



TORP 33 Under Master Contract 200-2000-08017

## **Developing and Administering a Survey of Truck Driver Injury and Health**

### **Task 2: Recommend Final Survey Questions: Findings from Focus Groups and Cognitive Interviews**

**FINAL**

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# 1. Background and Introduction

## 1.1 Background

The estimated 1.5 million class 7 and class 8 truck drivers in the U.S. workforce face considerable health and safety risks on the job. Truck drivers suffer more occupational fatalities than do members of any other occupation, having an overall fatality rate that is more than 11 times that of the general worker population. Furthermore, they have the second highest number of non-fatal occupational injuries among all occupations, and have been shown to be at increased risk for a number of chronic diseases and health conditions.

Despite truck drivers' high rates of injury and illness, little research has been done directly in this mobile and difficult-to-reach population. In evaluating the potential health effects of the 2005 hours-of-service ruling, the Federal Motor Carrier Safety Administration (FMCSA) stated that due to a lack of evidence specific to trucking operations, information from other industries had to be adapted to a trucking environment. Other research needs cited by stakeholders include detailed data on the prevalence of selected health conditions and risk factors among truck drivers, and data on working conditions, injury causes and outcomes, and health behaviors. The FMCSA has indicated that data such as these will assist in future rulemaking as well as in development of non-regulatory approaches to health and safety promotion.

The overall objective of the Survey of Truck Driver Injury and Health is to develop and conduct a national survey that will contribute to the occupational safety and health surveillance needs of the heavy and tractor trailer truck driving workforce. There are three main outcome goals for this project:

- Identify the risk factors most strongly associated with poor health and safety outcomes with the truck driver population;
- Provide baseline data to assist the FMCSA and other stakeholders in evaluating the health effects of the hours-of-service rules, and inform policymaking related to driver health and fitness for duty, and
- Provide information to drivers, the trucking industry, and the transportation research community that will guide health and safety promotion, interventions, and future research direction.

## 1.2 Introduction

This report documents the findings from *Task 2: Recommend Final Survey Questions*. The goal of Task 2 is to provide NIOSH with recommendations for finalizing the survey questionnaires for the pretest. Task 2 included two subtasks: conducting focus groups and conducting cognitive interviews. Chapter 2 provides a synopsis of the focus groups. Chapters 3 and 4 detail the two rounds of cognitive interviews. We conclude with some general comments in Chapter 5.

## 2. Focus Groups

On February 7 - 9, 2008 Westat project staff attended the Mid-West Truck Show in Peoria, Illinois. We had planned to conduct three separate focus group discussions on the following topics as they apply to the Survey of Truck Driver Injury and Health: Occupational Injuries; Operational Issues and Questionnaire Format; and Health, Sleep, and Fatigue. The moderator guides for each are included in Appendices A – C. It was our goal to recruit up to nine different participants for each of the three sessions to help introduce a variety of viewpoints and concerns. In order to aid in our recruitment efforts, we designed and distributed advertisements (See Appendix D) as well as offered an incentive of \$75.00 to those who agreed to participate.

### 2.1 Recruitment

Westat employees had a difficult time recruiting participants for the focus group sessions, which we attributed primarily to the fact that most of the individuals we spoke to were eager to attend the exhibit display. The Mid-West Truck Show included many vendors and a truck beauty contest. It was not the type of venue where people typically stay for one or two days, but rather stopped-by for an hour or two. In addition, due to the nature of their job, many of the drivers had loads scheduled in the afternoon and therefore would not be in town or were unable to wait until the following day to participate in the group sessions. However, we did notice that people's inability to participate did not reflect a lack of interest in the study. Many of the individuals that we spoke with were eager to learn more about the study and were excited to talk about the industry, health problems, injuries and general concerns. The situation we encountered would best be described as "now or never" with regards to recruiting participants.

After experiencing difficulty recruiting for the scheduled session times, we decided to alter our original plan and conduct on-the-spot interviews instead. We conducted these interviews immediately after screening respondents (See Appendix E for screening instrument) and determining they were eligible to participate. We conducted a total of six interviews with nine individuals. For three of the interviews, respondents were in pairs; the other three interviewed followed a one-on-one format. Five of the interviewees were asked questions from the Occupational Injuries moderator guide; three were asked questions from the Operational Issues guide; and one interviewee was asked questions from both. In addition to the six on-the-spot interviews, we were able to recruit seven participants for the last scheduled focus group session time.

This session was initially supposed to be the Health, Sleep, and Fatigue focus group, but we were able to incorporate key issues from all three moderator guides.

## **2.2 Driver Feedback**

Below is a summary of the feedback we received from the on-the-spot interviews and focus group session:

### **2.2.1 Occupational Injuries**

- Injuries resulting from slips and falls are mentioned most often by the participants.
- On average, participants cited that drivers would be likely to remember up to 2-3 years for general injuries and forever for crash related injuries.
- Participants stated that they would be comfortable answering questions on injuries, personal safety, company policies on safety, and moving violations. Assuring confidentiality is important.
- There were three main concerns expressed by participants when asked about what they view as the biggest safety concern in their line of work. Participants expressed concerns about: the safety of other drivers' equipment; 4-wheelers on the road, and companies that do not care about their drivers. In the focus group, drivers expressed strong opinions about the companies' disinterest in driver welfare as well as their frustration with the shipper/receiver system. Some of the frustration relates to excessive loading and unloading times where the drivers can't rest and sometimes are even expected to assist in the process. These excessive times (longer than 90 minutes) place the driver in violation of the 14-hour limit for work days because they are still expected to drive for 11 hours.
- In general, participants felt that workplace violence was not a pressing issue. The only situation that most could recall involving violent behavior was at loading docks. This was attributed to the stressful and aggressive atmosphere.
- A majority of the individuals we spoke with felt as though company safety training could be improved. Some mentioned that the average training consists of a video and it usually lasts about 10 minutes. A few participants (independent of one another) suggested one way to improve safety might include more training, specifically behind-the-wheel training, for new CDL drivers.
- As previously mentioned, other motorists on the road proved to be a big concern among truck drivers. Drivers suggested a potential remedy for this problem would be to include a separate section in driver's education emphasizing "how to share the road with trucks."



## 2.2.2 Operational Issues/Questionnaire Format

- Participants felt as though truck stops would provide the best variety of drivers and probably the best opportunity for recruiting participants who had 30 minutes to an hour to spend on our survey. Most suggested recruiting in the late afternoon or evening because drivers will be ending their driving periods at these times. It is important to note that some drivers prefer to drive all night and would be ending their shifts in the early morning hours. One participant suggested using the “driver’s lounge” in truck stops for recruiting and conducting interviews.
- Many of the individuals we spoke with had a negative opinion of the government and federal regulations in the trucking industry. As a result, almost unanimously, participants felt that the survey should be administered by a contract employee and not a federal employee. The gender of the interviewer was not deemed to be important.
- Participants had mixed opinions regarding how the questionnaire should be administered. Some felt as though the computer-administered format would be intimidating to drivers who are not as familiar with computers. It was suggested that we provide a choice between computer-administered and interviewer-administered questionnaires.
- The focus group felt that drivers would not answer honestly when asked questions about illegal drug use. Instead, they suggested that we provide a paper form with the illegal drug questions and ask the participants to fill it out anonymously and drop it into a locked box. Participants felt that this would help to improve honesty in responses.
- Participants suggested using XM and Sirius satellite radio and late night radio stations to advertise. One participant suggested that using three ad spots (morning, evening and late-night) would provide the best advertising range for day and night drivers.
- Participants stated that they would not be willing to fill out a sleep diary or wear a sleep apnea monitor. Instead, one participant suggested that we recruit a smaller subset of drivers to participate in a sleep study at a clinic, and pay these individuals for a day of work.
- Participants felt that the questionnaire should include more open-ended/free response questions that allow the drivers to fully express their opinions and concerns.
- Participants felt that the Injury Questions had a negative tone. They suggested that we change the questions to ask them in a positive way. For example, instead of “In the past “X” years how many accidents have you had?” ask “How many years have you been accident free?”
- A lot of the individuals that we spoke with thought that a meal would be a well-received and attractive incentive.

### **2.2.3 Health, Sleep, and Fatigue**

- Participants frequently mentioned fatigue, stress, the unavailability of healthy meal options at truck stops, and lack of exercise as primary health concerns.
- Participants agreed that they would be comfortable answering questions on their health and the medications they take.
- Focus group participants explained that “drivers do not want to drive fatigued” but there is constant pressure on them to get the load delivered by the dispatchers, shippers and receivers.
- Drivers informed us that it is often difficult for drivers to seek medical attention while on the road, sometimes forcing drivers to go weeks without addressing a problem. Some participants suggested that one way to improve the health of the industry is to have more clinics available at truck stops.
- Almost all of the individuals we spoke with felt that the new hours of service regulations have had a negative impact on driver fatigue. Under the new rule, the drivers have an 11 hour window in which to drive. They cannot drive for 5 hours, take a nap for an hour, and then drive for 6 hours. The nap time is now deducted from driving time. This is a change from the old regulations and causes the drivers to keep driving even when fatigued.
- Drivers reported that their sleep schedules vary and often the freight they carry dictates when and where they stop and rest.

Focus group/on-the-spot interview recommendations were taken into consideration when modifying the questionnaire prior to cognitive interviewing. The revised questionnaire draft is provided in Appendix F.

### 3. Cognitive Interviews: Round 1

In order to examine the processes that active long-haul truck drivers go through when answering the survey questions, Westat conducted cognitive research. Cognitive testing provides valuable information about what questions are unreliable. It also allows the reviewing respondents an opportunity to suggest ways to increase reliability and validity, such as rewording and changing the order in which questions are presented.

Cognitive interviews were conducted at two locations: the Colorado Motor Carriers Association (CMCA) facility in Denver, CO and the Travel Centers of America Truck Stop in Jessup, Maryland. Dr. Patricia Olsgard, Director of Safety, Training, and Research for the CMCA is a consultant on this study. She was responsible for the recruitment and conduct of cognitive interviews done by CMCA. Interviews at the truck stop in Jessup were conducted by Westat project staff. Interviews were conducted during September and October, 2008. The questionnaire was revised and retested as a result of these Round 1 interviews. Results from the second round of cognitive research are presented in Chapter 4.

Because the full questionnaire is quite lengthy, we divided it into partial interviews each covering one-third of the full length questionnaire presented in Appendix G. These divisions were as follows: question PA1 and sections A and J for partial questionnaire 1; question PA2 and sections B-D and RA for partial questionnaire 2; and section E – I for partial questionnaire 3.

Westat conducted fifteen partial questionnaire interviews at The Travel Centers of America Truck Stop and Dr. Olsgard conducted two partial questionnaire interviews at CMCA<sup>1</sup>. Table 3-1 summarizes the type of cognitive interview, numbers of drivers participating, and interview location.

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<sup>1</sup> The original plan was to conduct 3 full length interviews and 3 partial interviews at CMCA. However, due to circumstances beyond our control, that was not possible. NIOSH and Westat agreed that the 3 full length interviews would be done at a later date using the instrument that incorporates recommendations from the focus groups and initial cognitive interviews.

**Table 3-1. Number of drivers receiving each questionnaire section by type of cognitive interview and administration location**

Type of Interview	Question PA1, Sections A and J	Question PA2, Sections B-D, RA	Sections E-I	# of Drivers Receiving Interview	Administration Location
Partial	1			1	CMCA
Partial		1		1	CMCA
Partial	5			5	Jessup Truck Stop
Partial			5	5	Jessup Truck Stop
Partial		5		5	Jessup Truck Stop
<b>Total</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>17</b>	

The remainder of this chapter discusses recruitment and findings.

### **3.1 Recruitment**

#### **3.1.1 CMCA Recruitment**

CMCA placed recruitment ads on their website. Interested drivers then called CMCA and the recruiter administered the screener to determine if the caller was eligible to participate. If the driver was eligible, he/she was invited to the CMCA facility to participate in the interview. Upon arrival at CMCA, the driver was asked to read and sign the Informed Consent (see Appendix H). The interview then commenced.

#### **3.1.2 Travel Centers of America Truck Stop Recruitment**

Recruitment took place at the hotel and restaurant area of the truck stop. It began at 2:00 PM and continued until 5:00 PM on two consecutive days. The fuel manager recommended these times as being optimal for our purposes. Nearly all the drivers who approached us were eager to participate. In fact, the study intrigued enough people that the recruiter had a line of participants waiting to be screened. The recruiter developed a “call back” system where participants would complete the screener and then the participant would either be called (via cell phone) or located within the restaurant when it was time for their cognitive interview. The \$50.00 incentive proved to be well-received and it seemed as though many of the respondents would still have participated if the incentive had been less.

### 3.2 Westat Recommendations for Revising the Screener

When administering the screener (Appendix J), we noticed a few issues or sections of the screener that could be improved before being implemented in the main study. The following comments illustrate Westat's suggestions for improvement:

- Westat recommends that NIOSH provide a clear definition of class 7 or 8 vehicles (to be incorporated in the screener), as several drivers were not able to answer Question 4.
- Westat recommends that NIOSH provide a clear definition of a Long Haul driver (i.e., x number of nights sleeping away from home) as many drivers indicated they were "regional" drivers and were uncertain how to answer Question 2.
- Westat recommends that NIOSH include "Lease to Own" as an option for Question 6. Some of the participants indicated that they are in a situation where they are leasing their truck from a company and will eventually obtain ownership rights. These drivers did not identify with the terms "Independent" or "Owner/Operator."
- NIOSH may want to consider adding a question about "team driving" to the screener.
- NIOSH may want to consider if both drivers in a team driving pair are eligible to participate in the survey.
- The screener questionnaire might be a useful place to incorporate a question evaluating whether or not a driver is currently on a restart period.

### 3.3 Driver Feedback and Westat Recommendations for Revising the Questionnaire

Though all of the questions were tested during the cognitive interviews, not all questions presented problems. Below is a list of all the questions that did present problems for respondents. The questions are numbered as they are in the 8/5/08 version of the questionnaire (included in Appendix F), and are followed by a brief explanation of the problem or issue that arose during testing, as well as Westat's recommendation for revising the question. In addition, certain questions provoked comments, which we have also addressed in this section.

### 3.3.1 Work History and Work Practices (Section A)

A6. Do you work for or own...

	YES	NO	RF	DK
a. A package express company?.....	1	2	-7	-8
b. A less than truckload, or, LTL, general freight company?.....	1	2	-7	-8
c. A truckload, or TL, general freight company?.....	1	2	-7	-8

**Comment:** Rather than “Yes/No” for each option, this question could be structured as a “Select One Response” reply.

A10. Please tell me about your employment in the trucking industry. I’m going to name different types of jobs that drivers might have. Please tell me whether or not you have ever been employed in the position and the start and end years of your employment.

JOB 1:	YES	NO	FROM (YEAR)	TO (YEAR)	RF	DK
a. Owner-operator?.....	1	2	_ _ _ _ _ _ _	_ _ _ _ _ _ _	-7	-8
b. Trucking Firm?.....	1	2	_ _ _ _ _ _ _	_ _ _ _ _ _ _	-7	-8
c. Trucking for hire? .....	1	2	_ _ _ _ _ _ _	_ _ _ _ _ _ _	-7	-8
d. Private Carriage?.....	1	2	_ _ _ _ _ _ _	_ _ _ _ _ _ _	-7	-8
e. Other position within trucking industry such as mechanic, dock worker, etc?.....	1	2	_ _ _ _ _ _ _	_ _ _ _ _ _ _	-7	-8
f. Other position within trucking industry such as dispatcher, supervisor or manager?.....	1	2	_ _ _ _ _ _ _	_ _ _ _ _ _ _	-7	-8

**Issue:** We noticed that participants had extreme difficulty responding to Question A10. Participants did not understand the instructions. All of the drivers we encountered viewed “truck driving” as being their job, and working for different companies did not equate to different jobs. Participants were able to recall the years worked in different positions within the industry. Despite being able to recall specific years, drivers still did not view these different positions as different jobs because all of the positions were related to truck driving.

**Recommendation:** Westat recommends that NIOSH remove Job 3 – Job 6 as they are not necessary. Westat also recommends that NIOSH work to restructure the question and clarify the instructions provided for both the respondent and the interviewer.

**A12.** How are you being paid for your driving time on your current trip? Are you paid ...

	YES	NO	RE	DK
a. by the mile?.....	1	2	-7	-8
b. a percentage of revenue? .....	1	2	-7	-8
c. by the hour?.....	1	2	-7	-8
d. bonus for meeting schedule or other terms?.....	1	2	-7	-8
e. some other way? .....	1	2	-7	-8
(SPECIFY)_____				

**Comment:** Is “current trip” necessary? Many of the respondents we interviewed said that they get paid the same way for all of their trips.

**A13.** How many hours in the last 24 hours have you spent driving while on the job as a long-haul driver?

HOURS.....	__ __
REFUSED.....	-7
DON'T KNOW .....	-8

**Comment:** During the cognitive interviews we had two situations where respondents answered “zero” to this question because they were on mandatory re-start. NIOSH may want to consider adding a question to the screener that will highlight cases where drivers are on a re-start period.

**A14.** I’m going to read you a list of non-driving tasks. Please tell me how many hours per week you spend on each task.

	AVERAGE TIME SPENT (HOURS) PER WEEK	RE	DK
a. Loading and unloading?.....	__ __	-7	-8
b. Truck maintenance? .....	__ __	-7	-8
c. Waiting for dispatcher call?.....	__ __	-7	-8
d. Waiting at the loading dock?.....	__ __	-7	-8
e. Other major job duties?.....	__ __	-7	-8
(SPECIFY	__ __		
1)_____	__ __		
(SPECIFY			
2)_____			

**Issue 1:** A few of the respondents considered the time spent waiting at the loading dock when answering for A14, selection A “Loading and Unloading” and then had to readjust their answer when they were read A14, selection D “Waiting at the loading dock.”

**Recommendation 1:** NIOSH may want to consider switching the order in which the options appear to avoid this confusion by having “Waiting at the Loading Dock” as selection A and “Loading and Unloading” as selection D.

**Issue 2:** We found that some drivers do not participate in some of the tasks listed in Question A14.

**Recommendation 2:** NIOSH should consider adding “Not Applicable” as an answer choice to allow those who do not participate to respond rather than answering “zero” hours per week.

**Comment:** Many of the participants we interviewed listed “logbook / paperwork” and “Pre- and Post-Trip Inspections” as other non-driving tasks they complete during the week. NIOSH may want to consider including these as option choices.

**A17.** Do you use the equipment if it is available? Would you say...

- Yes, all of the time it is required,..... 1
- Yes, some of the time it is required, or ..... 2
- No ..... 3
- REFUSED ..... -7
- DON'T KNOW ..... -8

**Comment:** The response choices are confusing and it is unclear if, “Yes, some of the time it is required” means the driver uses the PPE some of the time that it is required, or if it means PPE gear is required some of the time for the driver’s job. Westat suggests that NIOSH rephrase these answer responses.

**A18.** About how many miles did you drive in your job as a long-haul truck driver in the last year?

- MILES..... |\_\_|\_\_|\_\_|\_\_|\_\_|\_\_|
- REFUSED ..... -7
- DON'T KNOW ..... -8

**Comment:** In a “team driving” situation, does NIOSH want the individual miles driven or total team miles driven in the past year?

**A19.** About how many miles is your typical run or dispatch?

- MILES..... |\_\_|\_\_|\_\_|\_\_|
- REFUSED ..... -7
- DON'T KNOW ..... -8



**Issue:** Some respondents had difficulty reporting an exact number and preferred to report a range (i.e. 1000- 3000 miles per trip).

**Recommendation:** NIOSH may want to consider including a follow-up question for participants who fall into this category. Or, NIOSH may consider additional interviewer instructions, encouraging interviewers to probe respondents for an exact number estimation of the miles driven per trip.

**A23.** In the last 30 days how many times have you...

	NUMBER OF TIMES	RE	DK
a. Pulled multiple trailers?.....	__ __	-7	-8
b. Carried hazardous materials? .....	__ __	-7	-8
c. Deadheaded or pulled an unloaded trailer? .....	__ __	-7	-8

**Issue:** Participants seemed confused by the term “pulled multiple trailers” (selection A). Upon probing, we found that respondents thought it to mean, hauling multiple loads per day (i.e. picking up a load, driving, offloading and then picking up another load).

**Recommendation:** Drivers suggested using the term “pulled doubles or triples” rather than “pulled multiple trailers.” Westat suggests that, in addition, it may be helpful if NIOSH provides a definition.

**A25.** When sleeping in the truck, do you sleep in a bunk?

YES.....	1
NO.....	2
REFUSED.....	-7
DON'T KNOW .....	-8

**Issue:** Participants were confused by the term “bunk.” Many associated that term more closely to a military atmosphere.

**Recommendation:** It was recommended by the participants that NIOSH consider the use of “sleeper berth” rather than “bunk” because it is a more familiar term.

**A26.** When sleeping in the truck, where is it usually located? Is it...

- At a terminal,..... 1
- At a truck stop,..... 2
- At a rest area, or..... 3
- Somewhere else? ..... 4
- (SPECIFY)\_\_\_\_\_
- REFUSED..... -7
- DON'T KNOW ..... -8

**Comment:** NIOSH may want to consider adding the option of “Moving / On the Road” for study participants who drive in a team.

**A28.** How many total hours do you usually sleep in 24 hours?

- TOTAL NUMBER OF HOURS. | \_\_\_ | \_\_\_ |
- REFUSED..... -7
- DON'T KNOW ..... -8

**Comment:** Is NIOSH concerned with total sleeping hours while on duty or in general?

**A29.** Is this sleep usually broken up or continuous?

- BROKEN UP ..... 1
- CONTINUOUS ..... 2
- REFUSED..... -7
- DON'T KNOW ..... -8

**Issue:** Participants had difficulty understanding the concept of broken up sleep. For example we had one participant who said that his sleep is continuous. However, when probed further about his sleeping patterns, he explained that he sleeps for five hours, then drives and then sleeps for five more hours, which is not continuous.

**Recommendation:** NIOSH may want to consider including a definition for “broken-up” and “continuous” sleep.

**A32.** How many nights have you been able to sleep at home in the last month?

- NUMBER OF NIGHTS ..... | \_\_\_ | \_\_\_ |
- REFUSED..... -7
- DON'T KNOW ..... -8

**Comment:** Is NIOSH considering nights spent away from home due to work (or for other reasons as well)?

**A33.** How many days have you worked in the last month?

NUMBER OF DAYS..... |\_\_\_|\_\_\_|  
REFUSED..... -7  
DON'T KNOW ..... -8

**Comment:** Is NIOSH concerned with days sitting and waiting at a truck stop or days actually spent driving?

**A36.** Which of the following best describes the ventilation or air conditioning in your vehicle cabin?

I have proper ventilation or air conditioning. It never gets extremely hot, with temperatures over 86 degrees. .... 1  
I don't have a proper ventilation or air conditioning system. Especially in the summer, it gets very hot with temperatures over 86 degrees ..... 2  
REFUSED..... -7  
DON'T KNOW ..... -8

**A37.** Which of the following best describes the heating system in your vehicle cabin?

I have good heating, so it never gets too cold in my cabin, with temperatures less than 60 degrees. .... 1  
I don't have adequate heating. It gets very cold in the winter, with temperatures less than 60 degrees..... 2  
REFUSED..... -7  
DON'T KNOW ..... -8

**Issue:** Participants seemed confused by the specific temperatures listed within Questions A36 and A37. One participant explained that in certain climates that he drives in, regardless of how good his heating is, it still gets cold in the cab of the truck.

**Recommendation:** Westat suggests that NIOSH remove the temperature examples and simplify the questions to say “I have proper ventilation or air conditioning, so it never gets extremely hot.” For Question A36 and “I have good heating, so it never gets too cold in my cabin” for Question A37. Westat also suggests that, if these questions are not extremely important to NIOSH, removing these two questions may be a good way to decrease the length of the questionnaire.

**A38.** I'm going to read you a list of hazardous conditions. Please tell me whether or not you drive under each. Do you ...

	YES	NO	RE	DK
a. Haul flammable or explosive material in your vehicle? .....	1	2	-7	-8
b. Drive along winding, narrow roads?.....	1	2	-7	-8
c. Face threat of violence? .....	1	2	-7	-8
d. Face any other hazardous condition while driving? .....	1	2	-7	-8
(SPECIFY) _____				

**Comment:** Is NIOSH interested in “non-weather” related hazardous conditions? We found that drivers often responded with “weather” for selection D “other hazardous conditions.” If NIOSH is only concerned with “non-weather” related hazards then we recommend that this is specified in the question stem. If not, we recommend adding “Weather” as an option and deleting Question A39, which will aid in shortening the length of the survey.

**A41.** I'm going to list some ways that drivers and dispatchers communicate about the location of a truck. Please tell me whether or not you and/or your dispatcher do the following:

	YES	NO	RE	DK	FOR EACH “YES,” ASK Do you find this stressful?			
					YES	NO	RE	DK
a. I call the office when I reach truck stops.	1	2	-7	-8	1	2	-7	-8
b. I call the dispatcher while I am driving.....	1	2	-7	-8	1	2	-7	-8
c. Automatic Vehicle Location System.....	1	2	-7	-8	1	2	-7	-8
d. Satellite-based system.....	1	2	-7	-8	1	2	-7	-8
e. Is there any other way that you communicate?.....	1	2	-7	-8	1	2	-7	-8
(SPECIFY) _____								

**Comment:** Westat suggests that NIOSH include “Not Applicable” as an option for Operator/Owners for this question.

**A42.** I'm going to read you a list of reasons why truck drivers may drive despite hazardous situations such as fatigue, bad weather, or heavy traffic. Please tell me whether you often, sometimes, or never drive in hazardous situations due to each reason:

	SOME					Do you find this stressful?			
	OFTEN	TIMES	NEVER	RE	DK	YES	NO	RE	DK
a. You're on a tight schedule?.....	1	2	3	-7	-8	1	2	-7	-8
b. The 14-hour continuous shift?.....	1	2	3	-7	-8	1	2	-7	-8
c. You cannot stop the duty clock?.....	1	2	3	-7	-8	1	2	-7	-8
d. You need to make more money?.....	1	2	3	-7	-8	1	2	-7	-8
e. Delays associated with dispatching?.....	1	2	3	-7	-8	1	2	-7	-8
f. Delays associated with loading/ unloading? .....	1	2	3	-7	-8	1	2	-7	-8
g. Some other reason?.....	1	2	3	-7	-8	1	2	-7	-8

**Issue:** Participants did not seem to understand selection C (“You Cannot Stop the Duty Clock”) but did seem to understand selection B (“The 14-Hour Continuous Shift”).

**Recommendation:** Westat suggests that NIOSH delete selection C because it is confusing to participants and because this option is included in selection B.

**A43.** What would be your preferred way to receive health and safety information? Would it be via....

AM/FM Radio,.....	1
Satellite Radio,.....	2
Television,.....	3
Truck stops,.....	4
Postings through your employer,.....	5
Union Postings,.....	6
Internet website postings,.....	7
U.S. Mail, or.....	8
Trucking magazines/publications?.....	9
REFUSED.....	-7
DON'T KNOW.....	-8

**Issue:** Upon probing participants on what they think of when they hear the term “health and safety information”, their responses included, “weather or accidents on the highway” and “new driving regulations/restrictions”. This indicates that the term “health and safety information” may be confusing for respondents.

**Recommendation:** NIOSH may want to consider giving an example of “health and safety information.”

**Comment:** One participant suggested “e-mail” as another way to distribute information. NIOSH may want to consider adding “e-mail” as an option.

### 3.3.2 Health (Section B)

**B3.** How old were you when you were first told you had diabetes or sugar diabetes?

- YEARS OLD ..... |\_\_|\_\_|
- REFUSED..... -7
- DON'T KNOW ..... -8

**Comment:** NIOSH may want to consider adding the phrase, “by a doctor or other healthcare professional” to the end of this question stem. This will help to prevent or eliminate “at-home diagnosis” responses from participants.

**B7.** During the past 12 months, have you been told by a doctor or other health professional that you had weak or failing kidneys? Do not include kidney stones, bladder infections, or incontinence.

- YES..... 1
- NO..... 2
- REFUSED..... -7
- DON'T KNOW ..... -8

**B8.** During the past 12 months, have you been told by a doctor or other health professional that you had any kind of liver condition?

- YES..... 1
- NO..... 2
- REFUSED..... -7
- DON'T KNOW ..... -8

**Comment:** For Questions B7 and B8 is it necessary to include the timeframe of the “past 12 months”? Do these types of conditions go away?

**B11.** Please tell me your height and weight.

\_\_\_\_\_ FEET \_\_\_\_\_ INCHES

REFUSED..... -7  
DON'T KNOW ..... -8

\_\_\_\_\_ POUNDS

REFUSED..... -7  
DON'T KNOW ..... -8

**Comment:** Of the people interviewed we found that all of the respondents were fairly confident of their height and weight.

**3.3.3 Respiratory (Section C)**

**C1.** Have you smoked at least 100 cigarettes, or 5 packs, in your entire life?

YES..... 1  
NO..... 2  
REFUSED..... -7  
DON'T KNOW ..... -8

**C3.** Thinking back over the years you have smoked regularly, about how many cigarettes did you usually smoke each day? Recall that 1 pack equals 20 cigarettes.

CIGARETTES PER DAY..... |\_\_|\_\_|

REFUSED..... -7  
DON'T KNOW ..... -8

**C4.** Do you now smoke cigarettes every day, some days, or not at all?

EVERY DAY ..... 1  
SOME DAYS..... 2  
NOT AT ALL..... 3  
REFUSED..... -7  
DON'T KNOW ..... -8

**C5.** How long has it been since you quit smoking cigarettes?

YEARS..... |\_\_|\_\_|  
 MONTHS..... |\_\_|\_\_|  
 REFUSED..... -7  
 DON'T KNOW ..... -8

**Comment:** These questions do not include the population of people who are pipe or cigar smokers. Is NIOSH concerned with the respiratory health effects of pipe and cigar smokers?

**C7.** How old were you when you were first told that you have asthma?

YEARS OLD..... |\_\_|\_\_|  
 REFUSED..... -7  
 DON'T KNOW ..... -8

**Comment:** NIOSH may want to consider adding the phrase, “by a doctor or other healthcare professional” to the end of this question stem. This will help to prevent or eliminate “at-home diagnosis” responses from participants.

**3.3.4 Health Practices (Section D)**

**D2.** What kind of health insurance or health care coverage do you have? Include those that pay for only one type of service such as nursing home care, accidents, or dental care. Do not include private plans that only provide extra cash while hospitalized.

Do you have....

	YES	NO	RE	DK
a. Private health insurance? .....	1	2	-7	-8
b. Medicare/Medicaid/Medi-Gap? .....	1	2	-7	-8
c. Other government insurance such as Indian Health Service, or.....	1	2	-7	-8
d. TRICARE/VA/CHAMP-VA?.....	1	2	-7	-8
e. Single service plan such as dental, vision, or prescription plans?.....	1	2	-7	-8

**Issue 1:** Participants seemed to be confused by Question D2, selection A. Respondents often asked us, “What do you mean by private health insurance?”

**Recommendation 1:** Westat suggests that NIOSH rephrase selection A to read as, “Private Health Insurance, either company-provided or purchased on your own” to help clarify what is meant by this question stem.



**Issue 2:** Drivers seemed confused about whether or not they should include dental, vision or prescription plans that are included in their primary healthcare insurance for Question D2, selection E.

**Recommendation 2:** NIOSH may want to consider rephrasing selection E so that it reads, “Single service plan such as dental, vision, and prescription plans, not otherwise included in your health coverage.”

**D8.** When in a public place such as a restaurant, terminal, or rest stop, do you do any of the following flu prevention practices?

	YES	NO	RE	DK
a. Frequent hand washing or disinfection? .....	1	2	-7	-8
b. Covering your mouth when you cough? .....	1	2	-7	-8
c. Avoiding crowded places when you are sick? .....	1	2	-7	-8
d. Covering your mouth and nose with a mask? .....	1	2	-7	-8
e. Cleaning or infection control such as using disinfectant wipes on surfaces that others have handled? .....	1	2	-7	-8

**Issue:** We found that most participants were not familiar with the term “infection control” in selection E of Question D8. Participants initially said “No” to this question, but when probed about if they use disinfectant wipes on cab surfaces or if they use antibacterial sanitizers many said, “Yes”.

**Recommendation:** Westat suggests that we rephrase selection E to read, “Cleaning or the use of disinfectant wipes on cab surfaces.” We believe that removing the unfamiliar term will help to clarify the statement.

**D12.** On average, how much time do you spend performing moderate to vigorous physical activity each week? Examples include: brisk walking, lifting and carrying objects, strenuous yard work, and competitive sports. Include both work and non-work activity, but do not include activities that last less than 20 minutes.

|\_\_|\_\_|\_\_| HOURS / MINUTES (CIRCLE ONE) PER WEEK

**Comment:** This question stem is convoluted. Westat proposes rephrasing the question as, “How much time do you spend doing moderate to vigorous physical activity each week? This would include work and non-work activities like loading and unloading, brisk walking, or playing sports. **Do not** include activities that last less than 20 minutes.”

**D15.** During a typical work day, would you say that you lift loads weighing....

- Less than 50 pounds,..... 1
- 50 – 100 pounds, or..... 2
- 100 pounds or more? ..... 3
- REFUSED..... -7
- DON'T KNOW ..... -8

**Issue:** During the cognitive interviewing we came across drivers who lift loads that vary in weight during their typical work day. This question does not account for participants who lift different weights in their typical day.

**Recommendation:** Westat recommends that NIOSH change the stem of the question so that participants can select, “YES” or “NO” to any of the three or include the option of “more than one of the above.”

**3.3.5 Truck Crashes and Work-Related Injuries (Section E)**

**E3.**

	THE FIRST CRASH			MOST RECENT CRASH		
		RE	DK		RE	DK
<b>E3a. When did the crash occur?</b> <i>Approximate</i>						
Month/Year <i>(example, 01/2004 for January 2004)</i>	__ __  /  __ __ __ __	-7	-8	__ __  /  __ __ __ __	-7	-8
<b>E3b. What type of crash was it?</b> Was it a ...						
single vehicle crash, ....	1	-7	-8	1	-7	-8
did your truck crash with a passenger vehicle, or.....	2	-7	-8	2	-7	-8
did your truck crash with another truck?.....	3	-7	-8	3	-7	-8

**Issue:** Participants had difficulty remembering the month of the crash but were easily able to identify the year for Question E3, selection A.

**Comment:** NIOSH may want to consider adding “multi-vehicle crash” as an option for Question E3, selection B.

**E5.**

	<b>THE FIRST INJURY</b>	<b>RE</b>	<b>DK</b>	<b>MOST RECENT INJURY</b>	<b>RE</b>	<b>DK</b>
E5a. <b>When did the injury occur?</b>						
MONTH/YEAR	_ _  /  _ _ _ _	-7	-8	_ _  /  _ _ _ _	-7	-8
E5b. <b>Which of the following <u>best</u> describe the type of injury you received?</b>						
Was it a ...						
Sprain or strain, .....	1			1		
Contact with object or equipment,.....	2			2		
Fall on same level,.....	3			3		
Fall to lower level,.....	4			4		
Struck by object,.....	5			5		
Thrown against object,.....	6			6		
Assault, or.....	7			7		
Something else? .....	8			8		
(SPECIFY)_____						
REFUSED .....	-7			-7		
DON'T KNOW .....	-8			-8		

**Comment:** For Question E5, selection B NIOSH may want to consider changing the instructions to, “circle all that apply” because the participant could have suffered more than one type of injury.

**3.3.6 Job-Related Training (Section F)**

**F2.** Have you received formal training or been given written materials without training about any of the following topics during the past 12 months?

	HAD TRAINING	WRITTEN MATERIALS	NONE	RE	DK
a. Federal regulations concerning trucking safety, for example, hours of service.....	1	2	3	-7	-8
b. Safe driving practices and/or defensive driving.....	1	2	3	-7	-8
c. Proper lifting techniques .....	1	2	3	-7	-8
d. Preventing falls.....	1	2	3	-7	-8
e. Vehicle maintenance and safety checks.....	1	2	3	-7	-8
f. Security procedures and awareness.....	1	2	3	-7	-8
g. Handling hazardous goods.....	1	2	3	-7	-8
h. Preventing assaults .....	1	2	3	-7	-8
i. Customer courtesy/customer relations.....	1	2	3	-7	-8

**Issue:** The question stem seemed to confuse participants during the cognitive interviewing.

**Recommendation:** Westat proposes the following word change to the question stem for F2: “I’m going to read you a list of health and safety topics. Thinking about the past 12 months, please tell me whether or not you have received a memo or other material about the topic, received formal training on the topic, received both written materials AND formal training or have not received any information.” Phrasing the question this way would require the addition of another category, “Both Formal and Written Training” to the answer scale.

### 3.3.7 Truck Driver Knowledge, Attitudes, and Behaviors (Section H)

**H1.** How often do you do the following to help you stay awake while driving a truck at work? Would you say never, at least once a month, at least once a week, once a day, or more than once a day?

	NEVER	AT LEAST ONCE A MONTH	AT LEAST ONCE A WEEK	ONCE A DAY	MORE THAN ONCE A DAY	RE	DK
a. Listen to the radio or CD/cassettes?.....	1	2	3	4	5	-7	-8
b. Drive faster so that you are forced to concentrate?.....	1	2	3	4	5	-7	-8
c. Talk on the cell phone?.....	1	2	3	4	5	-7	-8
d. Chat on the CB?.....	1	2	3	4	5	-7	-8
e. Pull into a truck stop to take a break or a nap?.....	1	2	3	4	5	-7	-8
f. Lower temperature in the truck cab?.....	1	2	3	4	5	-7	-8
g. Snack?.....	1	2	3	4	5	-7	-8
h. Stretch while driving?.....	1	2	3	4	5	-7	-8
i. Use stimulants such as energy drinks, nicotine, caffeine pills, or coffee?.....	1	2	3	4	5	-7	-8
j. Anything else?..... (SPECIFY)_____	1	2	3	4	5	-7	-8

**Issue:** We found that participants sometimes answered this question based upon whether or not they do these activities during their drive, regardless if they do these activities specifically to stay awake.

**Recommendation:** We believe it would be beneficial to include additional interviewer instructions, reminding the interviewer to continuously prompt or remind participants to report if they do these activities specifically to help stay awake while driving.

**H2.** How often do you do the following while driving a truck at work? Would you say never, at least once a month, at least once a week, once a day, more than once a day?

	NEVER	AT LEAST ONCE A MONTH	AT LEAST ONCE A WEEK	ONCE A DAY	MORE THAN ONCE A DAY	RE	DK
a. Wear a seatbelt?.....	1	2	3	4	5	-7	-8
b. Watch for problems several vehicles ahead?.....	1	2	3	4	5	-7	-8
c. React quickly due to the poor driving of others? .....	1	2	3	4	5	-7	-8
d. Find yourself getting excessively sleepy while driving? .....	1	2	3	4	5	-7	-8
e. Continue to drive when you are tired?.....	1	2	3	4	5	-7	-8
f. Get frustrated by other drivers on the road? .....	1	2	3	4	5	-7	-8
g. Get frustrated by operations at the depot?.....	1	2	3	4	5	-7	-8
h. Drive aggressively?.....	1	2	3	4	5	-7	-8

**Issue:** We found that the scale used for Question H2 did not seem to fit the answer responses that we were receiving from the participants. For example, the question “How often do you wear a seatbelt” prompted a driver response of “always” instead of “more than once a day.”

**Recommendation:** Westat proposes implementing a new scale.

**Comment:** Question H2, selection G does not apply for Operator/Owners. Also this same type of question is asked by question A47, so question H2, selection G can be deleted from the questionnaire.

**H5.** I’m going to read you some activities that may or may not improve safety for long-haul truck drivers. Using a scale from 0, which means “not at all” to 5, which means “very much,” please rate how well each statement describes how you feel about whether or not the activity would improve safety.

	NOT AT ALL					VERY MUCH		RE	DK
a. Tougher enforcement of current regulations concerning highway safety .....	0	1	2	3	4	5	-7	-8	
b. Tougher enforcement of current regulations concerning trucking safety .....	0	1	2	3	4	5	-7	-8	
c. More regulations on highway safety .....	0	1	2	3	4	5	-7	-8	
d. More regulations on trucking safety .....	0	1	2	3	4	5	-7	-8	
e. Reduced hours-of-service requirements .....	0	1	2	3	4	5	-7	-8	
f. Better communication tools for truck drivers....	0	1	2	3	4	5	-7	-8	
g. More truck driver training.....	0	1	2	3	4	5	-7	-8	
h. Educate car drivers on how to share the road with trucks .....	0	1	2	3	4	5	-7	-8	
i. Instructions on how to drive around a big truck should be included in driver’s education classes for youth as well as with senior citizens.....	0	1	2	3	4	5	-7	-8	
j. Improvements in highway capacity .....	0	1	2	3	4	5	-7	-8	
k. More safety technologies in trucks .....	0	1	2	3	4	5	-7	-8	
l. More truck stops/parking area.....	0	1	2	3	4	5	-7	-8	
m. Tougher Commercial Driver License requirements.....	0	1	2	3	4	5	-7	-8	
n. Regular Commercial Driver License competency testing.....	0	1	2	3	4	5	-7	-8	
o. Regular car driver competency testing .....	0	1	2	3	4	5	-7	-8	

**Issue 1:** Drivers did not seem to view question H5, selections A – D as different questions. Upon probing, we saw that drivers seemed to think the selections referred to the same type of things.

**Recommendation 1:** Westat suggests consolidating selections A – D into one question.

**Issue 2:** All of the participants felt as though selection E was confusing. They viewed “reduced hours-of-service regulations” as a reduction in the number of hours a driver can drive his truck before stopping for a mandatory break period. It is unclear whether it was meant this way or if it was meant as a reduction in the restrictions placed on the hours-of-service requirements.

**Comment:** Westat suggests Question H5, selection I be rephrased to say, “Instructions on how to drive around a big truck should be included in all driver’s education classes.”

### 3.3.8 Fatigue (Section I)

**I1.** I'm going to read you some words, phrases, and statements which may or may not describe how you were feeling while driving just before stopping here. Using a scale from 0, which means "not at all" to 5, which means "very much," please rate how well each statement describes how you were feeling while driving.

	NOT AT ALL							VERY MUCH		RE	DK
a. I catch myself daydreaming.....	0	1	2	3	4	5	-7	-8			
b. I spend a lot of time focusing on little things I see and hear .....	0	1	2	3	4	5	-7	-8			
c. Fed up with driving .....	0	1	2	3	4	5	-7	-8			
d. Find driving repetitive.....	0	1	2	3	4	5	-7	-8			
e. Don't want to do this drive ever again .....	0	1	2	3	4	5	-7	-8			
f. I don't trust my judgment if I have to pass other vehicles .....	0	1	2	3	4	5	-7	-8			
g. Eyes are burning .....	0	1	2	3	4	5	-7	-8			
h. I feel like I'm not alert to other drivers .....	0	1	2	3	4	5	-7	-8			
i. Feeling of heaviness in my eyes.....	0	1	2	3	4	5	-7	-8			
j. Vision is blurred.....	0	1	2	3	4	5	-7	-8			
k. Eyes feel gritty .....	0	1	2	3	4	5	-7	-8			
l. My reactions are slowed.....	0	1	2	3	4	5	-7	-8			
m. I'm thinking about personal issues.....	0	1	2	3	4	5	-7	-8			
n. I'm concerned about what other drivers may do....	0	1	2	3	4	5	-7	-8			
o. Legs feel weak.....	0	1	2	3	4	5	-7	-8			
p. Eyes hurt .....	0	1	2	3	4	5	-7	-8			
q. I feel like I'm about to nod off.....	0	1	2	3	4	5	-7	-8			
r. Half-awake .....	0	1	2	3	4	5	-7	-8			
s. I don't feel like exerting myself.....	0	1	2	3	4	5	-7	-8			
t. I feel like I'm fighting myself to stay awake.....	0	1	2	3	4	5	-7	-8			
u. Shoulders are stiff .....	0	1	2	3	4	5	-7	-8			
v. I'm finding it hard to control my speed.....	0	1	2	3	4	5	-7	-8			
w. I'm thinking about things that don't really matter..	0	1	2	3	4	5	-7	-8			
x. I'm bored.....	0	1	2	3	4	5	-7	-8			
y. I'm easily distracted .....	0	1	2	3	4	5	-7	-8			
z. Lower back is stiff and painful.....	0	1	2	3	4	5	-7	-8			
aa. I just want to stay comfortable.....	0	1	2	3	4	5	-7	-8			
bb. I'm having a hard time attending to road-signs ...	0	1	2	3	4	5	-7	-8			
cc. I need to rest and relax .....	0	1	2	3	4	5	-7	-8			
dd. Making sure I feel OK is my priority right now..	0	1	2	3	4	5	-7	-8			
ee. I keep losing track of where I am on the road.....	0	1	2	3	4	5	-7	-8			
ff. Muscles ache .....	0	1	2	3	4	5	-7	-8			
gg. I just want to take things easy.....	0	1	2	3	4	5	-7	-8			
hh. Feel burned-out .....	0	1	2	3	4	5	-7	-8			
ii. Other vehicles are appearing where I don't expect them .....	0	1	2	3	4	5	-7	-8			



	NOT AT ALL					VERY MUCH		RE	DK
jj. I'm thinking about money issues .....	0	1	2	3	4	5	-7	-8	
kk. I'm not braking as soon as I should .....	0	1	2	3	4	5	-7	-8	
ll. Having tremors or jitters in my limbs .....	0	1	2	3	4	5	-7	-8	
mm. Road appears to 'swim' .....	0	1	2	3	4	5	-7	-8	
nn. I don't feel as safe as I usually do.....	0	1	2	3	4	5	-7	-8	
oo. I'm distracted by thoughts of family or home .....	0	1	2	3	4	5	-7	-8	
pp. I want to take a break to sleep.....	0	1	2	3	4	5	-7	-8	
qq. Feel wiped out.....	0	1	2	3	4	5	-7	-8	
rr. I'm not using my mirrors as much as I should .....	0	1	2	3	4	5	-7	-8	
ss. I'm slow to make decisions.....	0	1	2	3	4	5	-7	-8	
tt. I have lost all interest.....	0	1	2	3	4	5	-7	-8	
uu. Legs and arms feel stiff.....	0	1	2	3	4	5	-7	-8	
vv. I want to avoid getting stressed about the drive..	0	1	2	3	4	5	-7	-8	
xx. Eyes feel strained.....	0	1	2	3	4	5	-7	-8	
yy. I'm worried about my state of mind.....	0	1	2	3	4	5	-7	-8	
zz. I'm worried about getting to my destination on time.....	0	1	2	3	4	5	-7	-8	

**I2. Toward the end of my drive just now, I felt like:**

a. Drinking coffee or smoking.....	0	1	2	3	4	5	-7	-8
b. Looking at the scenery .....	0	1	2	3	4	5	-7	-8
c. Blasting myself in the face with cold air .....	0	1	2	3	4	5	-7	-8
d. Singing or talking to myself.....	0	1	2	3	4	5	-7	-8
e. Would rather have been doing something else.....	0	1	2	3	4	5	-7	-8
f. Looking at what other drivers are doing.....	0	1	2	3	4	5	-7	-8
g. Listening to the radio .....	0	1	2	3	4	5	-7	-8
h. Talking to somebody else .....	0	1	2	3	4	5	-7	-8
i. Speeding up or changing lanes more .....	0	1	2	3	4	5	-7	-8

**Issue 1:** The first issue is that this particular section is rather lengthy and it was difficult for participants to remain focused while we read the questions. Additionally, it was tedious for the interviewer to read all of the different sections.

**Recommendation 1:** Westat suggests collapsing all of the similar questions into one question, such as all the questions pertaining to the eyes. We think that it would be beneficial to reduce this section to 2/3 of the original size.

**Issue 2:** The second issue with the Fatigue questions was that a majority of the drivers interviewed were within their restart period and it was difficult for them to recall back to how they felt when they finished their drive. Additionally, we learned that we had to constantly remind participants of this time frame regardless if they were within their restart period. When participants were asked afterwards of their estimation of how many of their answers would change if they were asked “in general” rather than “just now” the respondents informed us that more than 50% of their answers would change.

**Recommendation 2:** Westat recommends that the interviewer instructions for this question should be edited to include directions on reminding respondents to think about their most recent drive. In addition, NIOSH may want to consider incorporating a screening question asking drivers how long it has been since they completed their last drive.

**Issue 3:** For question I1, selection kk, “I’m not braking as soon as I should” we encountered a participant that thought this meant “I am not taking breaks (as in rest periods) as often as I should” rather than “I am not braking at an appropriate distance”.

**Recommendation 3:** NIOSH may want to consider rephrasing the selection to read, “I’m not applying my brakes as often or as soon as I should.”

**I3.**

	NOT AT ALL							VERY MUCH	RE	DK
<b>I3. In general:</b>										
a. After several days with lots of loading and unloading I can’t do my work so well because I am too tired.....	0	1	2	3	4	5		-7	-8	
b. After a long day at work I have enough energy to tackle anything.....	0	1	2	3	4	5		-7	-8	
c. During the working day I need extra breaks.....	0	1	2	3	4	5		-7	-8	
d. After doing a lot of loading and unloading for some days, I feel physically exhausted.....	0	1	2	3	4	5		-7	-8	
e. When I have driven all day, it’s hard for me to unwind.....	0	1	2	3	4	5		-7	-8	
f. After work I relax easily.....	0	1	2	3	4	5		-7	-8	
g. I sleep well.....	0	1	2	3	4	5		-7	-8	
h. I usually fall asleep easily.....	0	1	2	3	4	5		-7	-8	
i. I sleep uneasily.....	0	1	2	3	4	5		-7	-8	
j. When I wake up in the night, it’s hard for me to fall asleep again.....	0	1	2	3	4	5		-7	-8	

**Comment:** NIOSH may want to consider adding “Not Applicable” as an option choice for all of these selections because some of the tasks may not occur during the daily work schedule of all drivers, such as loading and unloading.

**3.3.9 Drug and Sleep Questions (RA Section)**

**RA1.** In the last 5 years, have you used either legal or illegal drugs to help stay awake? Examples include Sudafed, methamphetamines or “meth,” Adderall, Ritalin, and cocaine.

- Yes ..... 1
- No ..... 2
- Don't know..... -8

**Comment:** NIOSH may want to consider adding “caffeine” as an example because none of the participants mentioned it when probed about what type of drugs they considered when answering this question.

**RA2.** How often do you use drugs to help you stay awake?

- More than once a day..... 1
- Once a day ..... 2
- At least once a week..... 3
- At least once a month ..... 4
- Less than once a month..... 5
- Don't know..... -8

**Comment:** It might be useful to rephrase the question as, “How often do you use legal or illegal drugs to help you stay awake?” because people often associate the term “drugs” strictly with illegal substances.

**RA3.** Below is a list of common stimulants. Please indicate whether or not you have taken each to help you stay alert in the past 5 years.

	YES	NO	DON'T KNOW
a. Herbal or natural energy products ..... (Specify) _____	1	2	-8
b. Ephedrine (ma huang, Chinese ephedra, ephedra, Ephedra sinica, ephedrine).....	1	2	-8
c. Adderall.....	1	2	-8
d. Ritalin .....	1	2	-8
e. Cocaine, also known as Big C, Blow, Coke, Flake, Freebase, Lady, Nose Candy, Rock, Snow, Snowbirds, and White Crack.....	1	2	-8
f. Methamphetamine (Speed, Meth, Crystal, Crank, Tweak, Go-fast, Ice, Glass, Uppers, Black Beauties).....	1	2	-8
g. Pseudoephedrine (Sudafed) .....	1	2	-8
h. Ecstasy .....	1	2	-8
i. Other..... (Specify) _____	1	2	-8
j. Haven't used stimulants in past 5 years.....	1	2	-8

**Comment:** Is “In the past 5 years” relevant in the question stem? Also is selection J, “Haven’t used a stimulant in the past 5 years” necessary?

**RA6.** How often do you snore? Would you say...

Nearly every day,.....	1
3–4 times per week,.....	2
1–2 times per week,.....	3
1–2 times per month, or.....	4
Never or nearly never?.....	5
Don't know.....	-8

**RA7.** Has your snoring ever bothered other people?

Yes .....	1
No .....	2
Don't know.....	-8

**RA8.** Has anyone noticed that you quit breathing during your sleep? Would you say...

Nearly every day,.....	1
3–4 times per week,.....	2
1–2 times per week,.....	3
1–2 times per month, or.....	4
Never or nearly never?.....	5
Don't know.....	-8

**Comment:** We were not able to get a good response from drivers on how they calculated their answers to the sleep and snoring questions RA6- RA8. Due to the nature of truck driving schedules and the time spent away from home (and time spent alone) it will be difficult to predict the accuracy of their responses to these questions. Additionally, for RA6 and RA8 do we need a timeframe or can these questions have “Yes or No” responses?

**RA10.** During your waking time, do you feel tired, fatigued, or not up to par? Would you say...

Nearly every day,.....	1
3–4 times per week,.....	2
1–2 times per week,.....	3
1–2 times per month, or.....	4
Never or nearly never?.....	5
Don't know.....	-8

**Issue:** Participants viewed the term “waking time” in Question RA10 as the specific time period when someone just wakes up.

**Recommendation:** NIOSH may want to rephrase this question.

### 3.4 Questionnaire Timing

As previously discussed, the questionnaire was divided into three sections for cognitive interviewing (Appendix G). We were able to conduct 17 interviews, testing out the partial sections and 14 of the participants agreed to let us tape the interview. As of this report writing, we have not yet administered the questionnaire in its entirety. As NIOSH and Westat agreed, we will administer and time the full questionnaire during November. Doing so after NIOSH incorporates recommendations from this report into the next draft will allow us to get a more realistic timing for the pre-test instrument.

During the cognitive interviews, we timed how long it took to complete these individual sections of the questionnaire. Keep in mind that the times we are reporting include time spent probing.

- **Partial Questionnaire Section 1 (Includes sections PA1, A and J):** This section has 54 questions and took approximately 53 minutes to administer.
- **Partial Questionnaire Section 2 (Includes sections PA2, B, C, D and RA):** This section has 62 questions and took approximately 30 minutes to administer.
- **Partial Questionnaire Section 3 (Includes sections E, F, G, H and I):** This section is 20 questions long, but many of the questions have multiple subsets. This section took approximately 53 minutes to administer.

Based upon the length of time it took to conduct the partial cognitive interviews, we estimate that the current version of the questionnaire will take approximately 1 hour and 15 minutes to administer, without probing.

## 4. Cognitive Interviews: Round 2

Westat and NIOSH discussed the findings and recommendations from the first round of cognitive interviewing and revised the questionnaire accordingly. The revised version is included in Appendix L. Westat tested the revised instrument during a second round of cognitive interviewing at the Travel Centers of America Truck Stop in Jessup, Maryland.

While at the Jessup Truck Stop, Westat administered the full-length version of the questionnaire to three respondents, followed by retrospective probing on various questions. In addition to the three full-length interviews, we conducted one partial questionnaire interview for Sections E-I.

A main goal of the second round of cognitive interviewing was to determine the time that it took to administer the entire questionnaire, as well as how long it took respondents to answer the self-administered section. In order to accomplish this goal, the interviewers had to take note of any unusual or questionable responses, or long pauses or signs of confusion when a respondent gave an answer, and probe on these issue after administering the entire survey.

The remainder of the chapter discusses recruitment and findings.

### 4.1 Recruitment

As with the first round of cognitive interviewing, we did not experience any difficulty recruiting participants. In fact, some drivers even approached us asking to participate even after we fulfilled our recruitment quota. The \$50.00 incentive proved to be well-received, even for the full-length interview, which we informed respondents could take up to 1 hour and 45 minutes. One driver offered to complete the questionnaire for free.

In total, we interviewed 21 respondents. Table 4-1 summarizes key demographic characteristics for the drivers that we recruited during both rounds of cognitive interviewing at the <sup>2</sup>Jessup Truck Stop:

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<sup>2</sup> At this time we are unable to provide the demographic report for the two cognitive interviews conducted at The Colorado Motor Carriers Association.

**Table 4-1. Driver demographic characteristics**

	Months Experience:		Employment:		Age:		
	12- 24 months	25+ months	Company Driver	Independent Owner-Operator	18- 35 yrs old	36-55 yrs old	56 or older
Jessup	1	18	10	9	2	13	4

## 4.2 Driver Feedback and Westat Recommendation for Revising the Questionnaire

All of the questions were tested during the second round of cognitive interviewing. Below, we present the questions that presented problems for the respondents. The questions are numbered as they are in the 11/21/08 version of the questionnaire (Appendix L), and are followed by a brief explanation of the problem or issue that arose during testing, as well as Westat’s recommendation for revising the question. In addition, certain questions provoked comments, which we have also addressed in this section.

### 4.2.1 Work History and Work Practices (Section A)

**Comment:** Should the title of this section be “Work Practices” since “Work History” has moved to section B?

**A5.** Do you work for or own...

	YES	NO	RF	DK
a. A less than truckload, or LTL, general freight company?.....	1	2	-7	-8
b. A truckload, or TL, general freight company?.....	1	2	-7	-8

**Comment:** Drivers seemed confused by the terms “LTL” and “TL”. Also, there may be more than one recognized term for “LTL” and “TL”; for example, Wikipedia references the “TL” as “FTL” or “Full Truck Load”. It may be helpful to include a definition of these terms and perhaps an example of each.



**A6.** What type of business is the (“TL” or “LTL,” FILL IN RESPONSE FROM A5) that you currently work for or own – for example, auto parts distribution, department store, wholesale grocer, office furniture, or manufacturing?

(TYPE OF BUSINESS)\_\_\_\_\_

REFUSED..... -7

DON'T KNOW ..... -8

**Comment:** This question is confusing for drivers because the sentence does not flow and is difficult for the interviewer to administer. NIOSH may want to rewrite this question stem.

**A7.** Please tell me if you do any of the following:

	YES	NO	RF	DK
a. Household goods moving? .....	1	2	-7	-8
b. New car or truck delivery? .....	1	2	-7	-8
c. Livestock hauling? .....	1	2	-7	-8
d. Refrigerated hauling?.....	1	2	-7	-8
e. Multiple off-loads per trip?.....	1	2	-7	-8
f. Hazardous cargo hauling?.....	1	2	-7	-8
(SPECIFY)_____				
g. General Freight hauling? .....	1	2	-7	-8
(SPECIFY)_____				
h. Other specialized truckload cargo?.....	1	2	-7	-8
(SPECIFY)_____				

**Issue 1:** Is NIOSH interested in “current driving” or “at anytime during the driver’s career”? We encountered respondents who had previously hauled some of these categories, but currently do not and were confused at how to answer this question.

**Recommendation 1:** NIOSH may want to consider rephrasing the question to reflect the timeframe they want the respondent to consider.

**Comment 1:** One respondent mentioned that his company hauls hazardous goods, but he personally doesn’t. NIOSH may want to consider rephrasing the question to include “personally” in the question stem. For example, “Please tell me if you personally do any of the following” to make it clearer that we are interested in the particular driver and not the company.

**Comment 2:** Questions A6 and A7 seem redundant.

**A9.** How are you being paid for your driving time on your current trip? Are you paid...

	YES	NO	RE	DK
a. by the mile?.....	1	2	-7	-8
b. a percentage of revenue? .....	1	2	-7	-8
c. by the hour?.....	1	2	-7	-8
d. by the load?.....	1	2	-7	-8
e. with a bonus for meeting schedule or other terms?.....	1	2	-7	-8
(SPECIFY) _____				
f. with a penalty for failure to meet schedule or other terms?.....	1	2	-7	-8
(SPECIFY) _____				
g. some other way? .....	1	2	-7	-8
(SPECIFY) _____				

**Issue:** Respondents seemed confused by option F, “with a penalty for failure to meet a schedule or other terms”. They did not seem to view this as a form of payment, rather as a form of punishment.

**Recommendation:** NIOSH may want to consider deleting this option choice from the question.

**Comment:** One driver explained for option G “Some other way” that he gets paid for a layover or waiting overnight at a truck stop to pick up a load. NIOSH may want to consider adding this as an option.

**A11.** I’m going to read you a list of tasks. Please tell me how many hours in the last 7 days you spent on each task.

	AVERAGE TIME SPENT (HOURS) PER WEEK		RE	DK
a. Truck maintenance or repair?.....	__	__	-7	-8
b. Waiting for dispatcher call?.....	__	__	-7	-8
c. Waiting at the loading dock?.....	__	__	-7	-8
d. Loading and unloading?.....	__	__	-7	-8
e. Log book/other paper work?.....	__	__	-7	-8
f. Driving your truck.....	__	__	-7	-8
g. Other major job duties?.....	__	__	-7	-8
(SPECIFY 1) _____	__	__		
(SPECIFY 2) _____	__	__		

**Issue:** Responses seemed a bit low for the average hours spent doing these activities per week. Upon probing we found out that participants did not respond based upon the timeframe of the last 7 days, but instead gave daily averages.

**Recommendation:** NIOSH may want to consider reorganizing and rephrasing the question stem to read: “Since last \_\_\_\_ (the day of the week that was seven days ago) how many total hours did you spend on each task” or “Thinking about the last seven days of your week...”. Including the timeframe in the beginning prompts the respondent to think about the remainder of the question with the timeframe in mind. Including the word “total” reminds the respondent that he/she must add of their daily total and report the answer as a sum of the past 7 days.

**Comment:** In order to increase clarity in what NIOSH is looking for in option D, it may be helpful to change the wording to read “Physically loading and unloading”.

**A12.** Do you handle cargo that requires Personal Protective Equipment or PPE? This would include face masks, gloves, hearing protectors, or a respirator.

YES.....	1
NO.....	2
REFUSED.....	-7
DON'T KNOW.....	-8

**Comment:** Is NIOSH concerned about “currently” or “ever in driver’s career”. This should be specified in the question stem.

**4.2.2 Work History (Section B)**

**B1.** Now I would like you to think about all the years you have worked as a truck driver. For each type of truck driving listed below, please tell how many years you worked in each category and whether it was full or part-time. Part-time is defined as working between 10 and 30 hours per week.

JOB 1:	YES	NO	Part Time/ Full Time?	Full Time (Number of Years)	Part Time (Number of Years)	RF	DK
a. Long-haul - Driver sleeps away from home one night or more per week?.....	1	2	PT / FT	__ __	__ __	-7	-8
b. Short-haul – Driver is home every night? .....	1	2	PT / FT	__ __	__ __	-7	-8
c. Mechanic or Dock Worker, Other job on dock? .....	1	2	PT / FT	__ __	__ __	-7	-8
d. Dispatcher, Supervisor or Manager? .....	1	2	PT / FT	__ __	__ __	-7	-8
e. Other..... (SPECIFY) _____	1	2	PT / FT	__ __	__ __	-7	-8

**Comment 1:** One respondent explained that he worked as a mechanic at the same time as he was a long-haul truck driver because he had to perform routine maintenance on the truck while on duty. If NIOSH is attempting to evaluate drivers that had separate jobs that are affiliated with the trucking industry, then you may want to consider adding the phrase, “please do not include routine maintenance, loading or unloading or other activities that you do as part of your job as a long-haul truck driver”.

**Comment 2:** We recommend rewording the question stem to match the flow of the response section. For example: “... For each type of job in the trucking industry, please tell me whether you have ever held that job, whether it was full- or part-time work, and how many years you worked in the job.” In addition, we recommend that you remove the phrase “type of truck driving” from the question stem because not all of the answer choices are types of jobs that require driving.

**B2.** Please tell me about your employment outside of the trucking industry. What other jobs, full-time and part-time, have you held for 1 or more years and how long did you do each job for? Part-time is defined as between 10 and 30 hours per week.

JOB #	Job Title?	Industry?	Part Time/ Full Time?	Length of Time? (YEARS)	RE	DK
1	_____	_____	PT / FT	__ __	-7	-8
2	_____	_____	PT / FT	__ __	-7	-8
3	_____	_____	PT / FT	__ __	-7	-8
4	_____	_____	PT / FT	__ __	-7	-8
5	_____	_____	PT / FT	__ __	-7	-8
6	_____	_____	PT / FT	__ __	-7	-8

**Comment:** Two of the respondents had never had a job outside of the trucking industry, and there is no response option for people who have not worked other jobs. NIOSH may want to consider setting up this question as a two-part question. For example, “Have you ever been employed in a job outside the trucking industry?” If yes, then continue with this question.

#### 4.2.3 Working Environment (Section C)

**C4.** Truck drivers are routinely exposed to diesel exhaust. How many hours in the past 7 days do you feel you were exposed to relatively high levels of diesel exhaust?

- HOURS..... |\_\_|\_\_|
- REFUSED..... -7
- DON'T KNOW ..... -8

C4a. Where did this usually occur?

---

REFUSED..... -7  
DON'T KNOW..... -8

**Comment 1:** We got a range of responses for this question (0 hours, 7 hours and 168 hours). Upon probing we found that some of the respondents did not respond with the intended timeframe in mind and gave a response based upon daily exposure for one day rather than a cumulative response during the past 7 days. Again it may be helpful to begin the question with, "During the last seven days..." so that respondents start off their cognitive process and interpret the remainder of the question with the timeframe in mind.

**Comment 2:** This question leaves a lot up to the interpretation of the respondent. It may be useful to define "relatively", "exposed" and "exhaust". One participant interpreted fumes to be the same thing as exhaust and therefore he felt as if he were exposed 24hrs a day.

**C7.** How many hours is your typical longest sleep period?

TOTAL NUMBER OF HOURS. |\_\_|\_\_|  
REFUSED..... -7  
DON'T KNOW..... -8

**Issue:** Participants expressed difficulty interpreting this question. Many responded with the same answer that they gave for C5 and did not understand that this question was requesting their longest period of continuous sleep (during their broken sleep period).

**Recommendation:** It might be helpful to rephrase the question to read, "What is the longest stretch of sleep that you experience during your broken up sleep period?"

**C10.** About how many days have you been on the job in the last 30 days?

NUMBER OF DAYS..... |\_\_|\_\_|  
REFUSED..... -7  
DON'T KNOW..... -8

**Comment:** Are days spent waiting for a dispatcher call or waiting to pick up a load considered days on the job? If so, NIOSH may want to include a line that says, "Please include days spent waiting for a dispatcher to call or waiting to pick up a load when determining your answer".

**C12.** I'm going to list some ways that drivers and dispatchers communicate about the location of a truck. Please tell me whether or not you and/or your dispatcher do the following:

	YES	NO	NA	RE	DK	FOR EACH "YES," ASK: Do you find this stressful?				
						Not at all	Some-times	Always	RE	DK
a. I call the office when I reach truck stops.....	1	2	3	-7	-8	1	2	3	-7	-8
b. I call the dispatcher while I am driving .....	1	2	3	-7	-8	1	2	3	-7	-8
c. Automatic Vehicle Location System.....	1	2	3	-7	-8	1	2	3	-7	-8
d. Satellite-based system.....	1	2	3	-7	-8	1	2	3	-7	-8
e. Is there any other way that you communicate? .....	1	2	3	-7	-8	1	2	3	-7	-8
(SPECIFY) _____										

**Comment:** Respondents felt as though options D and E were the same. During this round of cognitive interviewing and during the first round, many people suggested use of the term "QUAL-COM" in place of "satellite-based system".

**C13.** I'm going to read you a list of reasons why truck drivers may drive despite fatigue, bad weather, or heavy traffic. Please tell me whether you often, sometimes, or never drive in hazardous situations due to each reason:

	OFTEN	SOME-TIMES	NEVER	RE	DK
a. You're on a tight schedule?.....	1	2	3	-7	-8
b. The 14-hour continuous shift? .....	1	2	3	-7	-8
c. You need to make more money? .....	1	2	3	-7	-8
d. Delays associated with dispatching? .....	1	2	3	-7	-8
e. Delays associated with loading/ unloading? .....	1	2	3	-7	-8
.....					
f. Some other reason?.....	1	2	3	-7	-8

**Comment:** This is a very difficult question to administer. Drivers seemed to forget what they were being asked (reasons why they might drive, despite fatigue, bad weather or heavy traffic) and we found that we often had to keep repeating the question stem for each option choice. We also found that we had to repeat the answer selections as well (often, sometimes and never). Also, Option F does not currently gather data on the other reason. Is this what you want or would you prefer it as an Other – Specify?

**C17.** We're interested in how you feel about the relationship you have with your dispatcher. Would you say it's generally good, generally bad, or that it's generally indifferent?

GENERALLY GOOD.....	1
GENERALLY BAD .....	2
GENERALLY INDIFFERENT .....	3
NOT APPLICABLE .....	4
REFUSED.....	-7
DON'T KNOW .....	-8

**Issue:** We found that “indifferent” was a difficult word for drivers to understand.

**Recommendation:** NIOSH may want to consider changing “indifferent” to “neither good nor bad”.

#### 4.2.4 Health Practices (Section F)

**F1.** Do you have any type of health insurance or health care coverage?

YES.....	1
NO.....	2 → SKIP TO F3
REFUSED.....	-7
DON'T KNOW .....	-8

**Issue:** One participant seemed confused by this question, he initially said “No” but then said, “I am covered by my wife’s insurance, does that count?”

**Recommendation:** NIOSH may want to consider rephrasing the question stem to read, “Do you have any type of health insurance or health care coverage, including a spouse or partner’s plan that you are covered under?”

**F12.** How much time do you spend doing moderate to vigorous physical activity each week? This would include work and non-work activities like loading and unloading, brisk walking, or playing sports. **Do not** include activities that last less than 20 minutes.

|\_\_|\_\_|\_\_| HOURS / MINUTES (CIRCLE ONE) PER WEEK

**Comment:** This question still seems to be confusing for respondents. Drivers had a difficult time answering in terms of the specified timeframe (per week). Also, it seems like the instruction, “Do not include any activities that last less than 20 minutes” is ignored.

**4.2.5 Truck Crashes and Work Related Injuries (Section G)**

**G3.**

	THE FIRST CRASH	RE	DK	MOST RECENT CRASH	RE	DK
<b>G3a. When did the crash occur? <i>Approximate</i></b>						
Year	__ __ __ __	-7	-8	__ __ __ __	-7	-8
<b>G3b. What type of crash was it?</b>						
Was it a ...						
single vehicle crash, .....	1	-7	-8	1	-7	-8
did your truck crash with a passenger vehicle, or .....	2	-7	-8	2	-7	-8
did your truck crash with another truck? .....	3	-7	-8	3	-7	-8
did your truck crash with 2 or more other vehicles? .....	4	-7	-8	4	-7	-8
<b>G3c. Who was found to be at fault?</b>						
SELF.....	1	-7	-8	1	-7	-8
OTHER.....	2	-7	-8	2	-7	-8
<b>G3d. As a result of the crash, did you suffer any injuries that required immediate medical attention?</b>						
YES.....	1	-7	-8	1	-7	-8
NO.....	2	-7	-8	2	-7	-8
<b>INTERVIEWER NOTE: IF G3d = NO, RE, OR DK, SKIP G3e.</b>						



	THE FIRST CRASH	RE	DK	MOST RECENT CRASH	RE	DK
<b>G3e. Where did you receive medical attention for the injury?</b>						
EMERGENCY DEPARTMENT.....	1	-7	-8	1	-7	-8
HOSPITAL.....	2	-7	-8	2	-7	-8
DOCTORS' OFFICE.....	3	-7	-8	3	-7	-8
COMPANY CLINIC.....	4	-7	-8	4	-7	-8
OTHER..... (SPECIFY) _____	9	-7	-8	9	-7	-8

**Comment 1:** For a truck crash, we did not consider a situation where a respondent was in a crash but wasn't the driver, for example a team or partner driving situation.

**Comment 2:** For G3c, NIOSH may want to consider adding "no one" as answer response, for a situation where nobody was found to be at fault.

**G4.** In the past 7 days, have you had "a near miss" that may have resulted in a crash?

- YES..... 1
- NO..... 2
- REFUSED..... -7
- DON'T KNOW..... -8

G4a. If YES, how many times in the last 7 days have you had "a near miss?"

- NUMBER OF TIMES..... | \_\_\_ | \_\_\_ |
- REFUSED..... -7
- DON'T KNOW..... -8

**Comment:** We recommend that NIOSH consider removing these two questions; they do not provide any reliable data.

**G6.** I have some additional questions about those injuries. If you have had more than two injuries, then please focus on the very first in your career and your most recent injury as a long-haul truck driver. Please keep in mind that these injuries should **not** have been as a result of a truck crash.

**Comment:** This question needs a transitional question, similar to G2 that asks how many injuries the respondent has had during career. This will aid the interviewer in proceeding with question G6, indicating if they have to ask about more than one crash.

#### 4.2.6 Job-Related Training (Section H)

**H2.** I'm going to read you a list of health and safety topics. Thinking about the **past 12 months**, please tell me whether or not you have received training from an instructor, been given written material about the topic to learn about it on your own, received both training and written materials or have not received any information?

	HAD TRAINING	WRITTEN MATERIALS	BOTH TRAINING & WRITTEN MATERIALS	NONE	RE	DK
a. Hours of Service regulations .....	1	2	3	4	-7	-8
b. Other Federal regulations concerning trucking safety .....	1	2	3	4	-7	-8
c. Safe driving practices and/or defensive driving .....	1	2	3	4	-7	-8
d. Proper lifting techniques .....	1	2	3	4	-7	-8
e. Preventing falls .....	1	2	3	4	-7	-8
f. Vehicle maintenance and safety checks .....	1	2	3	4	-7	-8
g. Security procedures and awareness .....	1	2	3	4	-7	-8
h. Handling hazardous goods .....	1	2	3	4	-7	-8
i. Preventing assaults .....	1	2	3	4	-7	-8
j. Customer courtesy/customer relations .....	1	2	3	4	-7	-8

**Comment:** This question is very difficult to administer to respondents. We found that in general drivers would respond before the answer options had been completely read and then would change their answers. To simplify this question, NIOSH may want to consider how concerned they are with how the material is presented versus if the material is presented at all. If this is not a major concern, perhaps we can change the question to read, “Have you received training, either from an instructor, in the form of written materials or both” and then have “YES” or “NO” options.

#### 4.2.7 Truck Driver Knowledge, Attitudes and Behaviors (Section J)

**J1.** How often do you do the following to help you stay awake while driving a truck at work? Would you say never, at least once a month, at least once a week, once a day, or more than once a day?

*To stay awake, how often do you .....*

	NEVER	AT LEAST ONCE A MONTH	AT LEAST ONCE A WEEK	ONCE A DAY	MORE THAN ONCE A DAY	RE	DK
a. Listen to the radio or CD/cassettes?.....	1	2	3	4	5	-7	-8
b. Drive faster so that you are forced to concentrate?.....	1	2	3	4	5	-7	-8
c. Talk on the cell phone or CB? .....	1	2	3	4	5	-7	-8
d. Stop to take a break?.....	1	2	3	4	5	-7	-8
e. Stop to take a nap?.....	1	2	3	4	5	-7	-8
f. Lower temperature in the truck cab?.....	1	2	3	4	5	-7	-8
g. Eat?.....	1	2	3	4	5	-7	-8
h. Walk around to inspect vehicle and check tires? .....	1	2	3	4	5	-7	-8
i. Roll down windows?.....	1	2	3	4	5	-7	-8
j. Follow behind another truck or vehicle? .....	1	2	3	4	5	-7	-8
k. Smoke or chew tobacco? .....	1	2	3	4	5	-7	-8
l. Drink an energy drink?.....	1	2	3	4	5	-7	-8
m. Drink coffee? .....	1	2	3	4	5	-7	-8
n. Use caffeine pills?.....	1	2	3	4	5	-7	-8
o. Anything else?..... (SPECIFY)_____	1	2	3	4	5	-7	-8

**Comment:** When probed about this question, respondents said that they do not do these activities necessarily to stay awake, but just do them in general on their drive. Also, many admitted that it was difficult for them to remember that they were supposed to be answering if they do these activities to help stay awake. As an interviewer it was tedious to continue to say, “To help you stay awake do you...” before each letter option.

**J2.** How often do you do the following while driving a truck at work? Would you say never, at least once a month, at least once a week, once a day, or always?

	NEVER	AT LEAST ONCE A MONTH	AT LEAST ONCE A WEEK	ONCE A DAY	ALWAYS	RE	DK
a. Wear a seatbelt?.....	1	2	3	4	5	-7	-8
b. Watch for problems several vehicles ahead?.....	1	2	3	4	5	-7	-8
c. React quickly due to the poor driving of others? .....	1	2	3	4	5	-7	-8
d. Find yourself getting excessively sleepy while driving? .....	1	2	3	4	5	-7	-8
e. Continue to drive when you are tired? .....	1	2	3	4	5	-7	-8
f. Get frustrated by other drivers on the road?.....	1	2	3	4	5	-7	-8
g. Get frustrated by operations at the depot?.....	1	2	3	4	5	-7	-8
h. Drive aggressively?.....	1	2	3	4	5	-7	-8
i. Continue to drive when visibility or road conditions are poor?.....	1	2	3	4	5	-7	-8

**Issue:** There was confusion as to what was meant by option G, the term “the depot”. According to the participant, “the depot” could mean the home terminal or it could mean the loading/unloading dock.

**Recommendation:** If NIOSH is referring to a company’s terminal, then they may want to consider replacing depot with “home terminal”.

**Comment:** One driver mentioned that his answer depends on the season of the year for option I “Continue to drive when visibility or road conditions are poor?”. He further explained that in winter when visibility and road conditions are usually poor and for prolonged periods of time (days or weeks) that he will continue to drive despite the adverse situation. However, in the summer when conditions are poor, perhaps due to a rainstorm, that he may stop and pull over because it is usually a short event and will not significantly delay him.

Similarly, with option C “react quickly due to the poor driving of others” another driver said it depends on the route he driving. In a more urban setting with my traffic and vehicles

surrounding him, he usually reacts quicker because he has to in order to avoid other cars. However, in a situation with less congestion, like a country road, he is more apt to react slower due to another person’s poor driving because he knows that he has more space to stop.

**J5.** I’m going to read you some activities that may or may not improve safety for long-haul truck drivers. Using a scale from 0, which means “not at all” to 5, which means “very much,” please rate how well each statement describes how you feel about whether or not the activity would improve safety.

**INTERVIEWER NOTE:**  
**GIVE SHOW CARD WITH SCALE**

	NOT AT ALL						VERY MUCH	RE	DK
a. More enforcement of current regulations concerning highway safety, for example speeding.....	0	1	2	3	4	5		-7	-8
b. More enforcement of current regulations concerning trucking safety, for example hours of service regulations .....	0	1	2	3	4	5		-7	-8
c. Create more regulations on highway and trucking safety.....	0	1	2	3	4	5		-7	-8
d. More freedom in hours-of-service requirements.....	0	1	2	3	4	5		-7	-8
e. Better communication tools for truck drivers....	0	1	2	3	4	5		-7	-8
f. More truck driver training.....	0	1	2	3	4	5		-7	-8
g. Educate car drivers on how to share the road with trucks .....	0	1	2	3	4	5		-7	-8
h. Instructions on how to drive around a big truck should be included in all driver’s education classes.....	0	1	2	3	4	5		-7	-8
i. Improvements in highway capacity .....	0	1	2	3	4	5		-7	-8
j. More safety technologies in trucks .....	0	1	2	3	4	5		-7	-8
k. More truck stops/parking area.....	0	1	2	3	4	5		-7	-8
l. Tougher Commercial Driver License requirements.....	0	1	2	3	4	5		-7	-8
m. Regular Commercial Driver License competency testing.....	0	1	2	3	4	5		-7	-8
n. Regular car driver competency testing .....	0	1	2	3	4	5		-7	-8

**Issue:** Respondents still seem to view option A and B, highway and trucking safety as the same thing. Often highway safety was viewed primarily in issues that pertained strictly to trucks and truck drivers.

**Recommendation:** NIOSH may want to consider switching the order of A and B.

**Comment:** This section is still very long.

**J6.** Now I'm going to read you some items that may or may not be **safety challenges or problems** for a long-haul truck driver. Again, using the scale from 0, which means "not at all" to 5, which means "very much," please rate how well each statement describes how you feel about whether or not the activity is a safety challenge or problem for long-haul truck drivers.

	NOT AT ALL					VERY MUCH		RE	DK
a. Truck crash injuries? .....	0	1	2	3	4	5	-7	-8	
b. Work-related injuries, excluding truck crash injuries? .....	0	1	2	3	4	5	-7	-8	
c. Workplace violence? .....	0	1	2	3	4	5	-7	-8	
d. Long work hours? .....	0	1	2	3	4	5	-7	-8	
e. Lack of exercise? .....	0	1	2	3	4	5	-7	-8	
f. Lack of family time? .....	0	1	2	3	4	5	-7	-8	
g. Lack of healthy food? .....	0	1	2	3	4	5	-7	-8	
h. Irregular work hours? .....	0	1	2	3	4	5	-7	-8	
i. Maintenance of other trucks on the road? .....	0	1	2	3	4	5	-7	-8	
j. Rising fuel costs? .....	0	1	2	3	4	5	-7	-8	
k. Unrealistic schedules?	0	1	2	3	4	5	-7	-8	
l. Some other challenge or problem? .....									
(SPECIFY)_____	0	1	2	3	4	5	-7	-8	

**Comment:** Do these situations have to be considered "safety challenges or problems" can we call them "concerns"? Drivers did not seem to relate with these terms. Also, the question stem is a bit verbose. Perhaps consider rewording it to read, "I am going to read some situations that may or may not be a concern for long-haul truck drivers. Using a scale from 0, which means "not at all" to 5, which means "very much," tell me about whether or not each situation is a concern for long-haul truck drivers."

#### 4.2.8 Fatigue (Section K)

**K4.** .Do you experience fatigue while driving?

NOT AT ALL	0	1	2	3	4	5	VERY MUCH
REFUSED.....							-7
DON'T KNOW.....							-8

**K5.** Is fatigue a problem for you personally?

NOT AT ALL	0	1	2	3	4	5	VERY MUCH
REFUSED.....							-7
DON'T KNOW.....							-8

**Comment:** These two questions need interviewer and respondent instructions explaining that respondents are to use the scale and flashcards.

**K6.** I'm going to read you some words, phrases, and statements which may or may not describe how you were feeling while driving during your most recent drive. Using a scale from 0, which means "not at all" to 5, which means "very much," please rate how well each statement describes how you were feeling while driving.

	NOT AT ALL					VERY MUCH	RE	DK
a. I spend a lot of time focusing on little things I see and hear.....	0	1	2	3	4	5	-7	-8
b. Find driving repetitive.....	0	1	2	3	4	5	-7	-8
c. Don't want to do this drive ever again .....	0	1	2	3	4	5	-7	-8
d. I don't trust my judgment if I have to pass other vehicles.....	0	1	2	3	4	5	-7	-8
e. Feeling of heaviness in my eyes.....	0	1	2	3	4	5	-7	-8
f. I'm concerned about what other drivers may do .....	0	1	2	3	4	5	-7	-8
g. My legs, arms or shoulders feel stiff or weak...	0	1	2	3	4	5	-7	-8
h. My vision is blurry, or feels strained .....	0	1	2	3	4	5	-7	-8
i. I feel half-awake or like I'm about to nod off.....	0	1	2	3	4	5	-7	-8
j. I'm thinking about money or personal issues..	0	1	2	3	4	5	-7	-8
k. My muscles or back aches .....	0	1	2	3	4	5	-7	-8
l. I feel burned-out or wiped out.....	0	1	2	3	4	5	-7	-8
m. I'm easily distracted by thoughts of family or home .....	0	1	2	3	4	5	-7	-8
n. I lost all interest in driving and would rather have been doing something else .....	0	1	2	3	4	5	-7	-8
o. My decisions or reactions are slowed.....	0	1	2	3	4	5	-7	-8
p. I'm finding it hard to control my speed or attend to road signs. ....	0	1	2	3	4	5	-7	-8
q. My eyes hurt, feel gritty, or burn .....	0	1	2	3	4	5	-7	-8
r. I feel like I'm not alert to other drivers; they appear where I don't expect them .....	0	1	2	3	4	5	-7	-8
s. I just want to rest, relax, or take things easy....	0	1	2	3	4	5	-7	-8

	NOT AT ALL					VERY MUCH	RE	DK
t. I'm bored or fed-up with driving.....	0	1	2	3	4	5	-7	-8
u. Looking at the scenery or what other drivers are doing.....	0	1	2	3	4	5	-7	-8
v. I'm daydreaming or thinking about things that don't really matter.....	0	1	2	3	4	5	-7	-8
w. Listening to the radio or talking to someone else.....	0	1	2	3	4	5	-7	-8
x. I feel like blasting myself in the face with cold air, singing, or talking to myself.....	0	1	2	3	4	5	-7	-8
y. I don't want to exert myself; just staying comfortable is my priority.....	0	1	2	3	4	5	-7	-8
z. I'm braking late or not using my mirrors as I should.....	0	1	2	3	4	5	-7	-8
aa. I feel like I'm fighting myself to stay awake.....	0	1	2	3	4	5	-7	-8
bb. I'm thinking about things that don't really matter.....	0	1	2	3	4	5	-7	-8
cc. I keep losing track of where I am on the road.....	0	1	2	3	4	5	-7	-8
dd. I have tremors or jitters in my limbs.....	0	1	2	3	4	5	-7	-8
ee. The road appears to 'swim'.....	0	1	2	3	4	5	-7	-8
ff. I don't feel as safe as I usually do.....	0	1	2	3	4	5	-7	-8
gg. I want to take a break to sleep.....	0	1	2	3	4	5	-7	-8
hh. I want to avoid getting stressed about the drive.....	0	1	2	3	4	5	-7	-8
ii. I'm worried about my state of mind.....	0	1	2	3	4	5	-7	-8
jj. I'm worried about getting to my destination on time.....	0	1	2	3	4	5	-7	-8
kk. I feel like drinking coffee or smoking more.....	0	1	2	3	4	5	-7	-8
ll. I feel like speeding up or changing lanes more.....	0	1	2	3	4	5	-7	-8

**Comment:** This question is still very long and it is difficult to maintain the respondent's attention while administering, especially because of its location at the end of the questionnaire.



**K7.** In general:

	NOT AT ALL					VERY MUCH	RE	DK
a. After several days with lots of loading and unloading I can't do my work so well because I am too tired.....	0	1	2	3	4	5	-7	-8
b. After a long day at work I have enough energy to tackle anything .....	0	1	2	3	4	5	-7	-8
c. During the working day I need extra breaks....	0	1	2	3	4	5	-7	-8
d. After doing a lot of loading and unloading for some days, I feel physically exhausted.....	0	1	2	3	4	5	-7	-8
e. When I have driven all day, it's hard for me to unwind .....	0	1	2	3	4	5	-7	-8
f. After work I relax easily .....	0	1	2	3	4	5	-7	-8
g. I sleep well .....	0	1	2	3	4	5	-7	-8
h. I usually fall asleep easily.....	0	1	2	3	4	5	-7	-8
i. I sleep uneasily.....	0	1	2	3	4	5	-7	-8
j. When I wake up in the night, it's hard for me to fall asleep again .....	0	1	2	3	4	5	-7	-8

**Comment:** One respondent pointed out that his response would vary for options F, G, H, I and J depending on whether or not he is sleeping in his truck or if he is sleeping in his bed at home. It may be useful to specify if NIOSH is concerned with the driver's response while "on the road" or "on duty".

**4.2.9 Drug and Sleep Questions (RA Section)**

**Comment:** We encountered a participant who was not able to read and therefore could not complete the RA section. This is something that we need to account for during the pilot and the full-scale study. Also, those that did complete the RA did not correctly follow the skip patterns. It may be useful to examine the questions again and see if we can organize them more appropriately to avoid skip patterns, redundancy and questions that are not applicable based upon a previous response.

**4.3 Questionnaire Timing**

As previously discussed, we were able to conduct 3 full-length interviews, during which we timed how long it took for us to administer sections A- L of the questionnaire and also how long it took respondents to complete the self-administered drug and sleep related questions (the RA section). On average, it took approximately 1 hour and 10 minutes to administer the sections A-L of the survey and an additional 5-10 minutes for respondents to complete the self-administered section.

## 5 General Comments

In addition to the previous recommendations, Westat wants to highlight a few general comments for NIOSH to consider when revising the questionnaire and conducting the pilot study. In general:

- Respondents have a difficult time answering questions that deal with the average amount of time spent doing an activity over timeframe, such as over the past 7 days”. In this particular example, we found that the answers do not reflect a time period of 7 days, but rather the time spent on the activity during one day. This may be because a truck driver week does not mirror a typical week for an office worker. Drivers do not have a conventional Monday- Friday 9-5 work week and respondents from both rounds of cognitive testing mentioned that their days and weeks blend together.
- The questionnaire is very lengthy. At times it was very difficult to maintain the respondent’s attention, especially towards the end of the questionnaire. If the length of the questionnaire can not be adjusted, then we would suggest restructuring the sections and moving some of the longer questions (i.e. the Fatigue Section) to the beginning when respondents are “fresh”.
- When planning the pilot study and selecting teams of interviewers we should make arrangements to protect the safety and security of the interviewing teams. Teams should consist of at least one male. We experienced some minor harassment issues at Jessup when we had a team consisting of two female interviewers.