

**AN ASSESSMENT OF
SAFETY BELT USE IN ALASKA**

prepared for

Alaska Department of Public Safety

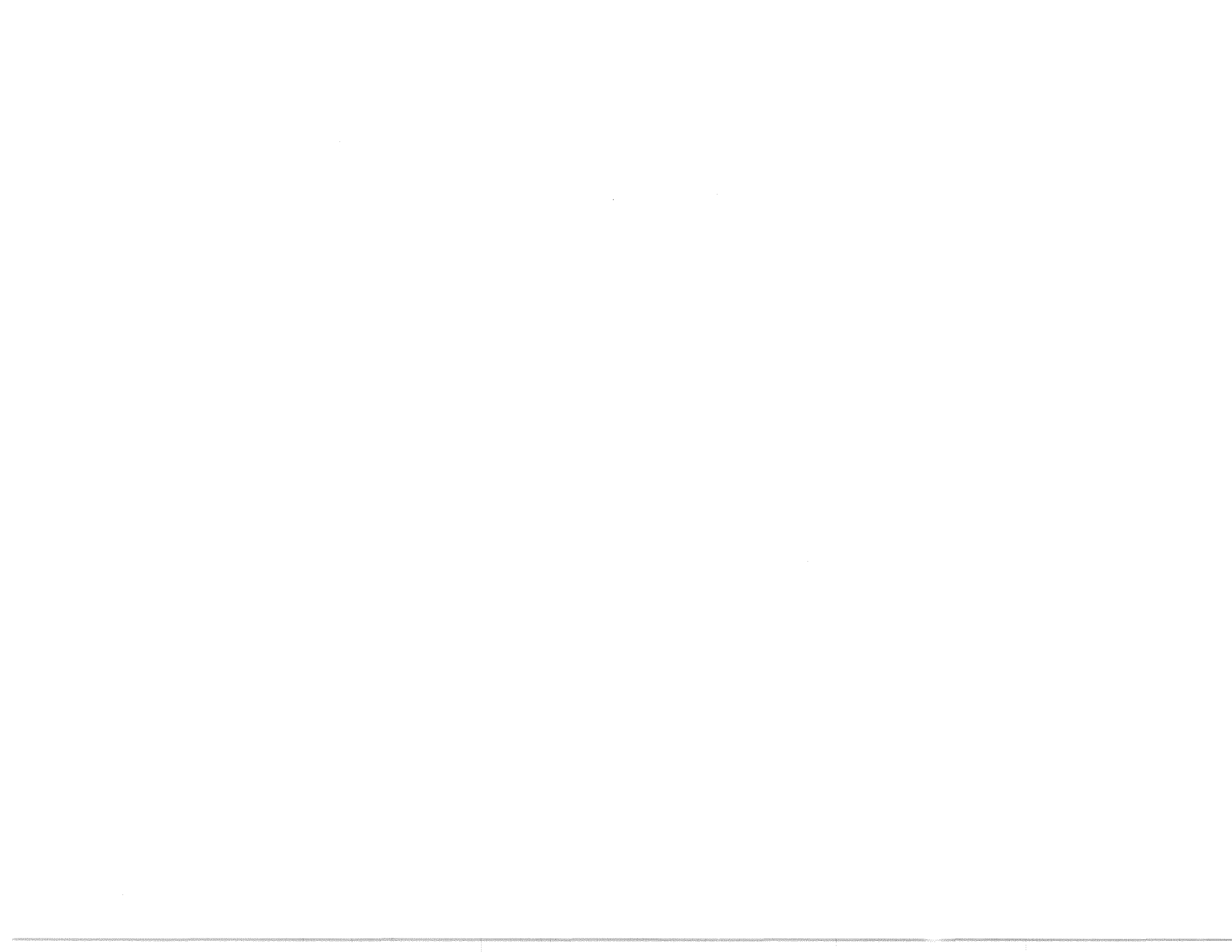
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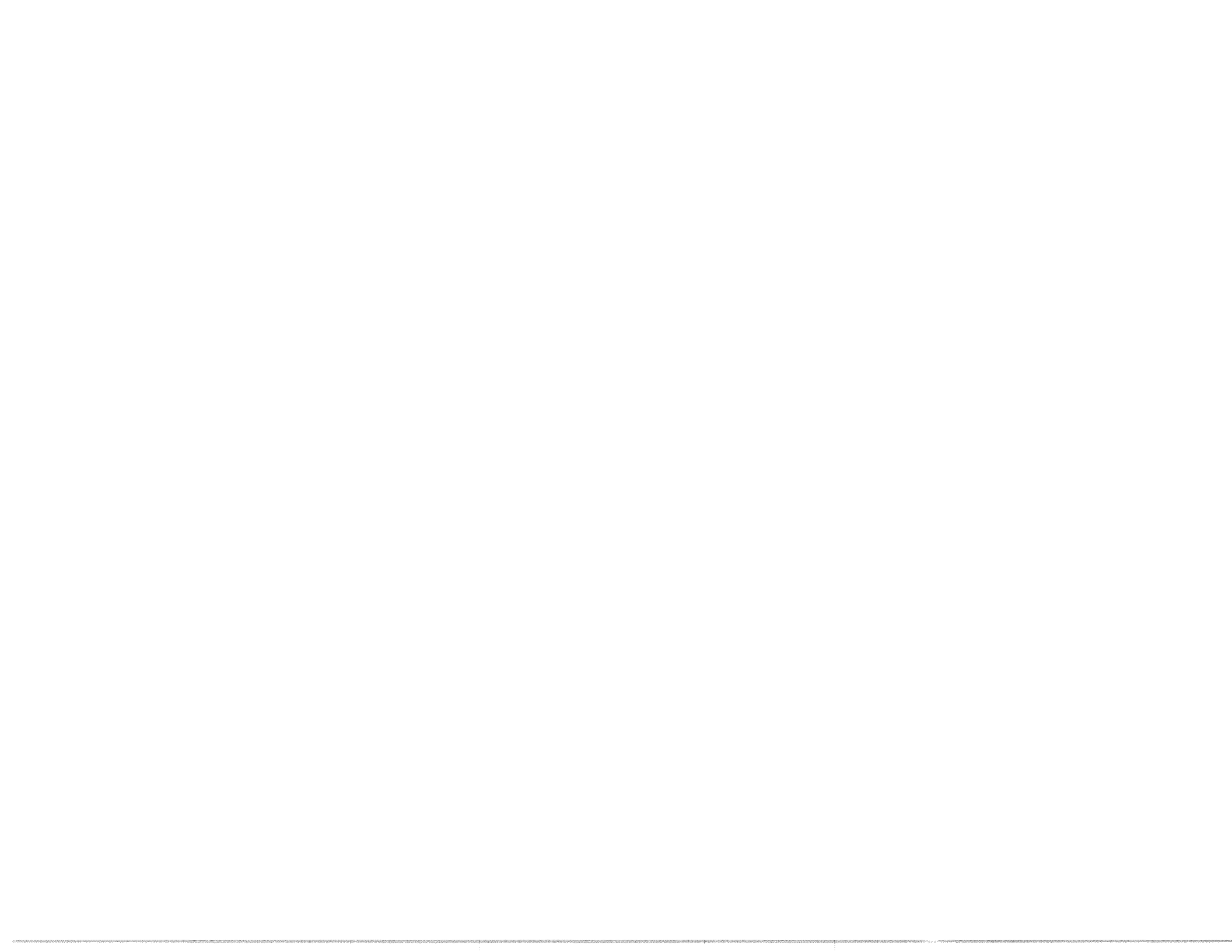
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AN ASSESSMENT OF SAFETY BELT USE IN ALASKA

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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 addition, children less than four years of age 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 adults. To be eligible for certain federal grants, states must document levels of compliance with seatbelt laws.

In June 1992, the Alaska Department of Public Safety (DPS) 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 DPS, along with the National Highway Traffic Safety Administration, wanted to know the degree to which Alaskans comply with seatbelt laws in Alaska. In addition, DPS wanted more information about the characteristics of people who do not comply with seatbelt laws. This report details the results of an observation survey of vehicles in Alaska.

Summary of Results

During the summer of 1992, over 24,000 vehicles were observed in a survey of seatbelt use. Information on these vehicles, the driver, and the outboard passenger was recorded and analyzed. Of the passenger cars in the sample area, covering 85 percent of the state's population, 62 percent of the drivers and 57 percent of the outboard passengers were observed to be wearing seatbelts. Cars in which both the driver and passenger in the same car were belted were observed 55 percent of the time. Of all the drivers and all the passengers observed, 66 percent were buckled. Drivers and outboard passengers of pickup trucks and recreational vehicles were much less likely to be wearing their seatbelts. Detailed results are presented below.

The same techniques used for observing vehicles were used for observing motorcycles. Areawide, 51 percent of the drivers of motorcycles were wearing helmets.

It is important to note that survey results pertain to the driver and outboard passenger in a probability sample of vehicles drawn from the most settled 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.

DATA COLLECTION

Overview of Survey Design

In conformance with federal guidelines, we targeted an area of the state comprising 85 percent of the population for a survey on seatbelt use. The survey sample consisted of 450 forty-minute observation periods at controlled intersections on both major and local roads. Trained observers stood at intersections selected in a multi-stage probability sample for forty-minute periods between 7:00 a.m. and 8:30 p.m. All reported survey results are weighted to properly reflect areawide totals.

Training

All observers attended a training session which was based on a training manual (Appendix B). The training sessions were held at primary sampling locations and were conducted by the field director to ensure consistency. Following the classroom training, observers conducted practice observations while under direct supervision. Everyone then returned to the classroom so that any points of confusion could be clarified. Observers then returned to their home communities and began their observations. The field supervisor was available to answer questions during the field phase and was in frequent contact with each observer.

Observations

Observers began collecting data on July 29 and were finished on August 28. In each location an alternate was hired and trained to be used in case the person assigned to an observation period was unable to work. There was a four-day interruption in scheduled observations in Anchorage because of ash in the air from a volcanic eruption. The observation periods scheduled for these days were made up after the regular schedule had been completed. There were no other interruptions in the observation schedule.

Data Collection

Observers recorded their observations for a forty-minute period and then had thirty minutes to move to the next site. They recorded their observations on a form which we designed and pretested (Appendix B). They recorded information for all privately owned cars, trucks, and recreational vehicles arriving at controlled intersections other than stop lights. At stop lights they recorded information for the second through ninth eligible vehicles. Observers did not collect information on the first car stopped at a light as we believe these drivers are more conservative (*Intercept*, n.d.). There was a space on the form to note an observation interval during periods when the traffic is moving too quickly to record each vehicle. Finally, observers recorded any comments which they felt might be helpful for interpretation of results.

ANALYSIS

Weighting

Observations were self-weighting with respect to variation in traffic by time of day, day of week, and within sample strata. Observations were weighted to take into account the estimated actual, as opposed to sampled, split in average daily traffic between major and local roads. Since some sampled locations represented non-sampled locations (e.g., Kenai represented Kenai, Valdez-Cordova, and Kodiak Census Areas), these observations were weighted to represent the entire strata. Finally, in those instances when traffic was moving too quickly to record information on each vehicle, these observations were weighted by the inverse of the sample interval.

Reliability

According to federal guidelines, the reliability of survey results should be expressed as the ratio between the standard error and the observed percentage of the target population observed to wear seatbelts. This ratio, termed the relative standard error, should be less than or equal to five percent.

We estimate that the standard error of our areawide sample results lies between 2 and 3 percent. Based on an observed 62 percent of drivers wearing seatbelts, the estimated relative error lies between 3 and 5 percent. This means that we would expect repeated surveys using the same design to yield observed seatbelt use percentages of between 57 and 67 percent 95 percent of the time. These estimates are based on a comparison of our sample with the sample used in Washington State and on variance estimations made by Westat, Inc., in the Washington State study. While it would be possible to replicate the variance estimation procedures used by Westat on the Alaska data, we do not believe that the expense is warranted in view of the fact that we made every effort to replicate the sample design used successfully in Washington State.

Detailed Analysis

Type of Vehicle

Table 1 presents the detailed survey results. Occupants of passenger cars were more likely to be wearing a seatbelt than were occupants of trucks and recreational vehicles. Having both the driver and passenger belted in the same vehicle was observed in 55 percent of the cars, 38 percent of the trucks, and 32 percent of the recreational vehicles. The percentages are virtually identical when looking at only those vehicles with Alaska license plates: 56 percent of cars, 38 percent of trucks, and 32 percent of recreational vehicles.

TABLE 1. PERCENTAGE OBSERVED TO WEAR SEATBELTS

| | Area Wide | Anchorage | Fairbanks | Juneau | Kenai | Mat-Su |
|--|-----------|-----------|-----------|--------|-------|--------|
| Cars w/ Driver Belted | 62 | 65 | 60 | 64 | 54 | 57 |
| Cars w/ Pass Belted | 57 | 65 | 56 | 59 | 43 | 46 |
| Cars w/ Eligible Belted | 55 | 62 | 55 | 58 | 48 | 39 |
| Cars w/ Dr &/or Pass Belted | 66 | 67 | 62 | 66 | 57 | 67 |
| Trucks w/ Driver Belted | 46 | 47 | 39 | 37 | 43 | 50 |
| Trucks w/ Pass Belted | 41 | 49 | 38 | * | * | 41 |
| Trucks w/ Eligible Belted | 38 | 45 | 36 | 34 | 37 | 34 |
| Cars & Trucks w/ Eligible Belted | 50 | 58 | 49 | 53 | 45 | 37 |
| RVs w/ Driver Belted | 48 | * | * | * | * | 51 |
| RVs w/ Pass Belted | 42 | * | * | * | * | 40 |
| RVs w/ Eligible Belted | 32 | * | * | * | * | 31 |
| Cars, Trucks, RVs w/ Eligible Belted | 49 | 58 | 48 | 53 | 44 | 36 |
| AK Cars w/ Driver Belted | 62 | 65 | 60 | 64 | 54 | 57 |
| AK Cars w/ Pass belted | 57 | 64 | 56 | 59 | 50 | 48 |
| AK Cars w/ Eligible Belted | 56 | 62 | 55 | 58 | 49 | 40 |
| AK Trucks w/ Driver Belted | 45 | 46 | 38 | 38 | 41 | 51 |
| AK Trucks w/ Pass Belted | 41 | 47 | 36 | * | * | 42 |
| AK Trucks w/ Eligible Belted | 38 | 44 | 36 | 34 | 36 | 35 |
| AK Cars & Trucks w/ Eligible Belted | 50 | 58 | 49 | 53 | 45 | 37 |
| AK RVs w/ Driver Belted | 47 | * | * | * | * | 51 |
| AK RVs w/ Pass Belted | 43 | * | * | * | * | 42 |
| AK RVs w/ Eligible Belted | 32 | * | * | * | * | 32 |
| AK Cars, Trucks, RVs w/ Eligible Belted | 50 | 57 | 48 | 53 | 45 | 37 |
| Motorcycle w/ Driver Helmeted | 51 | * | * | * | * | * |

*Insufficient observations to estimate percentages

SOURCE: ISER, Alaska Seatbelt Survey, 1992

Seatbelt Use by Occupants

In all categories drivers were more likely to be wearing a seatbelt than were passengers. Among those vehicles with Alaska license plates, 62 percent of car drivers and 57 percent of car passengers were belted. Among trucks 45 percent of drivers and 41 percent of passengers were belted. Finally, among recreational vehicles the corresponding percents were 47 and 43. Making this same comparison among vehicles with Alaskan and all other license plates resulted in the following observations: 62 percent and 57 percent of car drivers and passengers, 46 and 41 percent of truck drivers and passengers, and 48 and 42 percent of recreational vehicle drivers and passengers were belted.

Both cars and trucks were most likely to have only a driver. In the areawide sample, 58 percent of cars and 59 percent of trucks did not have an outboard passenger. Only 40 percent of recreational vehicles did not have a passenger.

Regional Differences

Overall, drivers and passengers in Anchorage were much more likely to be wearing seatbelts than in any other region in the sample. While there are certain differences, the other four regions were roughly similar overall in their use of seatbelts.

Table 1 shows 23 breakdowns of the data. If each breakdown is ranked from one to five, where one is the region with the highest percentage belted, and then these rankings are summed, Anchorage has by far the best score (30). This reflects that Anchorage had the highest percentage wearing seatbelts in 19 of the breakdown of the data. While the score of 30 is in itself meaningless, it is useful as a ranking device for comparison between areas. Juneau was second in this ranking of percentages with a score of 70. Matanuska-Susitna, Fairbanks, and Kenai were ranked third, fourth, and fifth in this summation of percent belted with scores of 76, 84, and 86.

In Anchorage a total of 8,570 vehicles were observed, 75 percent of which were cars. In Fairbanks 4,357 vehicles were observed; in Juneau, 2,944; in Kenai, 2,112; and in Matanuska-Susitna, 6,682. Table 2 shows the unweighted numbers of vehicles in each category. The percentages of cars, trucks, and recreation vehicles in the sample were similar in all locations, except for the Matanuska-Susitna Borough. The higher number of recreational vehicles in Matanuska-Susitna is a reflection of the seasonal increase.

TABLE 2. UNWEIGHTED NUMBER OF VEHICLES MEETING CRITERIA

| | Area Wide | Anchorage | Fairbanks | Juneau | Kenai | Mat-Su |
|--|-----------|-----------|-----------|--------|-------|--------|
| Cars w/ Driver Belted | 9577 | 4083 | 1676 | 1410 | 733 | 1675 |
| Cars w/ Pass Belted | 3623 | 1437 | 581 | 510 | 296 | 799 |
| Cars w/ Eligible Belted | 8454 | 3837 | 1523 | 1288 | 650 | 1156 |
| Cars w/ Dr &/or Pass Belted | 10142 | 4169 | 1739 | 1469 | 769 | 1996 |
| Trucks w/ Driver Belted | 3155 | 853 | 510 | 239 | 262 | 1290 |
| Trucks w/ Pass Belted | 1139 | 247 | 149 | 60 | 74 | 609 |
| Trucks w/ Eligible Belted | 2587 | 802 | 477 | 218 | 224 | 866 |
| Cars & Trucks w/ Eligible Belted | 11041 | 4639 | 2000 | 1506 | 874 | 2022 |
| RVs w/ Driver Belted | 546 | 68 | 8 | 5 | 7 | 458 |
| RVs w/ Pass Belted | 279 | 51 | 2 | 2 | 4 | 220 |
| RVs w/ Eligible Belted | 363 | 66 | 5 | 4 | 4 | 284 |
| Cars, Trucks, RVs w/ Eligible Belted | 11404 | 4705 | 1510 | 1510 | 878 | 2306 |
| AK Cars w/ Driver Belted | 8988 | 3946 | 1577 | 1371 | 704 | 1390 |
| AK Cars w/ Pass belted | 3364 | 1360 | 535 | 499 | 284 | 686 |
| AK Cars w/ Eligible Belted | 7997 | 3711 | 1439 | 1255 | 625 | 967 |
| AK Trucks w/ Driver Belted | 2749 | 790 | 471 | 233 | 231 | 1024 |
| AK Trucks w/ Pass Belted | 935 | 212 | 131 | 56 | 60 | 476 |
| AK Trucks w/ Eligible Belted | 2292 | 743 | 441 | 214 | 201 | 693 |
| AK Cars & Trucks w/ Eligible Belted | 10289 | 4454 | 1880 | 1469 | 826 | 1660 |
| AK RVs w/ Driver Belted | 396 | 39 | 6 | 4 | 4 | 343 |
| AK RVs w/ Pass Belted | 208 | 25 | 0 | 1 | 3 | 179 |
| AK RVs w/ Eligible Belted | 268 | 38 | 4 | 3 | 3 | 220 |
| AK Cars, Trucks, RVs w/ Eligible Belted | 10557 | 4492 | 1884 | 1472 | 829 | 1880 |
| Motorcycle w/ Driver Helmeted | 61 | 27 | 14 | 5 | 4 | 11 |

SOURCE: ISER, Alaska Seatbelt Survey, 1992

Motorcycles

A total of 118 motorcycles were observed areawide. Sixty-one or 51.7 percent of motorcycle drivers were wearing a helmet. Of the 118 total, 51 motorcycles were in Anchorage. The remaining motorcycles were distributed through the other regions. The numbers of motorcycles are too small to use in more detailed analysis and still be confident of the reliability of the results.

APPENDIX A

METHODOLOGY

The survey methods were designed to adhere as closely as possible to the proposed (3/19/92) DOT guidelines for safety belt and motorcycle helmet 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.

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 1990 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 subarea 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.

TABLE A.1. SAMPLE FRAME

| <u>Urban</u> | <u>1990 Population</u> |
|--|------------------------|
| <u>Self-representing</u> | |
| <i>Anchorage Borough</i> | 226,338 |
| <i>Fairbanks N.S. Borough</i> | 77,720 |
| <u>Sample Element</u> | |
| <i>Juneau Borough</i> | 26,751 |
| Ketchikan | 8,231 |
| Sitka Borough | 8,588 |
| <u>Ex-urban Roaded (all sample elements)</u> | |
| <i>Kenai Peninsula Borough</i> | 40,802 |
| Valdez-Cordova Census Area | 9,952 |
| Kodiak Island Borough | 13,309 |
| <i>Mat-Su Borough</i> | 39,683 |
| Koyukuk mid-Yukon Census subarea | 5,692 |
| Southeast Fairbanks Census Area | 5,913 |
| Haines Borough | 2,117 |
| Total population in sample frame | 465,096 |
| 1990 Census statewide population | 550,043 |

The selected PSU's cover the three regions encompassed by the road network as follows (the assigned number of observation periods is also shown — see explanation below):

| | <u>Number of Observation Periods</u> |
|-----------------------------------|--------------------------------------|
| 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. With the exception of 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 and 40 percent local roads. According to Rick Lau in the Planning Department of the Highway Data Section at the DOT&PF, they assume for planning purposes 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 (Lago, 1986) and, thus, they had oversampled 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.

Because we wanted to collect several pieces of information on each vehicle, we determined after field trials that we needed vehicles traveling somewhat slowly. Therefore, we decided 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 defined as 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 involving major roads in each selected PSU. Controlled intersections included on- and off-ramps. We associated Average Daily Traffic estimates with each controlled intersection. Major road observation points were selected with probabilities proportional to the associated ADT.

Again, so that we could collect all 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 segments were selected 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 p.m. and 7 a.m. Thus, we limited observations to the period between 7 a.m. and 9 p.m. These hours were then divided into two shifts: 7 a.m. to 2 p.m. and 2 p.m. to 9 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 involved local roads, it then selected 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 used as a reserve in case construction or other events made it impossible to safely observe traffic at an originally scheduled observation point.

Eligible Vehicles

We observed drivers and front seat outboard passengers of private cars and trucks. The outboard passenger included children in a child safety system. We did not make observations on commercial or official/governmental vehicles. Since most surveys exclude pickup trucks from their sample, we separately recorded observations for pickup trucks. We also separately recorded out-of-state and recreational vehicles.

Observation Process

The computer program which selected a location also randomly assigned the location to a specific time. The location, including the direction of traffic flow 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 adhered to instruction on the Lane Selection Chart (Appendix B).

APPENDIX B

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

SEATBELT OBSERVATION FORM

SITE # _____ LANE _____ TIME # _____ DATE _____ OBS # _____

PSU _____ L/M _____ # _____

| Type of Vehicle | | | | Instate License | | Driver Belted | | Passenger Belted | | | Mtrcycle Helmeted | | Inter-val | Remarks | |
|-----------------|---|----|---|-----------------|---|---------------|---|------------------|---|---|-------------------|---|-----------|---------|--|
| C | T | RV | ? | Y | N | ? | Y | N | ? | 0 | Y | N | ? | # | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |

LANE SELECTION CHART

| 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 | 1 |
| 5 | Yes | 1 2 4 5 | Median | 4 |
| 5 | No | 1 2 | Shoulder | 2 |
| 4 | Yes | 1 2 3 4 | Median | 4 |
| 4 | No | 1 2 | Shoulder | 2 |
| 3 | Yes | 1 2 3 | Shoulder | 1 |
| 3 | No | 1 2 | Shoulder | 1 |
| 2 | Yes | 1 2 | Median | 2 |
| 2 | No | 1 2 | Shoulder | 1 |
| 1 | Yes | 1 | | |
| 1 | No | 1 | | |

ISER SUMMER 1992 SEATBELT SURVEY

Sponsor:

**STATE OF ALASKA
DEPARTMENT OF PUBLIC SAFETY**

SAMPLE ASSIGNMENT FORM

1. Observer # _____ 2. Date _____
3. PSU _____ 4. Strata _____

| | TIME | SITE # | DESCRIPTION |
|---|------------------------|--------|-------------|
| 1 | 7:00 am - 7:40 am | | |
| 2 | 8:10 am - 8:50 am | | |
| 3 | 9:20 am - 10:00 am | | |
| 4 | 10:30 am - 11:10 am | | |
| 5 | 11:40 am - 12:20 pm | | |
| 6 | 12:50 pm - 1:30 pm | | |
| 7 | Alternate Site | | |

THE INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH
SEATBELT OBSERVATION SURVEY
SUMMER 1992

FOR
ALASKA DEPARTMENT OF PUBLIC SAFETY

ISER
OBSERVER TRAINING MANUAL

ISER

The Institute of Social and Economic Research (ISER) was established by state legislation in 1961 and celebrated its 30th year as Alaska's principal social science research agency in 1991. The institute is part of the University of Alaska, Anchorage and has a permanent staff of a director, executive officer, five faculty, four research associates, a secretary, a graphic artist, and a receptionist. 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, 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 judgements. 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.

PURPOSE OF THE STUDY

ISER will be conducting an observational survey of seatbelt use in Alaska for the Alaska Department of Public Safety (DPS). DPS along with the National Highway Traffic Safety Administration (NHTSA), within the Department of Transportation (DOT), wants to know seatbelt compliance rates in Alaska. In addition, DPS would like to know the characteristics of those persons who aren't complying with seatbelt laws so that future ad campaigns may target those groups.

The Alaska State Legislature has passed laws requiring seatbelt use. In June 1985, a law went into effect requiring children aged seven and under to be 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 adults to use safety belts.

SAMPLING

The manner in which we selected 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.

CONDUCTING THE OBSERVATIONS

ELIGIBILITY

Eligible vehicles include all privately owned cars and trucks. Mini-vans, blazers, Broncos, suburbans, Cherokees, 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, and Ranger. Commercial vehicles are not to be 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 a child, count the child. If the child is belted into an infant seat or booster seat these count as wearing a seatbelt.

Only shoulder belts are to be counted. Even if you can see a lap belt in use, record this as not wearing a seatbelt. If the shoulder belt is tucked under the person's arm, record this as not wearing a seatbelt.

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 selected street. For example:

Pauline/Dubon N

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

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.

PROCEDURE

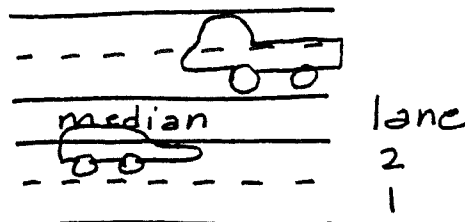
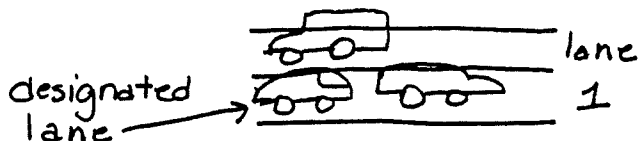
We have discovered through field tests that to be able to collect all of the required information, we need vehicles which have stopped or are moving slowly. Thus, we selected controlled intersections or on- and off-ramps.

When observing vehicles at a stop sign, 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 an interval to conduct your observations. 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. You may also need to use this technique when you are observing a freeway on- or off-ramp or a turn lane when the vehicles go through too rapidly to record information.

When observing vehicles at a stop light, you will only record observations on vehicles that are stopped for the red light. Begin your observations with the second vehicle stopped for the light. Previous studies have shown that the first car to stop is more likely to have a conservative driver, thus, is more likely to be wearing a seatbelt. Record your observations of the second 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 second 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.

OBSERVATION LANE

You will be observing 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. See the example of the Lane Selection Chart in the forms section. The sketch below shows how the lanes are numbered.



SUPPLIES

We will be providing 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, some highway warning signs are being provided by DOT. All supplies must be returned.

RECORDING 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. An example of a completed form is attached. Item by item instructions will be given to help you complete the form.

- Page** / The first dash is to record which page the current page is. The second dash records the total number of pages of observations at this site only. 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). When you go to a new site, you start a new observation form.
- SITE#** Transfer the site # on the Sample Assignment Form to this line. This is the unique identifier for each location.
- LANE** This is the number given to 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.
- TIME#** Transfer the number of the time period from the Sample Assignment Form. There are six times in each day.
- DATE** Transfer the date from the Sample Assignment Form.
- OBS#** This is the observer number. Each of you will be assigned a unique id number.
- 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.

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

Now we will see how to record the actual observations.

Type of Vehicle

Circle the number below the appropriate letter: C (car) T (truck) or RV (recreational vehicle). The question mark is circled when you are unable to determine which type of vehicle it is. A truck has a bed on the back. The bed may be covered with some type of canopy, but it is still apparent that there is a bed underneath. Jeep wagoneers, scouts, and blazers are all classified as cars, as are mini-vans.

Instate License

We want to know whether this vehicle has Alaska license plates. Caution: there are 12 types of Alaska plates using different color combinations. If you cannot tell, circle the nine below the question mark.

Driver Belted

Is the driver of the vehicle wearing a shoulder belt? It is possible that the occupants may be wearing lap belts, but we do not count lap belts. Only if you can observe a shoulder belt should you circle the number one.

Passenger Belted

We are only looking at the outboard passenger in the front seat, if there is a passenger in the middle, that middle person is ignored. Circle one only when you observe a shoulder belt on the outboard passenger. If the outboard passenger is a child we record the observation exactly as we do for an adult. Circle one if the child in the outboard seat is riding in a child safety seat or booster seat.

Circle two if the outboard passenger is not wearing a shoulder belt. Circle nine, below the question mark, if you can't tell whether the outboard passenger is wearing a shoulder belt. Finally, if there isn't an outboard passenger circle the zero.

Mtrcycle Helmeted

Circle one if the driver is helmeted; circle two if the driver isn't helmeted; and circle nine if you cannot tell.

Inter-val

This column is to be used only when the traffic is moving too quickly to observe each vehicle. When you can't record each vehicle, select an interval

such that you know you will be able to maintain that interval for the rest of that observation period.

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 third car. Write three on the Observation Form, and for the remainder of the 40 minutes continue to observe every third car. Even though rush hour ends and it would be possible to observe each vehicle, you continue to observe only the third.

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

Remarks

This column is for any additional comments or questions you may have. If there is a passenger on the motorcycle, record whether the passenger is wearing a helmet. You might use this column to note that the windows were blacked out. Anything else that seems important can be written in here.

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.

SEATBELT OBSERVATION FORM

SITE # LANE TIME # DATE OBS #

PSU L/M #

| Type of Vehicle | | | | Instate License | | Driver Belted | | Passenger Belted | | | Mtrcycle Helmeted | | Inter-val | Remarks | |
|-----------------|---|----|---|-----------------|---|---------------|---|------------------|---|---|-------------------|---|-----------|---------|---|
| C | T | RV | ? | Y | N | ? | Y | N | ? | 0 | Y | N | ? | | # |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |
| 1 | 2 | 3 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 0 | 1 | 2 | 9 | | |

ISER SUMMER 1992 SEATBELT SURVEY

Sponsor:

**STATE OF ALASKA
DEPARTMENT OF PUBLIC SAFETY**

SAMPLE ASSIGNMENT FORM

1. Observer # _____ 2. Date _____
3. PSU _____ 4. Strata _____

| | TIME | SITE # | DESCRIPTION |
|---|------------------------|--------|-------------|
| 1 | 7:00 am - 7:40 am | | |
| 2 | 8:10 am - 8:50 am | | |
| 3 | 9:20 am - 10:00 am | | |
| 4 | 10:30 am - 11:10 am | | |
| 5 | 11:40 am - 12:20 pm | | |
| 6 | 12:50 pm - 1:30 pm | | |
| 7 | Alternate Site | | |

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.

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 watch. The Lane Selection Chart will tell you where to stand and which lane to observe.

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.

SAFETY TIPS

DOT has given us some guideline 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.

LANE SELECTION CHART

| 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 | 1 |
| 5 | Yes | 1 2 4 5 | Median | 4 |
| 5 | No | 1 2 | Shoulder | 2 |
| 4 | Yes | 1 2 3 4 | Median | 4 |
| 4 | No | 1 2 | Shoulder | 2 |
| 3 | Yes | 1 2 3 | Shoulder | 1 |
| 3 | No | 1 2 | Shoulder | 1 |
| 2 | Yes | 1 2 | Median | 2 |
| 2 | No | 1 2 | Shoulder | 1 |
| 1 | Yes | 1 | | |
| 1 | No | 1 | | |