

**Department of Transportation
Office of the Chief Information Officer**

**SUPPORTING STATEMENT
Survey of Motor Carriers Operating Small
Passenger-Carrying Commercial Motor Vehicles**

Part B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

Sampling Strategy for Proposed Information Collection

This research involves a survey of motor carriers that operate commercial motor vehicles designed or used to transport 9 to 15 passengers (including the driver) in interstate commerce and have registered with the FMCSA. We will extract the sample for the telephone survey from the FMCSA's Motor Carrier Management Information System (MCMIS), a database which includes motor carriers registered with the FMCSA. The study will focus on these newly regulated carriers that primarily operate commercial motor vehicles designed to transport 9 to 15 passengers (including the driver). To meet the requirements of the study, the information in MCMIS was refined to develop a sample of carriers. The process to develop the sample is described below (also refer to Table 1).

The FMCSA conducted an initial analysis of MCMIS by linking data to the Licensing and Insurance (L & I) database to narrow the sample of carriers identified for this study. Motor carriers that transport passengers in interstate commerce with a commercial motor vehicles designed and used to transport 9 to 15 passengers (including the driver) are required to have \$1.5 million of insurance. Therefore, we narrowed down the sample of motor carriers identified in MCMIS to those with \$1.5 million in insurance (N = 745), which will more accurately represent the population of interest. Several exclusionary steps were taken to focus our sampling strategy to the carriers of most interest in this study.

Six of the carriers in this pool were identified as operating in Canada, and were excluded, bringing the total pool to N = 739 carriers. We then excluded 292 carriers which own only one commercial motor vehicle designed to transport 9 to 15 passengers (including the driver), bringing the total pool to N = 447 carriers. While this step will not result in a pure representative sample (i.e., many of these operations are very small), we wish to reduce the burden on the smallest of businesses, and also believe carriers operating more than one vehicle will be able to provide a greater amount of information regarding safety and regulatory compliance challenges.

We then excluded 111 carriers which operate vehicles designed to transport 16 or more passengers, as we wish to only focus on carriers operating small passenger vehicles in this study. This step brought the total pool to N = 336 carriers. We then excluded 78 carriers which operate an equal or greater number of vehicles designed to transport 8 or

fewer passengers in relation to vehicles designed to transport 9 to 15 passengers, as we want to focus on carriers which primarily operate the vehicles targeted by this research. This step brought the remaining total pool to N = 258 carriers.

Table 1: Steps Involved in Sampling Methodology

Process Step	Number of Carriers Identified for Exclusion	Remaining Carriers in Sampling Pool
MCMIS linked with L & I database	0	745
Remove carriers based in Canada	6	739
Remove carriers operating a single (9-15 passenger) vehicle	292	447
Remove carriers operating larger (16+ passenger) vehicles	111	336
Remove carriers operating an equal or greater number of smaller (1-8 passenger) vehicles relative to vehicles designed to transport 9-15 passengers	78	258

As this is a Nationwide telephone survey, the U.S. was divided into four geographic regions (West, South, East, and Midwest) as determined by the FMCSA in assigning responsibility to their Field Service Centers. Twenty-five (25) carriers were randomly selected from each region for a total of 100 carriers to be initially contacted for this telephone survey. The response rate for this survey is estimated to be 50% based on previous research¹, thus we believe we will meet the study goal of 50 completed telephone surveys using this initial sample of 100 carriers. If the response rate is lower than expected after attempting to recruit from the original sample of 100 carriers, another random sample of the remaining 158 carriers will be drawn until the goal of 50 surveys have been completed.

In addition to the exclusion/inclusion criteria outlined above, an effort will be made to conduct approximately 30% of the telephone surveys with carriers which operate within a 75 air-mile radius. Doing so will allow comparisons to be made between those operating within a 75 air-mile radius and those that do not. These comparisons are important because recent legislation has mandated that FMCSA remove its 75 air-mile radius standard which determines applicability of its operational safety regulations. Given the relatively small sampling pool (n = 258), it is possible that less than 30% of the pool operates within a 75 air-mile radius. However, an effort will be made to ensure that carriers that operate within a 75 air-mile radius have adequate representation for the survey with a goal of 30% participation.

Validity & Reliability

¹ Majowicz, S. E., Edge, V. L., Flint, J., et al. (2004). An introductory letter in advance of a telephone survey may increase response rate. *Canada Communicable Disease Report*, 30, 121-123.

The sampling procedure as described above will produce a statistically valid sample of the motor carriers targeted for the information collection. Assuming a population of 258 carriers, a sample of 50 would provide a ± 12 percent confidence interval (CI) at a 95 percent confidence level (CL), meaning we would be 95 percent sure that the sample reflects the target population and that the responses from the sample are within 12 percentage points of how the population would respond. The sample size could be adjusted upward for a tighter CI and/or CL; however, consideration must be given to the relatively short duration (30 weeks) of this project and the available budget.

This information collection is not intended to be representative of all motor carriers covered by the FMCSRs. Only carriers which are currently registered with the FMCSA will be included so as to reduce time burden (there is no efficient process for identifying carriers not registered with the FMCSA) and maximize response rate. Therefore, this information collection will not necessarily generalize to carriers who are not registered with the FMCSA.

Additionally, the results will not necessarily generalize to those operations which only operate a single vehicle or those businesses which operate larger vehicles such as motorcoaches. However, our sampling strategy is strategic to maximize the gain of the information collection (e.g., by focusing only on those operations specializing in interstate transportation with commercial motor vehicles designed to transport 9 to 15 passengers [including the driver]) while minimizing the burden on small businesses.

We will take several primary actions to mitigate nonresponses by carriers that are contacted for a telephone survey. First, researchers who conduct the telephone surveys will call carriers during regular business hours (9 a.m. to 5 p.m.) when the probability is highest to converse with a company official who has broad operational knowledge. Second, the researchers who conduct the telephone surveys will be fluent in Spanish as well as English. The owners, management, and employees of some carriers will speak Spanish as a primary language. Third, those carriers that are targeted for a telephone survey based upon the screening process described above will be sent a notification letter advising them that they will be contacted for a survey and their cooperative participation would be appreciated and beneficial to their industry. Pre-survey notification letters will be written and sent in both the English and Spanish languages. The English version of the letter is located in Attachment F.

After survey administration is completed and a sample size of 50 carriers is attained, a nonresponse bias analysis will be conducted and the results of such analysis will be discussed in the final research report. A comparison of the characteristics of those carriers that participated in the survey and those carriers that were targeted for the survey, but did not participate, will be covered in the report. The telephone survey instrument is located in Attachment G.

Statistical Methods & Software

The information collection will be analyzed using basic descriptive statistics (e.g., frequencies, percentages, mean, median, range, etc.). Software used to perform the statistical analyses include SAS and Microsoft Excel.

Tests of Procedures and Methods

The survey procedures involved in this information collection will be tested on fewer than 10 individuals so as to refine the process and survey instrument (questionnaire) if necessary. Such testing will ensure that the researchers are minimizing burden and maximizing the utility of the information collection.

Study protocols have been developed to guide the research team in obtaining the highest quality data possible. Each researcher involved in administering the telephone interview or conducting site visits will be involved in a training session where protocols will be reviewed, discussed, and practiced before beginning data collection. Furthermore, during the telephone survey and site visit process, individual researchers' procedures and data collection will be monitored to ensure quality.

Contact Information for Contractor Conducting Information Collection

Project Lead for this information collection is:

Susan Bell Knisely

Booz Allen Hamilton (ASE)
918 Old County Road
Severna Park, Maryland 21146
Telephone: 410-647-1890
Fax: 410-647-8816
Mobile: 410-507-7343
E-Mail: knisely_susan@bah.com

Researchers at the Virginia Tech Transportation Institute will conduct the telephone survey information collection. Virginia Tech Transportation Institute, 3500 Transportation Research Plaza, Blacksburg, VA 24061 (individual contact information below).

Name	Title	Phone	Email
Richard Hanowski, Ph.D.	Director, Center for Truck & Bus Safety	540-231-1513	hanowski@vtti.vt.edu
Douglas Wiegand, M.A.	Research Associate	540-231-1055	dwiegand@vtti.vt.edu
Maria Fumero, M.S.	Research Associate	540-231-1048	mfumero@vtti.vt.edu