ALASKA SEAT BELT OBSERVATION SURVEYS 2009

Prepared by

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For the

Alaska Injury Prevention Center

Under contract with

The Alaska Highway Safety Office,
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EXECUTIVE SUMMARY

The Alaska Highway Safety Office (AHSO) contracted with the Alaska Injury Prevention Center (AIPC) to conduct the 2009 observational surveys of seat belt use in Alaska. The Alaska Highway Safety Office, with support from the National Highway Traffic Safety Administration (NHTSA), participates in nationwide observational surveys of occupant restraint usage on an annual basis. This following report details the results of the observational surveys of vehicles and occupants throughout Alaska.

The planning process for measuring occupant restraint usage surveys started in April, to ensure that all NHTSA standards were met in sampling, observations, and analysis. In May, AIPC hired and trained six temporary employees to act as surveyors. The surveyors received personal training for the community in which they would be conducting the observations. The recorded observations took place from June 1 – 15, 2009. The AIPC surveyors used cassette voice recorders to document their observations, a unique method introduced by AIPC in 2004 which drastically increased the number of observations. Seat belt use was recorded for drivers and front seat outboard passengers in passenger cars, trucks, SUVs, vans, as well as helmet use for motorcyclists. We observed a total of 37,807 vehicle occupants: 30,194 drivers and 7,613 outboard passengers. Thirty-five percent (35%) of the observed vehicles were cars, 28% sport utility vehicles (SUV), 26% trucks, 8% were vans, and 3% were motorcycles. Motorcycles accounted for 936 observations.

A statistical sample of major and rural (i.e. local) roads in communities encompassing 85 percent of the state's population was selected for the surveys. Of the observed occupants, the raw data showed that 85.5 percent of the drivers and 82.6 percent of outboard passengers were wearing seat belts at the time of the observations. The official "weighted" total share of occupants wearing seat belts in Alaska in 2009 was **86.1 percent**. This is a 1.2 percentage point increase over the observed rate in 2008, and the highest rate ever observed in Alaska. We also compared rates for cars, vans, SUVs, and trucks. Eighty-eight (88%) percent of the front seat outboard "car" occupants, 88% of SUVs, 88% of vans, and 81% of truck occupants were using seat belts during these observations. Trucks, once again, had the lowest rate for any of the vehicle categories, which shows where enforcement and educational efforts should be targeted.

Alaska became a primary enforcement state on May 1, 2006, which means that a law enforcement officer can stop a vehicle if the occupants are not wearing seat belts.

INTRODUCTION

Background

In June 1984, the Alaska State Legislature passed a law (AS28.05.095) requiring Children ages six and under to be restrained while being transported in a motor vehicle. In addition, children under the age of four years are to be transported in a restraint that complies with federal safety standards. In February of 1989, the Legislature amended the provision to require the use of safety belts by all occupants. To be eligible for certain federal grants, states must document levels of compliance with seat belt laws, as Alaska does annually. Alaska became a primary enforcement state in May 2006.

From 1997 through 2003, the Alaska Highway Safety Office contracted with the University of Alaska's Institute of Social and Economic Research (ISER) to conduct observational surveys of seat belt use in Alaska. The National Highway Traffic Safety Administration pays for observational surveys to be completed annually in each state to determine the level of seat belt use. In 2004 - 2009, the Alaska Injury Prevention Center (AIPC) was contracted to conduct the observational surveys. The following report details the results of the observational surveys of seat belt use in Alaska in 2009.

DATA COLLECTION

Survey Design

AIPC used a population density, probability-based design to estimate the seat belt usage rates for the state of Alaska. All of the observations were completed in the month of June 2009. Our study design complies with criteria published on the *Electronic Code of Federal Regulations* website, which were updated as of June 24, 2003. The criteria can be found in the *Federal Register* 23 CFR, Chapter III, Subchapter D, Part 1340 – *Uniform Criteria for State Observational Surveys of Seat belt Use*.

Primary Sampling Units (PSU) were selected from boroughs in Alaska which totaled more than 85 percent of the state's population and had an even greater percentage of the controlled intersections. All of the boroughs within the 85 percent demographic guideline had a probability of being selected as a PSU, which was proportional to their population and their total traffic volume. Within the boroughs selected, 264 observation sites were chosen in a stratified random sample design. This was done to accurately reflect the Alaska Department of Transportation & Public Facilities (AK DOT&PF) traffic estimates at controlled intersections with high, medium, and low traffic volume roads. The number of sample sites per city was determined by a proportional percentage of the state's average annual daily vehicle volume and by the relative population density of that community. Stratification for traffic volume differences was completed during the design phase by dividing the total traffic volume in each community into three equal strata by traffic volume. Next, we chose an equal number of randomly selected sites

from high, from medium, and from low traffic volume intersections. This process provided a greater percentage of sample sites in small communities than in large communities.

The Alaska DOT&PF supplied AIPC with a list of all controlled intersections in the state and their average daily traffic volume (latest data from 2008). From this list, we used a random number generator program to select the specific intersections needed for inclusion in our sample for each community. Once the intersections were identified, AIPC developed observer schedules by randomly assigning the intersections to morning or afternoon shifts, then systematically alternating the direction of traffic flow (i.e., north, south, east, or west) as much as practical for the physical layout of the streets. The survey sites within each community were grouped to reduce driving distances but the first site for each shift was randomly selected.

Trained observers recorded shoulder belt use by drivers and outboard passengers at selected intersections, for forty-five minute periods, between 7:30 a.m. and 9:00 p.m. in June 2009.

Training

The AIPC Executive Director individually trained each observer in the classroom and in the field. A training manual was developed (Appendix B) and given to each observer. The classroom training covered each section of the manual and required feedback from the observer to ensure understanding of the methodology. Three of the six observers had been hired to conduct these observations in previous years. Following the classroom training, observers practiced recording restraint use while under direct supervision of the trainer. Several sites were visited to make sure the observer understood how to read the map, determine the direction of traffic to be measured and where to stand. Observers were trained in their own communities in order to make the instruction more pertinent.

Each observer was given a work schedule which included the days, times, locations, and traffic directions to be observed. A detailed map for each site was also included to reduce confusion. Observers were encouraged to call with any discrepancies or questions, and were given instructions on what to do if a site could not be observed. Unannounced visits were made to some of the sites to insure that the observers were at the correct location at the right time.

This was the sixth year for using voice recorders to document seat belt usage rates. This method eliminated the need to look down while writing, and the problems associated with writing in inclement weather. The downside of using recorders was that observations could be made too quickly for computer entry. We overcame this problem by hiring a transcriptionist who could slow down the tape when needed.

Observation Methodology

Each observer recorded seat belt use at predetermined intersections for eight, forty-five minute periods per shift. The shifts were either “AM”, from 7:30am to 3:30pm or “PM”,

from 1pm to 9pm. Daily observation sites were grouped geographically to facilitate moving from one site to the next within the 15-minute transition time allotted.

Observers used a micro-cassette recorder with 90 minute tapes. Numerous observation periods could be recorded on a single micro-cassette because the observers paused the tape between actual observations. This procedure also facilitated the transcription process. The observers recorded information on each non-commercial, non-emergency passenger vehicle at controlled intersections. Observers were instructed on what to do if traffic was moving too quickly to record information on each vehicle. Finally, observers recorded any comments they felt might be helpful when interpreting the data.

DATA ANALYSIS

Weighting

Observations at each site were weighted according to the site's final probability of selection. To accomplish this step, we used average annual daily traffic volumes for all of the boroughs in the sample pool and then calculated traffic volumes for each stratum within the borough. We were then able to calculate the sites' probability of selection and weight the observations accordingly, using *SPSS 15*.

To select the number of observation sites per community, we took into account possible disproportionate population and traffic volumes by over-sampling the less populated boroughs during the design phase of the study. The Raosoft Sample Size Calculator (found at www.raosoft.com/samplesize.html) was used to determine the number of intersections that needed to be sampled in each community, based on the margin of error limitations and the total number of intersections available. The number of sample sites required in each borough was then divided evenly among the three strata for random selection.

Intersections were assigned to the observers with respect to time of day, day of week, and average annual daily traffic volume. An equal number of randomly selected survey sites from low, medium, and high traffic volume intersections were selected for sampling within each community.

After data collection was complete, AIPC analyzed the data using *SPSS 15*. SPSS is a program for managing data and performing statistical analyses and it is particularly adept at manipulating data sets with many cases and variables.

Results

The surveyors observed a total of 37,807 vehicle occupants (30,194 drivers and 7,613 outboard passengers) in 2009. Thirty-five percent (35%) of the observed vehicles were cars, 28% sport utility vehicles (SUV), 26% trucks, 8% were vans, and 3% were motorcycles.

During the 2009 observation period in Alaska, the weighted data showed that 86.6 percent of the drivers and 84.1 percent of the outboard passengers were wearing seat belts. The total proportion of occupants wearing seat belts was **86.1 percent.** Trucks were the third largest vehicle category but had the lowest usage rate at 80.6%. There were 895 motorcycles (936 riders) in the sample, with 72.8% of the drivers and 97.6% of the passengers wearing helmets. The Alaska State law requires helmets for passengers but not for drivers of motorcycles.

The following graph shows the trend line of seat belt use in Alaska from 1999 – 2009.

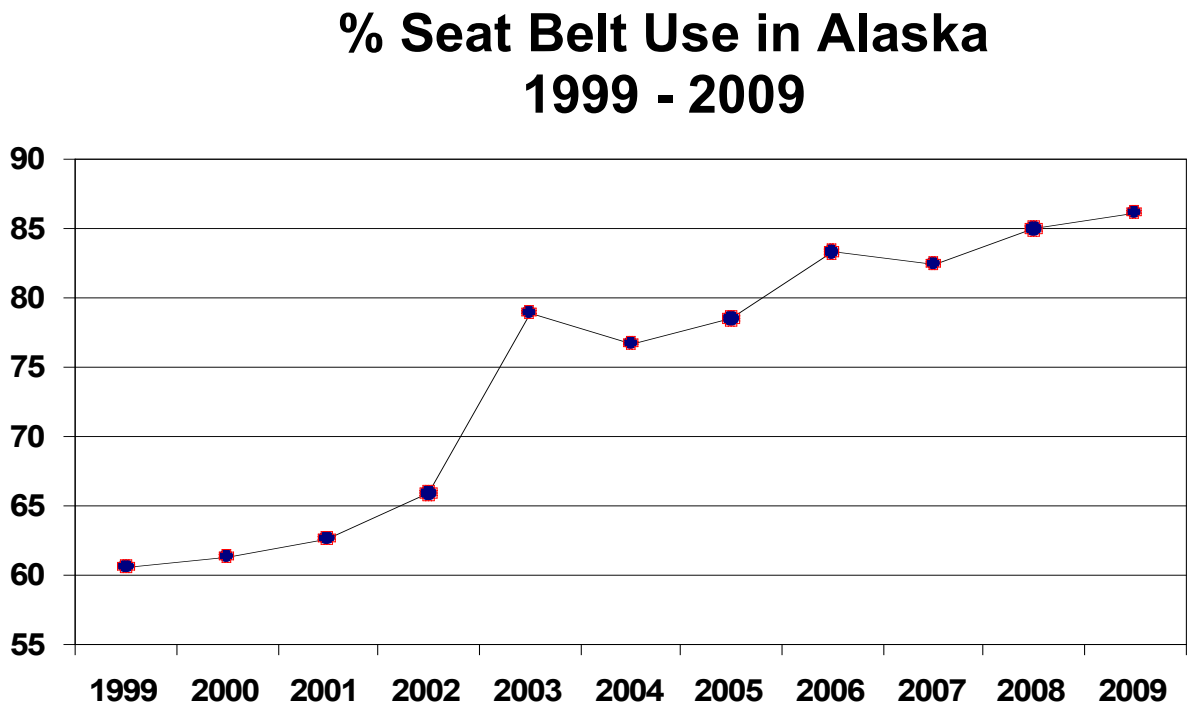

Table 1 shows the percent of drivers, passengers, and combined occupants who were wearing seat belts and the change across study years (weighted).

Table 1: Seat belt Use in Alaska, 2003-2009

		2009	2008	2007	2006	2005	2004	2003
All Vehicles	Share of Drivers Belted	0.866	0.859	0.828	0.834	0.785	0.772	0.797
	Share of Passengers Belted	0.841	0.812	0.810	0.825	0.779	0.750	0.762
	Share of Occupants Belted	**0.861**	0.849	0.824	0.832	0.784	0.767	0.789
Cars	Share of Drivers Belted	0.889	0.878	0.856	0.842	0.797	0.798	0.826
	Share of Passengers Belted	0.854	0.801	0.828	0.829	0.777	0.756	0.790
	Share of Occupants Belted	**0.882**	**0.862**	**0.850**	**0.840**	0.793	0.789	0.818
Vans	Share of Drivers Belted	0.874	0.898	0.859	0.887	0.838	0.810	
	Share of Passengers Belted	0.879	0.864	0.841	0.881	0.837	0.800	
	Share of Occupants Belted	**0.876**	**0.889**	**0.854**	**0.885**	0.838	0.808	
SUVs	Share of Drivers Belted	0.883	0.883	0.854	0.869	0.827	0.812	
	Share of Passengers Belted	0.858	0.844	0.834	0.853	0.830	0.786	
	Share of Occupants Belted	**0.879**	**0.874**	**0.850**	**0.865**	0.827	0.806	
Trucks	Share of Drivers Belted	0.813	0.792	0.753	0.770	0.716	0.689	0.707
	Share of Passengers Belted	0.782	0.764	0.742	0.761	0.706	0.685	0.670
	Share of Occupants Belted	**0.806**	**0.787**	**0.750**	**0.768**	0.714	0.689	0.699

According to federal guidelines, the reliability of the survey results should be within the 95 percent confidence interval. We calculated a **standard error of 0.002**. The data were analyzed and found to be well within a confidence interval of 95% as required by NHTSA guidelines.

Regional Differences

It is important to note that survey results reflect restraint use by the driver and outboard passenger in a probability sample of vehicles drawn from the most populated areas of Alaska. Included in the potential sample sites were the Municipality of Anchorage, the Matanuska-Susitna Borough, the Juneau Borough, the Kenai Peninsula Borough, the Fairbanks North Star Borough, as well as the boroughs of Kodiak, Ketchikan, and Sitka, which were not selected, in the random sample.

Table 2 presents the share of drivers, passengers, and occupants who were wearing seat belts, sorted by region and the changes across years. The table presents data from 2003 through 2009.

Table 2: Seat belt Use by Region

All Vehicles		**2009**	**2008**	**2007**	**2006**	**2005**	**2004**	**2003**
All Regions	Drivers Belted	0.866	0.859	0.828	0.837	0.785	0.772	0.797
	Passengers Belted	0.841	0.812	0.810	0.832	0.779	0.750	0.762
	Share of Occupants	**0.861**	0.849	0.824	0.832	0.784	0.767	0.789
Anchorage	Drivers Belted	0.876	0.874	0.839	0.848	0.821	0.812	0.822
	Passengers Belted	0.853	0.828	0.808	0.838	0.781	0.775	0.797
	Share of Occupants	**0.871**	0.865	0.833	0.846	0.812	0.804	0.817
Fairbanks	Drivers Belted	0.855	0.841	0.822	0.820	0.738	0.692	0.772
	Passengers Belted	0.835	0.783	0.797	0.755	0.675	0.658	0.737
	Share of Occupants	**0.851**	0.828	0.817	0.807	0.724	0.684	0.764
Juneau	Drivers Belted	0.796	0.816	0.770	0.758	0.839	0.724	0.716
	Passengers Belted	0.769	0.814	0.770	0.684	0.813	0.750	0.689
	Share of Occupants	**0.793**	0.815	0.770	0.745	0.833	0.730	0.709
Kenai/Soldotna	Drivers Belted	0.848	0.756	0.729	0.785	0.770	0.765	0.687
	Passengers Belted	0.840	0.709	0.717	0.819	0.797	0.817	0.588
	Share of Occupants	**0.847**	0.745	0.726	0.793	0.777	0.778	0.669
MatSu	Drivers Belted	0.864	0.837	0.803	0.784	0.687	0.767	0.670
	Passengers Belted	0.791	0.795	0.893	0.890	0.803	0.735	0.621
	Share of Occupants	**0.849**	0.826	0.826	0.809	0.716	0.759	0.658

Table 2 shows seat belt use in Alaska has risen 9 percent from 2003 to 2009. The greatest annual increase was from 2002 to 2003, when seat belt use by all occupants rose by 20 percent. In the 2009 surveys, there were slight increases observed in Anchorage, Fairbanks, and MatSu, while a huge increase was observed in the Kenai/Soldotna area. Juneau was the only area showing a decrease in seat belt usage, especially for passengers. Anchorage had the highest seat belt usage of any area in the state since the observational surveys began in 1997.

Table 3 presents the vehicles and the percentage of seat belt use by drivers and passengers in each borough sampled in 2009.

Table 3: Occupant Restraint Use (%) by Vehicle Type & Borough - 2009

	Area Wide		Anchorage	Fairbanks	Juneau	Kenai	Mat-Su
ALL VEHICLES							
Drivers Belted	86.6		87.6	85.5	79.6	84.8	86.4
Passengers Belted	84.0		85.4	83.5	76.7	84.0	79.1
% of Occupants Belted	**86.1%**		**87.1%**	**85.1%**	**79.3%**	**84.7%**	**84.9%**
CARS							
Drivers Belted	88.9		89.4	88.8	84.0	86.8	88.3
Passengers Belted	85.4		86.9	84.5	77.1	82.9	80.7
% of Occupants Belted	**88.2%**		**88.9%**	**88.0%**	**82.7%**	**86.1%**	**86.8%**
TRUCKS							
Drivers Belted	81.3		84.0	77.2	67.3	81.4	80.5
Passengers Belted	78.2		79.4	77.8	71.0	82.8	73.2
% of Occupants Belted	**80.6%**		**82.9%**	**77.3%**	**67.9%**	**81.9%**	**79.1%**
SUVS							
Drivers Belted	88.3		88.2	90.0	82.6	86.4	91.3
Passengers Belted	85.8		86.8	85.9	80.7	85.9	80.1
% of Occupants Belted	**87.9%**		**87.8%**	**89.2%**	**82.2%**	**86.4%**	**88.9%**
VANS							
Drivers Belted	87.4		87.0	89.9	82.8	86.5	88.7
Passengers Belted	87.9		88.8	89.5	73.7	86.5	88.0
% of Occupants Belted	**87.6%**		**87.6%**	**89.8%**	**82.0%**	**86.3%**	**88.4%**
MOTORCYCLES							
Driver Helmeted	72.8		77.6	67.9	64.3	69.2	68.6
Passenger Helmeted	97.6		95.2	100	100	100	100
% of riders Helmeted	**73.9%**		**78.3%**	**70%**	**64.6%**	**69.8%**	**68.8%**

Cell Phone Use

To establish a baseline, we asked the surveyors in all communities to document cell phone use for the driver of the vehicle. The observed cell phone usage rate for drivers was 5.6% in the 2009 Alaska NOPUS surveys. The observed usage rates by borough were: Juneau 7.0%, MatSu 6.9%, Kenai/Soldotna 6.6%, Anchorage 5.6%, and Fairbanks 4.2%.

Daytime Headlight Use
The use of daytime headlights on motor vehicles is a proven crash prevention strategy, so we wanted to measure the frequency of their use. Anchorage was the only city in which headlight use was observed. Of the 6,668 cars observed, 22% had their headlights on during daylight hours.

Conclusion
The overall observed seat belt usage rate for Alaska increased to its highest level to date in 2009. This rate included good increases in some areas and declines in other areas. The sampling methods and statistical analyses used in this survey yielded results well within the parameters required by the Alaska Highway Safety Office and the National Highway Traffic Safety Administration. Van occupants have been the reigning leaders for seat belt usage, but were surpassed by SUVs and cars this year. The lowest seat belt usage rates by vehicle were for truck occupants, especially passengers. With only a couple of exceptions, passenger usage rates were lower than that of the drivers. Truck occupants had a usage rate that was about nine percentage points lower than the other types of vehicles. There was an increase in every borough surveyed this year, except for Juneau. The obvious finding for the motorcycle rider observations was that passengers were far more likely to be helmeted than the drivers were (Alaska law requires helmet use for passengers but not for drivers).

Future interventions may want to target passengers in general, truck drivers and passengers in particular, and occupants in the Juneau area.

APPENDIX A

METHODOLOGY

The survey methods used in 2009 were designed to adhere to the *Uniform Criteria for State Observational Surveys of Seat belt Use,* published in the *Federal Register 2002* (updated in Electronic Code of Federal Regulations as of May 7, 2009) for safety belt and motorcycle helmet use surveys. The sample design was based on previous surveys in Alaska and the NHTSA guidelines. The Alaska study complies with the 1994 NOPUS report on probability-based surveys.

Geographic Area Covered

Alaska has one mile of road for every 42 square miles of land area. The U.S. average is one to one and the next lowest state is Nevada with one to 2.5. Despite low population and low road density, Alaska has nearly 23 miles of road per 1,000 people. This is 50% more than the US average of 15 miles of road per 1,000 people. Nearly 30% of Alaska's population is not connected by road or ferry to the continental road network. Less than 20% of Alaska's roads are paved whereas 91% of roads are paved in the other 49 states.

The 2008 Census estimates were used to identify the smallest land area on the road network that included 85 percent of the state's population. Alaska is not divided geographically into counties, but instead uses boroughs and census tracts. The boroughs with road systems that could be included in the potential sample were Anchorage, Fairbanks-North Star, Matanuska-Susitna, Kenai Peninsula, Valdez-Cordova, Kodiak, Juneau, Ketchikan, and Sitka.

AIPC stratified the Primary Sampling Units (PSUs) by Average Annual Daily Vehicle Volume into “High”, “Medium”, and “Low” volume roads. Table A.1, below, displays the stratification design and selected PSU’s appear in bold italics. PSUs were selected by assigning each census area measures of size in proportion to its 2008 population.

TABLE A.1. POTENTIAL SAMPLE SITES

Primary Sampling Units	2008 est. Population
Anchorage Borough	**284,994**
Fairbanks N.S. Borough	**89,896**
Mat-Su Borough	***82,515***
Juneau Borough	**30,427**
Kenai Peninsula Borough	**52,990**
Kodiak Island Borough	13,373
Ketchikan	12,993
Sitka Borough	8,615
Valdez	5,522
Total population in sample frame	**581,325**

2008 Census estimated statewide population 679,720

The potential sampling regions included 86 percent of Alaska's population and over 95% of the state's driving population. Weighting the observation site selection by average annual daily traffic volume helped to accommodate for population density. After communities were chosen, each of the PSUs was also divided into high, medium, and low traffic volume roads. All controlled intersections within the PSUs were eligible for inclusion in the random sample of observation sites within the sampled communities.

Distribution of Sample Observations by PSU

We selected the number of sample observation periods using a sample size calculator. Average Annual Daily Vehicle Volume (AADVV) was used for stratification of intersections and distribution of 264 observation sites across the five boroughs. Those observations were divided into sixty-minute observation periods, which included travel and field-editing tasks. The distribution of field observation periods by PSU was based on relative population distribution and is shown below.

	Number of Observation Periods
Anchorage	112
Fairbanks	56
Mat-Su	40
Juneau	32
Kenai/Soldotna	24
Total Observation Periods:	**264**

Stratification of Observation Points

The Alaska Department of Transportation & Public Facilities (AK DOT&PF) provided 2007 data on AADVV for all PSU intersections. AIPC used these data to classify intersections by "high", "medium", and "low" average daily traffic volume.

Road segments located on military reservations were not included in the sample. The AADVV for all controlled intersections in each PSU was totaled and then divided by three (for the traffic volume stratification). For each intersection there were two roads available for inclusion in the sample. A random numbers generator was used to select which roads at which intersections would be included in each stratum. This process made it possible that the same intersection could be sampled using different cross-streets.

Time of Day

There are an extreme number of summer daylight hours in Alaska in June (18-24 hours), and we felt there was a greater risk to observers between 9:00 p.m. and 7:00 a.m. Thus, we limited observations to the period between 7:30 a.m. and 9:00 p.m. These hours were then divided into two shifts: 7:30 a.m. to 3:30 p.m. and 1:00 p.m. to

9:00 p.m. The daily shift was determined by random selection for each community.

Eligible Vehicles and Occupants to count

The surveyors observed drivers and front seat outboard passengers in noncommercial, non-emergency, passenger motor vehicles. Additionally, observers recorded motorcycle helmet use by both drivers and passengers. Vehicles with tinted windows or other obstructions, which limited the view of the observer, were not counted. Occupants with the shoulder belt behind them were counted as not wearing their seat belt.

Observation Process

The location, day, and time were scheduled as detailed above and then the direction of traffic was randomly assigned. The observers were provided detailed maps and were trained in how to determine the assigned direction of traffic to be surveyed and where to stand when making the observations. Since the site and direction of traffic were both randomly selected, the observers were told to only count vehicles in the lane closest to them. This increased the accuracy of the count and reduced the safety concerns that would have been created had observers tried to stand on medians to count traffic in inside lanes.

Observer Reliability

Each observer was provided with one-on-one training in the classroom and on the street. They were asked to use the observation schedules provided to them to show they understood when, where, and how to conduct the surveys. Each observer was asked to make and record observations until they were in consistent agreement with the trainer's observations. In addition to the extensive training and manual that each observer received, other quality control efforts focused on the accuracy of the observations. Observers were selectively monitored to make sure they were at the correct location, at the correct time, observing traffic moving in the required direction and lane, and for the prescribed amount of time.

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APPENDIX B

* **Observer Training Manual**

* **Sample Assignment Schedule**

SEATBELT OBSERVATION TRAINING MANUAL

ALASKA SEAT BELT SURVEYS 2009

Prepared by the

ALASKA INJURY PREVENTION CENTER

In conjunction with the

ALASKA HIGHWAY SAFETY OFFICE

June 2009

PURPOSE OF THIS MANUAL

The Alaska Highway Safety Office (AHSO) and the National Highway Traffic Safety Administration wants to save lives and prevent motor vehicle related injuries through proper use of occupant restraints or seat belts. To help them know how many people use occupant restraints, to develop programs aimed at specific groups, and to measure the impact of safety programs, you and other people around the state will record the use of safety restraints. This manual describes the process and procedures you will follow to observe and record safety belt, child restraint, and motorcycle helmet use. All observers must record the same things in the same way so that our methodology and data can be compared with other locations, communities, and states. You are the researchers who collect the data that help us determine how many people are wearing safety belts. The Alaska State Legislature passed several laws requiring the use of safety restraints. In June 1985, a law went into effect requiring children aged seven and under to be appropriately restrained. In addition, children aged four and under are to be in a restraint that complies with federal safety standards. In February of 1989, the legislature passed a provision requiring adult use of safety belts. In May 2006, a primary seat belt law became effective, which allows police officers to stop a motorist if they are not buckled.

The Alaska Highway Safety Office is the agency charged with reducing the number of deaths and injuries and the societal costs that result from traffic crashes. As a part of their efforts, AHSO monitors seatbelt compliance rates in Alaska. AHSO asked the Alaska Injury Prevention Center (AIPC), to collect and analyze seatbelt use in Alaska in 2009.

You are the most important person in this process because you collect the data that lets AHSO determine safety restraint use. Without accurate and consistent observations among observers, the data won't tell us what we need to know.

METHODOLOGY

SAMPLE DESIGN

The manner in which we selected the observation locations was based on requirements listed in the Federal Register dated June 24, 2003, 23CFR, Chapter III, Subchapter D, Part 1340, Sections 1340.1 through 1340.5 and Appendixes. Some alterations have been made to allow for Alaskan conditions (such as daylight hours).

Much of the state of Alaska has no road systems, so we limited our potential field or boroughs to the largest ones that comprised 85% of the state's population. From this group we randomly selected 5 boroughs in which to do the observations. The areas chosen included Anchorage Municipality, Fairbanks North Star Borough, Kenai Peninsula Borough, Matanuska-Susitna Borough, and Juneau City and Borough. The intersections within these areas were then stratified by high, medium, and low traffic volume. We then selected a random sample from each of the strata.

Because there is lower traffic volume on rural roads and thus more variability in seatbelt use, we made more observations on these roads than would be expected from the proportion of traffic. This is known as over-sampling.

WHAT and WHO TO COUNT

Eligible vehicles include **all privately owned cars, trucks, vans, and SUVs** (sport-utility vehicles). To be counted as a truck, the vehicle must have a bed, but the bed may be covered with a canopy or camper. RVs, motor-homes, commercial, and emergency vehicles are not counted. Examples of these include taxi cabs, delivery vans, police cars, and other types of official or governmental vehicles.

Count	Don't Count
Cars	Commercial vehicles
Trucks	Tinted windows to dark to see
SUVs	Motor homes and RVs
Vans	Older vehicles without shoulder belts.
Motorcycles	If you can't see if they are belted or not

Eligible occupants are the **driver** of the vehicle and the **outboard, front seat passenger**. If there are three passenger seats in the front of the vehicle only count the driver and outermost passenger. If the outboard passenger is age four and under, you will record whether the child is properly fastened in a child safety seat.

Only count **shoulder belts** that are worn correctly. If the shoulder belt is behind the person's back, record this as not wearing a seatbelt. Even if you can see a lap belt in use, record this as not wearing a seatbelt. If vehicles where shoulder belts are not available, as with older trucks and cars, they should not be counted at all.

In addition, you will record whether the driver of a **motorcycle** is wearing a helmet. If there is a passenger on the motorcycle, you will record whether the passenger is wearing a helmet also.

PROCEDURES

Document your beginning mileage at the first site and your ending mileage at the last site of the day. Write the **city on the mini cassette and which days are included on the tape** (ex. Juneau 1, 2, 3. When arriving at **each** predetermined observation site, you should press "record" and say the:

- **City name**
- **Date**
- **Time of day**
- **Intersection** (as listed on your assignment sheet)
- **Direction of traffic observed**

For example, you might say: "Juneau - June 6th – 8:20am – Egan Dr. and Willoughby - East".

This is very important so we can match the observations with the intersection!

When you turn on the recorder, hesitate for a second so your words are not cut off and then speak slowly and clearly into the microphone. It will be helpful to say the current time every 5-10 minutes as a place holder on the tape.
We have discovered through field tests that to accurately collect and record all of the required information, we need to observe vehicles that have stopped or are moving slowly. Thus, we selected controlled intersections or on- and off-ramps.
When observing vehicles at any of the following:

- Stop sign
- Stop light
- Yield sign
- Highway on-ramp or off-ramp
- Right turn only lane

You will need to record information for **every vehicle** in the lane nearest you unless the vehicles are moving too fast to see inside.

OBSERVATION SITES

Your Assignment Sheet gives the date, time, and location where you are to observe. You will record your observations for the **45-minute period** specified on the sheet. You then proceed to the next location or take a short break. We have divided the cities and the roads into geographical areas so that all assignments on a given day can be easily reached in the time allocated. Travel time should be less than 5 minutes, so you should have a ten minute break every hour. If you choose to go directly to the next site and start counting, then your shift could be finished in less than 8 hours.

The location will specify two streets and a direction of traffic. The **first street (in yellow) is the street you will be observing**; the second street is the nearest intersection. The direction specified in the description is the **direction of travel of vehicles** on the first street that you will observe. For example:

Bragaw and DeBarr - North

This means that you would observe the vehicles traveling north on Bragaw as they come to the intersection with DeBarr. You would stand nearest to where the north bound vehicles will stop for the light.

Some of the larger intersections will require more detail. For example:

International Airport W, off ramp to Minnesota S
This means that you would observe the vehicles traveling west on International Airport after they cross the overpass and are on the off ramp that directs the traffic to go south on Minnesota.

Each time you move to a new location you will start the session by saying**:** the **city, date, time, intersection number and intersection name.** When the cassette ends turn it over and start by saying it is a continuation of: city, date, time, and intersection. Please say when you are finished at an intersection or for the day. **Watch the tape so you aren't trying to record after the tape has stopped.**

OBSERVED LANE

You will observe only one lane of traffic during each observation period. You will observe the lane closest to you. If that lane is a turning lane only, then count every car. Your safety is of paramount importance to us, so only observe from a safe place.

SUPPLIES

We will provide you with the supplies needed to conduct your observations. These supplies include: a mini-cassette recorder, at least a week's supply of 90-minute cassettes, batteries, and an orange safety vest.

USING THE CASSETTE RECORDER

These cassette recorders were selected for their ease of use. They are preset to record with manual operation (NOT voice actuated), and at ½ speed. To record just push the REC button; push PAUSE when there is a delay between vehicles; press PAUSE again to resume recording. Speak clearly and loud into the cassette recorder; remember there is a lot of traffic noise in the background. Practice with it a little before you begin, to familiarize yourself with the equipment and occasionally playback the recording to make sure it is working properly.

Now we will explain how to record the actual observations. Examples are:

"Car - driver yes"
"Truck - driver yes, passenger no"
"SUV - driver no, passenger yes"
"Motorcycle - driver no, passenger yes" no/yes refers to their helmet use.
"Van - driver yes, passenger yes"

CORRESPONDANCE
Please feel free to contact me at any time (contact numbers at the end). You will be provided with mailing envelopes or reimbursed for returning the used mini-cassettes to AIPC each week.

ALTERNATE SITE
In case of construction or some other hazard which makes it unwise or impossible to observe at the specified location, you will go to the next site on the list. The last site for the day will then be a repeat of the first site you did that day with the direction reversed (unless it is a one-way, then repeat same direction). Example: Site 2 is closed due to construction so you go to site 3 instead. The last site of the day will repeat number 1 (Bragaw and DeBarr N) but will be Bragaw and DeBarr S. Another possible alternative if your assigned site is under construction would be to measure traffic that is being detoured around your site. Call me for questions or decisions.

SAFETY TIPS

Here are some other guidelines to help protect you:

- Always wear your safety vest.
- Don't go on the roadway surface at any time.
- Stay on the right-of-way facing traffic.
- Avoid active construction sites.
- Don't cross the highway unnecessarily; cross only at designated locations.
- Don't play around or do anything that will distract passing drivers.
- Don't work while under the influence of alcohol, drugs or prescription medications. This is mandatory.
- Dress appropriately for the weather.
- Don't bring children or pets with you.
- Park off the road away from the pavement's edge. Use parking lots whenever available.
- Do stay alert for traffic when crossing roads and driveways.
- Cross with signals.
- Stay back from gravel shoulders; people use these shoulders as a turn lane.
- Remember that people may not be aware that you are there, so
- **PLEASE BE CAREFUL**

For additional information contact:

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SAMPLE Observation Schedule

MatSu

2009

Monday June 2, 2009

Day/Observ	TIME	STREET 1	STREET2	AADT	Strata	MAP	Direction
1/1	7:30am-3:30pm	PALMER-FISHHOOK ROAD	WASILLA/FISHHOOK ROAD	2455	L	1	S
1/2	7:30am-3:30pm	TRUNK ROAD, PALMER	PALMER-FISHHOOK ROAD	5048	L	1	E
1/3	7:30am-3:30pm	FARM LOOP ROAD * PAL	PALMER-FISHHOOK ROAD	3670	L	2	S
1/4	7:30am-3:30pm	GLENN HIGHWAY	PALMER-FISHHOOK ROAD	8309	L	2	S
1/5	7:30am-3:30pm	SCOTT ROAD * PALMER	GLENN HIGHWAY	9303	L	3	E
1/6	7:30am-3:30pm	ALASKA STREET * PALM	DOGWOOD AVENUE WEST	4870	L	3	N
1/7	7:30am-3:30pm	FARM LOOP ROAD * PAL	GLENN HIGHWAY	3817	L	2	E
1/8	7:30am-3:30pm	GLENN HIGHWAY	BUFFALO MINE ROAD	3016	L	4	turning on BM road

Tuesday June 3

2/1	12-8pm	LAKEVIEW ROAD	WASILLA/FISHHOOK ROAD	2868	L	5	NW
2/2	12-8pm	SCHROCK ROAD WASILLA	LUCILLE ROAD WASILLA	1607	L	5	E
2/3	12-8pm	WASILLA/FISHHOOK ROA	SPRUCE AVENUE * WASI	4090	L	5	S
2/4	12-8pm	WASILLA/FISHHOOK ROA	MULCHATNA DRIVE * WA	4090	L	5	N
2/5	12-8pm	SCHROCK ROAD WASILLA	SELDON ROAD MATSU	2248	L	5	S
2/6	12-8pm	E. SELDON EXTEN/BOGARD	WASILLA/FISHHOOK ROAD	6874	L	5	W
2/7	12-8pm	BOGARD ROAD WASILLA	SEWARD MERIDIAN ROAD	11914	M	6	W
2/8	12-8pm	BOGARD ROAD WASILLA	TRUNK ROAD, PALMER	11112	M	6	E

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