AN ASSESSMENT OF SAFETY BELT USE IN ALASKA SUMMER 2003

prepared for

Alaska Highway Safety Office

prepared by

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Summer 2003

ABSTRACT

In April 2003, the Alaska Highway Safety Office (AHSO) contracted with the University of Alaska's Institute of Social and Economic Research (ISER) to conduct an observational survey of seatbelt use in Alaska. The Alaska Highway Safety Office, along with the National Highway Traffic Safety Administration, wanted to know the degree to which Alaskans comply with seatbelt laws in Alaska. This report details the results of an observational survey of vehicles in Alaska.

During May, June, and July 2003, ISER researchers recorded and analyzed seatbelt use by drivers and front seat passengers in both passenger cars and trucks. We sampled seatbelt use in cities and towns on the road system. The sample area includes 85 percent of the state's population. In the sample area, 80 percent of drivers and 76 percent of outboard passengers were wearing seatbelts. The share of occupants wearing belts was 79 percent. This number reflects a 13 percent increase over what we observed in 2002. We excluded observations from the analysis where the observer was unsure whether the occupant was wearing a seatbelt.

We also compared rates for cars and trucks. Eighty-three percent of car drivers and 71 percent of truck drivers were using seatbelts. Seventy-nine percent of car passengers and 67 percent of truck passengers were belted. The rate for occupants of cars-82 percent-was higher than that for occupants of trucks-70 percent.

INTRODUCTION

Background

In June 1984, the Alaska State Legislature passed a law (AS28.05.095) requiring children aged six and under to be restrained while being transported in a vehicle. In addition, children under the age of four years are to be 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 children under sixteen and by adults. To be eligible for certain federal grants, states must document levels of compliance with seatbelt laws.

In April 2003, the Alaska Highway Safety Office contracted with the University of Alaska's Institute of Social and Economic Research (ISER) to conduct an observational survey of seatbelt use in Alaska. The Alaska Highway Safety Office, along with the National Highway Traffic Safety Administration, wanted to know the degree to which Alaskans comply with seatbelt laws in Alaska. This report details the results of an observational survey of vehicles in Alaska.

DATA COLLECTION

Overview of Survey Design

Our study design complies with criteria published in the *Federal Register* in March 2000, as do all of our previous studies. The sample was drawn from areas that contain 85 percent of the state's population. The survey sample consisted of 450 randomly selected observation periods at controlled intersections on both major and local roads. Trained observers recorded shoulder belt use at intersections selected in a multi-stage probability sample for forty-minute periods between 7:00 a.m. and 8:30 p.m. in May and June of 2003. Reported percents are weighted to properly reflect area-wide totals.

Training

Observers attended a training session and received a training manual designed for this project (Appendix B). Following the classroom training, observers practiced recording restraint use while under direct supervision, after which everyone returned to the classroom and any points of confusion were clarified. Some observers returned to the streets for more supervised practice. Then, observers returned to their home communities and began observing when their computer-generated schedule dictated. Two of the observers had recorded seatbelt use for this project every year since 1992. The field supervisor answered questions during the field phase and was in frequent contact with each observer.

Data Collection

Observers recorded safety restraint use for a forty-minute period at one site and then had thirty minutes to drive to the next site. They recorded their observations on a form that ISER designed and pre-tested (Appendix B). They recorded information on each non-commercial, non-emergency passenger vehicle at controlled intersections other than stoplights. At stoplights observers recorded information on the first through ninth eligible vehicle. Safety restraint use was recorded on each vehicle when there was a designated right-turn-only lane at a stoplight. There was a place on the form to note when the traffic was moving too quickly to record information on each vehicle, and observers recorded the interval that they used. Finally, observers recorded any comments they felt might be helpful when interpreting the data.

DATA ANALYSIS

Weighting

Observations were self-weighting with respect to time of day, day of week, and census tract. Census tracts were selected with probabilities proportional to the population.

To develop estimates we took into account disproportionate sampling by weighting by the inverse of the probability of selection at each sampling stage. Primary Sampling Units (PSUs) were weighted by the ratio of the proportion of the population to the proportion of observation periods within that PSU. Local and major roads were weighted by the inverse of their sampled proportion of intersections divided by their actual proportion of intersections. Because we didn't sample local roads in all census tracts, we also weighted local roads by the inverse of the population in each tract divided by the population of the PSU. We also weighted observations by the inverse of the sampled number of lanes of traffic at the intersection divided by the total lanes of traffic. We adjusted the lane weight for on- and off-ramps in Anchorage.

We weighted and analyzed the data using SPSS version 10.1. SPSS is a program for managing data and performing statistical analyses. It is particularly adept at manipulating data sets with many cases and variables.

Findings

We observed a total of 26,151 vehicle occupants (19,707 drivers and 6,444 outboard passengers). Seventy-two percent of these occupants were riding in cars, 28 percent were in trucks.

In Alaska, 80 percent of drivers and 76 percent of passengers were wearing seatbelts. The share of occupants wearing seatbelts was 79 percent. This is an increase of 13 percent above that observed in 2002. The rate for occupants of cars was higher than that for trucks. Eighty-two percent of car occupants compares with 70 percent of truck occupants.

Table 1 shows the percent of drivers, passengers, and occupants who were wearing seatbelts. Data cover 1997 to 2003.

Table 1: Seatbelt Use in Alaska, 1997-2003

		2003	2002	2001	2000	1999	1998	1997
All Vehicles	Share of Drivers Belted	0.797	0.663	0.634	0.615	0.609	0.613	0.604
	Share of Passengers Belted	0.762	0.643	0.602	0.607	0.599	0.601	0.572
	Share of Occupants Belted	0.789	0.658	0.626	0.613	0.606	0.610	0.596
Cars	Share of Drivers Belted	0.826	0.700	0.675	0.656	0.652	0.653	na
	Share of Passengers Belted	0.790	0.664	0.625	0.646	0.631	0.632	na
	Share of Occupants Belted	0.818	0.691	0.662	0.654	0.646	0.648	na
Trucks	Share of Drivers Belted	0.707	0.556	0.518	0.490	0.478	0.513	na
	Share of Passengers Belted	0.670	0.568	0.528	0.474	0.489	0.509	na
	Share of Occupants Belted	0.699	0.558	0.520	0.487	0.481	0.512	na

According to federal guidelines, the reliability of survey results should be expressed as the ratio between the standard error and the percent of the target population observed to wear seatbelts. This ratio, termed the relative standard error, should be less than or equal to five percent. Using SPSS statistical software, we calculated a standard error of .00258. The relative standard error for the percent of occupants who are belted is .0033.

There were 126 motorcycles in the sample. Sixty-six percent of drivers were wearing helmets. The number of motorcycles is too small to use in more detailed analysis and still be confident in the reliability of the results.

We noted in our survey when children were outboard passengers. Area wide, 75 percent of children were wearing seatbelts. This is an increase of 22 percent over 2002. In Anchorage, 78 percent of children were wearing seatbelts. The number of children in our samples from other areas is too small to use in more detailed analysis. Statewide, we observed 519 children riding as outboard passengers.

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 this area are the Municipality of Anchorage, the Matanuska-Susitna Borough, the Juneau Borough, the Kenai Peninsula Borough, and the Fairbanks North Star Borough.

Table 2 presents the share of drivers, passengers, and occupants who were wearing seatbelts by region. The table presents data from 1997 through 2003.

It shows that seatbelt use in Alaska has risen by about 19 percent from 1997 to 2003. The biggest annual increase was from 2002 to 2003 when seatbelt use rose by 13 percent. From 2002 to 2003, Fairbanks had the biggest gain, increasing by nearly 15 percent.

We have been conducting the seatbelt survey since 1992 and find the 2002 to 2003 increase remarkable. Clearly something affected usage rates by the time we conducted our observations in the summer of 2003. Until 2003, we observed increases of about one percent per year. We were astounded by the increase from 2002 to 2003 of 13 percent. We used the same methodology in all the years that we have done the survey. We have carefully reviewed our data collection and analysis methods for inadvertent changes or errors that would account for this increase. We did not find any methodological errors or inconsistencies.

Table 2: Seatbelt Use by Region

All Vehicles		*2003*	*2002*	*2001*	*2000*	*1999*	*1998*	*1997*
All Regions	Drivers Belted	0.797	0.663	0.634	0.615	0.609	0.613	0.604
	Passengers Belted	0.762	0.643	0.602	0.607	0.599	0.601	0.572
	Share of Occupants	0.789	0.658	0.626	0.613	0.606	0.610	0.596
Anchorage	Drivers Belted	0.822	0.690	0.657	0.627	0.626	0.634	0.632
	Passengers Belted	0.797	0.669	0.631	0.615	0.617	0.623	0.605
	Share of Occupants	0.817	0.685	0.651	0.624	0.624	0.631	0.625
Fairbanks	Drivers Belted	0.772	0.627	0.601	0.607	0.553	0.582	0.562
	Passengers Belted	0.737	0.594	0.592	0.605	0.559	0.539	0.543
	Share of Occupants	0.764	0.619	0.599	0.607	0.555	0.571	0.557
Juneau	Drivers Belted	0.716	0.633	0.599	0.568	0.577	0.631	0.577
	Passengers Belted	0.689	0.652	0.527	0.557	0.575	0.615	0.551
	Share of Occupants	0.709	0.638	0.581	0.565	0.577	0.628	0.570
Kenai	Drivers Belted	0.697	0.558	0.542	0.532	0.611	0.540	0.562
	Passengers Belted	0.588	0.559	0.509	0.572	0.583	0.566	0.504
	Share of Occupants	0.669	0.558	0.533	0.544	0.603	0.547	0.544
Matsu	Drivers Belted	0.670	0.556	0.555	0.557	0.536	0.561	0.565
	Passengers Belted	0.621	0.524	0.550	0.586	0.504	0.555	0.529
	Share of Occupants	0.658	0.549	0.553	0.565	0.526	0.560	0.555

Table 3 presents the actual count of vehicles in our sample in 2003.

Table 3: Unweighted Number of Vehicles Observed in 2003

	Area Wide	Anchorage	Fairbanks	Juneau	Kenai	Mat-Su
VEHICLES						
Drivers Belted	15,442	8,111	2,846	1,937	1,161	1,387
Passengers Belted	4,825	2,558	896	624	318	429
Occupants Belted	20,267	10,669	3,742	2,561	1,479	1,816
CARS						
Drivers Belted	11,451	6,265	2,000	1,523	738	925
Passengers Belted	3,662	2,032	631	498	205	296
Occupants Belted	15,113	8,297	2,631	2,021	943	1,221
TRUCKS						
Drivers Belted	3,990	1,846	846	413	423	462
Passengers Belted	1,163	526	265	126	113	133
Occupants Belted	5,153	2,372	1,111	539	536	595
Total Cars and Trucks	20,111	9,969	3,900	2,696	1,592	1,954
MOTORCYCLES						
Driver Helmeted	83	40	21	2	6	14
Passenger Helmeted	16	7	6	0	2	1
Total Motorcycles	126	65	30	5	9	17

APPENDIX A

METHODOLOGY

The survey methods were designed to adhere to the *Uniform Criteria for State Observational Surveys of Seat Belt Use* published in the *Federal Register* (March 14, 2000) for safety belt and motorcycle helmet use surveys. In large part, the sample design was based on the approach used in the 1986 study conducted in Washington State by Westat, combined with information from the 1991 Oregon study conducted by Intercept. We also believe the study complies with the 1994 NOPUS report on probability-based observational surveys.

Geographic Area Covered

Since much of the geographic extent of Alaska is off-the-road network and since private passenger vehicle traffic in remote settlements is minimal and expensive to monitor, we used 2000 census figures to identify the smallest land area on the road network that includes 85 percent of the state's population. Census areas (Census geographic units in Alaska are analogous to counties) included in the sample frame are Anchorage, Fairbanks, Southeast Fairbanks, Matanuska-Susitna, Kenai Peninsula, Valdez-Cordova, Haines, Kodiak, Juneau, Ketchikan, Sitka, and portions of the Yukon-Koyukuk Census Area (i.e. the Koyukuk mid-Yukon census sub-area which encompasses the Parks Highway connecting Anchorage and Fairbanks).

We stratified the census areas by urban-rural and by self-representing vs. sample element. Table A.1, below, displays the stratification scheme. Selected Primary Sampling Units (PSUs) appear in italics. PSUs were selected by assigning each census area measures of size in proportion to its 1990 population. A random number was selected that was equal to or less than the total number of measures of size in that census area. Given the high concentration of population in a single PSU within the sample strata, the largest PSUs were much more likely to be selected. Indeed, the largest PSU was selected in every case. Since even the large PSUs include rural areas, however, we do not believe that this results in an inadvertent sample bias.

TABLE A.1. SAMPLE FRAME

Urban	2000 Population
Self-representing	
Anchorage Borough	260,283
Fairbanks N.S. Borough	82,840
Sample Element	
Juneau Borough	30,711
Ketchikan	14,070
Sitka Borough	8,835
Ex-urban Roaded (all sample elements)	
Kenai Peninsula Borough	49,691
Valdez-Cordova Census Area	10,195
Kodiak Island Borough	13,913
Mat-Su Borough	59,322
Koyukuk mid-Yukon Census sub-area	6,551
Southeast Fairbanks Census Area	6,194
Haines Borough	2,392
Total population in sample frame	544,997
2000 Census statewide population	626,932

The selected PSUs cover the three regions encompassed by the road network. The assigned number of observation periods appears below.

		Number of Observation Periods
Anchorage	(Southcentral)	180
Fairbanks	(Interior)	90
Juneau	(Southeast)	60
Kenai	(Southcentral)	60
Mat-Su	(Southcentral/Interior)	60
Total Observation Periods:		450

Distribution of Sample Observations by PSU

We distributed our sample observation periods proportional to the square root of the population size of the PSUs. This is the approach adopted by Washington State to improve the efficiency of sample estimates assuming that population size is correlated with estimates of average daily miles traveled. Available project resources were sufficient to support 450 forty-minute observation periods and associated travel and field-editing tasks. The distribution of field observation periods by PSU is shown above.

Stratification of Observation Points

We followed the model used in the Washington study and stratified roads into two frames: local roads and major roads. We first categorized roads according to their average daily traffic (ADT) based on numbers published by the Alaska Department of Transportation and Public Facilities (DOT&PF). In Anchorage, major roads were those with an ADT over 20,000. These were roads classified by DOT&PF as major arterials, expressways, and freeways. In Kenai, Matanuska-Susitna, and Juneau, the major roads were those with an ADT over 5,000, while in Fairbanks the ADT was over 7,000. Except for road segments located on military reservations (where seatbelt laws are actively enforced), all remaining roads were classified as local.

We distributed the sample of observation periods at a ratio of 60 percent major roads to 40 percent local roads. According to Rick Lau in the Planning Department of the Highway Data Section at the DOT&PF, they assume that 80 percent of the traffic is on major roads and 20 percent is on local roads. Our understanding from the 1986 Washington study was that there is more variability in seatbelt use on local roads than major roads (Lago, 1986). Thus, they had over-sampled on local roads to improve the efficiency of the sample. Based on the same logic, we oversampled local roads as well.

Local Road Selection

Within each PSU we selected two or three census tracts as a second stage of sample selection for local roads. Tracts were selected with probabilities proportional to 1990 population counts. To make sure that our observations were accurate, we wanted to observe vehicles stopped or traveling slowly at controlled intersections or entering or exiting freeways. Thus, we field-listed each controlled intersection within each selected tract. A controlled intersection was one where there was a light or sign that slowed vehicles traveling in a particular direction. An intersection of two local roads involving a four-way stop sign would produce four controlled intersection listings. Because we did not have traffic counts for these local roads, we selected observation locations for local roads with equal probability.

Major Road Selection

We enumerated all controlled intersections having major roads in each selected PSU. Controlled intersections included on- and off-ramps. We associated Average Daily Traffic (ADT) estimates with each controlled intersection. Major road observation points were selected with probabilities proportional to the associated ADT.

Again, so that we could accurately collect the desired information, we needed locations where vehicles moved slowly. We listed all controlled intersections and on- and off-ramps. We linked each road segment with an ADT estimate and selected segments with a probability proportional to the ADT.

Time of Day

Although there are a high number of summer daylight hours in Alaska, 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 7:00 a.m. and 9:00 p.m. These hours were then divided into two shifts: 7:00 a.m. to 2:00 p.m. and 2:00 p.m. to 9:00 p.m. All days of the week were included in the sample. Shifts and days of the week were selected with equal probability.

We wrote a computer program to generate an observation schedule for each observer. For each observation week, the program selected five days without replacement. It then selected a shift for each day. It selected either local or major roads for an observer shift with a .4/.6 probability. If the shift consisted of local roads, the program chose a tract from which seven local road observation points were selected with replacement. There were six scheduled observation periods in a shift. The seventh selected observation point was held in reserve in case construction or other events made it impossible to safely observe traffic at the originally scheduled observation point.

Eligible Vehicles

We observed drivers and front seat outboard passengers in non-commercial, non-emergency passenger motor vehicles. The outboard passenger could have been a child in a child safety system. Additionally, observers recorded motorcycle helmet use by both the driver and the passenger.

Observation Process

The computer program that selected a location also randomly assigned the location to a specific time. The location, including the direction of traffic to be observed, was specified on the Sample Assignment Form (Appendix B). When there was more than one lane of traffic in the specified direction, the observer referred to the instructions on the Lane Selection Chart (Appendix B).

Quality Control

Computer generation of:

- Morning or afternoon shift
- Time period
- Day of week
- Strata (major or local)
- Site
- Alternate site
- Direction of travel, and
- Lane to observe

were to eliminate the possibility of observer bias in any of these steps.

In addition to extensive training and a manual that each observer received, other quality control efforts focused on the accuracy of the observations. Observers were secretly monitored to make sure they were at the correct location, at the correct time, observed traffic moving in the required direction and lane, and for the prescribed amount of time. On occasion we sent two observers to the same site and each recorded observations independently. These observations of the same site were entered into SPSS, checked for consistency and, then, the second set of data was deleted from the file. Finally, the data were entered twice to ensure accuracy.

APPENDIX B

Seatbelt Observation Form
Lane Selection Chart
Sample Assignment Form
Observer Training Manual

OBSERVER # _____ Page ____/____

SEATBELT OBSERVATION FORM

SITE # _____ DATE _____ TIME # _____

PSU _____ L/M _____ LANE _____ of _____ SHEET #_____

Type Vehicle			Driver Belted			Passenger Belted					Motorcycle Helmeted			Cycle/Psnger Helmeted				Interval / Remarks
Car	Truck	?	Yes	No	Don't Know	Yes	No	Don't Know	None	Child	Yes	No	Don't Know	Yes	No	Don't Know	None	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	
C	T	?	Y	N	?	Y	N	?	0	C	Y	N	?	Y	N	?	0	

LANE SELECTION CHART
SUMMER 2003

If Number of Lanes in the Specified Direction is	Median	Possible Lanes	Stand on	Observe Lane
6	Yes	1 2 5 6	Median	5
6	No	1 2	Shoulder	2
5	Yes	1 2 4 5	Median	4
5	No	1 2	Shoulder	1
4	Yes	1 2 3 4	Median	3
4	No	1 2	Shoulder	2
3	Yes	1 2 3	Median	2
3	No	1 2	Shoulder	2
2	Yes	1 2	Median	2
2	No	1 2	Shoulder	2
1	Yes	1	Median	1
1	No	1	Shoulder	1

ISER SUMMER 2003 SEATBELT SURVEY

Sponsor:

STATE OF ALASKA
DEPARTMENT OF PUBLIC SAFETY

SAMPLE ASSIGNMENT FORM

1. Observer # 4001

2. Date Friday 6/6/03

3. PSU KENAI

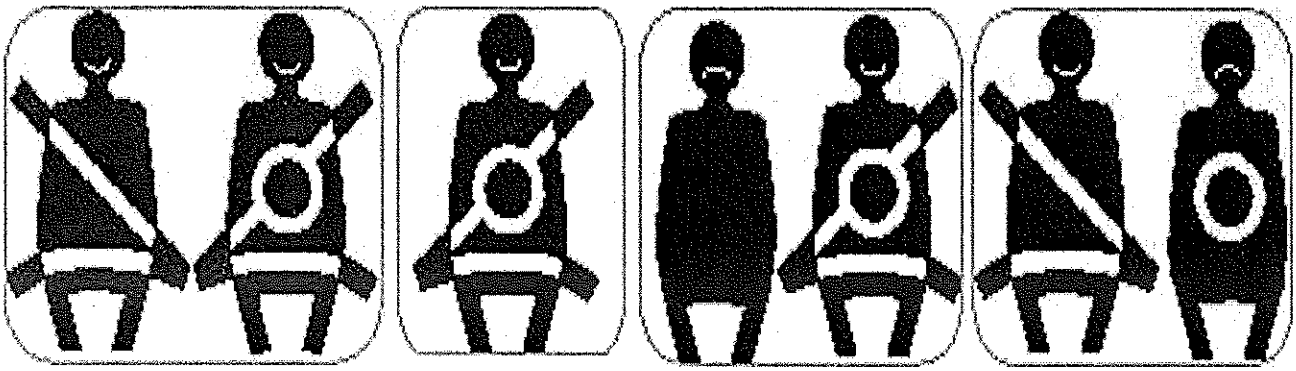
4. Strata Local

	TIME	SITE #	DESCRIPTION
7	2:00 pm - 2:40 pm	4952724	Cabin/Miller Loop N
8	3:10 pm - 3:50 pm	4952715	Black Bear/Holt-Lamplight S
9	4:20 pm - 5:00 pm	4952739	Osprey Ln/Lamplight NE
10	5:30 pm - 6:10 pm	4952721	Nikiska/Miller Loop N
11	6:40 pm - 7:20 pm	4952733	Wolding/Lamplight W
12	7:50 pm - 8:30 pm	4952702	Kenai/Wildwood S
	Alternate Site	4952707	Holt-Lamplight/Miller Loop W

SEATBELT OBSERVATION TRAINING MANUAL

ALASKA HIGHWAY SAFETY OFFICE

PREPARED BY
THE INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH
UNIVERSITY OF ALASKA ANCHORAGE
SUMMER 2003



PURPOSE OF THIS MANUAL

The Alaska Highway Safety Office (AHSO) wants to save lives and prevent injuries through proper use of safety restraints. To help AHSO know how many people use safety 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 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 data are consistent in different places and in different years. You are the researchers who collect the data that help us determine how many people are wearing safety belts and the impact of a particular program on seatbelt use.

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.

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 Institute of Social and Economic Research (ISER), a part of the University of Alaska Anchorage, to collect and analyze seatbelt use in Alaska in 2003. ISER has conducted seatbelt observation studies for AHSO in the past, the first one in 1992, one in 1995, and every year since 1997.

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.

ISER

The Institute of Social and Economic Research was established by state legislation in 1961 and celebrated its 40th year as Alaska's principal social science research agency in 2001. The Institute is part of the University of Alaska Anchorage and has a permanent staff of eighteen. The Institute frequently hires additional staff for special projects and works in collaboration with faculty from other parts of the University of Alaska, with faculty from Universities around the world, state and federal agencies, and with private consultants.

The mission of the Institute is to obtain, analyze, and report social science data relevant to significant issues of our time. Most Institute studies are directed toward advancing our understanding of social and economic systems in Alaska so that state, federal, and local government policy makers can make informed judgments. Most of the operating funds for the institute come from grants and contracts sponsored by government agencies seeking information relevant to public policy decisions. Because the information produced from ISER studies must be available to the public, the institute rarely performs research for private companies unless they are operating under a grant or contract with a public agency.

CONDUCTING THE OBSERVATIONS

SAMPLE DESIGN

The manner in which we select the locations where we will be observing seatbelt use was based on techniques applied in Washington and Oregon. Some alterations were made to allow for Alaskan conditions.

The state was divided into two categories: urban and ex-urban roaded. Within these two categories general areas were selected where we will be observing. These general areas are Anchorage, Fairbanks, Kenai, Mat-Su, and Juneau. These areas were then subdivided into local and major roads on the basis of the average daily traffic. Major roads form one subset of the sample, and local roads form another.

Major roads were selected on the basis of their average daily traffic. Local roads were selected by listing the census tracts within an area and selecting a tract in proportion to its population. We do not have traffic counts for local roads so these roads were selected with equal probability.

Insofar as the total use of roads, DOT estimates that 80% of the traffic is on major roads and 20% is on local roads. Studies have shown that there is more variability in seatbelt use on local roads than there is on major roads. To make certain that we had enough observations on local roads, where seatbelt use varies, we are making more observations on these roads than would be expected simply due to the proportion of traffic. This is known as oversampling.

ELIGIBILITY

Eligible vehicles include all privately owned cars and trucks. Mini-vans, blazers, broncos, suburbans, sport-utility vehicles (cherokee, explorer,…), and other similar vehicles are counted as cars. To be counted as a truck, the vehicle must have a bed; the bed may be covered with a canopy or camper. Examples of trucks include F-150, ranger, and tacoma. RVs, commercial, and emergency vehicles are not counted, these include taxi cabs, delivery vans, police cars, and other types of official or governmental vehicles.

Eligible occupants are the driver of the vehicle and the outboard or outside passenger. If there are three passenger seats in the front of the vehicle only count the outermost passengers. If the outboard passenger is age four and under, you will record whether the child is properly fastened in an appropriate child safety seat. Guidelines for children are on a separate handout.

Only count shoulder belts that are worn correctly. If the shoulder belt is tucked under the person's arm, record this as not

wearing a seatbelt. Even if you can see a lap belt in use, record this as not wearing a seatbelt.

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 was wearing a helmet. If there isn't a passenger, record this by circling the **0** on the Seatbelt Observation Form.

PROCEDURES

We have discovered through field tests that to accurately collect and record all of the required information, we need vehicles that have stopped or are moving slowly. Thus, we selected controlled intersections or on- and off-ramps.

When observing vehicles at:

- a stop sign
- a yield sign
- a freeway on-ramp
- a freeway off-ramp
- a right-turn-only lane (even if there is a stop light),

you will need to record information for each vehicle. If the vehicles are moving too quickly to observe each one, you may need to select a subset of vehicles to observe. For example, you may only be able to record information on every third vehicle. Make certain you write the number 3 on the Observation Form under the column titled "Interval" and then continue to observe only the third vehicle for the remainder of the 40-minute period.

When observing vehicles at a stoplight, you will only record observations on vehicles that are stopped for the red light. Begin your observations with the first vehicle stopped for the light. Record your observations of the first car through the ninth car. Even though you may be able to record information on more cars before the light turns green, stop with the ninth one. Repeat this sequence of recording observations on the first through the ninth vehicle stopped during the red light for each red light in the 40-minute period. If you are unable to observe every vehicle you should, write down the number of vehicles you missed in the Remarks column on the Observation Form.

LOCATION

The Sample Assignment Form gives the date, time, and location where you are to observe. You record your observations for the 40-minute period specified on the form. You then have 30 minutes to get to the next location. When observing on local roads, all locations during that shift will be within the same census tract. When observing on major roads, the locations will be much more diverse.

The location will specify two streets and a direction. The first street 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. For example:

Pauline/Duben N

This means that you would observe the vehicles traveling north on Pauline as they come to the intersection with Duben.

On major roads in Anchorage the written description of your location is a little different. In Anchorage the direction the vehicle is traveling is given first. For example:

W on Tudor/Lake Otis

This means that you would observe the vehicles traveling west on Tudor as they come to the intersection with Lake Otis. We want to give you more detail about some intersections in Anchorage. For example:

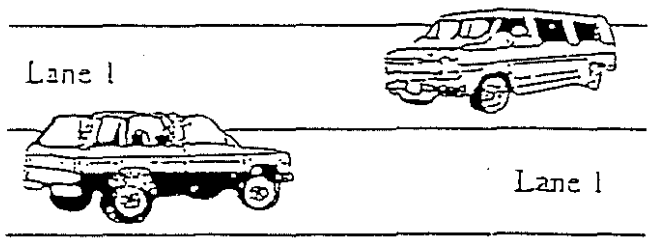
W on Intl Airport/Circle Exit to Minn S

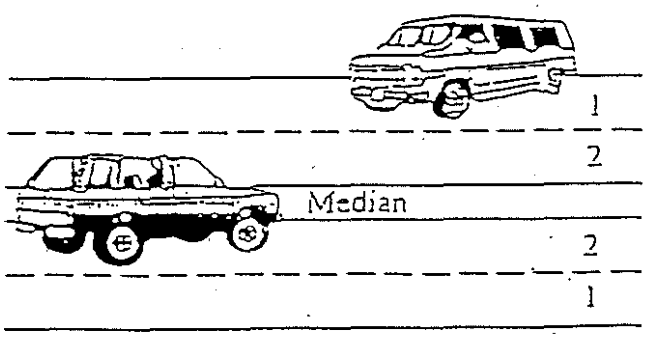
This means that you would observe the vehicles traveling west on International Airport after they cross the overpass and are on the circular exit that directs the traffic to go south on Minnesota.

Each time you move to a new location you will complete a new Seatbelt Observation Form. Instructions on how to complete the form are detailed in the Forms section. Please be sure to complete the top of the form.

OBSERVED LANE

You will observe only one lane of traffic during each observation period. Because we don't know the number of lanes at each intersection, we developed a chart to determine which lane you will observe. Lanes are numbered from the outermost to the innermost in the designated direction of travel. The sketch below shows how the lanes are numbered.





SUPPLIES

We will provide you with all of the supplies needed to conduct your observations. These supplies include: a clipboard, mechanical pencil, regular pencils, one space pen (writes in the rain), and an orange safety vest. In addition, we have a limited number of observation forms on "rite-in-the-rain" paper. Please be judicious with this paper because it is very expensive. All supplies must be returned to ISER.

RECORDING THE INFORMATION

We have designed and field-tested the forms you will use. Each form will be explained in this manual.

SEATBELT OBSERVATION FORM

All observations will be recorded on the Seatbelt Observation Form. Item by item instructions will be given to help you complete the form.

Page_/_ Record the number of the current page on the first line. Record the total number of pages used at this site only, on the second line. Most sites will require only one page (1/1). However, some sites such as a freeway on-ramp might require as many as 10 pages (1/10 to 10/10). Each time you go to a new site, start a new observation form.

OBS#_____ This is the observer number. Each of you will be assigned a unique id number.

SITE#____ Transfer the site # on the Sample Assignment Form to this line. This is the unique identifier for each location.

DATE_____ Transfer the date from the Sample Assignment Form.

TIME#____ Transfer the number of the time period from the Sample Assignment Form. There are six time periods on each Sample Assignment Form.

PSU_____ The Primary Sampling Unit is the general area where you are observing. Examples are Kenai, Mat-Su, Fairbanks... This is item number 3 on the Sample Assignment Form.

L/M___ This stands for Local or Major Road. Transfer the letter written after the word Strata on the Sample Assignment Form.

LANE____
OF ____ The first blank is for the number of the lane of traffic that you are observing. You only observe one lane during an observation period. Lanes are numbered from the outermost to the innermost. You determine which lane to observe by looking at the Lane Selection Chart. The second blank is for you to write the total number of lanes in the observed direction.

SHEET #_____ Transfer the Sheet # from the bottom of the Sample Assignment Form.

Now we will explain how to record the actual observations.

Type Vehicle Is the vehicle a car: **C**= privately owned passenger car, van, or sport-utility vehicle. If it has a bed it is a truck, even if the bed is covered. If you cannot tell, circle **?** and write a description in the comments section.

Driver Belted Is the driver of the vehicle wearing a shoulder belt? Circle the **Y**, for yes, only if you observe a shoulder belt being used properly. It is possible that the driver may be wearing a lap belt, but we do not count lap belts, so circle **N.** Again, circle **N** when the driver is improperly wearing a shoulder belt or isn't wearing one at all. If you can't tell, circle the **?**.

Passenger Belted We are only looking at the outboard passenger in the front seat, if there is a passenger in the middle, that passenger is ignored. Circle **Y** only when you observe the outboard passenger properly wearing a shoulder belt.

Circle **N** if the outboard passenger is not wearing, or is incorrectly wearing, a shoulder belt or is wearing a lap belt only. Circle **?** if you can't tell whether the outboard passenger is wearing a shoulder belt. If there isn't an outboard passenger circle the **0** (zero). Finally, if the outboard passenger is a child age four or under, circle **C** (child). Circle **Y** if the child in the outboard seat is properly strapped into a child safety seat. Circle **N** if the child in the outboard seat is not properly strapped into a child safety seat. Review the NHTSA handout on Child Passenger Safety for details on age, weight, type of seat, and seat position.

Mtrcycle Helmeted

Circle **Y** if the motorcycle driver is helmeted; circle **N** if the driver isn't helmeted; and circle **?** if you cannot tell.

CyclPsngr Helmeted

Circle **Y** if the motorcycle passenger is helmeted; circle **N** if the passenger isn't helmeted; and circle **?** if you cannot tell. Circle **0** (zero) if there isn't a passenger on the motorcycle.

Interval/Remarks

Use this column only when the traffic is moving too quickly to observe each vehicle in the selected lane. When you can't record each vehicle, select an interval that you know you can maintain for the rest of that observation period. You are most likely to need to use an interval at locations where you observe each vehicle, such as on- and off-ramps, yield signs, or right turn lanes. For example: you are standing at the on-ramp to a freeway at rush hour; the cars are moving past too quickly to observe each one; you decide that you can observe every other car. Write two on the Observation Form, and for the remainder of the 40 minutes continue to observe every other car. Even though rush hour ends and it would be possible to observe each vehicle, continue to observe every other vehicle.

Reminder: at stoplights you will only be recording information on the first through the ninth vehicle stopped at a red light. Therefore, you probably won't need to use an interval.

This column is also to be used for any additional comments or questions you may have. You might use this column to note that the car's windows were blacked out or that the construction caused the traffic to move slowly. Anything that might be important when we interpret your data should be included.

SAMPLE ASSIGNMENT FORM

Your Sample Assignment Forms will be completed when you receive them. These forms tell you where you will be and when you will be there.

Observer # This is your unique id number.

Date____ This is the date when you will make your observations.

PSU_____ This is the general area in which you will be working.

Strata_____ Whether these are local or major roads is specified on this line.

Time Which 40-minute period you will be observing is listed here.

Site # This is the unique number given to each location.

Description The intersection where you will observe is specified. The first street is the one you will observe. The second street is the cross street. You will observe the traffic moving in the direction specified.

Alternate Site In case of construction or some other hazard which makes it unwise to observe at the specified location, there is one alternate site available. You may use this alternate as many times as necessary on this day.

LANE SELECTION CHART

Once you arrive at the specified location and have determined which direction of travel you are to observe, you need to know which lane of traffic to observe. The Lane Selection Chart will tell you where to stand and which lane to observe. Even though the chart may tell you to stand on the median or the shoulder, **only stand there if it is safe.**

Lanes are numbered from the outermost to the innermost. That is, the lane nearest the shoulder is number one and as they get closer to the centerline the higher the number. Review the illustration under the heading, "Observed Lane" earlier in this training manual.

SAFETY TIPS

Never stand anywhere you don't feel is safe!

Here are some other guidelines to help you protect yourself:

- Always wear your safety vest.
- Don't go on the roadway surface at any time.
- Stay on the right-of-way facing traffic.
- Stay away from construction or maintenance 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.
- 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 wear light- or bright-colored protective clothing.
- 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.**