



KNOWLEDGE AND ATTITUDE CHANGE AND THE RELATIONSHIP TO DRIVING PERFORMANCE AMONG DRIVERS ATTENDING CALIFORNIA TRAFFIC VIOLATOR SCHOOL

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13. ABSTRACT (Maximum 200 words) <p>One of the primary goals of the traffic violator school (TVS) program is to improve knowledge and attitudes toward traffic safety issues among drivers cited for traffic violations. While the TVS curriculum is standard for all courses, the courses may differ in content emphasis and other factors. Among the specific characteristics on which TVS programs differ are comedy versus non-comedy presentation modes, public versus private ownership, and use of advertising inducements. The present study examined how these differences may influence the amount of learning and attitude change resulting from TVS attendance.</p> <p>The results indicate that the amount of improvement in knowledge and positive attitude was not significantly related to method of instruction, type of provider, or use of an inducement to attract enrollees. No significant relationship was found between knowledge gain and subsequent accident involvement, or between attitude change and subsequent driver record entries. It was also found that although level of knowledge gain was associated with fewer subsequent traffic citations, the magnitude of the relationship was small.</p> <p>It was recommended that, to the extent that one of the goals of TVS is to increase knowledge of safe driving practices, there may be some value in requiring an exit test as a condition for receiving a TVS-completion certificate. However, there is no evidence at this time to conclude that such an increase in knowledge would result in a reduction in subsequent accident involvements.</p>			
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PREFACE

This study was initiated in 1991 at the request of A. A. Pierce, former director, Department of Motor Vehicles. In contrast to prior Departmental evaluations of TVS, (1979, 1987, 1991, 1993) which focused on the relationship between TVS attendance and subsequent accident rate, this study addresses whether or not TVS course attendance promotes knowledge and attitude improvement. A similar study of TVS courses in Southern California was initiated by AB 2999 (Polanco, 1993) and is being conducted by the Auto Club of Southern California. The findings of the final report to that study, which are currently under review, are very consistent with those reported here.

The present report is being issued as an internal technical monograph of the Department of Motor Vehicle's Research and Development Section rather than an official report of the State of California. The findings and opinions may therefore not represent the views and policies of the State of California.

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The transfer of test and survey data from hardcopy to tape was performed by Headquarters Operations' Data Entry, under the direction of Joanne Lopez, Data Entry Manager.

The department would like to thank the following traffic violator schools for their participation in the study:

A Laff 'N Learn Traffic Schools	B-Safe TVS
A Local Fun and Economy Safety School	College of the Desert
A Nu-Way Traffic Violators School	College of the Siskiyous
Airport Traffic School	Comedy School
American Pacific Traffic School	Comedy-Magic Traffic School
Arroyo Grande High School Adult Ed.	Crafton Hills College
Aztlan Traffic School	Decisions R J P
Banning-Carson Community Adult	Delta Traffic Safety Seminars
Bay Cities Driving School	Dootson Driving School
Bob's Traffic School	Driver Safety Schools Inc.
Bruin Traffic School	"Eagle Rock" Condor Driving School
Emporium Capwell Traffic Seminars	Montebello Adult School
Eureka Adult School	Orange Coast Community College
Excel Traffic Safety School	Palm Springs Adult School
Finally A Gay Traffic School	Porterville Community College
Free Las Vegas Trips-Traffic School	Robin Rose Traffic School
Fremont-Community Adult School	Roosevelt Community Adult School
Fresno City College	Sacramento City College
Fun-D-Mental Traffic School	Safe-Pace Driver Education Center
Glendale Adult School	Safe-Way Quality at Lowcost TVS
Goldon Empire Traffic Safety	Safety Center of California
Humors My Name-Traffics My Game	Saturday and Week Nights Comedy TVS
International Driving and Traffic School	Says-Sat Evenings and Free Parking
International Traffic School	Solano Community College
It Won't Be A Bore-Coffee & More TVS	Sunrise Sat/Sun/Eve Traffic Program
Jdmar Traffic School Specialists	Technique Driving & Traffic School
L.A. Pierce College Traffic School	Tokay Traffic School
Less Stress 4U/Humor 2/Snax/Fun Films	Traffic Safety Made Interesting & Fun
Lettuce Teach U Traffic School	Traffic Safety Taught with Humor
Liberty Union High School Adult Ed	Tri-Community Adult Education
Lodi Safety Council	Upland Area Traffic School
Long Way Traffic School	Valley Traffic Center
Los Angeles Trade-Technical College	Valley Traffic School-Plus
M & N Traffic School	Victory Traffic School
Manual Art Jefferson Community Adult	Video 4 U Traffic School
Marin Community College	VIP Showtime Comedy Films SNK

EXECUTIVE SUMMARY

Background/Study Objectives

One of the primary goals of the traffic violator school (TVS) program is to improve knowledge and attitudes toward traffic safety issues among drivers cited for traffic violations. All TVS courses are required to teach a 400-minute curriculum established by the California Department of Motor Vehicles, covering principles of safe driving, driver responsibility, and licensing regulations. However, the courses may differ in method of instruction, content emphasis, and other factors. Among the specific characteristics on which TVS programs differ are comedy vs. non-comedy presentation modes, public vs. private ownership, and use of advertising inducements. It has been hypothesized that these differences may influence the amount of learning resulting from TVS attendance.

The present study measured each TVS attendee's level of knowledge of safe-driving practices and rules of the road, and driving attitudes, before and after course instruction. The study addressed the following two questions:

1. Is gain in knowledge competency and change in driver attitudes resulting from TVS course attendance dependent upon the course's method of instruction, type of provider, or use of advertising inducements?
2. What is the relationship between a students' change in level of knowledge resulting from course attendance and his or her driving record?

Methods

Test performance and survey data were collected from 900 traffic violator school students graduating from the 68 randomly selected TVS schools participating in the study. Testing was conducted from March 1991 through September 1992. Inspectors from DMV's Division of Investigations and Occupational Licensing served as test proctors at all sites.

Analysis of covariance was used to assess the effects on driver knowledge and attitude of the TVS school's method of instruction (comedy versus non-comedy), ownership status (public versus private), and method of advertisement (inducement versus no

inducement). Multiple regression analysis was used to evaluate the relationship between driver knowledge and attitude and driving performance.

Results

- Exposure to TVS had only a small effect in improving the knowledge level of the attendees. Although the gain in knowledge was statistically significant, the posttest scores were only 8% higher than the pre-course scores.
- There was no evidence that exposure to TVS resulted in a change in attitude toward traffic safety.
- Knowledge and attitude change was not significantly related to method of instruction, type of provider, or use of an inducement to attract enrollees.
- There was no significant relationship between knowledge gain and subsequent accident involvement, or between attitude change and driver record entries.
- Knowledge gain was associated with fewer subsequent traffic citations; however, the magnitude of the relationship was small.

Recommendations

To the extent that one of the goals of TVS is to increase knowledge of safe driving practices, there may be some value in requiring an exit test as a condition for receiving a TVS completion certificate. Such a mechanism would probably increase the attentiveness of the offenders during the course, thereby promoting increased learning. This requirement might also promote greater instructor diligence and improved curricula design. However, there is no evidence at this time to conclude that such an increase in knowledge would result in a reduction in subsequent accident involvements.

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INTRODUCTION

Background

Drivers receiving a court referral to a California traffic violator school (TVS) may choose to receive instruction from one of the state's approximately 400 providers. Those who return to the court with proof of TVS course completion have their citations dismissed and masked from the public driving record. In 1993, approximately 900,000 drivers completed TVS instruction.

It is generally believed that the TVS program must accomplish two things for the program to be considered effective in modifying driving behavior. One is to provide students with information which, if applied, would lead to safer and more lawful driving. The other is to change student attitudes toward driving that will both motivate and maintain safe driving behavior. Increasing knowledge or improving attitudes toward safety will accomplish nothing unless they also result in behavioral change.

There are at least four assumptions underlying this rationale. One is that knowledge and attitudes toward driving can be modified through classroom instruction. Two is that knowledge and attitudes are behaviors that a traffic school course can directly affect. Three is that knowledge and attitude change will increase rational and safe decision making in driving situations. Four is that knowledge and attitudes are stable and endure over time. The first three assumptions are the focus of this paper, while the fourth requires a longitudinal study beyond the scope of this report.

It should be recognized that attitudes toward driving do not directly predict driving behavior. Research has demonstrated that the correlation between knowledge/attitudes and behavior is weak (Ajzen & Fishbein, 1977). Two recent studies examining the effects of driver improvement schools on driver knowledge, attitudes, and driving performance have supported this conclusion, as discussed below.

Bloch (in press) examined the curriculum effects of traffic violator schools in Southern California. The study addressed whether TVS leads to increases in driver knowledge, shifts in driver attitudes, and improvements in driver performance. Results showed that knowledge gain, while statistically significant, is quite small—only 5%—and that the level of knowledge six months following the course is even smaller. Bloch concluded that TVS causes no significant modification in driver attitudes, driving performance (citations and accidents), or knowledge of defensive driving practices.

Bloch's study also addressed whether increased knowledge of traffic safety, a major goal of the TVS program, leads to improvements in driving performance. It found no indication that increased knowledge of any type of traffic safety information is associated with improved driver performance. The final issue addressed in the study focused on what TVS program characteristics improve driver knowledge, attitudes, and performance. None of the program or curriculum variables (of 25 examined) were found to have either consistent or strong association with program outcome.

In a study by Michaels (1990), the objective was to determine whether the attitudes of traffic offenders sent to traffic safety school in Cook County, Illinois were changed by

this treatment. It was reported that the absolute magnitude of the shift in attitude score was statistically significant, but quite small. For the subject population as a whole, the average score before the class was 64.7 while the average score after the class was 66.4. This represents only a 2.6% shift to more positive attitudes. The study did not, however, examine the relationship between attitude change and future driving behavior.

It should be acknowledged that the informational content of the traffic violator school course is primarily aimed at improving the cognitive and decision-making skills involved in driving. However, the course can also influence the student's level of knowledge and attitudes through the method of instruction and interactions with other course attendees.

Study Objectives

All TVS courses are required to teach a standard 400-minute curriculum established by the California Department of Motor Vehicles (DMV), covering principles of safe driving, driver responsibility, and licensing regulations. The curriculum guidelines are presented in Appendix A. However, the courses may differ in method of instruction, type of provider, use of advertising inducements, content emphasis, and use of visual aids. It has been hypothesized that these differences may influence the amount of learning resulting from TVS attendance. Among the characteristics of particular interest to the present study were use of comedy as a method of presentation, public versus private ownership, and use of advertising in attracting participants.

The study measured each TVS attendee's level of knowledge of safe-driving practices and rules of the road, and driving attitudes, before and after course instruction. The study addressed the following two questions:

1. Is gain in knowledge competency and change in driver attitudes resulting from TVS course attendance dependent upon the course's method of instruction, type of provider, or use of advertising inducements?
2. What is the relationship between a student's change in level of knowledge resulting from course attendance and his or her subsequent driving record?

METHODS

Development of Knowledge Tests and Survey Materials

Test items. Items relevant to the subject content required by DMV's 400-minute TVS curriculum guidelines were constructed. The items were patterned in format and content after those from the department's existing driver license written tests and driver pamphlets, the University of Michigan's Highway Safety Research Institute pool (Pollock & McDole, 1973), Montag and Comrey's (1987) driving internality and driving externality scales, and items contained within a report by McKnight and Green (1977). Equivalent pretest and posttest forms were constructed from the pool of items.

Both pretest and posttest forms were carefully reviewed for comprehensiveness, level of difficulty, and internal consistency. Other considerations in test construction included alternative responses, wording, and test structure. The test forms were pilot tested, and identified deficiencies were corrected.

The final test forms, presented in Appendix B, consisted of 50 items each. Each test contained two segments. The first segment consisted of 40 items measuring knowledge in the areas of (1) use and maintenance of required safety equipment, (2) defensive driving, (3) established speed laws, (4) proper lane use, (5) interacting at intersections, (6) passing, (7) demands of freeway, highway, or city driving, (8) hazardous driving conditions, (9) alcohol and other drugs, (10) driver responsibility, (11) traffic signs, signals, and pavement markings, and (12) license control measures. The second segment of each test consisted of 10 items measuring driver attitude in the areas of (1) accident causation, (2) accident avoidance, (3) accident risk, (4) alcohol and other drugs, (5) perception of violators, and (6) seat belt usage.

Survey items. Two questionnaires were constructed for the study: A 7-item form for students and a 5-item form for instructors. The items were intended to measure some of the factors that may influence a student's gain in knowledge from attending TVS or a student's subsequent driving record (e.g., the number of years an instructor has taught TVS and student's annual driving mileage). The student and instructor questionnaires are presented in Appendix B.

Identification of Treatment Groups

All 455 licensed traffic violator schools on DMV's January 1991 TVS-owners list were classified according to instructional method, type of provider, and enrollment-inducement status. The classifications were made based on a review of the following documents:

1. The school's lesson plan. Each lesson plan submitted for DMV approval provides detail on course content, method of instruction, and instruction time.
2. Personal correspondence between DMV and the school's owner. Correspondence on file at DMV was examined for supplemental information associated with the school's lesson plan.
3. DMV's school-monitoring form (if available). DMV employs a number of inspectors who periodically audit individual classrooms. For each audit, the inspector is required to file a monitoring form providing detailed information on course content and method of instruction, quality of classroom facilities, and attendance control.
4. The school's advertisements. This information (e.g., classified ads and flyers) was examined to identify schools that offered inducements to attract students.

The following three school-classification factors and subdivisions were identified:

1. Method of instruction
 - A. Non-comedy - Instruction was presented in a didactic lecture/discussion format.
 - B. Comedy - Instruction was presented with a heavy emphasis on humor.

2. Type of provider
 - A. Public - The school was owned and operated by a public school or community college district and required credentialed staff for instruction.
 - B. Private - The school was not owned and operated by a public entity and did not require credentialed staff for instruction.
3. Enrollment-inducement status
 - A. Inducement - The school offered inducements such as lower attendance fees and free pizza to attract students.
 - B. No inducement - The school offered no direct inducement to attract students.

The above categories were used to classify each school into one of the following five treatment groups:

1. Non-comedy, private, no inducement.
2. Non-comedy, public, no inducement.
3. Non-comedy, private, inducement.
4. Comedy, private, no inducement.
5. Comedy, private, inducement.

There were no treatment groups for public schools with a comedy format or inducements because, at the time of school classification for the study, no public institutions were offering TVS courses with these characteristics.

Selection of Schools

Twenty schools within each of the five treatment categories were randomly selected to participate in pretesting and posttesting. In order to assess the effect that exposure to the pretest may have had on posttest performance, an additional 20 schools were randomly selected within the traditional, private, no-inducement stratum to participate in posttesting only. Schools catering to non-English speaking students were not included in the study.

As an alternative selection strategy, it would have been possible to sample a number of schools within each treatment category proportional to the total number of schools in the stratum. However, since the emphasis of the present study was to identify variation among the treatment groups rather than producing statewide parameter estimates, the fixed, non-proportional sampling method was deemed more appropriate for the analyses.

As stated above, it was intended that 20 classrooms within each treatment group participate in the study. However, two changes to the California Vehicle Code (CVC) enacted during the study caused a number of schools to go out of business or alter the method of instruction and/or classroom environment. These legislative changes resulted in a reduction in the number of schools participating in each treatment category, as illustrated in Table 1 below.

Table 1

Group by Number of Schools Selected and Participating in the Study

Treatment category	Number of schools selected	Number of schools participating
1. Non-comedy, private, no inducement	20	13
2. Non-comedy, public, no inducement	20	17
3. Non-comedy, private, inducement	20	13
4. Comedy, private, no inducement	20	9
5. Comedy, private, inducement	20	3

The first legislative change amended CVC Section 11205, allowing each court to remove from DMV's list of licensed traffic violator schools any school whose name the court deems inappropriate. Under this law, a school's name could be considered inappropriate if it was thought to be misleading to the public, unprofessional, or implying that the school offered a program or inducements that derogated or distorted the instructional intent of the traffic safety program. The second legislative change amended CVC Section 42007, requiring drivers referred to TVS to pay a fee equal to the total bail set for the traffic offense on the uniform countywide bail schedule. This fee does not include the cost of TVS enrollment. Many of the schools remaining in business have reported reduction in student attendance volumes of up to 50% following enactment of the legislative changes.

Testing Procedures

Testing was conducted from March 1991 through September 1992. Inspectors from DMV's Division of Investigations and Occupational Licensing served as test proctors at all test sites.

Each student attending one of the schools participating in both pretesting and posttesting received a test package containing the 7-item survey form and two written tests, each consisting of 40 3- or 4-choice knowledge items and 10 2- or 3-choice attitude items. To prevent students from copying each other's answers, the test packages were alternated so that one of two parallel forms of the written test was administered as either the pretest or posttest. The pretest was administered at the beginning of class just prior to instruction. The posttest was administered immediately after instruction. Thirty minutes were allowed for each testing session. While students were completing the pretest, instructors were administered the 5-item survey questionnaire. The proctor text used for the pretesting and posttesting sessions is presented in Appendix C.

Each student attending one of the participating posttesting-only schools received a test package consisting of the 7-item survey form and one of the two parallel forms of the written test. The test was administered during a 30-minute period immediately following instruction. Parallel test forms were alternated between students to prevent copying. While student's were completing the test, instructors were administered the 5-item questionnaire. The proctor text used for the posttesting-only sessions is included in Appendix C.

Data Analysis

Effects of TVS instruction on driver knowledge and attitude. The treatment groups were compared on student's knowledge and change in attitude using analysis of covariance (ANCOVA) on program SAS GLM (SAS Institute Inc., 1990). The ANCOVA procedure essentially performs a statistical "matching" of treatment groups on factors thought to affect the criterion variable. This adjustment allows for a more powerful test of differences on the criterion variable among the treatment groups (Tabachnick & Fidell, 1989).

For the following comparisons, the primary unit of analysis was the class rather than the individual student. In this design, class can be referred to as being "nested" within the primary factor of interest (e.g., instructional method). An average posttest score was computed for each class in each treatment group, and tests for statistical significance of treatment effects were conducted. The primary question of interest was whether any of the treatments produced greater classroom posttest scores after adjusting for differences in pretest scores and the covariates.¹

The following specific comparisons of treatment groups were made:

- A. Instructional method: Non-comedy versus comedy.
- B. Provider: Public versus private.
- C. Inducement: No inducement versus inducement.
- D. Instructional method by inducement.

Pretest sensitization. In studies involving pretest and posttest measurements of knowledge level, it is possible that subjects react to the measurement process itself. For example, an individual's score on the posttest may be improved due to the effect of practice on the pretest. Subjects may even become more "test wise" as a result of developing test-taking skills on the pretest. Such changes in the students as a result of the measurement process can bias the estimate of knowledge gain and ultimately the effect of treatment (e.g., instructional method).

In order to evaluate the possible existence of such testing artifacts, an additional 13 classes within the non-comedy, private, no-premium treatment category were administered a posttest only, with students not being warned of the testing ahead of time. The posttest scores of this group were used to determine the effect of pretest measurement on posttest scores. If pretesting, per se, had no effect, the average posttest score for this group should not differ from that for subjects in the same treatment category who were administered the pretest.

To determine if the two testing groups differed on posttest performance, the two groups were compared on mean items correct overall and also within posttest knowledge and attitude segment.

¹It should be noted that three other analyses using different statistical techniques were conducted. Specifically, the supplemental analyses were (1) ANOVA using raw gain scores, (2) ANOVA using standardized gain scores, and (3) ANCOVA as stated above, but with a correction for the correlation between pretest and posttest. All techniques yielded similar results to those presented below. For a discussion of these and other techniques for assessing treatment effects in a nonequivalent control group design, the interested reader is referred to Kenny (1975).

Relationship of driver knowledge and attitudes and driver performance. Part of the underlying rationale for TVS is that increased driver knowledge and positive attitude toward the driving tasks will lead to improvements in driving performance. This assumption was tested by examining the association between percentage difference scores and driver performance after adjusting for differences on the student and instructor variables. In this analysis, the degrees of freedom for the error term is based on the number of subjects sampled rather than the number of schools.

RESULTS

Effects of TVS Instruction on Driver Knowledge and Attitude

Pretest sensitization. Table 2 displays the mean posttest scores for the pretest/posttest and posttest-only groups.

Table 2
Mean Posttest Items Correct by Test Segment for Groups
Receiving Pretest/Posttest or Posttest Only

Group	Knowledge segment	Attitude segment*	Total
Pretest/posttest	26.81	7.72	34.53
Posttest only	26.81	7.20	34.01

* $p < .01$

There were no statistically significant differences between the two groups on either total posttest score ($p = .53$) or knowledge-segment score ($p = .99$). There was a small, but significant ($p = .01$), difference favoring the pretest/posttest group (an average of 7.72 items correct) over that of the posttest-only group (an average of 7.20 items correct) on the attitude items. These results suggest that exposure to the pretest had little, if any, influence on posttest performance.

Covariate selection. As stated above, the treatment groups were compared by performing an ANCOVA on posttest scores. Analysis of covariance is based on a linear regression or relationship between one or more covariates and the dependent variable. The regression can be evaluated statistically by testing the covariate(s) as a source of variance in the dependent variable scores, while ignoring effects of differential treatment. Variables not significantly contributing to the variance of the criterion are excluded from the covariate pool.

In the present study, the potential covariate pool consisted of pretest scores and items from the student and instructor surveys. Using regression analysis, it was found that none of the survey items added significantly to prediction of posttest scores after adjusting for differences in pretest scores. Therefore, pretest score was the only covariate used in the ANCOVA.

Driver knowledge and attitude. There was a significant gain in test performance following course completion. Overall, test performance increased from 32.92 items correct (out of 50) to 35.64. Total knowledge increased significantly from 25.75 items correct (out of 40) to 27.91. Performance on the attitude scale also increased significantly from 7.17 items correct (out of 10) to 7.73. Although the gains in knowledge and positive attitudes were significant ($p < .01$), the magnitude of these changes is modest. For example, on the knowledge segment, the gain was approximately two additional questions correct or 8%. In terms of percentage of items correct, test score increased from 64.4% correct on the pretest to 69.8% correct on the posttest.

Table 3 presents average pretest scores and unadjusted and statistically-adjusted average posttest scores by group for the total test and each test segment.

Table 3
Average Pretest Scores and Unadjusted and Adjusted
Average Posttest Scores by Group

Comparison	Number of students	Total test (items 1-50)			Knowledge/law segment (items 1-40)			Attitude segment (items 41-50)		
		Pretest	Unadjusted posttest	Adjusted posttest	Pretest	Unadjusted posttest	Adjusted posttest	Pretest	Unadjusted posttest	Adjusted posttest
Instructional method										
Non-comedy	737	32.32	34.93	35.29	25.26	27.21	27.51	7.06	7.72	7.73
Comedy	166	33.41	36.43	36.15	26.14	28.55	28.31	7.27	7.91	7.89
School ownership										
Public	355	32.67	34.90	35.05	25.66	27.27	27.32	7.01	7.63	7.66
Private	548	32.77	35.69	35.78	25.60	27.80	27.96	7.30	7.83	7.83
Inducement status										
No inducement	698	32.61	35.08	35.27	25.41	27.43	27.63	7.20	7.67	7.66
Inducement	205	32.96	36.20	36.18	25.91	28.22	28.12	7.06	7.98	8.00

Results of the ANCOVA are presented in Table 4. As indicated by the F and p values, no significant differences in adjusted mean scores were found for any of the treatment group comparisons (including the method-by-inducement interaction) for the total test or either of the two individual test segments.

Table 4
Results of Comparisons on Average Adjusted Posttest Scores

Comparison	Total test (items 1-50)		Knowledge/law segment (items 1-40)		Attitude segment (items 41-50)	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
A. Instructional method: non-comedy versus comedy	1.03	.32	0.99	.32	0.45	.50
B. School ownership: public versus private	1.52	.22	1.29	.26	1.14	.29
C. Inducement: no inducement versus inducement	1.14	.29	0.38	.54	2.08	.16
D. Method-by-inducement interaction	0.12	.74	0.02	.89	0.65	.42

The direction of the results indicate that, although all groups combined had a modest gain in knowledge and safe driving attitudes from pre- to post-instruction, the amount of improvement was not significantly related to method of instruction, type of provider, or use of an inducement to attract enrollees.

Driver Knowledge and Driving Performance

A central rationale for the TVS program is that increased driver knowledge will lead to improvements in driving performance. Table 5 displays data on the relationship (partial correlations obtained from a regression analysis) between pretest versus posttest difference (percentage) scores and driving performance, controlling for student age and gender and the student and instructor survey variables. The table shows the correlation for the knowledge and attitude segment and for the overall test. Appendix D presents the correlations between the statistically significant ($p < .10$) survey variables and subsequent 1-year total accidents and total citations for the overall test.

Table 5
Correlations between Pretest Versus Posttest Percentage Difference Scores and Subsequent 1-Year Total Traffic Citations and Total Accidents Controlling for Biographical and Survey Variables

Test segment	Total citations		Total accidents	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Knowledge	-.09	.03	-.05	.23
Attitude	-.06	.12	.01	.86
----- Total	-.11	.01	-.04	.34

As indicated in the table, gain on the knowledge segment is significantly related to 1-year subsequent total citations ($p = .03$) but not total accidents. Similarly, gain on the total test is significantly related to subsequent one-year total citations ($p = .01$), but not total accidents. The direction of the correlations suggests that gain in knowledge of driving and rules of the road as a result of attending TVS is associated with fewer subsequent driving citations. However, the magnitudes of the correlations are small. For example, the $-.09$ correlation between the knowledge gain on the knowledge segment and total citations implies that less than 1% of the variation in total citations among TVS students can be attributed to improved knowledge of driving and rules of the road.

Performance on the attitude segment is not significantly related to either subsequent citations or subsequent accidents.²

The above analyses addressed the question of whether pre versus post percentage gain in knowledge was associated with subsequent driving record. Another question of interest is whether the scores on the knowledge and attitude items prior to course completion (pretest) were associated with subsequent driving record. In other words, do violators with relatively high levels of safe driving knowledge have better or worse subsequent driving records than those with lower knowledge levels. The results of this analysis are summarized in Table 6. As displayed in the table, pretest knowledge levels and attitude were not significantly related to subsequent driver-record incidents.

Table 6

Pearson Correlations between Pretest Scores and 1-Year Subsequent Total Traffic Citations and Total Traffic Accidents

Test segment	Total citations		Total accidents	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Knowledge	.01	.78	-.03	.37
Attitude	.01	.89	.02	.66

Total	.01	.77	-.02	.53

DISCUSSION/RECOMMENDATIONS

A primary goal of the traffic violator school program is to improve knowledge and attitudes toward traffic safety issues among drivers cited for traffic violations. Results presented in the report indicate that the program is not very successful in meeting this goal. The finding that the TVS programs produced only small gains in knowledge and

²An additional analysis was performed by adjusting posttest scores for pretest scores and the other covariates. The signs and magnitudes of the correlations were similar.

attitudes is consistent with the outcome of the studies by Bloch (in press) and Michaels (1990) discussed earlier. The degree of effectiveness of the schools evaluated in this study must be viewed in light of the following findings:

- While significant, the level of overall knowledge gain and attitude change was only 8%.
- The amount of improvement in knowledge and positive attitude was not significantly related to method of instruction, type of provider, or use of an inducement to attract enrollees.
- Although percentage gain in knowledge was associated with fewer subsequent traffic citations, the magnitude of the relationship was small. In addition, there was no significant relationship between knowledge gain and subsequent accident involvement, or between attitude change and subsequent driver record entries.

One of the major explanations offered for the limited effectiveness of TVS is that the citation-dismissal policy provides no incentive for traffic school students to perform better. Peck, Kelsey, Ratz, and Sherman (1979) questioned the motivational factors underlying traffic school attendance. They stated that when a driver receives a dismissal for attending a TVS, the driver is, in a sense, being rewarded for attending traffic school. They concluded that any reward system that is not contingent upon maintaining an improved record is difficult to defend on reinforcement theory grounds and could be counterproductive. As Bloch (in press) stated, within the context of low student motivation, it is not surprising that even the best of schools may have difficulty stimulating students to increase their learning or modify their attitudes toward traffic safety.

McKnight and Green (1977) also commented on the level of traffic safety knowledge possessed by violators. In order to determine the effectiveness of information dissemination and assessment techniques in reducing traffic accidents, they developed a set of tests for new drivers, traffic violators, accident repeaters, and drinking drivers. Their results showed knowledge gains ranging between 20% and 33% for all target groups except the traffic violator group, which showed only an 11% gain. The authors also argued that violators are not distinguishable from other drivers on the basis of rules of the road and safe-driving information needs. In other words, their accumulation of traffic citations was not attributable to lack of knowledge.

The present study also examined the issue of driver knowledge and driving performance. It was found that percentage knowledge gain is significantly related to traffic citations, but not total accidents. However, neither knowledge level nor driver attitudes as measured on the pretest was significantly related to subsequent driving incidents. These results are consistent with those found by Bloch (in press) and McKnight and Edwards (1979). Bloch reported no indication that increased knowledge of any form of traffic safety information is associated with improved driver performance. McKnight found that a manual and test program customized for traffic violators had no discernible effect in reducing subsequent driving incidents.

To the extent that one of the goals of TVS is to increase knowledge of safe driving practices, there may be some value in requiring an exit test as a condition for receiving a TVS completion certificate. Such a mechanism would probably increase the attentiveness of the offenders during the course, thereby promoting increased learning. This requirement might also promote greater instructor diligence and improved curricula design. However, there is no evidence at this time to conclude that such an increase in knowledge would result in a reduction in subsequent accident involvements. However, the present results did show that persons who learned more from the course tended to have fewer subsequent citations and this effect might be enhanced by requiring an exit test.

The objective of this study was to evaluate the effectiveness of several existing components of California's TVS program in modifying the attitudes and level of knowledge of traffic violators attending the program. There was no attempt to modify or develop new curriculum content and methods of instruction in order to identify changes that would more effectively induce knowledge and attitude change among TVS students. Such a study, legislatively mandated by Assembly Bill 2999, has been completed for the department by the Automobile Club of Southern California (Bloch, in press). The purpose of the study was to identify ways to enhance the traffic safety effectiveness of traffic violator schools through their educational impact. This study employed a proper control group to determine whether knowledge and attitude shifts induced by the TVS course endured and, if not, what factors were most related to recidivism on traffic accidents and citations. The analysis found that none of the 25 program variables that were examined had a consistent effect on program outcome.

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APPENDIX A



COURSE CORE TOPICS AND REQUIREMENTS FOR STATE OF CALIFORNIA, DEPARTMENT OF MOTOR VEHICLES APPROVED TRAFFIC VIOLATOR SCHOOL

400—MINUTE CURRICULUM

PURPOSE AND OBJECTIVES

The goal of the Traffic Violator School Program is to ultimately:

- Reduce traffic accident involvement
- Reduce traffic law violations
- Reemphasize the responsibilities associated with operating a motor vehicle

The traffic violator school shall create, through a structured learning atmosphere, an understanding of motor vehicle operation essential to violation and accident-free driving, driver responsibility, and licensing regulations.

COURSE

The course must provide a minimum of 400 minutes of classroom education expressly devoted to traffic safety. The 400 minutes is exclusive of class registration, lunch, rest breaks and certificate issuance. It should be balanced so as to provide a good overview of the subject matter pertinent to the Traffic Violator School Program. All information must be referenced in a table of contents.

LESSON PLAN OUTLINE

Each lesson plan submitted for department approval shall provide sufficient detail and content to allow the department to adequately review for course context, method of instruction, and compliance with the minimum amount of instruction time. Therefore, the following course guidelines should be followed:

Instruction Times:

The course must provide for 400 minutes of designated classroom instruction. *This time excludes course registration, any lunch or break periods, and issuance of completed course certificates.*

Audio Visual Aids:

Audio visual aids in the form of slide presentations, video cassettes or movies shall be used to visually demonstrate and supplement lecture material. All audio visual aids OL 613 (NEW 1/92) must be current and applicable to course purpose and lecture material. All presentations must be reasonably spaced throughout the entire course. Each lesson plan shall reflect where the instruction will be supplemented by audio visual aids, what type of visual aid is to be used, and approximate viewing times. No less than 40 minutes or more than 80 minutes of audio visual material shall be included in the 400 minute course.

Participation:

The course shall provide for participation by attendees. Participation may include, but is not limited to, questions and answers, pre and post-knowledge tests and group discussions. Each lesson plan shall reflect where group participation will be used to supplement lecture material, specific information on how the instructor will generate group participation and approximate amount of time allotted for the type of participation used. Student participation shall comprise not less than 40 minutes nor more than 80 minutes of the 400 minute course. Samples of any written material intended to elicit group participation shall be submitted with each lesson plan.

Tests:

If the course provides for tests to be used to supplement lecture material, the lesson plan shall indicate at what point the tests are to be given, the time allowed for completion of each test, the method of correction, and time allowed for correction. Samples of any tests and answers shall be submitted with each lesson plan.

Evaluations:

If the school provides for an evaluation of the course contents by attendees, completion of the evaluation shall not exceed 5 minutes. Samples of evaluations shall be submitted with each lesson plan.

Participant's Workbook:

If the course provides for a workbook to supplement instruction, the workbook shall be designed to complement course instruction and course purpose. Samples of workbooks intended for course use shall be submitted with each lesson plan.

Handout Material:

If the course is to provide regular use of supplemental handout material, the material shall be relevant to the purpose of the course, timely, and reproduced in an adequate and readable manner. (Unique or noteworthy handout material may be used on an infrequent basis.) Samples of regularly used handout material shall be submitted with each lesson plan.

General:

Lesson plans must be designed to provide the instructor with detailed methods on how to lead a course of instruction (instructor's manual) in driver safety. They must be submitted in sufficient detail (approximately 50 to 75 pages, using consecutively numbered pages and consecutively numbered lines on each page) to adequately inform the instructor and the department concerning the content of the course, the method of instruction to be used, the time spent on each segment, the start and finish times, and the lunch and break times. If tests are used, questions should be answerable from course material. Include sample of questions and answers in the lesson plan. More specific details regarding lesson plans can be found in Sections 101.31, 101.32 and 101.33 of the California Code of Regulations.

NOTE: Neither a traffic violator school lesson plan nor any instructor teaching a traffic violator school class shall include topics which are not related to traffic safety, such as: how to beat a traffic ticket; courtroom procedures; cop bashing; police jurisdictions; and other similar topics.

TIME FRAMES FOR COURSE INSTRUCTION

Lesson plans shall include instruction on each topic and sub-topic area. All topic and sub-topic areas are to be *thoroughly* discussed in each lesson plan submitted for approval.

The following topic and sub-topic areas are shown with the recommended amount of time to be spent on instruction.

TOPIC AREAS	RECOMMENDED TIME
I. The Common Sense of Driving	20 minutes
II. Use and Maintenance of Required Safety Equipment	20 minutes
III. Defensive Driving	60 minutes
IV. Established Speed Laws	15 minutes
V. Proper Lane Use	15 minutes
VI. Backing Up Safely	10 minutes
VII. Interacting at Intersections	20 minutes
VIII. Passing	15 minutes
IX. Demands of City Driving	30 minutes
X. Demands of Freeway Driving	30 minutes
XI. Demands of Driving On An Open Highway	20 minutes
XII. Hazardous Conditions	30 minutes
XIII. Alcohol and Other Drugs	45 minutes
XIV. Driver Responsibility	20 minutes
XV. Traffic Signs, Signals and Pavement Markings	30 minutes
XVI. Licensing Control Measures	<u>20 minutes</u>
TOTAL	400 MINUTES

CURRICULUM

I THE COMMON SENSE OF DRIVING

A. OPERATING A MOTOR VEHICLE IS A SERIOUS RESPONSIBILITY:

1. Motor Vehicle is a Weapon
2. Dangerous as a Loaded Gun, if Not Operated Properly
3. Parking Responsibility (e.g. to Avoid Rollaways)

B. OBEY THE LITERAL INTERPRETATION OF EVERYDAY LAWS:

1. Why Stop Completely at Stop Signs
2. What Does "Yield" Really Mean

C. COMMON COURTESY IS A KEY TO SAFETY:

1. Roadway is Shared by All Drivers
2. Courtesy Makes Order Out of Chaos
3. Treat Other Drivers the Way You Want to be Treated

II USE AND MAINTENANCE OF REQUIRED SAFETY EQUIPMENT

A. LIGHTING:

1. Purpose

- High Beams - Low Beams
- Taillights
- Brake Lights
- Back-up Lights
- Turn Signals
- Emergency Flashers

2. Hours of Use

3. Visibility Requirements

4. Maintenance and Precautionary Measures

5. Lighting During Darkness

24250 VC

6. Lighting Distance Requirements

24251 VC

7. Lighting Equipment Requirements

24252 VC

8. Headlamps and Auxiliary Lamps:

- Headlamps on motor vehicles 24400 VC
- Auxiliary driving and passing lamps 24402 VC
- Foglamps 24403 VC
- Multiple beams 24406 VC
- Upper and lower beams 24407 VC
- Use of multiple beams 24409 VC
- Single beams 24410 VC

9. Rear Lighting Equipment:

- Tail lamps 24600 VC
- Stop lamps 24603 VC
- Back-up lamps 24606 VC

10.	Signal Lamps and Devices:	
	• Turn signal system required	24950 VC
	• Turn signal system	24951 VC
	• Visibility requirements of signals	24952 VC
	• Turn signal lamps	24953 VC
B.	BRAKES:	
1.	Purpose	
	• Vehicular Control	
	• Stopping Requirements	
2.	Required Systems	
3.	Maintenance and Precautionary Measures	
4.	Required Brake System	26450 VC
5.	Parking Brake System	26451 VC
6.	Condition of Brakes	26453 VC
7.	Control and Stopping Requirements	26454 VC
C.	WINDSHIELDS AND MIRRORS:	
1.	Purpose	
	• Visibility	
	• Screening	
2.	Requirements to Aid Visibility	
3.	Prohibited Devices or Equipment	
4.	Maintenance	
5.	Windshields	26700 VC
6.	Windshield Wipers	26706 VC
7.	Condition and Use of Windshield Wipers	26707 VC
8.	Materials Obstructing or Reducing Driver's View	26708 VC
9.	Sun Screening Devices: Requirements	26708.2 VC
10.	Mirrors	26709 VC
11.	Defective Windshields and Rear Windows	26710 VC
D.	HORN:	
1.	Purpose	
	• Warning device	
2.	Use	
3.	Audible Distance	
4.	Prohibitive Amplification	
5.	Maintenance	
6.	Horns or Warning Devices	27000 VC
7.	Use of Horn	27001 VC
E.	TIRES:	
1.	Purpose	
	• Vehicle control	

- Traction
 - 2. Required Condition, Inflation and Tread
 - 3. Maintenance
 - 4. Tread Depth of Pneumatic Tires 27465 VC
- F. SAFETY BELTS:**
- 1. Purpose
 - Reduce injury and fatalities
 - 2. Use
 - 3. Maintenance
 - 4. Safety Belts: Requirements 27315 VC
 - 5. Child Passenger Seat Restraints: Requirements 27360 VC

II. DEFENSIVE DRIVING (Plus Pertinent Traffic Laws and Attitudes)

A. DRIVING COURTESY AND ATTITUDE:

- 1. Be as Courteous While Driving as in Other Social Contacts
- 2. Right of Way
 - a. When to use it
 - b. When to give it up
- 3. Stress, Anger, Emotion and Fatigue
 - a. How to recognize it
 - b. How does it affect driving?
 - c. Accident potential

B. ADJUSTING TO THE DRIVING ENVIRONMENT:

- 1. Daytime vs. Nighttime
 - a. Visibility
 - b. Speed
 - c. Planning the route
- 2. Weather
 - a. Rain, Fog, Snow
 - (1) braking distance
 - (2) speed
 - (3) wet roads
 - (a) slippery
 - (b) hydroplaning
 - b. See and be seen
- 3. Road Conditions

- a. Soft shoulders
 - b. Dropoffs
 - c. Bad pavement
 - d. Seasonal hazards
 - 4. Intersections
 - a. Marked - Unmarked
 - (1) signaling distance
 - (2) speed
 - (3) stopping limits
 - (4) signal controlled
 - 5. City, Freeway, Open Roadway, Mountain
 - a. Speed
 - b. Following distance
 - c. Braking distance
 - d. Signaling distance
 - e. Traffic conditions
 - f. Passing
 - (1) open roadway
 - (2) mountains
 - 6. Driving Distractions
 - a. Inside vehicle
 - b. Outside vehicle
- C. ACCIDENT CAUSATION:
- 1. Mental
 - 2. Physical
 - 3. Environment
 - 4. Visual Habits
 - 5. Other Drivers
 - 6. Accident Types
 - a. Intersections
 - (1) blind
 - (2) right-of-way
 - (3) turns
 - (a) left
 - (b) right
 - (c) simultaneous
 - (d) wide turns - commercial vehicles
 - (4) pedestrians
 - b. Freeway
 - (1) merging
 - (2) exiting

- (3) space cushion
- c. Lane changes
- d. Passing
- e. Head-on
- f. Rear-end
- g. Fixed object
- h. Slippery surface skids
- i. Vehicle failure
- (1) brakes
- (2) tires

D. ACCIDENT AVOIDANCE:

1. **Defensive Driving Techniques:**
 - a. Be alert - don't assume
 - b. Escape techniques
 - c. Reaction time
 - d. Three-second rule
 - e. Think ahead
 - f. Use of the horn
2. **Avoiding a Collision with the Car Ahead:**
 - a. Importance of vehicle lane placement
 - b. 2-second system
 - How to establish a 2-second gap
 - c. When to increase following distance to 3 seconds or more
 - When being tailgated
 - When vision is blocked or visibility poor
 - When speed is increased
 - When adverse roadway or weather condition exist
 - d. Momentary distractions - pick a safe time to look away
 - Check the situation ahead
 - Take short looks
 - Have a passenger help with navigation
 - e. Look ahead for trouble
 - Look over and around the car ahead
 - Check ahead for speed on hilltops and curves
 - Watch brake lights in adjacent lanes
 - Start braking early
 - f. Locations to watch for trouble
 - Traffic controlled intersections
 - Approaching crosswalks
 - Lanes next to parked cars
 - Parking lot entrances

- Interchanges where cars enter and leave
 - Slippery or ice-covered streets
 - Where children are at play
3. **Avoid Being Rear Ended by Another Vehicle:**
- a. -Increase following distance from vehicles ahead
 - b. Signal early for turns, stops, and lane changes
 - c. Brake smoothly and gradually
 - d. Keep pace with traffic when possible
 - e. Check mirrors for following distance of other vehicles
 - f. Before changing lanes, check direction of travel
 - g. After stopping, keep brake pedal depressed
 - h. Keep rear lights clean and working
4. **How to Choose an Alternative Path of Travel as an Escape Route:**
- a. Importance of adequate visual leads
 - Choosing a safe path of travel ahead
 - Possible speed or position adjustments
 - b. Positioning the vehicle laterally
 - Select speeds to position vehicle between clusters of vehicles
 - Select a lane position within traffic clusters to allow greatest maneuverability
 - c. Avoiding multiple hazards
 - Identify hazards early
 - Predict potential hazards
 - Adjust speed and position to avoid potential hazards
 - Anticipate and plan possible escape routes
 - d. Compromise to reduce the risk of hazards
 - A long line of cars approaching from the opposite direction
 - Be prepared to brake and move to the right
 - An approaching vehicle drifts into lane of travel
 - Slow down
 - Pull to the right
 - Sound horn and flash lights
 - On a curve
 - Slow before entering
 - Stay toward the right of the lane
5. **Protecting Yourself When a Collision Cannot be Avoided:**
- a. Being hit from the rear
 - When to apply the brakes
 - Use of head restraints

- b. Being hit from the side
 - Preparing to steer
 - Bracing against the steering wheel
- c. Being hit from the front
 - Protecting your face when wearing a shoulder strap
 - Protection when not wearing a shoulder strap
- 6. Emergency Situations:
 - a. Maintenance and construction areas
 - b. Children
 - c. Animals

IV. ESTABLISHED SPEED LAWS

- A. PURPOSE OF BASIC SPEED LAWS
- B. PURPOSE OF MINIMUM SPEED LAWS
- C. SPEED LIMITS FOR DESIGNATED AREAS
 - 1. Freeway
 - 2. Residential Zones
 - 3. Business Districts
 - 4. School Zones
 - 5. Blind Intersections
- D. SPEED LIMITS FOR DESIGNATED VEHICLES
- E. SPEED AND STOPPING DISTANCE
 - 1. Perception Time and Distance
 - 2. Reaction Time and Distance
 - 3. Braking Distance
 - 4. Stopping Distance
- F. TEMPORARY MAXIMUM SPEED LIMIT 22348 VC
- G. BASIC SPEED LIMIT 22350 VC
- H. PRIMA FACIE SPEED LIMITS 22352 VC
- I. MINIMUM SPEED LAW 22400 VC
- J. MAXIMUM SPEED FOR DESIGNATED VEHICLES 22406 VC

V. PROPER LANE USE

- A. DESIGNATED LANES OF TRAVEL:
 - 1. Divided Highways
 - 2. Laned Roadways
 - 3. Three-Laned Highways
- B. POSITION OF VEHICLE IN LANE OF TRAVEL:
 - 1. Marked Lanes
 - 2. Narrow Roadways

3. Mountain Roadways
4. Other Vehicle Approaching
5. Exceptions to Driving on the Right Side of Roadway

C. REQUIRED LANE USE AND USE OF TURNOUTS:

1. Slow-Moving Vehicles
2. Special Vehicles

D. LANE USE (Vehicle Code Sections):

- | | |
|--|----------|
| 1. Right Side of Roadway | 21650 VC |
| 2. Divided Highway | 21651 VC |
| 3. Slow-Moving Vehicles | 21654 VC |
| 4. Designated Lanes for Certain Vehicles | 21655 VC |
| 5. Turning Out of Slow-Moving Vehicles | 21656 VC |
| 6. Laned Roadways | 21658 VC |
| 7. Three-Lane Highways | 21659 VC |
| 8. Approaching Vehicles | 21660 VC |
| 9. Narrow Roadways | 21661 VC |
| 10. Mountain Driving | 21662 VC |

VI. BACKING UP SAFELY

A. CHECK BEHIND THE VEHICLE BEFORE GETTING IN FOR:

1. Children
2. Small Objects

B. VISIBILITY AND BODY POSTURE:

1. Body Position While Steering
2. Head Position While Steering

C. SPEED CONTROL:

1. Release of Brake Pedal
2. Backing Speed

D. STEERING:

1. Sharp Turns
2. Backing Around a Corner

E. WHEN MOVEMENT IS CONSTRICTED:

1. Use Mirrors and Passengers to Help Navigate
2. Whenever Possible Avoid Backing
3. Find Parking Spaces that Do Not Require Backing

VII. INTERACTING AT INTERSECTIONS

A. IDENTIFYING AN INTERSECTION:

1. Controlled
2. Uncontrolled

B SKILLS REQUIRED FOR CROSSING AND TURNING:

1. Judging Time to Make a Maneuver
2. Judging Speed and Distance of Other Vehicles
3. Choosing a Traffic Gap or Space to Enter or Cross Traffic

C. LEFT TURNS - PROTECTED AND UNPROTECTED:

1. Scan for Hazards - Other Vehicles, Pedestrians, Bicycles
2. Vehicle Position - Before and After Turn
3. When View is Blocked

D. RIGHT TURNS - PROTECTED AND UNPROTECTED:

1. Scan for Hazards - Other Vehicles, Pedestrians, Bicycles
2. Check for Controlled Lanes and Signals
3. Vehicle Position - Before and After Turn
4. When View is Blocked
5. Use of Bike Lane for Turns

E. U-TURNS:

1. Scan for Hazards - Other Vehicles, Pedestrians, Bicycles
2. Check for Prohibitive Signs
3. Vehicle Position - Before and After Turn

F. PROCEEDING STRAIGHT:

1. Scan for Hazards - Other Vehicles, Pedestrians, Bicycles
2. Covering the Brake Pedal

G. SIGNALING FOR TURNS AND STOPS:

1. Purpose of Signaling
2. Distance Required
3. Duration of Signal

**H. INTERSECTIONS - PROCEEDING STRAIGHT, TURNING AND SIGNALING
(Vehicle Code Sections):**

- | | |
|---|------------|
| 1. Intersection Defined | 365 VC |
| 2. Turning Upon a Highway | 22100 VC |
| 3. U-Turn at Controlled Intersections | 22100.5 VC |
| 4. Regulations of Turns at Intersections | 22101 VC |
| 5. U-Turn in a Business District | 22102 VC |
| 6. U-Turn in a Residential District | 22103 VC |
| 7. Unobstructed View Necessary for U-Turn | 22105 VC |
| 8. Turning Across Bicycle lane | 21717 VC |
| 9. Turning Movements and Required Signals | 22107 VC |
| 10. Duration of Signal | 22108 VC |
| 11. Signal When Stopping | 22109 VC |
| 12. Method of Signaling | 22110 VC |

VIII. PASSING

A. PASSING AND BEING PASSED:

1. Demands of Proper Passing
 - Good judgment
 - Rapid decision making
- B. WHEN PASSING IS AUTHORIZED:
 1. Designated Lane Use and Markings
 - Freeways
 - Two-lane roadways
- C. WHEN PASSING IS PROHIBITED:
 1. Designated Lane Use and Markings
 - Freeways
 - Two-lane roadways
- D. SPECIAL SITUATIONS:
 1. Without Sufficient Clearance
 2. On a Hill
 3. Intersections or Railroad Crossings
 4. School Bus
 5. Bridges or Abutments
- E. DANGEROUS PASSING SITUATIONS:
 1. Long Line of Cars Ahead
 2. Intention to Stop or Turn
 3. Oncoming Car Too Close
 4. Car Ahead is at or Near the Speed Limit
 5. Sight Distance Ahead is Limited
 6. Maneuver Cannot be Completed Before Reaching A No Passing Zone
- F. PASSING POTENTIAL:
 1. Identify Passing Situations
 - Passing maneuver times
 - Identifying a safe distance ahead
 - Identify an end-of-pass gap to pull back into lane
 - Establish a safe response for hazards
 - Checking for road traction
- G. STEPS FOR SUCCESSFUL PASSING:
 1. Scan for Hazards
 - Oncoming vehicles
 - Vehicles approaching from rear
 - Merging vehicles
 2. Check for Blind Spots
 3. Signal Intent
 4. Warn the Driver Ahead

5. Obtain a Speed Advantage
6. Re-check Conditions Ahead
7. Create Return Space
8. Signal Return
9. Check for Blind Spots
10. Create Space for Vehicle Passed

H. WHEN BEING PASSED:

1. Safety When Being Passed
 - Yielding required
 - Maintaining speed

I. OVERTAKING AND PASSING (Vehicle Code Sections):

- | | |
|---|----------|
| 1. Overtake and Pass to Left | 21750 VC |
| 2. Passing Without Sufficient Clearance | 21751 VC |
| 3. When Driving on the Left Prohibited | 21752 VC |
| 4. Yielding for Passing | 21753 VC |
| 5. Passing on the Right | 21754 VC |
| 6. Pass on Right Safely | 21755 VC |
| 7. Passing on Grades | 21758 VC |

IX. DEMANDS OF CITY DRIVING

A. REDUCING SPEED:

1. Allows For More Time to See Details and Identify Their Meaning
2. Allows For More Time to Analyze Information and Predict What Might Happen
3. Allows For More Reaction Time to Decide What to Do
4. Allows For Additional Time to Execute Decisions or Avoid Dangerous Situations

B. LOOKING AHEAD OF TRAFFIC:

1. Look Ahead For Traffic Hazards
2. Leave Enough Distance to Maneuver
3. Signal Lights:
 - Look ahead for signal changes
 - Anticipate signal changes
 - Check for stale green lights

C. COVERING THE BRAKE, NOT RIDING IT:

1. Slow For Reduced Stopping Distance
2. Situations in Which the Brake Pedal Should Be Covered
 - Next to parked cars
 - Brake lights of other cars
 - Approaching signal lights

D. CITY PASSING:

1. Passing Over Center Line of Travel
2. Passing In or Near an Intersection

E. CHOOSING OF LANE:

1. Choose a Lane Appropriate to Use
2. Choose a Less Traveled or Congested Lane Unless Planning To Turn

F. VEHICLE POSITION:

1. Keep Up With Traffic Speed and Within Legal Limits
2. Avoid Another Driver's Blind Spots
3. Avoid Letting Another Driver Drive In Your Blind Spot
4. Avoid Side-by-Side Driving
5. Avoid Driving in Bunches

G. CHOOSING A SAFE ROUTE:

1. Time of Day and Traffic Density
2. Through Streets vs. Side Streets
3. One-Way Streets vs. Two-Way Streets

H. SPECIAL PROBLEMS ASSOCIATED WITH CITY TRAFFIC

1. Parked Cars Hiding Cross Traffic
2. Detour in Lane of Travel
3. Two-Way Left Turn Center Lane Use
4. Turning at Corners
5. Driving on One-Way Streets
 - Identifying
 - Entering
 - Speed
 - Lane Choice
 - Exiting
 - Dealing with wrong way drivers
6. When and where to expect pedestrians and bicyclists

X. DEMANDS OF FREEWAY DRIVING

A. PLANNING A ROUTE IN ADVANCE:

1. Be Familiar With Alternate Exits
2. Guide Signs - Placement of Guide Signs Which Indicate Distance and Route Direction
3. Plan Time of Travel to Avoid Unfamiliar or Congested Traffic Situations

B. ENTERING THE FREEWAY:

1. Acceleration Lanes: Extra Lane Permitting a Vehicle to Reach Freeway Speeds
 - Be familiar with entrance warning signs
 - Observe ramp speed limit
 - Check speed of freeway traffic
 - Watch vehicle ahead for sudden stops
 - Locate a gap in traffic
 - Adjust speed for merging onto freeway through lanes
 - Signal until entering through-traffic lane

- C. COMMON MISTAKES ENTERING FROM ACCELERATION LANE:
1. Sudden Slowing or Stopping
 2. Merging At Too Slow a Speed
- D. ENTERING DIRECTLY ONTO THE FREEWAY - NO ACCELERATION LANE:
1. Yield or Merge Signs Before Entering
 2. Wait for a Longer Gap Before Entering
 3. Acceleration Speed to Blend into Traffic
- E. SPECIAL SITUATIONS:
1. Timed Entrance Lights
 2. Double Merge Lanes
 3. Diamond Lanes
- F. LEAVING THE FREEWAY:
1. Scan Ahead For Signs Indicating Desired Exit Lane
 2. What To Do When An Exit is Missed
- G. EXIT LANES:
1. Deceleration Lanes Allow Drivers to Reduce Speed Without Endangering Traffic to the Rear
 2. Multiple Deceleration Lanes
 - Yielding to other drivers
 3. Adjusting Speed
 - Posted limit
 - Curved ramps
- H. CHOOSING LANES OF TRAVEL:
1. Two-Lane Freeways
 - Use of right-hand lanes
 - Use of left-hand lanes
 2. Three Lanes or More
 - Use of right-hand lanes
 - Use of center lanes
 - Use of left-hand lanes
 3. Lane Use When Approaching Interchanges
 - Avoiding merging conflicts
- I. SPEED LIMITS:
1. Posted Speed Limits
 - Maximum speed
 - Speed for conditions

- Minimum speed
 - Lane use for slower vehicles
2. Dangers of Driving Too Slow
 - Blocking the flow of traffic
 - Forced lane changes
- J. MAKING A SAFE LANE CHANGE:**
1. Checking For Ample Space
 - Vehicle ahead
 - Vehicle to rear
 - Vehicles to sides
 2. Look For Hazards
 - Use of mirrors
 - Checking for blind spots
 3. Signaling in Advance
 4. Change Lanes One at a Time
 5. Speed When Changing Lanes
 - Avoid slowing or stopping
- K. TIME MARGINS FOR FREEWAY CONDITIONS:**
1. Establishing A Space Cushion
- L. HELPING OTHER DRIVERS ENTER OR EXIT:**
1. Merging Signs, Warning Other Vehicles Are Entering the Freeway
 2. Adjusting Speed to Open A Gap
 3. Moving Into Adjacent Lanes
- M. FREEWAY EMERGENCIES:**
1. Blocked Roadways
 - Steering around
 2. Stopping
 - Warning drivers to the rear
 - Brake lights
 - Hazard lights
- N. BREAKDOWNS:**
1. Pulling To The Shoulder
 - Signaling
 - Shoulder use and vehicle position
 2. Warning Approaching Traffic

- Hazard lights
- Flares or warning devices

O. RE-ENTERING THE FREEWAY:

1. Signaling
2. Accelerating on Shoulder
3. Entering Into An Adequate Gap
 - Speed
 - Checking for hazards

P. SPECIAL FREEWAY PROBLEMS:

1. Velocity - Unconsciously Going Too Fast
 - Check speedometer
 - Allow time to readjust to slower speeds
2. Highway Hypnosis
 - Avoid drowsiness

Q. TOLL BOOTHS - WHAT TO LOOK FOR WHEN APPROACHING:

1. Reduced Speed Limits
2. Distance Ahead
3. Designated Lanes For Special Vehicles

XI. DEMANDS OF DRIVING ON AN OPEN HIGHWAY

A. AREAS OF POTENTIAL HAZARDS:

1. Unmarked Farm and Field Driveways
2. Livestock Crossing Areas
3. Rough Road Conditions
4. Unmarked Shoulders
5. Roadside Stands or Gas Stations

B. OTHER USERS OF THE ROADWAY:

1. Trucks
 - Speed
 - Passing
2. Slow-Moving Vehicles
 - Speed
 - Clearance
3. Animals
 - Unexpected
 - Passing

C. ENVIRONMENT:

1. Curves
 - Speed and braking
 - Hazards
2. Hills
 - Shifting gears
 - Visibility and speed
 - Brake failure or overheating
3. Mountain Driving
 - Vehicle condition
 - Speed
 - Allowing for other vehicles to pass
 - Passing slower vehicles
4. Special Problems in High Altitudes
 - Overheating
 - Vapor lock

D. MEETING OR APPROACHING OTHER VEHICLES ON OPEN ROADWAYS:

1. Meeting Lines of Cars
2. Meeting at Hilltops
3. Meeting at Night
4. Meeting Slow-Moving Vehicles

E. ROAD CONDITIONS:

1. Rough Roads
2. Traction
3. Width of Road
4. Field of View
5. Line of Sight

XII. HAZARDOUS CONDITIONS

A. DRIVING IN THE FOG:

1. Obtaining Maximum Visibility and Reducing Glare
 - Appropriate use of headlamps
 - Use of fog lights and mounting
 - Windshield wipers and defrosters

B. SPEED:

1. Reduce Speed, But Keep Moving When Entering a Fog Bank
2. Watch For Slow-Moving Vehicles Ahead
3. Look in the Rearview Mirror for Vehicles Approaching From the Rear

C. WHEN YOUR VEHICLE STALLS:

1. Move Off Roadway as Quickly as Possible
2. Move Away From Vehicle
3. Restricted Use of Flashers or Flares

D. GENERAL TIPS:

1. Listen For Traffic You Cannot See
2. Avoid Crossing Roadways
3. Avoid Passing a Line of Cars
4. Consider Postponing Driving Until Conditions Clear
5. Keep Headlights and Taillights Clean

E. DRIVING ON SLIPPERY SURFACES:

1. Obtaining Maximum Visibility
 - Drive with Headlamps On
 - Use Windshield Washers to Remove Film

F. SPEED:

1. Keep Below Dry Road Speed
2. Decrease Speed When Entering a Curve

G. STAYING ON THE ROADWAY:

1. Stay on Paved Portion of the Roadway
2. Drive in the Tracks of the Car Ahead
3. Allow More of a Space Cushion
4. Avoid Sudden Movements

H. GOING THROUGH DEEP WATER:

1. Do Not Overload the Rear
2. Shift to a Lower Gear

I. HYDROPLANING:

1. Regaining Vehicle Control
 - Take foot off gas
 - Do not brake

J. DRIVING IN SNOW AND ICE:

1. Obtaining Maximum Visibility
 - Appropriate use of headlamps
 - Windshield wipers and defrosters

K. SPEED:

1. Keep Speed Below Dry-Road Speed
2. Keep Steady Speed
3. Reduce Speed on Curves and Shady Areas

4. **Maintain a Longer Space Cushion**

L. GENERAL TIPS TO AVOID SKIDS:

1. **Watch for Areas Where Ice Collects**
2. **Avoid Turning or Swerving Suddenly**
3. **Avoid Applying Brakes Too Suddenly or Too Hard**
4. **Do Not Drive on Road Edge or Shoulder**
5. **Do Not Change to a Lower Gear at Too Fast a Speed**
6. **When to Use Chains**

M. HOW TO STOP SKIDDING:

1. **Avoid Braking Suddenly - Pump Brakes Lightly But Fast**
2. **Steer in the Direction Which the Rear End is Skidding**
3. **Avoid Oversteering**
4. **Keep the Clutch Engaged**
5. **Avoid Lifting Your Foot From the Accelerator Suddenly**

N. STARTING WHEN TRACTION IS POOR:

1. **Start in a Higher Gear**
2. **Accelerate Gradually**

O. HOW TO ROCK OUT:

1. **Start Slowly in Low Gear**
2. **Shift Rapidly to Reverse**
3. **Back Until Wheels Start to Spin**
4. **Shift Back to Low Gear**
5. **Repeat Movement in Rapid Succession**

P. MECHANICAL FAILURE:

1. **Accelerator Stuck**
2. **Blowout**
3. **Brake Failure**
4. **Headlight Failure**
5. **Power Steering Failure**

XIII ALCOHOL AND OTHER DRUGS

A. ALCOHOL:

1. **As a Drug**
2. **Stages of Alcohol Influence**
 - a. **Blood alcohol level**
 - b. **Know limits**
 - c. **Reaction time**
 - d. **Accident potential/statistics**
3. **Effects of Alcohol on the Body**
 - a. **Organs**
 - b. **Vision**

c. Brain

4. How to Avoid/Identify Drunk Drivers
5. Alternatives to Drinking and Driving
6. Synergistic Effects

B. OTHER DRUGS:

1. Types - Effects

- a. Prescription
- b. Nonprescription

- (1) depressants
- (2) stimulants
- (3) narcotics
- (4) hallucinogens

2. Effect on the Driving Task
3. Synergistic Effects

C. PENALTIES:

1. Implied Consent (13353 VC) and ADMIN PER SE (13353.2 VC)

- a. Testing concept
- b. Purpose of testing
- c. Consequences of refusal
- d. Types of tests

- Alcohol
- Drugs

2. Fines and Penalties - DUI

- a. First & second conviction requirements
- b. Misdemeanor vs. felony
- c. Other effects

- Personal
- Financial

XIV. DRIVER RESPONSIBILITY

A. PEDESTRIAN SAFETY:

1. Pedestrian Responsibility
2. Driver Responsibility

B. MOTORCYCLE SAFETY:

1. Sharing the Roadway
2. Protection

C. BICYCLE SAFETY:

1. Sharing the Roadway
2. Driver Responsibility
3. Protection

D. MISCELLANEOUS:

1. Stereo Earphones
2. Emergency Vehicles

E. PROCEDURES WHEN INVOLVED IN AN ACCIDENT:

1. Stopping Requirements
 - Victims at scene
 - Property damage - unable to locate owner
2. Aid to the Injured
 - Sending for help
 - When to move an injured person
3. Preventing Further Damage
 - Reducing chances of fire
 - Warning oncoming vehicles
4. Reporting Requirements
 - When a report must be filed
 - Use of reports
5. Exchanging Information
 - Identifying information
 - Noting damage and injury
6. Additional Steps
 - Obtain names and addresses of other witnesses
 - Give accurate facts to police
 - Seek medical attention
 - File necessary supplemental reports

F. ACCIDENTS AND ACCIDENT REPORTS (General Vehicle Code Sections):

- | | |
|---|----------|
| 1. Duty to Stop at Scene of Accident | 20001 VC |
| 2. Duty Where Property Damaged | 20002 VC |
| 3. Duty to Report Accidents | 20008 VC |
| 4. Reports Confidential | 20012 VC |
| 5. Reports as Evidence | 20013 VC |
| 6. Use of Reports | 20014 VC |
| 7. Counter Reports; No Determination of Fault | 20015 VC |

G. FINANCIAL RESPONSIBILITY REQUIREMENTS:

1. When a Report is Required

- Property damage amounts
 - Injury
 - Time frames for reporting
2. Required Amounts of Coverage
 - Minimum amounts of insurance coverage
 - Additional forms of coverage
 3. Suspension for Failure to Provide Proof of Coverage
 - Period of suspension

H. FINANCIAL RESPONSIBILITY LAWS (Vehicle Code Sections):

- | | |
|---|----------|
| 1. Report Required | 16000 VC |
| 2. Mandatory Suspension of License | 16004 VC |
| 3. Required Maintenance of Financial Responsibility | 16020 VC |
| 4. Requirements of Policy or Bond | 16056 VC |
| 5. Suspension of the Driving Privilege | 16070 VC |
| 6. Period of Suspension | 16072 VC |

XV. TRAFFIC SIGNS, SIGNALS AND CONTROLS

A. RECOGNIZING TRAFFIC CONTROL SIGNALS AND PAVEMENT MARKINGS:

1. Purpose of Traffic Controls
 - Regulation
 - Warning
 - Information
 - Guidance
2. Meaning of Traffic Control Signals
 - Traffic lights
 - Arrows
 - Flashing signals
 - Lane signals
3. Intersection Safety
 - Scan for traffic controls and prohibitive signs
 - Scan for potential hazards
 - Entering controlled intersections on yellow light
 - Controlled intersections
 - Signal lights
 - Flashing signal lights
 - Circular arrows
 - Right turn on red signals
 - Designated lanes

B. PAVEMENT AND CURB MARKINGS - PURPOSE AND MEANING:

1. Yellow Center Line Marking

- Broken line
 - Solid line next to broken lines
 - Double solid lines on two-lane roadways
 - Double solid lines on four-lane roadways
2. White Line Markings
- Broken
 - Solid
 - Lines with arrows
3. Curb Markings
- Purpose
 - Color
 - Placement
- C. ADDITIONAL PAVEMENT MARKINGS - COLOR AND PURPOSE:
- Edge of pavement
 - Obstructions
 - Stop lines
 - Crosswalks
 - Railroad crossings
 - School warnings
- D. INTERSECTIONS OR CROSSINGS THAT REQUIRE SPECIAL STOPS:
1. Railroad Crossings
- a. Controls
- Flashers
 - Crossing gate
 - Stop sign
- b. Rail crossing safety (including rail transit)
2. School Buses
- At school crossings
 - When lights are flashing
- E. UNDERSTANDING PICTORIAL MESSAGES AS INSTANT COMMUNICATION (Color and Meaning):
1. Regulation - Red, Black, or Red on White
- Stop, yield, or a prohibition
2. Guide - Green
- Movement permitted or directional guidance
3. Warning - Yellow
- General warning

4. Construction - Orange
 - Warning and guidance, information for construction and maintenance zone operation
5. Service - Blue
 - Motorista' services
6. Recreational - Brown
 - Public recreation and cultural interest guidance
7. Shapes:
 - Octagon - Stop
 - Triangle - Yield
 - Round - Railroad Crossing
 - Vertical Rectangle - Regulatory
 - Pentagon - School
 - Pennant - No Passing
 - Diamond - Warning
 - Horizontal Rectangle - Information and Guide

F. TRAFFIC CONTROL DEVICES (Vehicle Code Sections):

- | | |
|---|------------|
| 1. Official Traffic Control Signals | 21450 VC |
| 2. Circular Green or Green Arrow | 21451 VC |
| 3. Circular Yellow or Yellow Arrow | 21452 VC |
| 4. Circular Red or Red Arrow | 21453 VC |
| 5. Lane Use Control Signals | 21454 VC |
| 6. Signal at Other Places | 21455 VC |
| 7. Flashing Signals | 21457 VC |
| 8. Curb Markings | 21458 VC |
| 9. Distinctive Roadway Markings | 21459 VC |
| 10. Double Lines | 21460 VC |
| 11. Two-way Left Turn Lanes | 21460.5 VC |
| 12. Obedience of Driver to Official Traffic Control Devices | 21461 VC |
| 13. Obedience to Traffic Control Signals | 21462 VC |

G. SPECIAL STOPS REQUIRED (Vehicle Code Sections):

- | | |
|----------------------------|----------|
| 1. Stop Required | 22450 VC |
| 2. Stops for Train Signals | 22451 VC |
| 3. Railroad Crossings | 22452 VC |
| 4. School Bus | 22454 VC |

XVI. LICENSING CONTROL MEASURES

A. THE DRIVING PRIVILEGE:

1. Privilege vs. Right
2. License Refusal
3. Violation of License Restriction

B. NEGLIGENT OPERATOR TREATMENT SYSTEM (NOTS):

- 1. Effects of Convictions/Accidents**
- 2. Point Count Determination**

- (a) Violations**
- (b) Accidents**

- 3. Actions**

- | | |
|-----------------------|-----------------|
| (a) Probation | 14250 VC |
| (b) Suspension | 13102 VC |
| (c) Revocation | 13101 VC |

4. Select one of the following that best describes your background in traffic safety.

- Education
- Law Enforcement
- Department of Motor Vehicles
- Research
- Other, please specify _____

5. How many years of experience do you have in the area you selected in question 4 above?

- | | |
|---|--------------------------------------|
| <input type="checkbox"/> Less than 1 year | <input type="checkbox"/> 6-10 years |
| <input type="checkbox"/> 1-2 years | <input type="checkbox"/> 11-15 years |
| <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 16+ years |

STUDENT SURVEY

Driver License Number _____

Directions: We would like to ask you a few background questions so that your answers can be compared with other persons in the class. Simply mark an X in the box next to your response. All your responses will be kept completely confidential.

1. Please provide the following about your current home address:

City _____

County _____

Zip code (1st. 5 digits only) _____

State (if other than California?) _____

2. How old were you when you received your first instruction permit or driver license (in any state, including California)?

- | | |
|-----------------------------------|-------------------------------------|
| <input type="checkbox"/> Under 16 | <input type="checkbox"/> 20-29 |
| <input type="checkbox"/> 15-17 | <input type="checkbox"/> 30-39 |
| <input type="checkbox"/> 18-19 | <input type="checkbox"/> 40 or over |

3. During a typical week, about how many miles do you drive?

- | | |
|--|---|
| <input type="checkbox"/> Don't drive | <input type="checkbox"/> 251-350 miles |
| <input type="checkbox"/> 1-50 miles | <input type="checkbox"/> 351-500 miles |
| <input type="checkbox"/> 51-150 miles | <input type="checkbox"/> 501-1,000 miles |
| <input type="checkbox"/> 151-250 miles | <input type="checkbox"/> Over 1,000 miles |

4. Which of the following do you consider your primary language?

- | | |
|----------------------------------|--|
| <input type="checkbox"/> English | <input type="checkbox"/> Vietnamese |
| <input type="checkbox"/> Spanish | <input type="checkbox"/> Other, please specify |
| <input type="checkbox"/> Chinese | _____ |

5. Please indicate the highest level of education that you have completed.

Grade school/high school:

(K) (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)

-

Number of complete years of college credit:

(1) (2) (3) (4) (5) (6+)

-

TURN THE PAGE OVER AND ANSWER ITEMS 6 & 7

6. What is your present employment status? Select all that apply.

- | | | | |
|--------------------------|--------------------|--------------------------|-----------------------|
| <input type="checkbox"/> | Regularly employed | <input type="checkbox"/> | Student |
| <input type="checkbox"/> | Unemployed | <input type="checkbox"/> | Retired or disabled |
| <input type="checkbox"/> | Military | <input type="checkbox"/> | Other, please specify |
| <input type="checkbox"/> | Fulltime homemaker | | |

7. Select one of the following that best describes your current, or most recent, job.

- | | | | |
|--------------------------|---------------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | Never been employed | <input type="checkbox"/> | Craftsman or foreman |
| <input type="checkbox"/> | Professional | <input type="checkbox"/> | Service worker |
| <input type="checkbox"/> | Technical | <input type="checkbox"/> | Police or Fire Personnel |
| <input type="checkbox"/> | Entertainer or performer | <input type="checkbox"/> | Farm worker |
| <input type="checkbox"/> | Manager, official, or executive | <input type="checkbox"/> | Laborer |
| <input type="checkbox"/> | Business Owner | <input type="checkbox"/> | Commercial driver |
| <input type="checkbox"/> | Clerical | <input type="checkbox"/> | Other, please specify |
| <input type="checkbox"/> | Sales | | |

-----END OF SURVEY-----

APPENDIX C

PROCTOR TEXT

(PRETEST/POSTTEST)

BEGINNING OF CLASS

Good morning (evening)! I am _____ from the Department of Motor Vehicles

I am here today to administer two 50-question tests and a survey form, all of which are required by the Department of Motor Vehicles. You will be allowed 5 minutes to complete the survey and 30 minutes for each test. Although you are required to take the tests as part of your course curriculum, you are not required to obtain a passing score on the tests to receive a completion certificate for this class. Your responses are for confidential use by the Department only.

I m going to pass out the test booklets now. Please do not write anything on the booklet until I give you further instructions (pass out booklets. Offer students a pencil if they do not have one.)

Each of you should have a package containing two 50-question tests and a survey which has been inserted into the booklet.

The first test and survey form will be administered in a couple of minutes. The second test will be taken later today after classroom instruction.

The survey form is designed to obtain information regarding your age, the number of miles you drive, your occupation, and other information of that type.

The tests are being given for two reasons:

1. To find out whether your knowledge of safety-related material increases as a result of class attendance.
2. To determine whether those who learned more in class have better driving records later on.

Please remove the survey from the test booklet and write your driver license number on the upper right hand corner of the survey in the space provided. You also need to write your name, driver license number, and today's date which is __ / __ / __ (make sure

students write the date in MM/DD/YY format) on the front cover of the test booklet in the spaces provided. (Allow students to complete the information. This should not take more than 2 minutes).

You will be allowed 5 minutes to complete the survey. Raise your hand if you have any questions. Please begin the survey now. (Allow students 5 minutes to complete the survey.)

Now that you have completed the survey, we are ready for the test. Open your booklets to page 2 and read the instructions carefully. You are to complete the first 50 questions only, down to where it says "STOP." Do not discuss the questions with any other students or look up the answers in any manuals you may have. YOU have 30 minutes to take the test. I will tell you when the 30 minutes are up, and then collect your test booklets. When you have finished, place the survey in the test booklet and close it. If you finish early, you may review your answers. Please begin the test now.

(After 30 minutes, proctor will say "Time's up! I will collect your test booklet now." Ask students to take the same seats throughout the day. This will make it easier for you to hand back the test booklets at the end of the class in the order you collected them.

END OF CLASS

Now that instruction is over, I would like to administer the second test. (Pass out booklets now).

Open your booklet to page 13 if your test has a white cover or to page 14 if your test has a blue cover. Read the instructions carefully. Do not, at any time, look back to the questions you answered this morning (or last night). Do not discuss the questions with any other students or look up the answers in any manuals you may have. You have 30 minutes to take the test. I will call "time" when the 30 minutes are up and then collect your test booklets. If you finish early, you may review your answers. Please begin the test now.

(After 30 minutes, proctor will say "Time's up! I will collect your test booklet now.")

AFTER POSTTEST

Thank you for your cooperation in this survey and testing project. Again, the information you provided and your individual test scores are for the confidential use of the Department only and will not affect your driver license.

APPENDIX D

Partial Correlations between Statistically Significant ($p \leq .10$)
Survey Variables and Subsequent 1-Year Total Accidents
and Total Citations

Criterion variable Survey variable	<i>r</i>	<i>p</i>
<u>Total accidents</u>		
Age	-0.071	0.08
Gender	0.080	0.05
Miles driven	0.068	0.10
Commercial license	0.139	0.00
Occupation (sales vs. professional)	0.068	0.10
Occupation (laborer vs. professional)	0.075	0.06
<u>Total citations</u>		
Age	-0.146	0.00
Gender	0.077	0.06
Miles driven	0.132	0.00
Commercial license	0.070	0.08
Years of education	-0.070	0.09
Occupation (manager vs. professional)	-0.089	0.03
Occupation (sales vs. professional)	0.074	0.07