will be used for statistical purposes only. Public reporting burden is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Please note that an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The OMB control number for this collection of information is 2130-0558.*



ID Number \_\_\_\_\_

If you have questions, you can contact:

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sacton@foster-miller.com

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aviale@foster-miller.com

This collection of information is completely voluntary, and will be used for statistical purposes only. Public reporting burden is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Please note that an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The OMB control number for this collection of information is 2130-0558.

FRA F6180.108

**Welcome...**  
and thank you for participating in this project. The purpose of this study is to assemble data on both work and sleep patterns of signalmen. The data that you record will serve as a history of your work and sleep patterns and how you feel throughout the day. The study will examine the relationship between signalmen's work schedules and their level of alertness/fatigue.  
Your participation is appreciated. Please contact us if you have any questions or comments.

### Instructions

This log is divided into 14 sections, one for each day that you will be recording data. Each section contains both a Sleep and Nap Log and a Work Log.

Start a new section for each new day. On the section divider page, write the date and indicate whether or not this is a regular workday or a planned day off. Please start with Day 1. It is important that you provide data for 14 *consecutive* days.

When recording time, use the 2400 clock system. For example, 4:30 p.m. is 1630.

**Complete the Sleep and Nap Log for every day of the study. Complete the Work Log for those days that you work.**

If for any reason you do not record data at the appointed time, fill out your log as soon as possible to the best of your ability.

### Sleep and Nap Log

Make entries on this log *upon awakening and at bedtime every day*. In addition, if you took any naps, enter this information in the log.

### Work Log

Make entries on the work log at the *start of your workday* when you arrive at your workplace, *during your lunch break* and at the *end of the workday* when you arrive home.

You should use the *unscheduled work period* section of the log *only* if you were called back to work on a weekend or other day that is a planned day off, or on a regular workday after you left your workplace. If you did not work an unscheduled work period, then leave this section blank.

### Study Compensation

Complete the last page of this log book to indicate your preference for the study compensation.

# Day 1

Date \_\_\_\_/\_\_\_\_/2003

Today is:  regular workday  
 planned day off

### Sleep and Nap Log

*Upon Awakening*  
**Sleep Location** Home  Away from home

Time you went to bed	
Time you fell asleep	
Time you woke up	
Time you got up	
Number of awakenings during the night	

**Rate your sleep**

Ease of falling asleep	1	2	3	4	5
	Very difficult				Very easy

Ease of getting up

	1	2	3	4	5
	Very difficult				Very easy

Length of sleep

	1	2	3	4	5
	Wholly insufficient				More than sufficient

Quality of sleep

	1	2	3	4	5
	Very poor				Very good

Indicate how you feel now

	1	2	3	4	5
	Very sleepy				Very alert

*At end of day, if you took any naps*

**Nap 1**

Time fell asleep	
Time awoke	

**Nap 2**

Time fell asleep	
Time awoke	

**At Bedtime**

Indicate how you feel now

	1	2	3	4	5
	Very sleepy				Very alert

**Comments on today's sleep experience:**

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## Work Log

### *Start of workday*

Time you began commute to work	
Time you reported to work	

Indicate how you feel now

1   2   3   4   5  
Very sleepy                      Very alert

### *During lunch break*

Time at start of lunch break \_\_\_\_\_

Indicate how you feel now

1   2   3   4   5  
Very sleepy                      Very alert

### *End of workday when you arrive home*

Longest time period you worked today without a break (A break is considered a minimum of 15 minutes of rest from work)	hr	min
Time you completed today's work period (Include unscheduled hours if there was <i>no break</i> between regular and extra work)		
Time you arrived home		

Indicate how you feel now

1   2   3   4   5  
Very sleepy                      Very alert

### *After unscheduled work period(s), if any* *Period 1*

Time you were called to report back to work	
Time you reported back to work	
Time you completed unscheduled work period	
Time you arrived home	

Indicate how you feel now

1   2   3   4   5  
Very sleepy                      Very alert

### *Period 2*

Time you were called to report back to work	
Time you reported back to work	
Time you completed unscheduled work period	
Time you arrived home	

Indicate how you feel now

1   2   3   4   5  
Very sleepy                      Very alert

Comments on today's work experience: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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