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DIRECT OBSERVATION OF SEAT BELT USE IN MICHIGAN: SPRING 1989

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16. Abstract

Results of a direct observation study of safety belt use in Michigan conducted in April 1989 were compared with results of eleven previous surveys (December 1984; April, July, and December 1985; April, July, and December 1986; April, July, and November 1987; and May 1988). In the current survey, 17,574 occupants in 12,184 cars and light trucks were observed between March 27 and April 16, 1989. Use of safety belts did not change between May 1988 and April 1989. Front-seat restraint use among all motorists observed was 45.6% in April 1989 compared to 45.1% in May 1988 (the difference of 0.5 percentage points is not statistically significant because the estimates have a margin of error of ±2.8%). By age group, use rates were as follows in April 1989 (all seat positions): 62.7% among occupants age 0-3; 36.2% among occupants age 4-15; 36.6% among occupants age 16-29; 46.5% among occupants age 30-59; and 51.9% among occupants age 60 and older. Females continued to exhibit higher restraint use than males, 50.1% versus 38.8% in the current survey. As in previous surveys, restraint use varied by region of the state. Safety belt use has remained stable since December 1985 when use among front-seat occupants was 44.5%. Finally, front-seat belt use among those age 16 and over remains significantly higher than it was before Michigan's mandatory use law took effect (45.2% in April 1989, versus 18.3% in December 1984).

17. Key Words	18. Distribution Statement
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1. INTRODUCTION

Michigan's mandatory safety belt law, implemented in July of 1985, is one of 33 similar laws in the United States intended to reduce motor vehicle crash-related deaths and injuries (Highway and Vehicle/Safety Report, 1989). Belt use has typically increased sharply following implementation of such laws and then partially declined over the subsequent six to twelve months. The magnitude of these increases and subsequent declines has varied from state to state, however, perhaps explaining the differing experience in injury reduction associated with the laws. A multiple time-series evaluation of effects in the first eight states with safety belt laws identified significant fatality reductions ranging from 7.1% to 24.5% (Wagenaar, Maybee, and Sullivan, 1988).

To measure compliance with Michigan's safety belt law, The University of Michigan Transportation Research Institute is conducting a series of direct-observation surveys of safety belt use among motor vehicle occupants throughout the state. Two survey waves were conducted prior to implementation of the law (December 1984 and April 1985) and provide a base against which effects of the law are assessed. The third wave was conducted in July 1985 immediately following implementation of the law. The fourth through eleventh waves were conducted at roughly four to six-month intervals from 1986 to 1988 (December 1985; April, July, and December 1986; April, July, and November 1987; and May 1988). The twelfth survey wave reported here was conducted from March 27 to April 16, 1989, forty-five months after the Michigan law first took effect. Each of the surveys examined restraint use by age, sex, seat position, time of day, day of week, type of roadway, weather conditions, vehicle type and size, and region of the state. Readers are referred to earlier reports for complete results of the previous surveys (see Section 4 for full citations). In the current report, restraint use in April 1989 is compared with the results of previous survey waves.[1]

[1]For convenience, the current survey wave is referred to as the April 1989 wave throughout this report even though data collection began at the end of March.

2. METHODS

To ensure comparability across all survey waves in this series, the same methods were used in each wave. A few minor differences in the current wave are noted in this section. For a detailed discussion of the sample design, data collection procedures, and analytic procedures used throughout the series of surveys, see the first report of this series (Wagenaar and Wiviott, 1985a).

As in previous survey waves, motor vehicle occupants at a carefully selected probability sample of 240 intersections throughout the State of Michigan were observed by trained field observers. Observers recorded restraint use, seat position, estimated age, and sex for occupants in **all** seat positions in each sampled vehicle. The size and type of vehicle were also recorded.

Detailed information on the seat positions of all occupants was recorded, including those in nonstandard seat positions. Specifically, observers noted whether passengers were sitting, standing, kneeling, or lying on the seat, floor, or cargo area of the vehicle. Passengers riding in the lap of another occupant were also recorded. The objective was to collect data on the full complement of restraint use and related information for all occupants of vehicles included in the sample.

Beginning in July 1985, observers were instructed to record incorrect use of safety belts. Examples of incorrect belt use include: positioning the shoulder harness under the outboard arm, behind the back, or over the inside shoulder; and restraining two occupants with one safety belt. The category of incorrect belt use did not include occupants (typically in the 4-15 age group) who were too short to wear a shoulder belt in the correct position across the chest. Often such occupants placed the belt behind the back. These occupants were coded as correctly belted.[2] Occupants incorrectly using safety belts were coded as "belted" and, therefore, appear in the tables and figures below as restrained.

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[2]Some of these cases were difficult to determine, in the sense that many occupant protection researchers argue that school-age children should be restrained by a shoulder belt along with the lap belt.

Observers limited the number of vehicles recorded during any given traffic signal cycle to three. This procedure was adopted during the July 1985 wave. After the mandatory use law took effect, occupants in long traffic queues buckled up after noticing the observer examined vehicles ahead of them in the queue. Recording data on only the first three vehicles prevented inclusion of these occupants in the survey.

The sample of 240 sites was identical to previous survey waves except that two alternative sites were selected (from the pool of sites selected in the original sample design) to replace sites at which construction was occurring or at which a yellow flashing rather than cycling traffic signal was in operation. Within each sampling area, the first site observed for each day and city was selected using a random number table, with the remaining sites observed in an order determined by proximity, to minimize amount of travel required between sites. All field personnel were spot checked in the field by the field supervisor. Field personnel attended extensive training sessions in which data collection policies and procedures were reviewed and practice field observations were conducted (the training program was described in greater detail in the first report of this series; Wagenaar and Wiviott, 1985a).

Descriptive statistics for the 240 observation sites are shown in Table 2.1. The distribution of site observations by day of week and time of day was similar to previous survey waves conducted during the same season of the year. Actual numbers of cases observed across categories of the major variables are shown in Table 2.2. Restraint use estimates based on small numbers of cases, such as those for occupants in extra seats and cargo areas, need to be interpreted with care.

In addition to showing the actual number of cases by subcategory, Table 2.2 indicates the extent of missing data for each variable. The key restraint item was missing for 0.4% of all occupants observed. These were cases in which the observer could not accurately identify whether the occupant was restrained. There were 14 cases of missing data on restraint use for the 12,184 drivers and 3,706 front-right occupants observed. Front-center occupants had 8 cases of missing data and rear-seat occupants had low levels of missing data on restraint use (2.6% to 3.0%; see Table 2.2).

TABLE 2.1
Descriptive Statistics for the 240 Observation Sites

Day of Week		Start Time		Site Choice		Weather		Observer	
Monday	14.6%	7-9 AM	13.3%	Primary	99.2%	Sunny	40.0%	(A)	31.3%
Tuesday	14.2%	9-11 AM	19.2%	Alternate	0.8%	Cloudy	53.3%	(B)	33.8%
Wednesday	13.8%	11-1 PM	20.4%			Rain	6.3%	(C)	31.7%
Thursday	14.6%	1-3 PM	20.0%			Snow	0.4%	(D)	3.3%
Friday	16.7%	3-5 PM	18.8%						
Saturday	13.8%	5-7 PM	8.3%						
Sunday	12.5%								
TOTALS	100%		100%		100%		100%		100%

TABLE 2.2
Sample Distributions for Major Variables by Seat Position, Unweighted Ns and Percent Missing Data

	Seat Position									
	Driver	Front Center	Front Right	Rear Left	Rear Center	Rear Right	Extra Seats	Cargo Area	Held in Lap	All[1]
Restraint Use										
None	6,530	105	2,136	294	191	432	27	22	55	9,830
Belted	5,650	39	1,515	100	32	108	10	0	0	7,454
CRD Correct	–	10	39	50	41	59	1	0	0	200
CRD Wrong	–	9	6	3	3	6	0	0	0	27
Missing	4	8	10	12	7	19	3	0	0	63
% Missing	0.0	4.7	0.3	2.6	2.6	3.0	7.3	0.0	0.0	0.4
Sex										
Male	7,345	63	1,252	223	132	287	23	9	23	9,376
Female	4,830	94	2,434	229	133	325	17	10	20	8,107
Missing	9	14	20	7	9	12	1	3	12	91
% Missing	0.1	8.2	0.5	1.5	3.3	1.9	2.4	13.6	21.8	0.5
Age										
0-3	–	37	81	81	66	82	2	0	43	405
4-15	0	64	514	239	167	298	33	13	9	1,360
16-29	3,561	30	1,027	73	31	117	1	7	1	4,850
30-59	6,760	33	1,403	27	5	62	1	1	0	8,292
60+	1,842	2	659	32	2	57	1	0	0	2,595
Missing	21	5	22	7	3	8	3	1	2	72
% Missing	0.2	2.9	0.6	1.5	1.1	1.3	7.3	4.5	3.6	0.4
Vehicle Type										
Small Car	2,672	10	706	72	48	123	2	2	12	3,655
Midsize Car	4,030	39	1,263	194	106	255	1	0	12	5,910
Large Car	2,665	41	916	126	79	161	5	0	14	4,019
Pickup	1,520	65	375	6	2	5	0	13	5	1,993
Van	892	9	307	47	26	63	31	6	8	1,392
Other	387	4	122	10	10	13	2	1	3	555
Missing	18	3	17	4	3	4	0	0	1	50
% Missing	0.1	1.8	0.5	0.9	1.1	0.6	0.0	0.0	1.8	0.3
Site Type										
Intersection	9,591	135	2,888	336	191	474	34	15	43	13,738
Freeway Exit	2,593	36	818	123	83	150	7	7	12	3,836
Day of Week										
Monday	1,773	25	500	66	40	86	4	3	10	2,514
Tuesday	1,734	12	409	42	29	50	1	4	5	2.288
Wednesday	1,659	20	414	41	27	54	7	0	5	2.233
Thursday	1,791	20	451	53	33	72	8	0	8	2.443
Friday	2,061	21	538	69	34	94	2	0	4	2.828
Saturday	1,651	34	728	106	56	146	14	11	13	2,765
Sunday	1,515	39	666	82	55	122	5	4	10	2.503

TABLE 2.2 Continued

	Seat Position									
	Driver	Front Center	Front Right	Rear Left	Rear Center	Rear Right	Extra Seats	Cargo Area	Held in Lap	All[1]
Time of Day										
7-8 AM	542	1	128	13	4	20	3	1	2	714
8-9 AM	766	7	169	20	8	26	6	0	1	1,004
9-10 AM	967	6	213	22	10	28	4	3	4	1,260
10-11 AM	1,289	14	356	44	24	56	3	2	3	1,792
11-12 AM	1,428	15	394	53	28	69	3	6	7	2,007
12-1 PM	1,147	15	396	48	34	48	3	0	6	1,702
1-2 PM	1,127	21	386	46	24	74	5	0	5	1,693
2-3 PM	1,386	27	440	42	37	76	2	3	6	2,026
3-4 PM	1,313	28	471	66	35	78	6	3	7	2,011
4-5 PM	1,074	16	357	44	31	71	3	3	7	1,610
5-6 PM	1,093	20	368	55	33	73	3	1	5	1,655
6-7 PM	52	1	28	6	6	5	0	0	2	100
Weather										
Sunny	4,850	76	1,611	192	113	259	20	7	27	7,169
Cloudy	6,538	82	1,833	237	144	326	21	15	26	9,245
Rain	745	11	230	27	16	34	0	0	1	1,065
Snow	51	2	32	3	1	5	0	0	1	95
MDOT Region										
Western U.P.	595	9	173	13	11	23	1	0	0	828
Eastern U.P.	363	5	113	12	7	12	0	0	2	514
Northwest	610	17	205	27	9	43	1	1	1	914
Northeast	406	1	117	8	3	8	0	0	3	548
West Central	1,428	15	405	66	31	69	5	0	7	2,033
East Central	1,428	9	422	45	28	60	3	0	6	2,006
Southwest	1,419	32	516	68	43	96	11	5	7	2,201
Southeast	1,198	27	470	47	21	70	5	11	3	1,856
Metro Detroit	4,737	56	1,285	173	121	243	15	5	26	6,674
TOTAL N	12,184	171	3,706	459	274	624	41	22	55	17,574

[1] Includes 38 occupants standing.

3. RESULTS

Forty-four percent of all motor vehicle occupants observed during April 1989 were restrained with safety belts or child restraint devices. This is virtually identical to the 43.5% rate observed in May 1988 (Figure 3.1; the difference of 0.5 percentage points is not statistically significant; Z=0.25; two-tailed test, p>.05).[3,4] The latest survey supports earlier findings that restraint use has not changed during the past forty months. In December 1985, five months after the mandatory safety belt law took effect, overall restraint use had declined to 43.0% from 58.4% in July 1985, immediately after the law took effect. Since that time, however, restraint use has remained constant. While restraint use in April 1989 was lower than the 58.4% peak rate observed in July 1985, it is still higher than it was before the law took effect. The April 1989 use rate of 44.0% represents a 122.2% increase from the December 1984 rate of 19.8%.

Table 3.1 provides summary information on restraint use by seat location (front and rear) for each major variable, including sex, age type of vehicle, site type, day of week, time of day, weather, and region. As in previous surveys, restraint use was higher among front-seat occupants than rear-seat occupants (45.6% versus 30.0%).

Young children have particularly high rates of restraint use as a result of mandatory child restraint legislation implemented in 1982 (Wagenaar, 1984; Wagenaar and Webster, 1986), and exert an upward influence on overall use rates. Because of this, effects of the adult mandatory safety belt law on restraint use can be seen most clearly by including only motor vehicle occupants 16 years and older in the analyses. In December 1984, restraint use for adults (16 and over) was 18.3% among front-seat occupants and 7.2% among rear-seat occupants (see Figure 3.2). Restraint use increased noticeably in April 1985, after enactment of the law but before implementation. In July 1985, immediately after implementation, restraint use among front-seat occupants more than doubled, increasing to

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[3]These numbers include both correct and incorrect use of safety belts and child restraint devices.

[4]Calculation of Z-statistics takes into account the design effect resulting from the multi-stage sampling procedure used. The design effect of the April 1989 wave was 13.8.

Figure 3.1: Overall Restraint Use

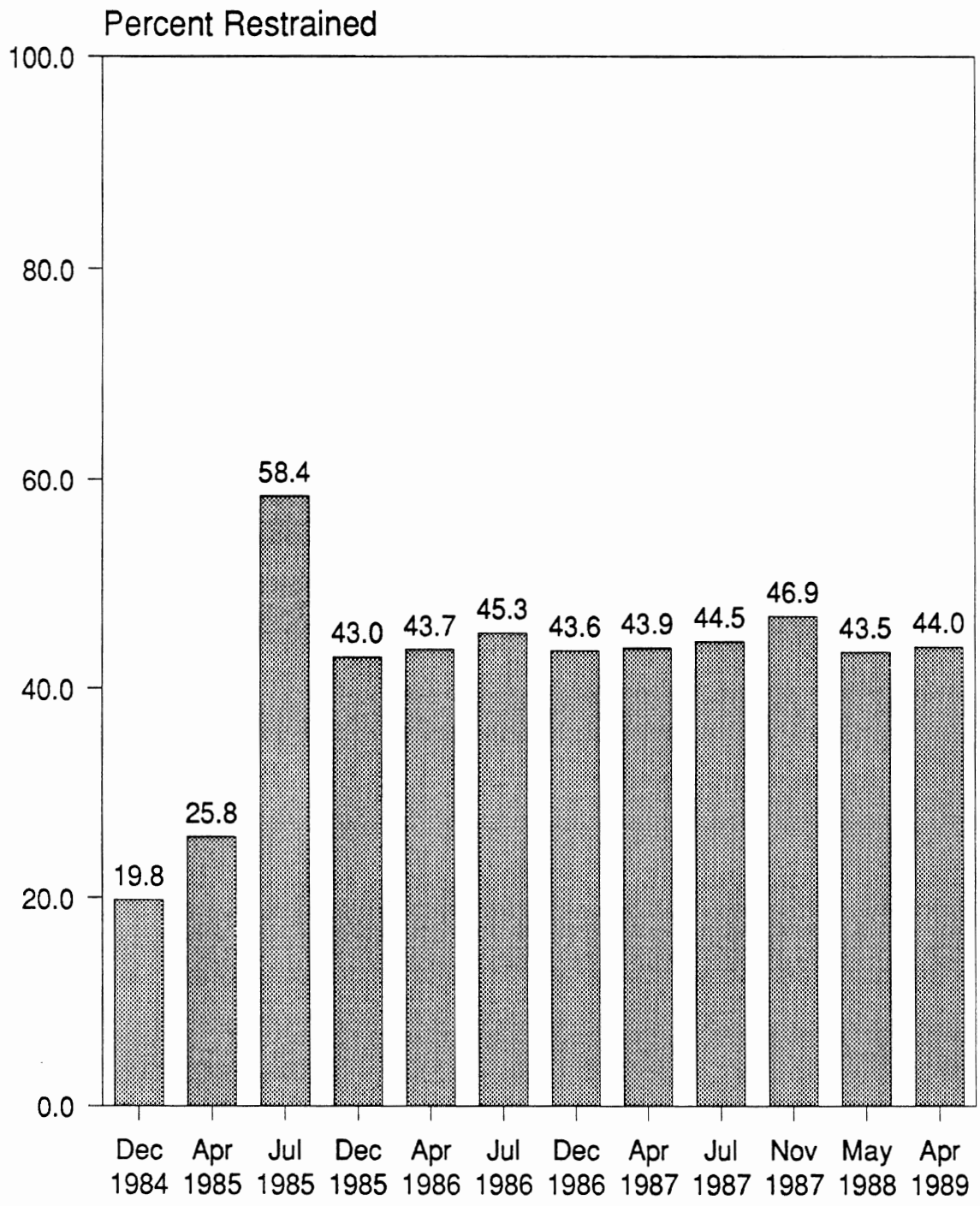


TABLE 3.1
Percent Restrained by Major Variables and Seat Location[1]

	Seat Location		
	Front Seat	Rear Seat	All[2]
Sex			
Male	39.6	31.1	38.8
Female	52.5	28.4	50.1
Age			
0–3	67.2	75.7	62.7
4–15	49.7	27.4	36.2
16–29	38.2	4.0	36.6
30–59	46.9	11.2	46.5
60+	53.3	13.0	51.9
Type of Vehicle			
Small Car	49.4	25.7	47.5
Mid-Sized Car	50.8	32.7	48.9
Large Car	40.2	23.5	38.4
Pickup Truck	31.0	65.3	30.9
Van	49.4	38.5	47.5
Other	46.8	35.9	45.3
Site Type			
Intersection	44.2	29.3	42.8
Freeway Exit	50.1	32.0	48.2
Day of Week			
Monday	46.3	33.8	44.9
Tuesday	45.0	27.1	43.9
Wednesday	40.9	28.2	40.0
Thursday	47.3	32.6	46.0
Friday	48.3	33.9	47.1
Saturday	43.5	26.6	41.1
Sunday	46.9	29.0	44.7

[1]All percents are based on analyses weighted according to the sample design to accurately represent the entire state. Restraint use includes correct and incorrect use of child restraint devices and seat belts.

[2]Includes occupants riding in third and fourth seats of station wagons and vans and in nonstandard seat positions (i.e., on laps, in cargo area, on floor).

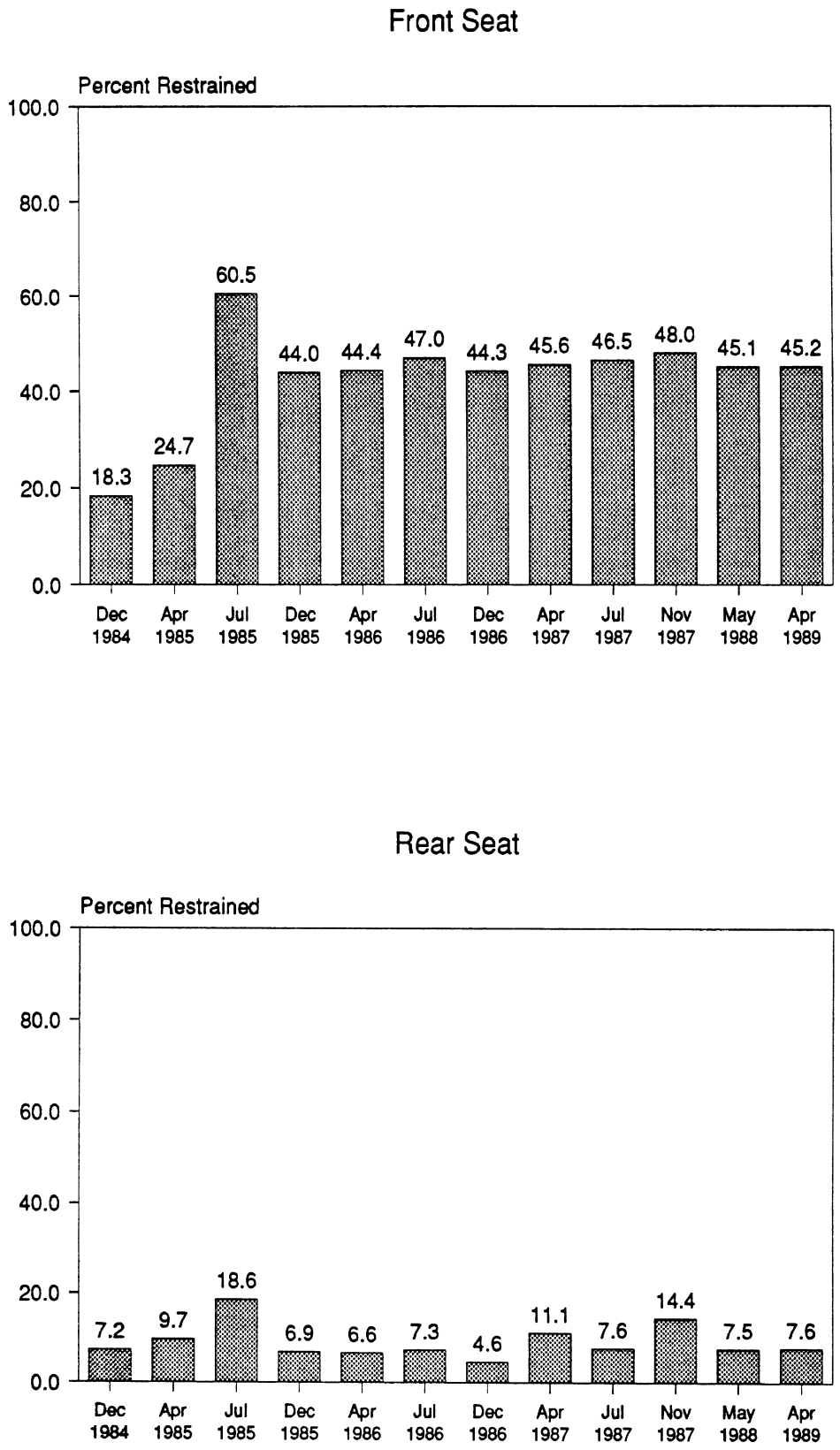
TABLE 3.1 Continued

	Seat Location		
	Front Seat	Rear Seat	All[2]
Time of Day			
7-8 AM	49.0	29.9	47.4
8-9 AM	44.1	27.1	42.9
9-10 AM	45.5	34.7	44.8
10-11 AM	47.7	29.0	46.2
11-12 AM	48.1	40.6	47.2
12-1 PM	43.4	22.5	41.5
1-2 PM	44.5	32.8	43.3
2-3 PM	43.7	25.2	41.9
3-4 PM	46.1	35.7	44.9
4-5 PM	44.8	27.2	42.8
5-6 PM	45.9	25.8	43.6
6-7 PM	39.7	23.0	36.0
Weather			
Sunny	46.8	32.5	45.2
Cloudy	44.3	29.2	42.8
Rain	49.5	21.0	47.7
Snow	44.7	22.2	42.1
MDOT Region			
Western U.P.	51.2	40.2	50.4
Eastern U.P.	36.5	26.2	35.7
Northwest	43.0	40.8	42.7
Northeast	41.6	21.1	40.5
West Central	47.7	44.5	47.1
East Central	47.7	31.7	46.3
Southwest	43.7	31.3	42.1
Southeast	53.7	33.4	51.6
Metro Detroit	43.1	23.2	41.3
TOTAL	45.6	30.0	44.0

[1]All percents are based on analyses weighted according to the sample design to accurately represent the entire state. Restraint use includes correct and incorrect use of child restraint devices and seat belts.

[2]Includes occupants riding in third and fourth seats of station wagons and vans and in nonstandard seat positions (i.e., on laps, in cargo area, on floor).

Figure 3.2: Restraint Use by Seat Location: Occupants Age 16 and Over



60.5%. In December 1985, after five months of compulsory belt use, restraint use declined to 44.0% among front-seat occupants and 6.9% among rear-seat occupants. Since that time, restraint use among adult front-seat and rear-seat occupants has remained stable. In the current survey wave, restraint use for adults was 45.2% among front-seat occupants and 7.6% among rear-seat occupants (Figure 3.2); these rates are identical to those observed in May 1988 (Z=0.05 for front-seat adult occupants and Z=0.02 for rear-seat adult occupants).

An examination of restraint use by vehicle seat position indicates that restraint use was higher among drivers than occupants of other seating positions in all age groups (Table 3.2). Restraint use by seat position did not change from May 1988 to April 1989 (Figure 3.3). While restraint use among front-center passengers may seem substantially higher than in the previous wave, there was no statistically significant change from May 1988 to April 1989 (Z=1.10; note the small sample size in Table 2.2 for front-center passengers; N=171). Only drivers and front-right passengers had restraint use rates notably higher than pre-law levels. No long-term change in rear seat use might be expected, given that the law applies only to front-seat occupants.

Restraint use remained highest among occupants age 0-3, who have been required to be restrained when traveling in motor vehicles in Michigan since 1982. A total of 62.7% of occupants age 0-3 years were restrained, compared to 36.2% of occupants age 4-15 years, 36.6% of occupants age 16-29 years, 46.5% of occupants age 30-59 years, and 51.9% of occupants age 60 years and older (Table 3.2). Restraint use rates by age group in the current survey did not represent statistically significant changes from May 1988 (Figure 3.4).[5]

A total of 11.9% of child restraint devices were observed to be incorrectly used in April 1989. While incorrect use in the current survey appears lower than in previous waves, the numbers of child restraint devices observed in each survey are relatively small, making differences harder to detect. Also, because incorrect use was limited only to cases obvious to the observer (noting the data collection process used), data presented here

[5]The Z-statistics are as follows: age 0-3 years, 0.23; age 4-15 years, 0.03; age 16-29 years, 0.41; age 30-59 years, 0.22; and age 60 and over, 0.43.

TABLE 3.2
Restraint Use by Age and Seat Position[1]

Age Group	Seat Position									
	Driver	Front Center	Front Right	Rear Left	Rear Center	Rear Right	Extra Seats	Cargo Area	Held in Lap	All[2]
Age 0–3										
% Belted	–	12.4	19.3	7.7	5.5	10.0	0.0	–	0.0	9.4
% Correct CRD	–	23.2	45.6	57.9	60.3	68.6	49.6	–	0.0	47.1
% Incorrect CRD	–	22.3	6.3	3.9	3.6	7.9	0.0	–	0.0	6.2
% Restrained[3]	–	57.9	71.2	69.5	69.4	86.5	49.6	–	0.0	62.7
Unweighted N	0	37	81	81	66	82	2	0	43	405
Age 4–15										
% Restrained	–	25.1	52.8	33.4	17.1	28.2	33.8	0.0	0.0	36.2
Unweighted N	0	64	514	239	167	298	33	13	9	1,360
Age 16–29										
% Restrained	40.7	21.5	29.9	5.9	3.4	3.0	0.0	0.0	0.0	36.6
Unweighted N	3,561	30	1,027	73	31	117	1	7	1	4,850
Age 30–59										
% Restrained	48.3	39.0	40.2	19.4	0.0	8.7	0.0	0.0	–	46.5
Unweighted N	6,760	33	1,403	27	5	62	1	1	0	8,292
Age 60+										
% Restrained	52.8	0.0	54.9	15.4	0.0	12.1	0.0	–	–	51.9
Unweighted N	1,842	2	659	32	2	57	1	0	0	2,595
All Ages										
% Restrained	46.7	35.8	42.3	33.4	28.2	28.4	29.4	0.0	0.0	44.0
Unweighted N	12,184	171	3,706	459	274	624	41	22	55	17,574

[1]All percents are based on analyses weighted according to the sample design to accurately represent the entire state. Unweighted Ns indicate the actual number of occupants observed in a given group.
[2]Restraint use for all positions includes cargo areas, passengers held in laps, and passengers standing.
[3]Percent restrained includes correct and incorrect CRD use.

Figure 3.3: Restraint Use by Seat Location

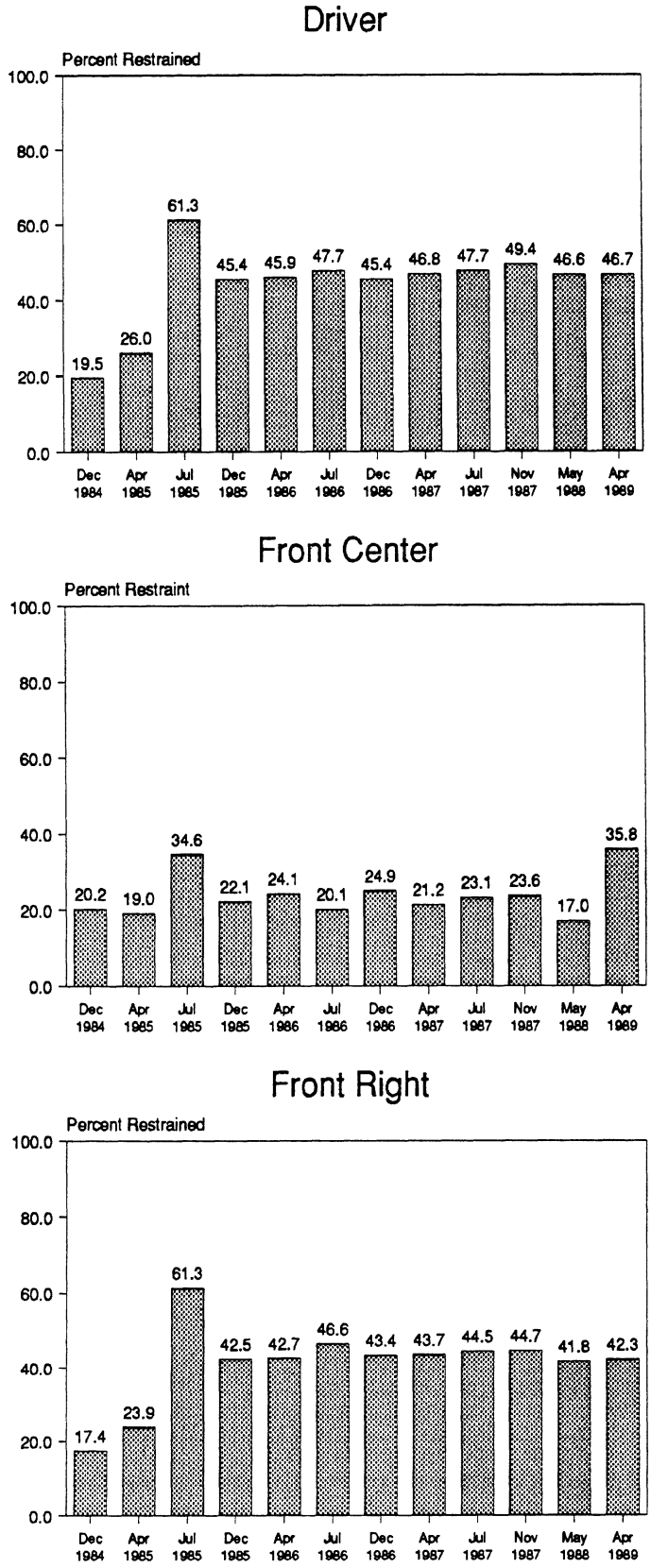


Figure 3.3 (Continued): Restraint Use by Seat Location

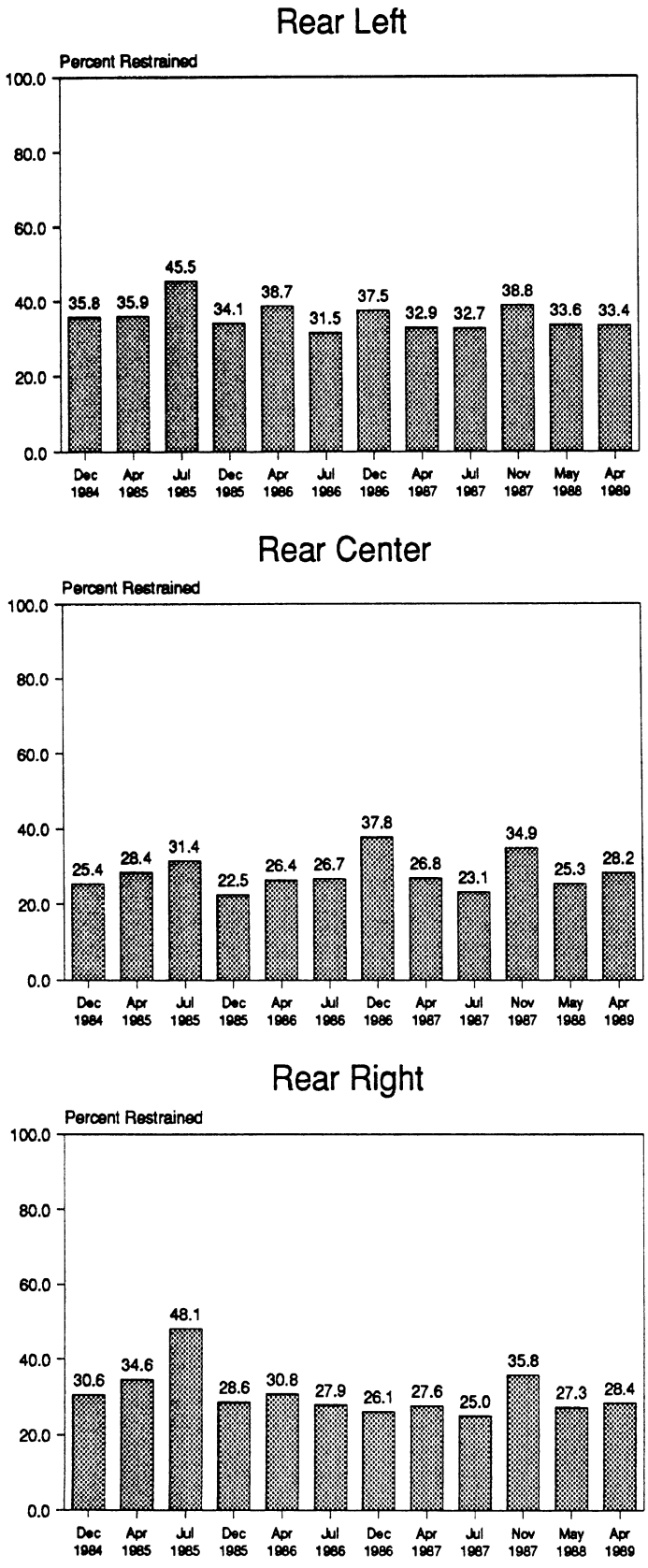


Figure 3.4: Restraint Use by Age

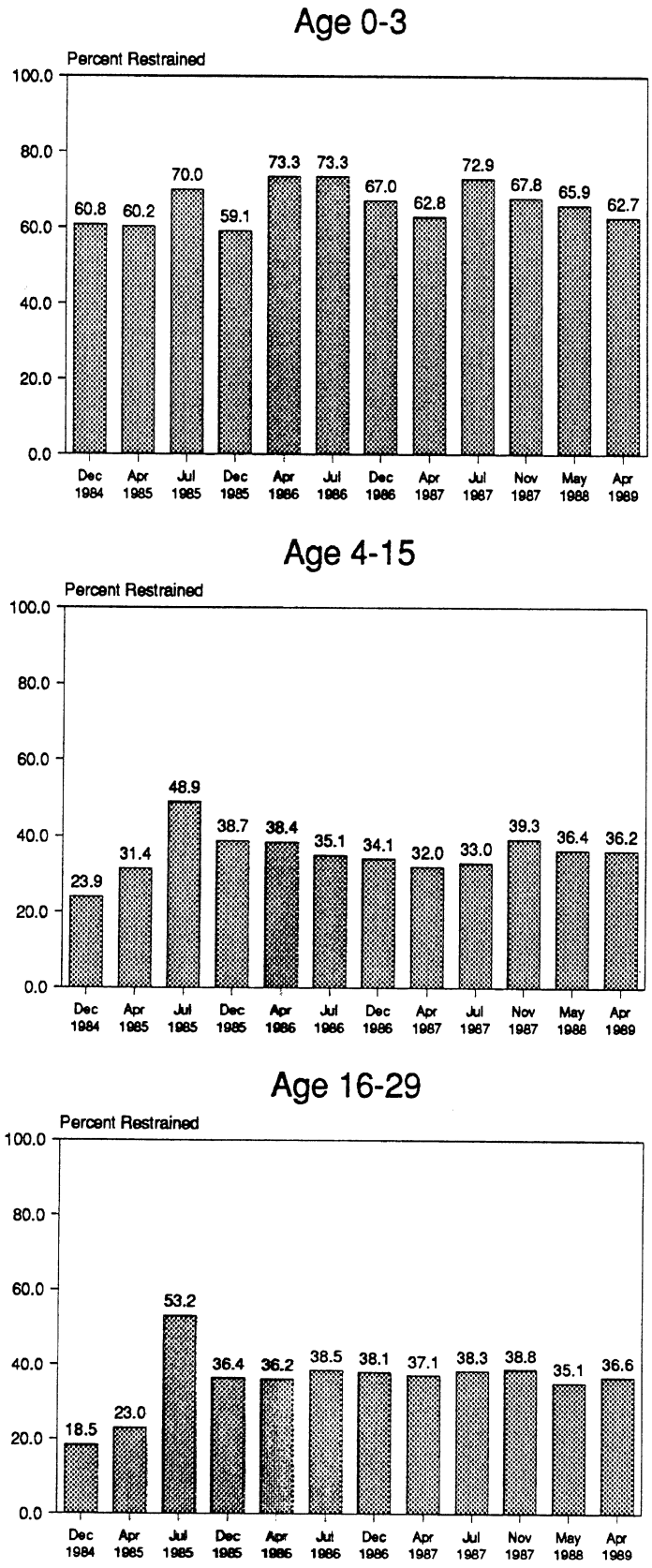
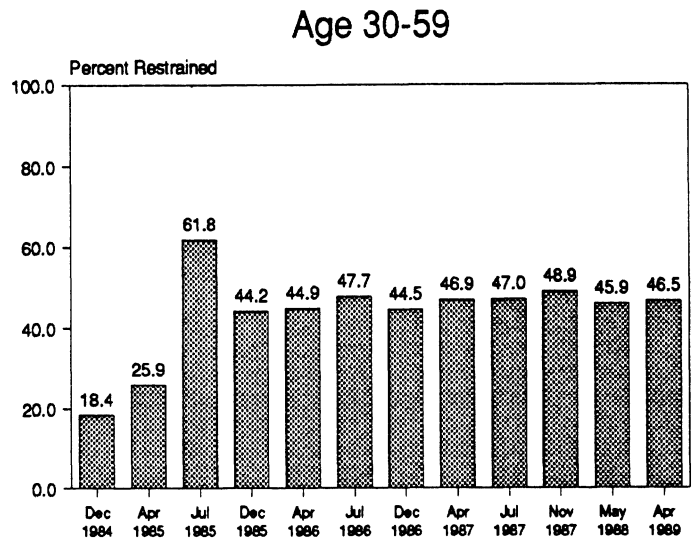
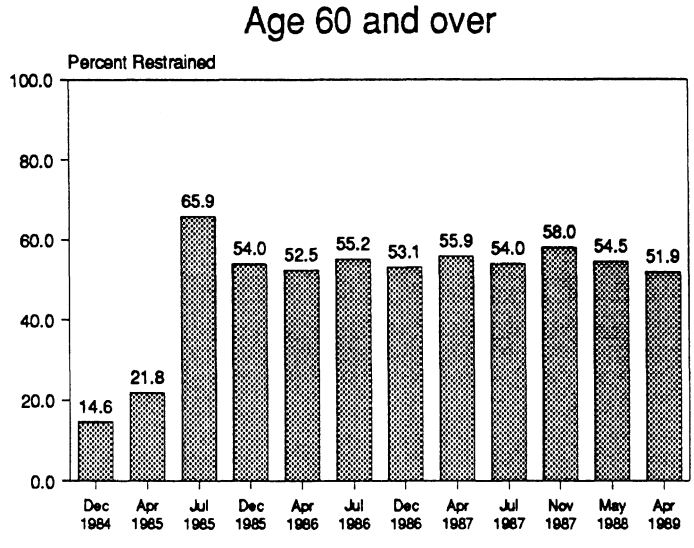


Figure 3.4 (Continued): Restraint Use by Age





should be considered a conservative estimate. A more detailed study of restraint use among Michigan children under the age of four found that 62.9% of child restraint devices were incorrectly used (Margolis, Wagenaar, and Molnar, 1988).

As in previous survey waves, occupants age 60 years and older had a restraint use rate higher than any other age group except occupants age 0-3. Prior to enactment of the mandatory safety belt law, the 60 and older age group had the lowest rate of use. Since December 1984, however, the increase in restraint use among those age 60 years and older (255%) has been greater than all other age groups (0-3 increased 3%; 4-15 increased 51%; 16-29 increased 98%; and 30-59 increased 153%). The pattern of driver restraint use by age was similar to that of total occupants by age (Figure 3.5).

Restraint use continued to vary by sex, with a greater proportion of females than males using restraints (50.1% versus 38.8%; Table 3.3). The rate of increase in belt use among both females and males, however, has been similar since December 1984.

The pattern of restraint use by type of vehicle has been similar throughout the series of surveys (Figure 3.6). Occupants of mid-sized cars had the highest rate of restraint use in the current wave (48.9%; Table 3.3). Use rates for occupants of other types of vehicles were: small cars and vans, 47.5%; large cars, 38.4%; pickup trucks, 30.9%; and other vehicles, 45.3%.

As in previous survey waves, occupants in vehicles observed at freeway exits had a higher rate of restraint use than those observed at local intersections (48.2% versus 42.8%; Table 3.3). Neither rate represented a statistically significant change from May 1988.[6]

Restraint use rates in the current survey were similar across weather conditions (Table 3.3). Comparisons with previous waves continue to indicate no consistent pattern of restraint use by weather conditions. Similarly, there was no consistent pattern of restraint use across time of day and day of week (Table 3.4).

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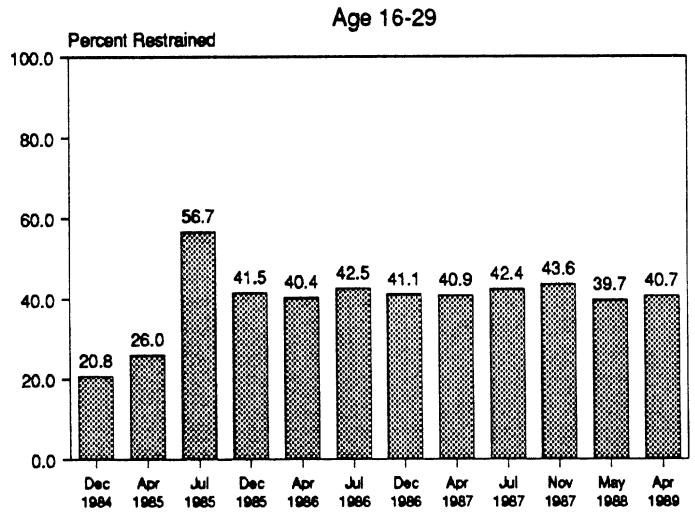
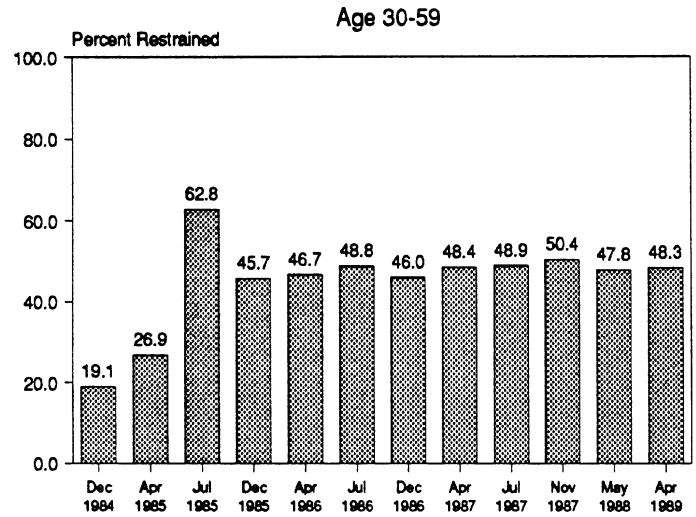
[6]Local intersections, Z=0.77; freeway exits, Z=0.82.

Figure 3.5: Driver Restraint Use by Age





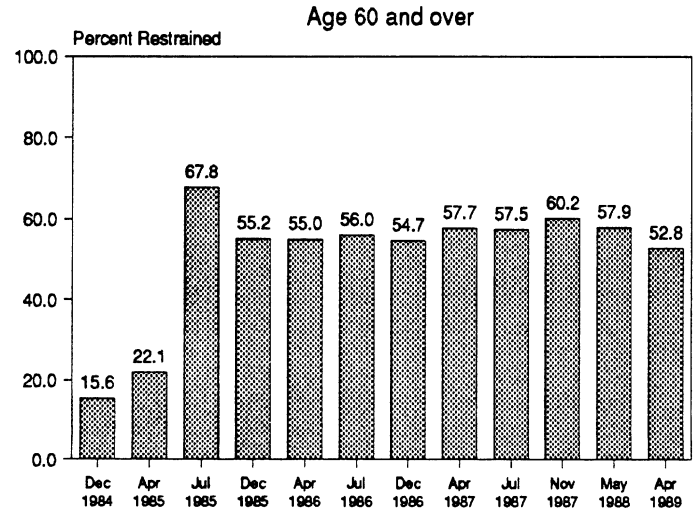


TABLE 3.3
Percent Restraint Use by Sex, Type of Vehicle, Observation Site, and Weather Conditions[1]

	Seat Position							
	Driver	Front Center	Front Right	Rear Left	Rear Center	Rear Right	Extra Seats[2]	All[3]
Sex								
Male	40.7	25.5	33.5	34.1	29.1	29.8	36.6	38.8
Female	55.7	37.4	46.7	32.0	27.1	26.4	23.2	50.1
Type of Vehicle								
Small Car	51.1	15.6	43.6	29.9	11.2	28.8	0.0	47.5
Mid-Sized Car	52.3	43.1	46.2	37.2	28.7	31.1	0.0	48.9
Large Car	40.9	49.9	37.7	27.4	24.1	20.2	0.0	38.4
Pickup Truck[4]	31.6	26.4	29.4	60.7	51.5	81.0	–	30.9
Van	49.1	32.2	50.7	33.5	57.7	32.8	37.8	47.5
Other	47.7	50.6	43.9	28.7	44.4	34.8	0.0	45.3
Observation Site								
Intersection	45.4	35.0	40.7	30.9	31.7	27.2	24.0	42.8
Freeway Exit	51.1	38.4	47.4	39.9	20.1	32.1	53.5	48.2
Weather Conditions								
Mostly Sunny	47.1	38.9	46.0	36.6	27.3	31.8	15.5	45.2
Mostly Cloudy	45.9	33.3	38.7	31.6	29.7	27.2	43.2	42.8
Raining	50.8	34.1	46.3	31.4	14.7	16.1	–	47.7
Snowing	45.1	50.0	43.8	0.0	100.0	20.0	–	42.1
TOTAL	46.7	35.8	42.3	33.4	28.2	28.4	29.4	44.0

[1]All percents are based on analyses weighted according to the sample design to accurately represent the entire state. Restraint use includes correct and incorrect use of child restraint devices.

[2]Based on only 41 observed occupants.

[3]Restraint use for all positions includes cargo areas, passengers held in laps, and passengers standing.

[4]Data on rear seat passengers includes 13 occupants, riding in crew cab.

Figure 3.6: Restraint Use by Vehicle Type

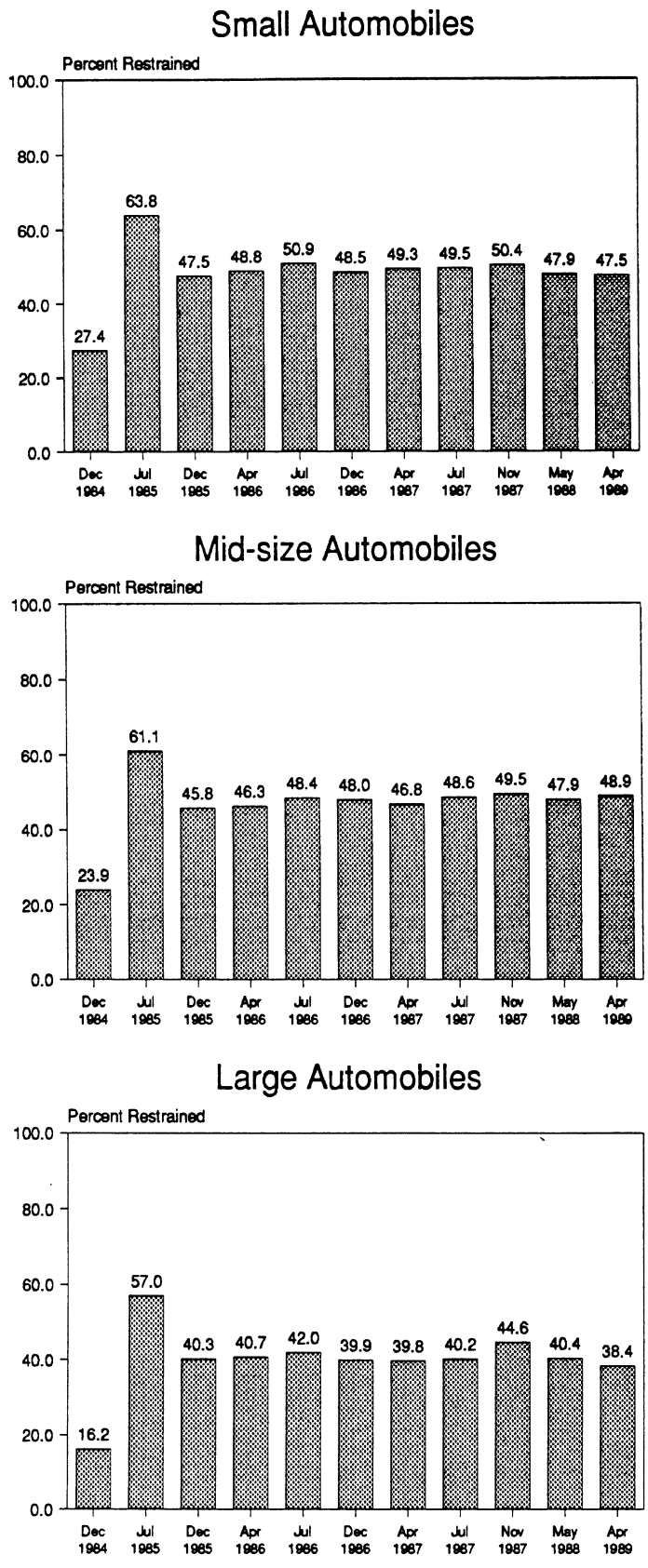


Figure 3.6 (Continued): Restraint Use by Vehicle Type

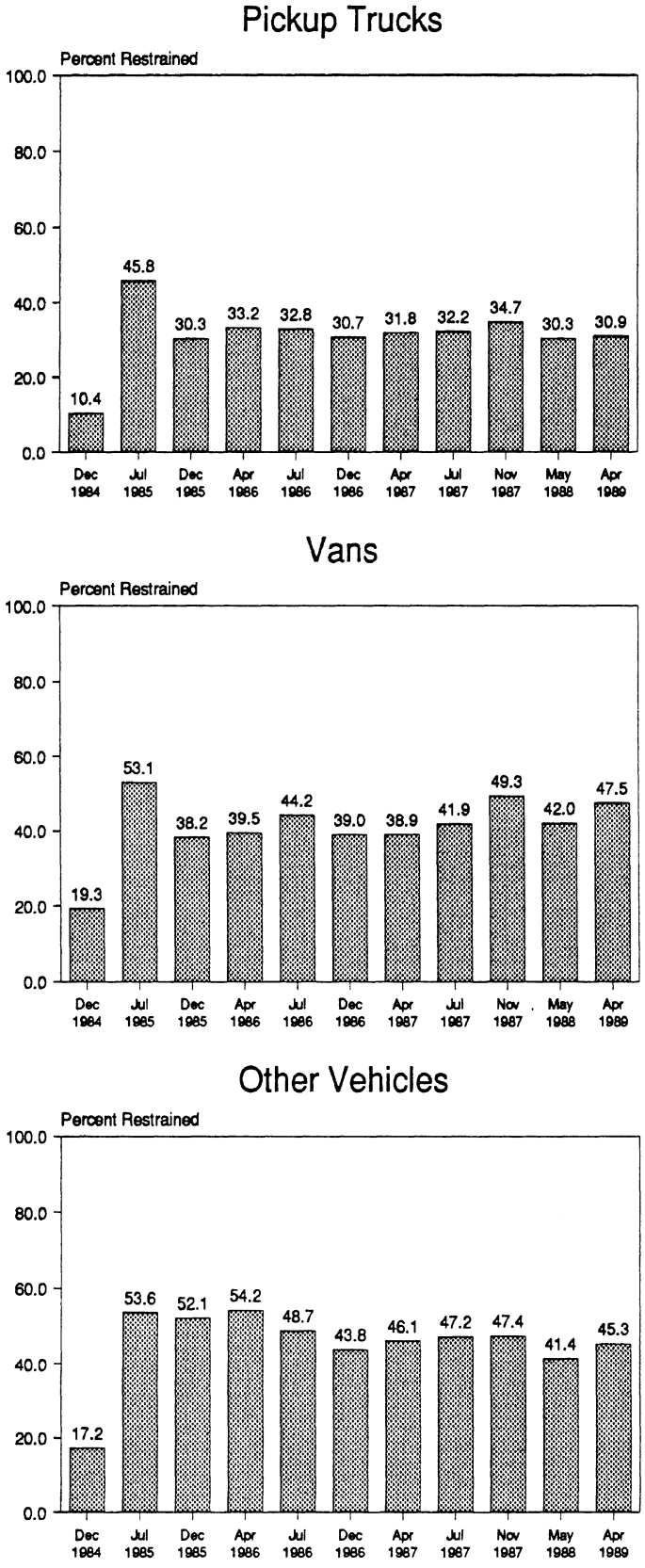


TABLE 3.4
Percent Restraint Use by Time of Day and Day of Week[1]

	Seat Position							
	Driver	Front Center	Front Right	Rear Left	Rear Center	Rear Right	Extra Seats[2]	All[3]
Time of Day								
7-8 AM	49.5	0.0	47.5	30.4	0.0	35.2	0.0	47.4
8-9 AM	45.6	57.9	36.6	29.9	24.4	26.0	0.0	42.9
9-10 AM	46.9	43.9	39.0	37.7	38.7	31.3	100.0	44.8
10-11 AM	48.2	21.7	46.8	35.6	40.7	18.9	30.5	46.2
11-12 AM	48.5	39.3	47.0	52.5	38.8	31.6	46.0	47.2
12-1 PM	44.4	29.5	41.1	30.9	21.5	14.7	0.0	41.5
1-2 PM	46.7	51.5	37.7	38.2	24.7	32.3	40.7	43.3
2-3 PM	43.8	41.7	43.3	21.1	23.2	28.5	0.0	41.9
3-4 PM	48.2	32.1	40.9	34.1	35.3	37.3	48.7	44.9
4-5 PM	46.9	33.4	39.0	34.0	16.5	27.9	36.6	42.8
5-6 PM	46.6	19.4	45.3	20.9	27.1	28.8	0.0	43.6
6-7 PM	33.9	100.0	48.4	16.9	48.8	0.0	–	36.0
Day of Week								
Monday	47.1	30.8	44.2	30.6	35.8	35.3	23.7	44.9
Tuesday	47.0	31.8	36.1	38.7	26.3	17.5	0.0	43.9
Wednesday	42.7	26.1	34.7	27.6	31.9	26.8	57.1	40.0
Thursday	48.4	59.6	42.4	41.1	29.0	27.8	13.7	46.0
Friday	49.8	27.0	43.0	37.4	36.6	30.2	100.0	47.1
Saturday	43.1	17.1	45.4	31.7	15.4	27.2	20.6	41.1
Sunday	47.6	55.0	44.8	29.4	28.9	28.8	27.4	44.7
TOTAL	46.7	35.8	42.3	33.4	28.2	28.4	29.4	44.0

[1]All percents are based on analyses weighted according to the sample design to accurately represent the entire state. Restraint use includes correct and incorrect use of child restraint devices.
[2]Based on only 41 observed occupants.
[3]Restraint use for all positions includes cargo areas, passengers held in laps, and passengers standing.

Restraint use varied by region of the state (Table 3.5 and Figure 3.7). As in the previous survey, use rates were highest in the Southeast region (51.6%) and lowest in the Eastern upper peninsula (35.7%). The Southeast region had the highest use rates in most previous survey waves (except July 1987, July 1986, and December 1985). The Eastern upper peninsula region has had the lowest rate of restraint use in every wave except April 1986. Changes within region from the previous survey are likely due to sampling error and are not of interest.

There was also variability in restraint use by sampling area (Table 3.6). Low rates of restraint use were seen in Wayne County, City of Melvindale (22.4%), the City of Detroit (29.4%), and St. Clair County (29.7%). Sampling areas with high restraint use rates included Washtenaw County, City of Ann Arbor (61.0%), Wayne County, City of Livonia (56.9%), Marquette County (55.9%), and Ingham County, City of East Lansing (55.0%). The pattern of change in restraint use from previous survey waves was not consistent across sampling areas. Most of these changes are due to sampling error and are not of interest.

Although restraint use in all sampling areas has increased since December 1984 (before enactment of mandatory safety belt legislation), the magnitude of the increases has varied. The largest percentage increases were experienced in Berrien County (242%), Muskegon County (221%), Jackson County (204%), and Mecosata-Newaygo Counties (201%). One reason for these large percentage increases is the low prelegislation rates of belt use in these areas.

Occupants riding in nonstandard positions were tallied separately (Table 3.7). Nonstandard positions included: lying, standing, sitting, or kneeling on the floor, seat, or cargo area; sharing safety belts; or riding on the lap of another occupant. Occupants in nonstandard seat positions were typically under 16 years of age, as might be expected. A total of 18.5% of occupants 0-3 years and 6.6% of occupants 4-15 years were observed in nonstandard seat positions. Within the 0-3 age group, the most common nonstandard seat position was sitting on the lap of another occupant. Within the 4-15 age group, the most common positions were standing on the floor or rear seat.

TABLE 3.5
Percent Restraint Use by Michigan Department of Transportation Regions[1]

MDOT Region	Seat Position							
	Driver	Front Center	Front Right	Rear Left	Rear Center	Rear Right	Extra Seats[2]	All[3]
1. Western U.P.	52.3	29.3	48.4	53.3	35.9	34.8	0.0	50.4
2. Eastern U.P.	37.2	0.0	36.2	41.0	31.5	9.2	0.0	35.7
3. Northwest	42.7	62.5	42.4	37.0	49.9	41.5	0.0	42.7
4. Northeast	41.6	0.0	41.9	37.5	0.0	12.6	–	40.5
5. West Central	47.5	35.7	48.6	46.8	45.0	42.0	60.0	47.1
6. East Central	49.8	34.5	40.8	27.7	35.9	32.5	0.0	46.3
7. Southwest	44.9	28.1	41.1	38.2	24.0	29.7	18.1	42.1
8. Southeast	54.6	40.7	52.2	34.9	28.3	33.9	0.0	51.6
Metro Detroit	44.6	35.1	37.7	26.6	23.0	20.9	42.2	41.3
TOTAL	46.7	35.8	42.3	33.4	28.2	28.4	29.4	44.0

[1]All percents are based on analyses weighted according to the sample design to accurately represent the entire state. Restraint use includes correct and incorrect use of child restraint devices.
[2]Based on only 41 observed occupants.
[3]Restraint use for all positions includes cargo areas, passengers held in laps and passengers standing.

Figure 3.7: Restraint Use by Region

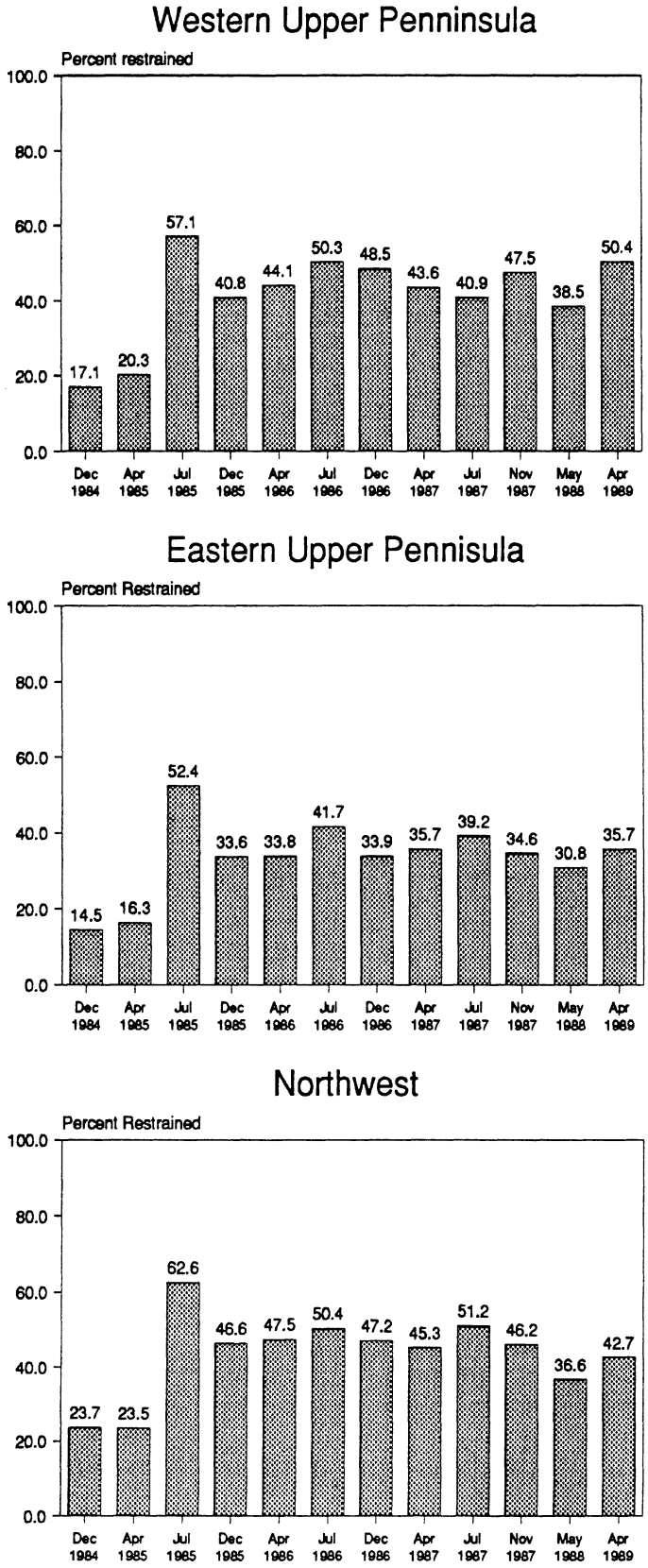


Figure 3.7 (Continued): Restraint Use by Region

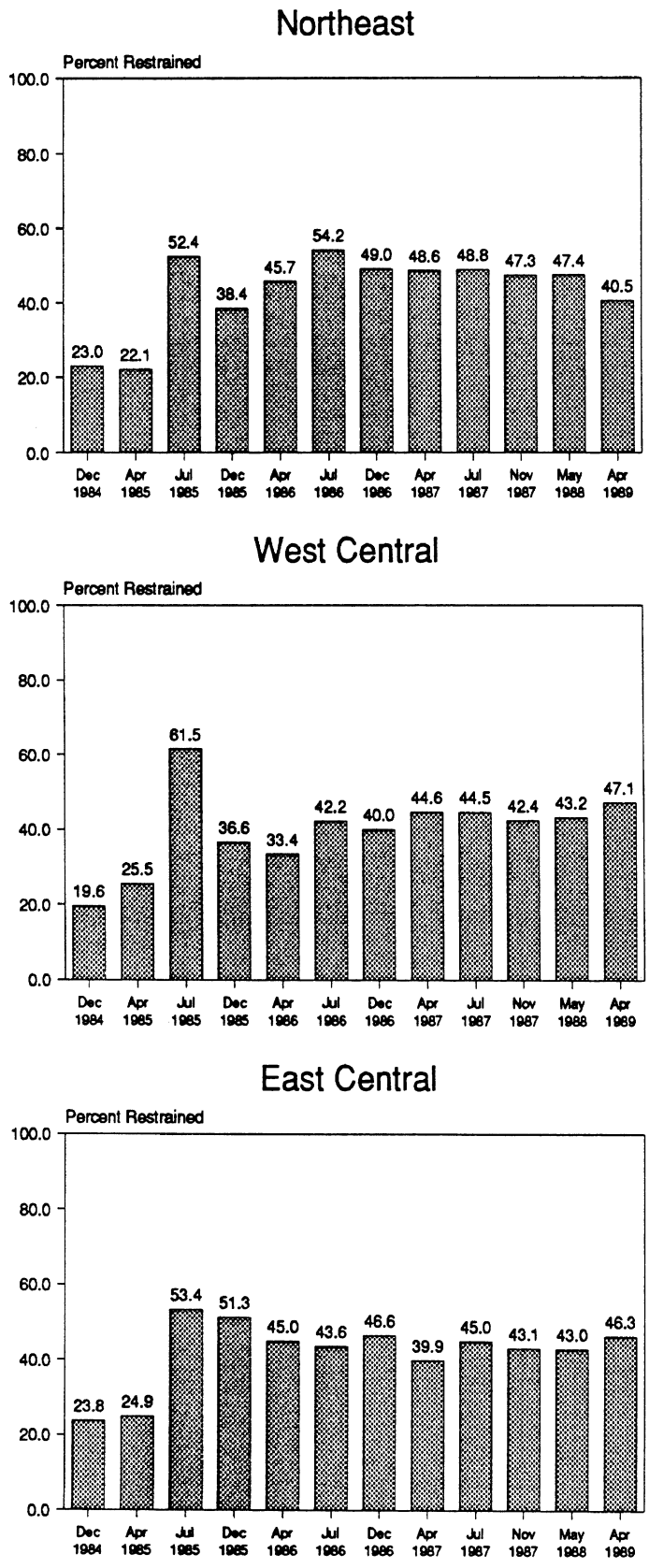


Figure 3.7 (Continued): Restraint Use by Region

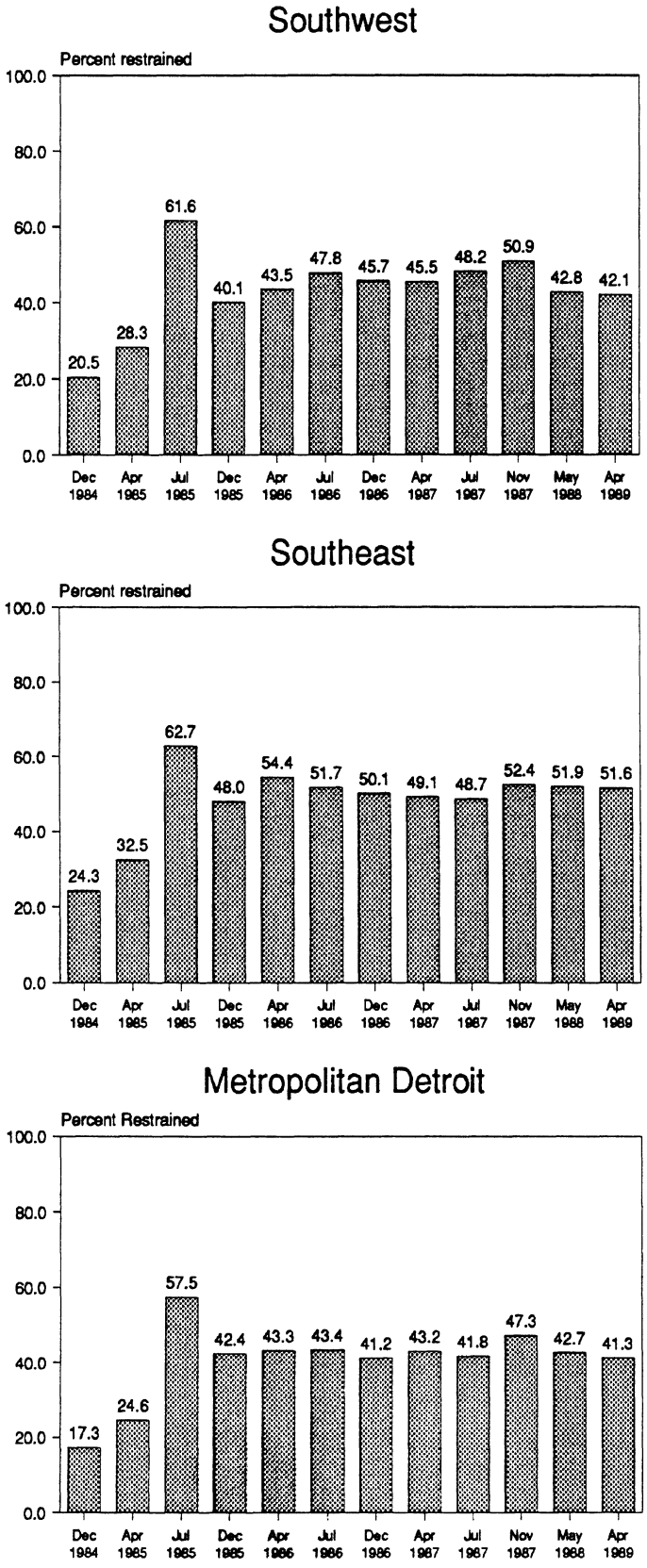


TABLE 3.6
Restraint Use, Number of Vehicles Observed, and Number of Occupants Observed for Each Sampling Area[1]

Sampling Area	Number of Vehicles Observed	Number of Occupants Observed	Percent Drivers Restrained	Percent Front Seat Passengers Restrained[2]	Percent All Occupants Restrained[2]
Barry[3]	204	315	44.1	36.4	42.2
Bay	204	261	53.9	54.2	53.6
Berrien County	195	326	44.4	42.6	43.8
Berrien, Niles	204	367	47.5	43.9	42.0
Charlevoix	204	269	30.9	27.7	30.2
Chippewa	160	274	43.3	36.9	39.2
Crawford-Roscommon	202	290	37.2	37.2	35.9
Delta	203	240	31.0	27.3	30.4
Dickinson	192	267	39.0	42.9	39.6
Eaton	204	294	53.4	56.2	52.7
Genesee	612	875	50.0	41.4	47.1
Grand Traverse	203	377	50.9	52.1	50.0
Ingham County	204	318	53.4	56.5	53.1
Ingham, East Lansing	204	302	57.8	53.9	55.0
Iosco-Alcona	204	258	46.1	47.9	45.7
Jackson	204	324	51.0	57.3	51.7
Kalamazoo County	204	276	41.2	28.8	38.4
Kalamazoo City	204	283	43.6	37.5	40.6
Kent County	204	277	48.5	62.0	51.6
Kent, Grand Rapids	204	281	50.5	46.8	48.0
Kent, Wyoming	204	362	45.6	55.9	47.0
Lapeer	204	263	47.1	44.4	44.9
Lenawee[3]	195	278	52.6	45.4	49.6
Macomb	602	855	54.4	48.7	50.8
Marquette	403	561	59.0	50.0	55.9
Mason	203	268	46.3	39.6	45.0
Mecosta-Newaygo	204	288	41.7	29.0	37.6
Monroe[3]	201	344	44.3	41.4	40.5
Montcalm[3]	204	288	47.5	42.9	45.8
Muskegon	204	259	45.6	50.0	45.6
Oakland County	1,019	1,308	55.8	49.7	54.2
Oakland, Royal Oak	203	237	56.2	38.4	53.8
Ottawa	204	278	53.4	52.2	54.7
Saginaw	408	607	48.9	34.0	42.5
St. Clair	204	283	35.3	18.8	29.7
VanBuren	204	340	40.2	33.7	35.1
Washtenaw, Ann Arbor	190	290	67.9	56.1	61.0
Wayne, Detroit	1,507	2,266	33.5	27.5	29.4
Wayne, Canton	204	294	54.9	54.0	54.5
Wayne, Garden City	204	301	45.8	50.0	44.6
Wayne, Livonia	204	253	55.9	63.6	56.9
Wayne, Melvindale etc.	204	290	26.0	15.6	22.4
Wayne, Trenton etc.	184	287	38.8	39.3	38.1
Wayne, Wyandotte	202	300	35.6	35.5	34.2
TOTAL	12,184	17,574	46.7	42.0	44.0

[1]All percentages are based on weighted analyses.
[2]Includes correct and incorrect use of child restraint devices.
[3]For these sampling areas no signalized freeway exits existed. Therefore, freeway exits required by the sample design were selected from an adjacent county.

TABLE 3.7 Number of Occupants in Nonstandard Seat Positions by Age[1]

Position	Age of Occupant		
	0–3	4–15	16+
Lying			
Front seat	3	4	1
Rear seat	0	2	0
Standing			
Front seat	6	4	0
Rear seat	8	21	0
On floor	13	23	2
Kneeling			
Front seat	0	1	0
Rear seat	1	3	0
Sitting			
On edge of front seat	0	0	0
On edge of rear seat	1	10	3
Between bucket seats	0	0	0
On lap	43	9	1
Cargo area	0	13	8
Shared seat belt	0	0	0
Total occupants in nonstandard positions	75	90	15
Total occupants in all positions	405	1,360	15,737

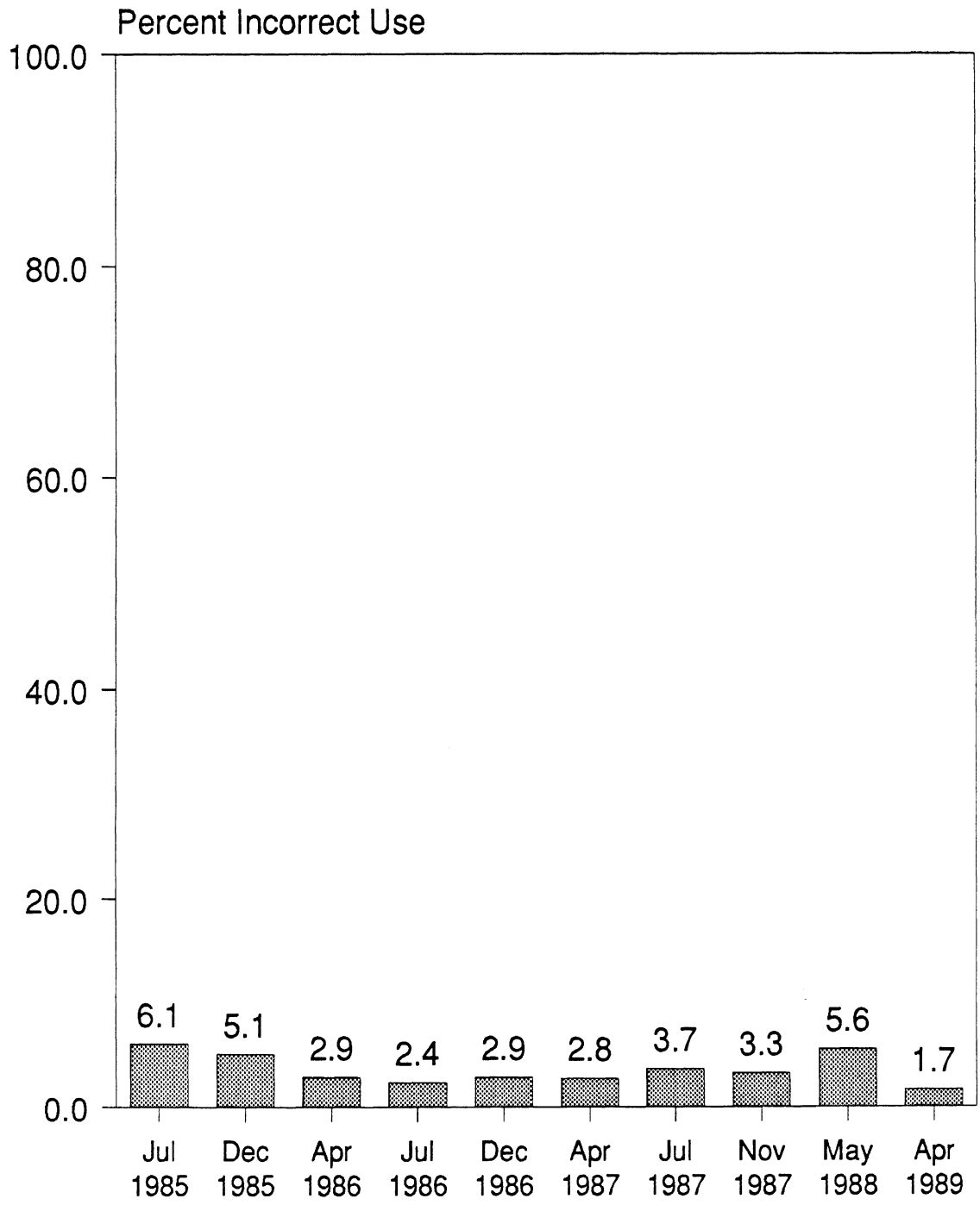
[1] Data are not weighted.

Incorrect use of safety belts has been recorded since July 1985. Because incorrect use does not typically include belt slack unless it is obvious to the observer, our measure of incorrect use should be considered a conservative estimate. Incorrect belt use in April 1989 declined from the previous survey, although the number of cases of incorrect use of belts has been low throughout the series of survey waves (Figure 3.8; incorrect use of child restraint devices is **not** included here). Ciccone and Wells (1987) studied incorrect use focusing primarily on shoulder belt slack. Analyses of films of drivers indicated that 27% of restrained drivers of domestic cars had one to two inches of slack in their belts and 8% had three or more inches. Among restrained drivers of imported cars, 5% had one to two inches of slack and none had three or more.

Several studies suggest that compliance with mandatory safety belt laws is tied to both public perceptions of enforcement of such laws and actual enforcement efforts and that continued efforts over time are needed to sustain high rates of use (Jonah and Grant, 1985; Rood, Kraichy, and Carman, 1987; Williams, Preusser, Blomberg, and Lund, 1987). Furthermore, specific provisions of the laws themselves may affect safety belt use. A study of twenty-seven states with belt laws found that states with primary enforcement laws had higher compliance overall than states with secondary enforcement laws (Campbell, 1987).

Compliance with Michigan's safety belt law would be facilitated if the law permitted primary enforcement. Even without such new legislation, however, stricter enforcement of the current law is needed, coupled with major publicity campaigns, in order to strengthen public perception about enforcement of the law and to enhance the law's contribution to reduced injury and death.

Figure 3.8: Percent of Belted Occupants with Incorrect Use



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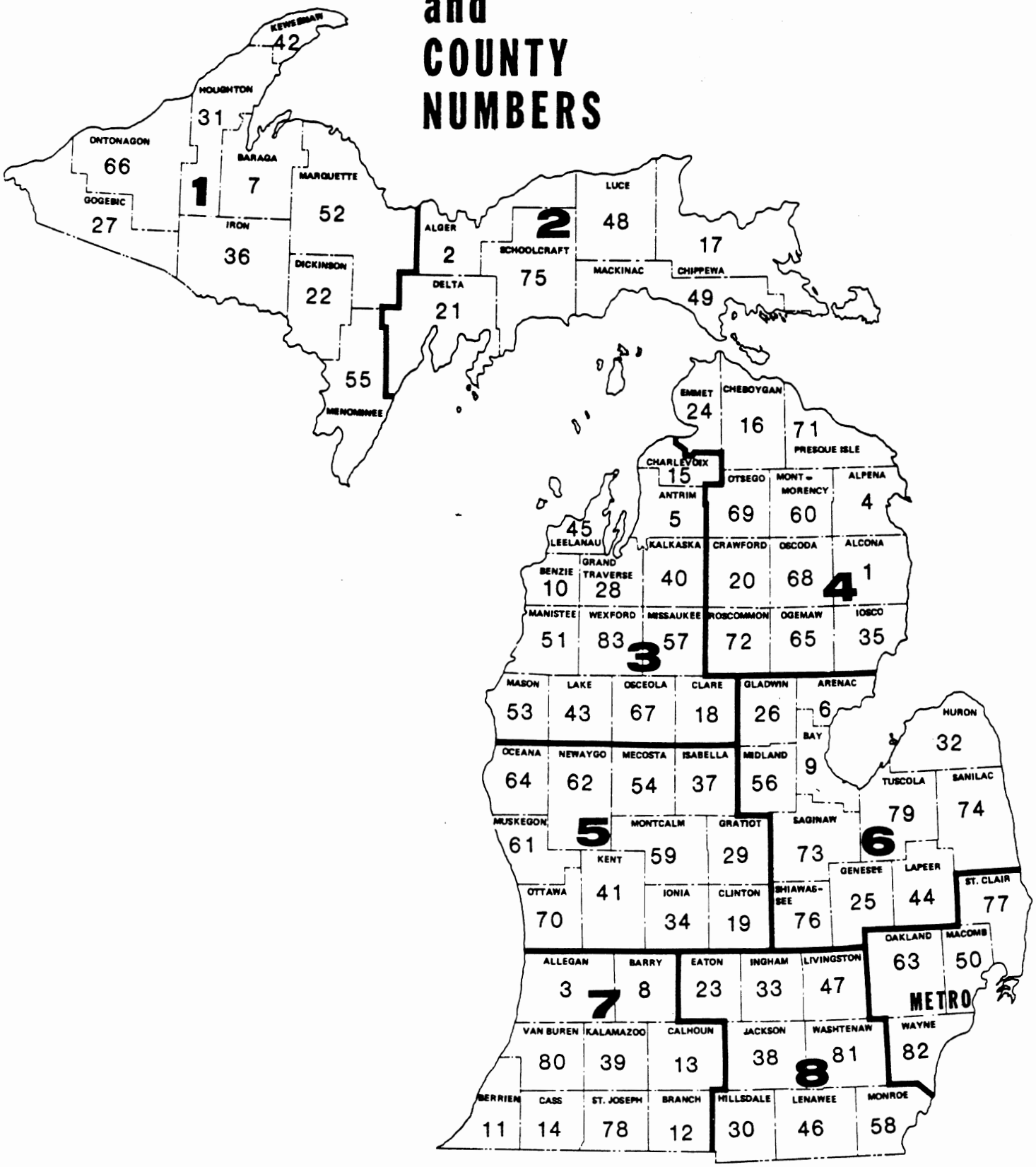
APPENDIX A

MICHIGAN DEPARTMENT OF TRANSPORTATION REGION MAP

DISTRICT and COUNTY NUMBERS



APPENDIX B
SEAT BELT SURVEY CODEBOOK

MICHIGAN SEAT BELT SURVEY
Wave 12, April 1989

Variable Number	Variable Name	Field Width	Character Type	Mult Resp	Page Number
1	SITE NUMBER	3	Numeric		1
2	SITE TYPE	1	Numeric		1
3	SITE CHOICE	1	Numeric		1
4	MONTH	2	Numeric		1
5	DAY OF MONTH	2	Numeric		1
6	START HOUR	2	Numeric		2
7	START MINUTE	2	Numeric		2
8	DAY OF WEEK	1	Numeric		2
9	WEATHER	1	Numeric		2
10	BREAK TIME (MINUTES)	2	Numeric		3
11	END HOUR	2	Numeric		3
12	END MINUTE	2	Numeric		3
13	SAMPLE REGION	1	Numeric		3
14	PSU ID	2	Numeric		3
15	MDOT REGION	1	Numeric		5
16	REGION WEIGHT	5	Numeric		5
17	ELAPSED TIME	2	Numeric		5
18	SITE OBSERVER	1	Numeric		5
19	SAMPLE ERROR COMP UNIT #	2	Numeric		5

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Variable Number	Variable Name	Field Width	Character Type	Mult Resp	Page Number
20	VEHICLE OBSERVER	1	Numeric		7
21	VEHICLE TYPE	1	Numeric		7
22	SEQUENCE NUMBER	2	Numeric		7
23	SITE # COUNT	2	Numeric		7
24	OBSERVER COUNT	2	Numeric		8
25	SITE/OBSERVER SEQ #	2	Numeric		8
26	HOUR OF OBSERVATION	2	Numeric		8
27	MINUTE OF OBSERVATION	2	Numeric		8
28	SITE WEIGHT	6	Numeric		8
29	TOTAL WEIGHT	6	Numeric		8
30	WAVE	2	Numeric		9
31	DRIVER BELTED (Y/N)	1	Numeric		9
32	DRIVER RESTRAINT USE	1	Numeric		9
33	DRIVER SEX	1	Numeric		9
34	DRIVER AGE	1	Numeric		9

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Variable Number	Variable Name	Field Width	Character Type	Mult Resp	Page Number
35	POSITION	2	Numeric		11
36	BELTED (Y/N)	1	Numeric		11
37	RESTRAINT USE	1	Numeric		11
38	SEX	1	Numeric		12
39	AGE	1	Numeric		12
40	SPECIAL TAG	2	Numeric		12
41	OCCUPANT # IN POSITION	1	Numeric		12

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Site Variables

Variables 1 through 19 describe site level information. The frequencies for the site variables contain one record for each of the 240 sites.

Variable 1 **SITE NUMBER** MD1: None MD2: None Field Width: 3 Type: Numeric

Variable 2 **SITE TYPE** MD1: None MD2: None Field Width: 1 Type: Numeric

FREQ	Prcnt	SITE TYPE
189	78.7	1. Intersection
51	21.2	2. Freeway Exit

Variable 3 **SITE CHOICE** MD1: None MD2: None Field Width: 1 Type: Numeric

FREQ	Prcnt	SITE CHOICE
238	99.2	1. Primary
2	0.8	2. Secondary

Variable 4 **MONTH** MD1: None MD2: None Field Width: 2 Type: Numeric

FREQ	Prcnt	MONTH
63	26.2	03. March
177	73.7	04. April

Variable 5 **DAY OF MONTH** MD1: None MD2: None Field Width: 2 Type: Numeric

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Variable 6 **START HOUR** MD1: None Field Width: 2
MD2: None Type: Numeric

FREQ	Prcnt	START HOUR
13	5.4	07.
19	7.9	08.
18	7.5	09.
28	11.7	10.
25	10.4	11.
24	10.0	12.
20	8.3	13.
28	11.7	14.
27	11.2	15.
18	7.5	16.
20	8.3	17.

Variable 7 **START MINUTE** MD1: None Field Width: 2
MD2: None Type: Numeric

Variable 8 **DAY OF WEEK** MD1: None Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	DAY OF WEEK
35	14.6	1. Monday
34	14.2	2. Tuesday
33	13.7	3. Wednesday
35	14.6	4. Thursday
40	16.7	5. Friday
33	13.7	6. Saturday
30	12.5	7. Sunday

Variable 9 **WEATHER** MD1: None Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	WEATHER
96	40.0	1. Mostly Sunny
128	53.3	2. Mostly Cloudy
15	6.2	3. Rain
1	0.4	4. Snow

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Variable 10 **BREAK TIME (MINUTES)** MD1: None Field Width: 2
MD2: None Type: Numeric

Variable 11 **END HOUR** MD1: None Field Width: 2
MD2: None Type: Numeric

FREQ	Prcnt	END HOUR
1	0.4	07.
15	6.2	08.
22	9.2	09.
23	9.6	10.
30	12.5	11.
20	8.3	12.
24	10.0	13.
27	11.2	14.
29	12.1	15.
23	9.6	16.
21	8.7	17.
5	2.1	18.

Variable 12 **END MINUTE** MD1: None Field Width: 2
MD2: None Type: Numeric

Variable 13 **SAMPLE REGION** MD1: None Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	SAMPLE REGION
20	8.3	1. Upper
20	8.3	2. Northern
20	8.3	3. Western
20	8.3	4. Central
20	8.3	5. South Central
20	8.3	6. Eastern
120	50.0	7. South Eastern

Variable 14 **PSU ID** MD1: None Field Width: 2
MD2: None Type: Numeric

FREQ	Prcnt	PSU ID
4	1.7	08. BARRY
4	1.7	09. BAY
4	1.7	11. BERRIEN COUNTY

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FREQ	Prcnt	Var 14 PSU ID
4	1.7	12. BERRIEN, NILES
4	1.7	15. CHARLEVOIX
4	1.7	17. CHIPPEWA
4	1.7	20. CRAWFORD-ROSCOMMON
4	1.7	21. DELTA
4	1.7	22. DICKINSON
4	1.7	23. EATON
12	5.0	25. GENESEE
4	1.7	28. GRAND TRAVERSE
4	1.7	33. INGHAM COUNTY
4	1.7	34. INGHAM, EAST LANSING
4	1.7	35. IOSOC-ALCONA
4	1.7	38. JACKSON
4	1.7	39. KALAMAZOO COUNTY
4	1.7	40. KALAMAZOO, CITY OF
4	1.7	41. KENT COUNTY
4	1.7	42. KENT, GRAND RAPIDS
4	1.7	43. KENT, WYOMING
4	1.7	44. LAPEER
4	1.7	46. LENAWEE
12	5.0	50. MACOMB
8	3.3	52. MARQUETTE
4	1.7	53. MASON
4	1.7	54. MECSOTA-NEWAYGO
4	1.7	58. MONROE
4	1.7	59. MONTCALM
4	1.7	61. MUSKEGON
20	8.3	63. OAKLAND COUNTY
4	1.7	64. OAKLAND, ROYAL OAK
4	1.7	70. OTTAWA
8	3.3	73. SAGINAW
4	1.7	74. ST. CLAIR
4	1.7	80. VANBUREN
4	1.7	81. WASHTENAW, ANN ARBOR
28	11.7	82. WAYNE, DETROIT
4	1.7	83. WAYNE, CANTON
4	1.7	84. WAYNE, GARDEN CITY
4	1.7	85. WAYNE, LIVONIA
4	1.7	86. WAYNE, MELVINDALE ETC.
4	1.7	87. WAYNE, TRENTON ETC.
4	1.7	88. WAYNE, WYANDOTTE

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Variable 15 **MDOT REGION** MD1: None Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	MDOT REGION
12	5.0	1. Western U.P.
8	3.3	2. Eastern U.P.
12	5.0	3. Northwest
8	3.3	4. Northeast
28	11.7	5. West Central
28	11.7	6. East Central
28	11.7	7. Southwest
24	10.0	8. Southeast
92	38.3	9. Metro Detroit

Variable 16 **REGION WEIGHT** MD1: None Field Width: 5
MD2: None Type: Numeric
Implied Dec Places: 4

Variable 17 **ELAPSED TIME** MD1: None Field Width: 2
MD2: None Type: Numeric

Variable 18 **SITE OBSERVER** MD1: None Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	PRIMARY OBSERVER FOR THIS SITE
75	31.2	1. Observer #1
81	33.7	2. Observer #2
76	31.7	3. Observer #3
8	3.3	4. Observer #4

Variable 19 **SAMPLE ERROR COMP UNIT #** MD1: None Field Width: 2
MD2: None Type: Numeric

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Vehicle variables

Variables 20 through 34 describe the vehicle and driver. The frequencies for the vehicle variables reflect one record for each vehicle observed.

Variable 20 **VEHICLE OBSERVER** MD1: None Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	ACTUAL OBSERVER FOR THIS VEHICLE
3782	31.0	1. Observer #1
4102	33.7	2. Observer #2
3915	32.1	3. Observer #3
385	3.2	4. Observer #4

Variable 21 **VEHICLE TYPE** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	VEHICLE TYPE
2672	21.9	1. Small Car
4030	33.1	2. Midsize Car
2665	21.9	3. Large Car
1520	12.5	4. Pickup
892	7.3	5. Van
387	3.2	6. Other
18	0.1	8. Missing Data

Variable 22 **SEQUENCE NUMBER** MD1: None Field Width: 2
MD2: None Type: Numeric

Variable 23 **SITE # COUNT** MD1: None Field Width: 2
MD2: None Type: Numeric

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Variable 24 **OBSERVER COUNT** MD1: None Field Width: 2
MD2: None Type: Numeric

Variable 25 **SITE/OBSERVER SEQ #** MD1: None Field Width: 2
MD2: None Type: Numeric

Variable 26 **HOUR OF OBSERVATION** MD1: 88 Field Width: 2
MD2: None Type: Numeric

FREQ	Prcnt	HOUR OF THE DAY THIS VEHICLE WAS OBSERVED
542	4.4	07.
766	6.3	08.
967	7.9	09.
1289	10.6	10.
1428	11.7	11.
1147	9.4	12.
1127	9.2	13.
1386	11.4	14.
1313	10.8	15.
1074	8.8	16.
1093	9.0	17.
52	0.4	18.

Variable 27 **MINUTE OF OBSERVATION** MD1: 88 Field Width: 2
MD2: None Type: Numeric

Variable 28 **SITE WEIGHT** MD1: None Field Width: 6
MD2: None Type: Numeric
Implied Dec Places: 4

Variable 29 **TOTAL WEIGHT** MD1: None Field Width: 6
MD2: None Type: Numeric
Implied Dec Places: 4

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Variable 30 **WAVE** MD1: None Field Width: 2
MD2: None Type: Numeric

FREQ	Prcnt	WAVE
12184	100.0	12. Wave 12

Variable 31 **DRIVER BELTED (Y/N)** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	DRIVER BELTED (Y/N)
6530	53.6	1. Not Belted
5650	46.4	2. Belted
4	0.0	8. Missing data

Variable 32 **DRIVER RESTRAINT USE** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	DRIVER RESTRAINT USE
6530	53.6	1. Not Belted
5650	46.4	2. Belted
4	0.0	8. Missing Data

Variable 33 **DRIVER SEX** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	DRIVER SEX
7345	60.3	1. Male
4830	39.6	2. Female
9	0.1	8. Missing Data

Variable 34 **DRIVER AGE** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	DRIVER AGE
3561	29.2	3. 16-29
6760	55.5	4. 30-59
1842	15.1	5. 60+
21	0.2	8. Missing Data

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Variables 35 through 37 describe the occupants.
The frequencies for the occupant variables contain
one record for each occupied occupant position.

Variable 35 **POSITION** MD1: 88 Field Width: 2
MD2: None Type: Numeric

FREQ	Prcnt	POSITION
12184	69.3	01. Front Left
171	1.0	02. Front Center
3706	21.1	03. Front Right
459	2.6	04. Rear Left
274	1.6	05. Rear Center
624	3.6	06. Rear Right
55	0.3	07. In Lap
22	0.1	08. Cargo Area
41	0.2	09. Extra Seat
38	0.2	10. Standing
0	0.0	88. Missing Data

Variable 36 **BELTED (Y/N)** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	BELTED (Y/N)
9830	55.9	1. Not Belted
7681	43.7	2. Belted (any type)
63	0.4	8. Missing Data

Variable 37 **RESTRAINT USE** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	RESTRAINT USE
9830	55.9	1. Not Belted
7454	42.4	2. Belted
200	1.1	3. CRD OK
27	0.2	4. CRD Wrong
63	0.4	8. Missing Data

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Variable 38 **SEX** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	SEX
9376	53.4	1. Male
8107	46.1	2. Female
91	0.5	8. Missing Data

Variable 39 **AGE** MD1: 8 Field Width: 1
MD2: None Type: Numeric

FREQ	Prcnt	AGE
405	2.3	1. 0-3
1360	7.7	2. 4-15
4850	27.6	3. 16-29
8292	47.2	4. 30-59
2595	14.8	5. 60+
72	0.4	8. Missing Data

Variable 40 **SPECIAL TAG** MD1: None Field Width: 2
MD2: None Type: Numeric

FREQ	Prcnt	SPECIAL TAG
17447	99.3	00. None
119	0.7	01. Shoulder Belt Misused
8	0.0	02. Lap Belt Misused

Variable 41 **OCCUPANT # IN POSITION** MD1: 8 Field Width: 1
MD2: None Type: Numeric

Sequence number for occupants in same seat position.
(Includes cargo areas and extra seats)

FREQ	Prcnt	OCCUPANT # IN POSITION
17533	99.8	1. First Occupant
30	0.2	2. Second Occupant