

DOCUMENT RESUME

ED 242 977

CE 038 841

TITLE Driver Selection and Training for Human Service Agencies. Final Report.  
INSTITUTION Tennessee Univ., Knoxville.  
SPONS AGENCY Office of Human Development Services (DHHS), Washington, D.C.  
REPORT NO DOT-I-83-17  
PUB DATE May 80  
NOTE 164p.; Reprinted by the Technology Sharing Program, Office of the Secretary of Transportation. For a related document, see CE 038 840.  
PUB TYPE Guides - Non-Classroom Use (055)  
EDRS PRICE MF01/PC07 Plus Postage.  
DESCRIPTORS Adults; \*Disadvantaged; \*Driver Education; Employment Qualifications; \*Human Services; Occupational Information; \*Personnel Selection; Private Agencies; Public Agencies; \*Social Agencies; Social Services; \*Transportation; Vocational Education  
IDENTIFIERS \*Drivers

ABSTRACT

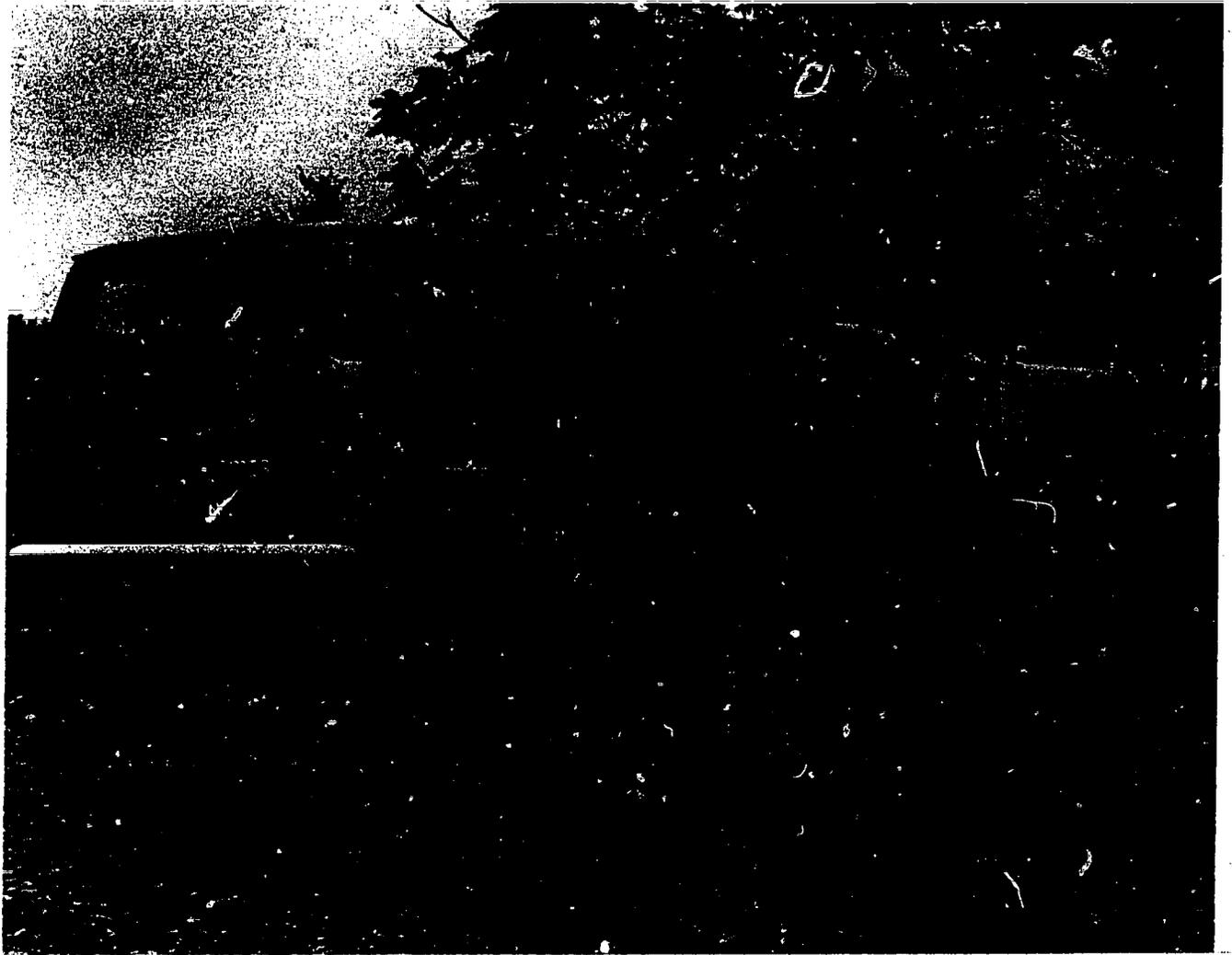
This manual is designed to assist the various human service agencies to identify and understand both the driving and passenger assistance skills needed to transport program beneficiaries. It is also a guide to identification of appropriate screening procedures to select drivers compatible with the objectives of the agency's program and with the various training programs available. Chapter 1, the introduction, is followed by, in chapter 2, a discussion of demographic and nondemographic factors that should be considered in driver selection. Chapter 3 presents a description of the tasks of human service agency drivers grouped into seven general areas. The steps in driver selection are covered in chapter 4, including description of job, establishment of minimum criteria and personal traits, screening, applicant categorization, and legal considerations. Chapter 5 focuses on professionalization of the driver and provision of adequate training. Specialized training is discussed, including driver improvement or accident avoidance program, emergency medical skills, passenger assistance techniques, human relations skills, nonmedical emergency skills, and basic transportation skills. Chapter 6 briefly addresses administration of a driver selection and training program. Chapter 7 is a bibliography. Appendixes include general driving skills, passenger assistance skills, an interview form, a driver performance measurement test, and outlines of specialized training courses. (YLB)

\*\*\*\*\*  
\* Reproductions supplied by EDRS are the best that can be made \*  
\* from the original document. \*  
\*\*\*\*\*

ED242977

# Driver Selection and Training for Human Service Agencies

Final Report  
May 1980



Reprinted by:



**U.S. Department of  
Transportation**

U.S. DEPARTMENT OF EDUCATION  
NATIONAL INSTITUTE OF EDUCATION  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

ⓘ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Sponsored by:



**U.S. Department of Health  
and Human Services**

On the cover, one of the drivers of the Southeast Missouri Transportation Service (SMIS) helps some passengers out of the vehicle. This photo was provided courtesy of Robert Oberman of SMIS.

# **Driver Selection and Training for Human Service Agencies**

---

Final Report  
May 1980

Prepared by  
Transportation Center  
The University of Tennessee  
Knoxville, Tennessee 37996

Prepared for  
Office of Human Development Services  
U.S. Department of Health and Human Services  
Washington, D.C. 20201

Reprinted by  
Technology Sharing Program  
Office of the Secretary of Transportation  
Washington, D.C. 20590

DOT-I-83-17

NOTE

This technical report was originally developed for the U. S. Department of Health and Human Services under contract, and is distributed by the U. S. Department of Transportation in cooperation with that agency. The opinions expressed are those of the contractor, and do not necessarily represent the views, opinions or policy of the U. S. Department of Transportation or the U. S. Department of Health and Human Services.

This document is distributed in the interest of information exchange. The United States Government assumes no liability for its contents or the use thereof.

## TABLE OF CONTENTS

<u>Chapter</u>		<u>Page</u>
1.	INTRODUCTION . . . . .	1
	Reference . . . . .	6
2.	THE DRIVER AND VEHICLE ACCIDENTS . . . . .	7
	Factors Which Relate to Driver Selection . . . . .	9
	Demographic Variables . . . . .	10
	Nondemographic Variables . . . . .	18
	Conclusion . . . . .	23
	References . . . . .	25
3.	TASK ANALYSIS FOR DRIVERS OF HUMAN SERVICE VEHICLES . . . . .	29
	Legal Responsibilities . . . . .	29
	General Driving Skills . . . . .	31
	Accident Avoidance . . . . .	31
	Passenger Assistance Skills . . . . .	32
	Human Relations Skills . . . . .	32
	Emergency First Aid Skills . . . . .	34
	Nonmedical Emergencies . . . . .	35
	Basic Transportation Operations Skills . . . . .	37
	Conclusion . . . . .	38
	Reference . . . . .	40
4.	DRIVER SELECTION . . . . .	41
	What is Expected of the Driver? . . . . .	41
	What are the Minimum Job Requirements? . . . . .	42
	Can the Applicant Physically Perform the Job? . . . . .	42
	Does the Applicant Identify with the Mission of the Agency and Indicate a Desire to Work with the Program Beneficiaries Whom the Agency Transports? . . . . .	44
	Does the Applicant Exhibit Proven Driving Skills and a Safe Driving Record? . . . . .	45
	Does the Evidence show that the Applicant can be Trained to the Degree Required? . . . . .	48
	Does the Applicant show the Degree of Emotional Maturity and Self-Control Necessary to Perform the Job? . . . . .	49
	Categorizing Applicants . . . . .	53
	Legal Consideration in Selecting Driver . . . . .	55
	References . . . . .	56
5.	DRIVER TRAINING . . . . .	57
	Professionalization of Driver . . . . .	57
	Basic Driving Skills . . . . .	58
	Driver Improvement Programs or Accident Avoidance Programs . . . . .	58
	First Aid and Emergency Medical Skills . . . . .	59
	Passenger Assistance Techniques . . . . .	60

	Human Relations Skills . . . . .	60
	Nonmedical Emergency Skills . . . . .	61
	Basic Transportation Skills . . . . .	61
	Specialized Training for Older Drivers . . . . .	62
	Specialized Retraining of Drivers . . . . .	62
	In-House vs. Professional Training . . . . .	62
	Reference . . . . .	65
6.	ADMINISTERING A DRIVER SELECTION AND TRAINING PROGRAM . .	67
	Defining Selection and Training Needs . . . . .	67
7.	DRIVER SELECTION AND TRAINING BIBLIOGRAPHY . . . . .	71
APPENDIX A	AN ANALYSIS OF THE LEGAL DUTY OF THE FOR-HIRE CARRIER . .	81
APPENDIX B	GENERAL DRIVING SKILLS . . . . .	87
APPENDIX C	PASSENGER ASSISTANCE SKILLS . . . . .	103
APPENDIX D	INTERVIEW FORM . . . . .	107
APPENDIX E	U.S. DEPARTMENT OF TRANSPORTATION PHYSICAL EXAMINATION FORM . . . . .	111
APPENDIX F	INQUIRY TO STATE AGENCY FOR DRIVER'S RECORD . . . . .	115
APPENDIX G	DRIVER PERFORMANCE MEASUREMENT TEST . . . . .	117
APPENDIX H	LEGAL CONSIDERATIONS IN DRIVER SELECTION . . . . .	123
APPENDIX I	PROFESSIONALIZING THE DRIVER . . . . .	129
APPENDIX J	NATIONAL SAFETY COUNCIL DEFENSIVE DRIVING COURSE . . . . .	137
APPENDIX K	EMERGENCY MEDICAL TRAINING PROGRAMS . . . . .	141
APPENDIX L	PASSENGER ASSISTANCE TRAINING COURSE . . . . .	145
APPENDIX M	SELECTION AND USE OF CHILD RESTRAINT DEVICES . . . . .	149
APPENDIX N	ESTABLISHING AN ACCIDENT REVIEW BOARD . . . . .	155
APPENDIX O	55 ALIVE MATURE DRIVING COURSE . . . . .	159
APPENDIX P	CLASSIFICATION OF ACCIDENTS . . . . .	161

## CHAPTER 1

### INTRODUCTION

In recent years, human service agencies\* have moved into a void in the American transportation system--the provision of transportation services for the disadvantaged. Public and private agencies specializing in handicapped, low income, welfare, medical, nutrition and day-care services have sought to meet the transportation needs of clients who are not served by existing transportation organizations or who require service levels in excess of what is provided by mass transit.

The transportation programs of human service agencies are unique. Unlike traditional transportation programs, they are mission oriented. The programs of these agencies are designed to ensure that the clients have adequate access to a wide range of social services which enhance their quality of life. The human service transportation programs provide the target group with the opportunity to enjoy adequate medical care, shopping facilities, nutritional services and recreational facilities--the opportunities for which most people depend upon the private automobile or traditional transit.

A recent study done by The University of Tennessee (Hood et al., 1979) illustrates that a range of human service transportation options are important. The need for transportation services in general is divisible into seven distinct segments. These are:

---

\*Human service agency is a term used in this report to define either of two types of organizations that are concerned with preserving and developing our nation's human assets. These groups include (1) social service agencies that are organized and supported with public funds and (2) charitable institutions (a legal term) which are supported by private contributions whether for the benefit of their own members (such as churches and YMCAs) or for the benefit of special groups (such as the Easter Seal Society, an orphanage, or the American Red Cross). Often both groups serve similar needs and similar, if not the same, groups; so for purposes of this report, both groups are addressed collectively as human service agencies.

1. Automobile Users--where individuals have driver's licenses, own automobiles and can afford to operate their automobiles (some individuals may require special controls);
2. Conventional Public Transportation Users--individuals without access to automobiles who are physically able to use public transportation, who have conventional public transportation service available and who can afford to use the service;
3. Subsidized Public Transportation Users--individuals without access to automobiles, who are physically able to use public transportation, who have public transportation available, but who are not able to afford the available service;
4. Expanded Public Transportation Users--individuals without access to automobiles who could use public transportation service if it were available;
5. Curb-to-Curb Users--individuals without access to automobiles who physically cannot use public transportation, but who could use a service which came to the fronts of their homes;
6. Door-Through-Door Users--individuals who are not able to leave their homes without assistance or escort; and
7. Ambulance Users--individuals who need ambulances and their paramedic escorts to take trips of any type.

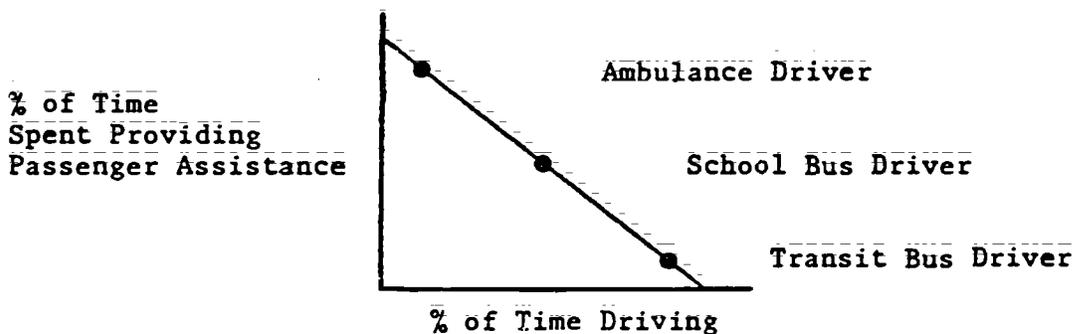
Unlike public transportation companies (public or privately owned) that are in the business of providing and selling a specific type of transportation service, human service agencies are only concerned that their target groups have adequate access to essential services. Human service agencies view themselves as advocates for various constituencies. Thus, a human service agency may find itself helping one program beneficiary obtain training to drive a vehicle with hand controls. A second program beneficiary may need information and training on available public transportation options. A third may obtain vouchers that can be used to pay for a ride on public transportation (buses or taxicabs).

Where adequate public transportation is not available, the agency must develop options. Options may include use of volunteers; part-time employees using their own vehicles to transport program beneficiaries; purchase of service

from various providers (ranging from churches to school bus operators to taxi companies to private individuals); reimbursement of family, friends and neighbors who provide services; and even in some cases agency owned and operated service. The type of service offered depends upon the special needs of the program beneficiaries (Can they ride in a standard vehicle? What kind of passenger assistance is required?) and the cost of providing the service. In some cases, ambulance service will be provided for the program beneficiary.

This report is designed to guide the human service agency in the selection, management and training of volunteers, contractors and employees, whether the individuals are driving their own vehicles or vehicles owned (or leased) by the human service agency. These solution and training principles are as applicable to a volunteer driver of a bus for a church as to the full-time employee driving for a rural transportation project sponsored by a state department of transportation or to a taxi driver providing service under contract to an agency.

The primary difference in the driver selection and training procedures that should be used is not in the type of agency nor the way the agency is organized or financed, but rather is the mix of driver skills which best serve the agency's customers. This distinction can be conceptually demonstrated in the following figure of driving time vs. passenger assistance skills:



As shown in this conceptual model, the transit bus driver is primarily responsible for driving, with some time required for collecting fares, maintaining discipline, providing passenger information on route and schedules and, in some cases, physically helping a passenger. The school bus driver, on the other hand, must spend more time with assisting the passengers since discipline is more of a problem with children, and the children must be protected when traveling to or from the bus, especially across a busy street. The ambulance driver is required to be well trained in paramedic and first aid skills since the primary purpose of the ambulance service is emergency medical service in conjunction with transportation.

The various human service programs range in division of responsibilities between those of the paramedic and those of the school bus driver. When transporting Head Start children or operating a church bus to a local Sunday School, the duties and skills are much like those of the typical school bus operator. On the other hand, a program that transports the severely handicapped, elderly individuals, or autistic children may require that the driver spend almost as much time in passenger support duties as the ambulance driver.

Thus it is important that the human service agency realize that "driver" is not a generic term that applies to the full range of driving and passenger assistance responsibilities. Potential responsibilities of human service agency drivers include general driving skills, accident avoidance skills, passenger assistance skills, human relations skills, emergency first-aid skills, nonmedical emergency skills and basic transportation operation skills.

If "driver" were a generic responsibility, then the many truck driving schools could be used to train ambulance drivers, human service drivers, bus

drivers and truck drivers. If "passenger assistance" were a generic skill, then the American Red Cross which teaches first aid and paramedic skills could be used to train school bus drivers and transit operators.

In some programs (ambulance services and services to the severely handicapped) the passenger assistance that must be rendered is primarily an immediate professional medical response. Passengers who are frail, have limited mobility or have poor hearing or sight need patient understanding and gentle assistance, including a constant verbal reassurance. Young Head Start or school children need an entirely different type of assistance. Each of these different types of passenger assistance requires a different personality type, a different skill and a different training.

It does not matter if the driver is a volunteer, contractor or full- or part-time employee, the needed skills are identical. For example, the driver for the volunteer rescue squad, the rescue squad attached to the full-time fire department or the contract ambulance service all require similar training. Likewise, the county school bus employee, contract school bus driver and the volunteer school bus driver for the parochial school all require the same training.

This manual is designed to assist the various human service agencies to identify and understand both the driving and passenger assistance skills that are needed to transport program beneficiaries to identify appropriate screening procedures to select those drivers that will most likely be compatible with the objectives of the agency's program and to identify the various training programs that are currently available so that the agency can adapt local training resources to their own training needs.

There are two major purposes of effective driver selection and training programs:

1. Drivers who are not compatible with the objectives of the agency's transportation program seriously reduce the effectiveness of the program and unduly escalate cost.
2. Poorly selected and untrained drivers cause accidents which lead to accidental injury and death to the agency's passengers which in turn lead to higher insurance rates.

Human service agencies have an opportunity to utilize many management options. For example, many local communities find that it is much more cost effective to have a well-trained and well-equipped volunteer fire department or rescue squad than to spend the money on full-time employees. Likewise, several rural northern states found greater flexibility when they established rigorous standards and contracted for snow removal service from local farmers rather than using county road crews. School boards often make extensive use of well-trained, part-time substitute teachers instead of maintaining a large group of backup teachers on their staffs. If the agency knows the skills needed and the cost of developing these skills, it can effectively manage the resources that it has to meet the needs of the beneficiaries and society.

#### Reference

Hood, Thomas C. et al.

1979 Market Opportunity Analysis for Short-Range Public Transportation Planning--Transportation Services for the Transportation Disadvantaged. National Cooperative Highway Research Program Report 209. Washington, D.C.: Transportation Research Board.

## CHAPTER 2

### THE DRIVER AND VEHICLE ACCIDENTS

Motor vehicle transportation is subject to accidents, and the cost of these accidents is great, not only for the individuals involved but also for society. In 1977, there were 144,381,000 registered vehicles and 220,000,000 people in the United States. During this year there was an accident for every 5.4 registered vehicles (144,381,000 vehicles/26,716,000 accidents). One out of every 4,444 persons died (220,000,000 people/49,500 deaths) in a traffic accident (Insurance Information Institute, 1978) and one out of every 39 persons was injured in a traffic accident (220,000,000 people/5,575,000 injuries). This was for the year 1977 only. Although the number of accidents decreased in 1974 with the 55 mph speed limit, it is now continuing to increase.

The cost of accidents is very large. Property damage, legal cost, medical and hospital bills, funeral bills, loss of income during convalescence and the administrative cost of insurance for the almost 27 million traffic accidents in 1977 was almost \$48 billion (Insurance Information Institute, 1978) or \$332.45 for every registered vehicle on the highway (\$48 billion/144.38 million vehicles). As a consequence, accident costs, including those covered by insurance and losses not covered by insurance (such as the vehicle deductible), will be a large part of the cost of operating a vehicle. In many cases accident cost will exceed fuel cost of operating a vehicle.

Driver error accounts for 90 percent of all accidents. Although only a small percentage of accidents are caused by mechanical failure, the percentage

is higher for commercial vehicles than it is for privately owned automobiles (Treat et al., 1977). (Vans owned by human service agencies are considered to be commercial vehicles.)

All drivers will probably be involved in an accident sometime, but some drivers are chronically involved in accidents. The Survey Research Center (1970) states that 6 percent of the drivers are involved in 45 percent of all traffic accidents.

Many researchers believe that people "drive the way they live" (Shinar, 1978). Individuals with emotional, psychological, depressive, suicidal, highly aggressive or antisocial tendencies, negative attitudes or rebellious attitudes tend to drive the way they live and are frequently high risk drivers.

Driver training programs are only as effective as the motivation of the person to be trained. Students from high school driver training programs where the students view the training as a necessary hurdle to getting licenses receive very little benefit from driver training, whereas drivers in the 35-55 age group who take the National Safety Council defensive driving course can reduce their accident involvement by up to 50 percent (Planek, 1974).

The key to a good transportation program is to select individuals who live safely and drive safely and who identify with the mission of the agency. These individuals can then be effectively trained to provide human service transportation and to provide it safely.

The driver selection decision is so important that at least one major insurance company uses driver turnover ratio as the primary measure of the

"riskiness" of the transportation program, especially for commercial vehicle fleets. If the turnover rate is greater than 10 percent it becomes cautious, if the turnover rate is in excess of 20 percent it becomes a major concern to the underwriter.

The reason the turnover rate is an excellent prediction of risk is that when the turnover rate is high it usually implies that:

1. Employee morale is low, and consequently the driver probably does not identify with or feel part of the organization mission. (Poor morale can be caused by not meeting monetary or psychic needs of workers.)
2. Employer interest in carefully screening and training drivers is lessened as the employer resigns himself to the fact that the driver will not be with the organization long enough to justify the effort or expense to carefully select and train drivers.
3. The principle of adverse selection begins to take its toll with the best drivers going somewhere else and the worst drivers remaining because they have fewer job options.

#### Factors Which Relate to Driver Selection

Since driver selection is so important to the success of the agency's program, a section of this report is dedicated to an analysis of those factors which appear to be strongly related to driving performance. Unfortunately, it is not easy to point to a single factor which causes accidents. Driver behavior is influenced by many variables. Accidents are not solely a direct measure of poor driving ability, but are often a combination of many actions, some of which are outside of the driver's control (including the behavior of other motorists). Although unsafe driving practices are frequent (hourly for many drivers), accidents are relatively rare; thus, the probability of a single unsafe practice resulting in an accident is very low. Finally, safe drivers can be involved in accidents due to the unsafe

practices of others or when the driving task and external factors exceed the driver's ability to respond. Because of these factors it is difficult to establish a simple direct cause-and-effect relationship between a specific driving practice and accident relativity (relative probability of accidents).

Because of the difficulty of establishing direct cause and effect relationships between a specific driving practice and accidents, research efforts have been directed at using statistical profiles of drivers to predict those drivers which will have a high likelihood of being involved in an accident. Unfortunately, the only data that is readily available and easy to use is demographic data. Thus most research studies consist of the statistical analysis of relationship between demographic data and accidents.

#### Demographic Variables

Actually, it is human attitudes, tendencies, traits and emotions which tend to cause accidents. Thus the demographic studies attempt to estimate these human characteristics by using easy-to-measure demographic data (age, sex, education) as substitutes for the traits actually contributing to unsafe driving practices. This is unfortunate since there is a substantial variation between groups that possess the desirable (or undesirable) traits and other individuals in the broad demographic classification. This stereotypical nature of demographic data has contributed to a legislative reaction in the form of antidiscrimination laws prohibiting employment criteria based on broad demographic characteristics such as age, sex or marital status. Thus, many of the studies evaluating the human factor in accident relativity are of little use to human service agencies. Because of this conflict between research convenience and legislative equity, there is a tendency for

many agencies to ignore the literature relating to driver traits and accident involvement. This is unfortunate since the agency is responsible for selecting the drivers best able to ensure the safe transportation of clients and not abdicating this responsibility.

For these reasons, this report attempts to review the demographic variables by combining scientific literature with the experienced evaluation of insurance agents who are closely involved with evaluation of all drivers and their loss experiences. Demographic classifications have been given to indicate the basis for the statistical studies but emphasis is on the human traits which actually affect driver performance. Agencies are encouraged to focus on individual traits rather than on demographic generalizations in the driver selection process (see Chapter 5).

Age. Age is used in most statistical studies. In general it is felt that age is actually a surrogate for driving experience and the tendency of certain chronic physical conditions (which may inhibit driving skills) to become more pronounced with increased age.

Driving Experience. There is a strong tendency for an individual with limited driving experience to have accidents during the first several years of driving. Table 2-1 indicates that young drivers are over twice as likely to be involved in an accident during the first year of driving than during the following three or more years. More important, however, is that individuals beginning their driving careers as adults are over three and one-half times more likely to have an accident during the first year of driving.

Physical Condition. When drivers approach 55 years of age, they tend to become subject to chronic disorders (Botwinick, 1973). Many chronic

TABLE 2-1  
ACCIDENT RELATIVITY AND DRIVING EXPERIENCE

Years Licensed	Accident Relativity
<u>Young Drivers</u>	
less than 1 year*	195*
1-2 years	153
2-3 years	129
more than 3 years	<u>88</u>
Total Young Drivers	100
<u>Adults</u>	
less than 1 year*	369
1-2 years	281
2-3 years	183
more than 3 years	<u>97</u>
Total Adults	100

Source: North and South Carolina AURES Data Base (39,369 car years).

\*Persons licensed less than one year are 1.95 times as likely to have an accident.

conditions require medication which may in itself inhibit driving performance. Table 2-2 provides a list of chronic conditions common to individuals over 55 years of age and the side effects expected from the use of corrective drugs. Some categories, such as heart disease and respiratory problems, are omitted since there are many different conditions and treatments associated with such ailments. Agency managers should note that adverse reactions to drugs occur three times more frequently in the older population than among other age groups. Thus, older drivers who have chronic health problems and who have not yet learned to compensate for the side effect of the medication can be very accident prone.

Maximum driving performance requires good auditory and visual perception reactions. Several medical problems can cause sudden and unpredictable loss of control likewise increasing risk of accident.

Epilepsy, a chronic disease, is characterized by unpredictable convulsions (grand mal seizures) which often are preceded by a warning sensation known as an aura. Thus, the victim may be able to prepare for a seizure if time and circumstances permit. Observers can sometimes foresee an attack by a victim's sudden paleness and unusual behavior. A milder form of epilepsy, characterized by petit mal seizures, occurs without convulsions. There may be only a brief muscle spasm and momentary disorientation.

Heart disease often results in attacks (the heart is unable to get sufficient oxygen to function properly) which may be accompanied by unconsciousness, numbness and severe pain. In severe cases, sudden death is possible. The victim may have a history of heart disease or the attack can come with little or no warning.

TABLE 2-2  
EFFECTS OF DRUG USE UPON DRIVING PERFORMANCE

<u>Chronic Condition</u>	<u>Drug Type</u>	<u>Side Effects on Driving</u>
Arthritis	Analgesics	Drowsiness, inability to concentrate
Allergies	Antihistamines.	Drowsiness, confusion
Common Cold	Antihistamines	Drowsiness, blurred vision, dizziness
Diabetes	Oral Hypoglycemics	Drowsiness, inability to concentrate
Hypertension	Antihyperactives	Drowsiness
Rheumatism	Analgesics	Drowsiness, inability to concentrate
Weight control	Stimulants	False feeling of alertness, overexcitability
<u>Emotional State</u>		
Anxiety	Sedatives	Drowsiness, staggering
Depression	Stimulants	Overexcitability, false sense of alertness
Fatigue	Stimulants	Overexcitability, false sense of alertness

Source: 55 and Alive Driver Training Course.

Angina pectoris is a common form of heart disease. Anginal attacks are precipitated by stress, excitement, emotion, heavy eating and exertion. Although death is not frequent, the severe chest pains and other symptoms can so distract the driver that an accident can become very likely.

High blood pressure (a diastolic pressure of 140 or more) can produce severe headaches, convulsions and comas in victims. A family history of heart attacks and/or a high cholesterol level are strong indications of a tendency toward heart attack.

Symptoms of diabetes usually assume two forms--hyperglycemia and hypoglycemia. Hyperglycemia (too much sugar in the blood) is generally associated with drowsiness and disorientation which can seriously reduce the individual's ability to drive. The individual's breathing becomes deep and rapid, and a fruity odor is discernible on the breath. Hypoglycemia (too little sugar in the blood) may cause fainting, especially during periods of vigorous physical exertion and/or emotional stress.

Obviously, there is significant correlation between susceptibility to chronic disorders and age which result in a profile of the aged individual as a higher risk driver. However, as will be elaborated below, certain personality traits conducive to safe driving are present among older individuals to a greater extent than among younger persons. Hence, when considering age, physical condition and driving potential in the driver selection process, agencies should emphasize functional age rather than chronological age.

Individuals interested in studies relating to age and driving are referred to the following: the National Center for Health Statistics (1970);

Butler and Lewis (1972), Hendricks and Hendricks (1977), Botwinick (1967), Botwinick and Storandt (1974), Botwinick and Thompson (1969), Welford (1969), Fell (1976), Soliday (1975) and Barrett et al. (1977).

Marital Status. Marital status is used in most demographic studies because it is easy to obtain and use. The human characteristic which this measures is primarily stress which usually occurs to some degree with the death of a spouse or involvement in divorce proceedings. Table 2-3 shows the relationship between marital status and accident relativity. It is believed that stress is the most important factor in these statistics. What the statistics do not show are the high stress level immediately after a death or for the six months to a year before and after a divorce and the decline in stress as the individual learns to cope with the change. Agency managers should note, however, that stress can also be derived from other external factors such as sickness, negative self-image or financial problems. The important point to remember is that individuals under stress often become preoccupied with the source of stress and do not concentrate on their driving.

Those interested in further study of the relationships between marital status, stress and driving performance should consult McCurray (1970), Brown and Bohnert (1968) and Selzer et al. (1968).

Sex. Sex, as a demographic classification, has been one of the easiest data bases to obtain and use in statistical programs. Unfortunately, the use of this measure tends to divert attention away from the personal traits which actually affect accident involvement. These traits include the tendency of some immature individuals to use the automobile to prove their

TABLE 2-3

## MARITAL STATUS AND ACCIDENT RELATIVITY

Marital Status	Accident Relativity
Married	85
Single	135
Divorced/Separated	127
Widowed	148
Total Adults	100

Source: North and South Carolina AURES Data Base

"masculinity" or personal worth and the disposition of the young, single driver to mix alcohol (or drugs) and driving. Both of these traits seem to be more prevalent among young, male drivers.

With the increased social acceptance of drinking among women, it can be expected that alcohol and driving will become more pronounced by females in the future.

For a thorough analysis of the socially induced variations between male and female driving practices, see Yorburg (1974), Soliday (1975), Sobel and Underhill (1976) and Shaffer et al. (1977).

Regardless of the sex of the driver, it appears that alcohol is the major cause of accidents where alcohol is present. Robertson et al. (1973) note that excessive drinking is involved in over 50 percent of the motor vehicle fatalities in the United States. Smart (1967) points to the similarity between personality descriptions of accident-involved drivers and alcoholics. Both groups are described as dependent, egocentric, hostile and intolerant of tension. Most investigators agree with Selzer and Payne (1962) who note that the basic personality of the alcoholic may be of importance because drinking releases personality traits associated with accident involvement.

#### Nondemographic Variables

Several traits should be noted that are important predictors of driving performance but which have little basis in demographic classifications. These are an individual's driving record, exposure to driver education programs and alienation.

Driving Record. The Survey Research Center (1970) states that 6 percent of the drivers are involved in 45 percent of all traffic accidents. This is indicative of the tendency for a small group of "dangerous" drivers to be responsible for many accidents (see Table 2-4). It seems that some drivers develop a pattern of risk-taking behavior which may be positively reinforced by reference or peer groups. As such, an individual's driving record becomes a prediction of future driving behavior. (The average driver has one traffic citation every three years and one accident every twelve years.)

Empirical data demonstrates that persons with high violation rates are also likely to have high accident rates. An individual's driving record may be a symptom of tendencies toward risk-taking practices, drug and alcohol abuse, declining motor skills and an unwillingness to abide by traffic laws and conventions.

Exposure to Driver Education Program. Jones (1978) notes that research into the effects of driver education programs on driver performance is ambiguous. When a person does not identify with the mission or purpose of the training, the training has little effect. Thus, high school driver education programs which are viewed as simply a hurdle to obtaining a driver's license have little effect on the driver performance, while the defensive driving course given to middle-aged drivers who desire to learn the principles taught can reduce accident rates by 50 percent.

For examples of analyses of training programs, see Schuster (1974), Le Garde et al. (1971), Peck (1976), Planek et al. (1974) and Epperson and Harano (1975).

TABLE 2-4  
DRIVING RECORD AND ACCIDENT RELATIVITY

<u>Driving Record</u>	<u>Accident Relativity</u>
<u>Number of Prior Accidents--6 years</u>	
0	100
1	150
2	209
3	217
4	247
5	301
<u>Number of Prior Violations--6 years</u>	
0	100
1	140
2	180
3	215
4	243
5	312

Source: North and South Carolina AURES data.

Alienation. Alienation is widespread in society and is detectable in individuals regardless of social class, education, occupation or other demographic classification. Basically, alienation is a condition in which individuals experience psychological and social isolation. This often leads to tendencies toward a feeling of powerlessness, insecurity, authoritarianism, intolerance, pessimism, misanthropy and aggressiveness. Such psychological tendencies emerge socially to minimize identification with the purpose of and conformity with the traffic laws, to encourage disrespect for other motorists and to increase aggressive and risk-taking behaviors. In addition, the alienated individual is unlikely to respond to driver education programs enthusiastically or to embrace the goal of the social service mission.

For example, feelings of powerlessness can be expressed in the driving situation through risk-taking and aggressive behavior in an attempt to reclaim some control over one's circumstances and to assert independence from the rest of society. Authoritarianism, intolerance and pessimism are conducive to intolerance toward agency clients, emotional instability, sudden emotional outbursts (or anger) and a tendency to be self-centered and fantasy-oriented rather than agreeable and reality-oriented.

One indication of alienation may be an individual's employment history. Frequent unexplained job change may indicate that the individual may have had problems with fellow workers and or an inability to respond to managerial direction. Table 2-5 suggests that there is a relationship between job stability and accident involvement. One of the problems with these data is that they do not differentiate between logical and illogical (unexplained)

TABLE 2-5

JOB STABILITY AND ACCIDENT RELATIVITY

<u>Time on Job</u>	<u>Accident Relativity</u>
less than 2 years	137
2-5 years	109
more than 5 years	94
Total Adults	100

Source: North and South Carolina AURES Data Base (39,369 car years)

changes. Studies which indicate the relationships among occupational instability, alienation and poor driving practices are Taylor (1976), Blake (1974) and Tillman and Hobbs (1973).

Alienation is one factor that is determined by both the driver and the supervisor. Individuals may have strong feelings of alienation which they bring to their driving duties. On the other hand, the supervisor (volunteer coordinator, contract administrator) can substantially amplify (or diminish) the feeling of alienation by the attitudes conveyed to the driver. A supervisor who continually emphasizes professionalism, training, responsibility, and the importance of the driver will reduce alienation and will help motivate the driver to identify with the mission of the agency. On the other hand, supervisors who view drivers as performing routine duties that anyone off the street could do, as being short-term employees and as not being able to make decisions may quickly alienate the employees they do have. (One important component of driver selection and training will be to teach supervisors fundamental job enrichment skills which embrace professionalism and which give workers significant control and responsibility over the work situation. This is especially important when working with volunteers.)

### Conclusion

A human service transportation program is only as good as its driver selection procedures and the subsequent training of the drivers it selects. The selection process should involve a thorough examination of each applicant to document the applicant's qualifications. This chapter has suggested that traits rather than demographic classifications be used during the screening process.

When examining each applicant, management should consider the following items in the evaluation:

1. Four or more years of driving experience;
2. Absence of alcohol and/or drug abuse;
3. Good physical condition (applicants should not be subject to chronic conditions such as epilepsy, diabetes and heart problems which might cause a sudden loss of control, functional rather than chronological age should be used);
4. Good driving record with few violations and accidents;
5. Predictable job history (frequent unexplained job changes have been associated with poor driving performance); and
6. A willingness to absorb training and accept directions and a commitment to the mission of the agency.

Depending upon the target groups transported, the following traits should be considered:

1. Patience with children;
2. Emotional stability;
3. Understanding and tolerant attitude toward others, especially older or handicapped individuals;
4. Independence and responsibility;
5. Agreeable rather than aggressive nature;
6. Safety consciousness;
7. Reality orientation; and
8. Ability to accept blame and to recognize limitations.

These characteristics provide agencies with a guide to driver selection which allows flexibility; however, it must be emphasized that management's responsibility is to select the best qualified candidate if accidents are to be minimized.

## References

- Barrett, Gerald U. et al.  
1977 "Information processing skills predictive of accident involvement for younger and older commercial drivers." *Industrial Gerontologist* (Summer): 1973-81.
- Blake, Joseph A.  
1974 "Occupational thrill, mystique and the truck driver." *Urban Life and Culture* 3 (July): 205-20.
- Botwinick, Jack  
1967 *Cognitive Process in Maturity and Old Age*. New York: Springer.
- Botwinick, Jack  
1973 *Aging and Behavior: A Comprehensive Integration of Research Findings*. New York: Springer.
- Botwinick, Jack and M. Storandt  
1974 "Cardiovascular status, depression effect, and other factors in reaction time." *Journal of Gerontology* 29: 543-48.
- Botwinick, Jack and L. W. Thompson  
1968 "Age differences in reaction time: an artifact?" *The Gerontologist* 8: 25-8.
- Brown, S. and P. Bohnert  
1968 *Alcohol Safety Study: Drivers Who Die*. Waco, Texas: Baylor University Press.
- Butler, R. N. and M. I. Lewis  
1973 *Aging and Mental Health: Positive Psychological Approaches*. St. Louis: C. V. Mosby.
- Epperson, William V. and Richard M. Harano  
1975 "An evaluation of some additional factors influencing the effectiveness of warning letters." *Accident Analysis and Prevention* 7 (December): 239-47.
- Fell, James C.  
1976 "A motor vehicle accident causal system: the human element." *Human Factors* 18: 85-94.
- Hendricks, Jon C. and C. David Hendricks  
1977 *Aging in Mass Society: Myths and Realities*. Cambridge, Massachusetts: Winthrop.
- Insurance Information Institute  
1978 *Insurance Facts*
- Jones, Margaret H.  
1978 "The reliability of driver performance--test reliability or driver stability." Unpublished Manuscript. Traffic Safety Center, University of Southern California.

- LeGarde, John C. et al.  
 1971 "A highway safety scare film and its effect on performance and mood of males and females." Behavioral Research in Highway Safety 2(Fall): 83-97.
- McCurray, L.  
 1970 "Emotional stress and driving performance: the effect of divorce." Behavioral Research in Highway Safety: 100-14.
- National Center for Health Statistics  
 1970 "Health in the later years of life." Washington, D.C.: Department of Health, Education, and Welfare.
- Peck, Raymond C.  
 1976 "Toward a dynamic system of driver improvement program evaluation." Human Factors 18: 493-506.
- Planek, Thomas W. et al.  
 1974 "An evaluation of the National Safety Council's Defensive Driving Course in various states." Accident Analysis and Prevention 6 (December): 271-297.
- Robertson, Leon S. et al.  
 1973 "Jail sentences for driving while intoxicated in Chicago: a judicial policy that failed." Law and Society Review 9 (Fall): 55-67.
- Schuster, D. H.  
 1974 "The effectiveness of official action taken against problem driver: a five-year follow-up." Journal of Safety Research. 6 (December): 171-76.
- Selzer, M. L. and C. E. Payne  
 1962 "Traffic accidents, personality and alcoholism: a preliminary study." Journal of Abnormal Psychology 4: 21-6.
- Selzer, M. L. et al  
 1968 "Fatal accidents; the rate of psychopathology, social stress, and acute disturbance." Journal of Psychiatry 125: 1028-36.
- Shaffer, John W. et al.  
 1977 "Social adjustment profiles of female drivers involved in fatal and nonfatal accidents." American Journal of Psychiatry 134 (July): 801-04.
- Shinar, David.  
 1978 Psychology on the Road. The Human Factor in Traffic Safety. New York: John Wiley and Sons.
- Smart, R.G.  
 1967 "Are alcoholic's accidents due solely to heavy drinking?" Journal of Safety Research 1: 174-77.

Sobel, Raymond and Ralph Underhill

1976 "Family disorganization and teenage auto accidents." Journal of Safety Research 8:8-18.

Soliday, Stanley M.

1975 "Development and preliminary testing of a driving hazard questionnaire." Predeputal and Motor Skills 41: 764-70.

Survey Research Center, University of Michigan

1970 Public Attitudes Toward Auto Insurance. Washington D.C.: Government Printing Office.

Taylor, Donald H.

1976 "Accidents, risks, and models of explanation." Human Factors 18: 371-80.

Tillman, W. A. and G. E. Hobbs

1973 "The bus driver: a study in role analysis." Human Relations 26 (February): 101-11.

Treat, J. R. et al.

1977 Tri-Level Study of the Causes of Traffic Accidents. Report No. DOT-HS-034-3-535-77 (TAC). Bloomington: Indiana University (March)

Welford, A.T.

1969 "Age and skill: Motor, intellectual and social." In Decision Making and Age. ed. A.T. Welford, Basel, Switzerland: S. Karger.

Yorburg, Betty

1974 Sexual Identity: Sex Roles and Social Change. New York: Wiley.

## CHAPTER 3

### TASK ANALYSIS FOR DRIVERS OF HUMAN SERVICE VEHICLES

As emphasized in Chapter 1, a driver is not a generic term, especially when a large part of the driver's responsibility is in the rendering of passenger assistance. Therefore, the human service agency must be able to define what is expected of the driver before detailed selection criteria can be established and before the required training can be prescribed. This chapter is designed to assist the human service agency in defining what the agency and the law expects of the driver providing human service transportation. (See Chapter 1 of the Risk Management Manual for Human Service Agencies for a description of the legal duty concept.)

#### Legal Responsibilities

The law and the courts have been quite explicit in what should be expected of drivers of passenger carrying vehicles. The driver of a vehicle which "holds itself out to serve the general public" is expected to exercise extreme care to ensure the safety of the vehicle and the passenger. (See Appendix A for an analysis of the extreme care standard of the "for-hire" carrier.) To enforce this legal duty the carrier is given very few legal defenses if a person is injured. Since most for-hire drivers are not trained to serve the handicapped, the intercity bus companies offer to give free passage to any escort who will accompany the handicapped passenger and care for the handicapped passenger's special needs.

School bus drivers, on the other hand, are expected to give special consideration to the children, since children are naive and may make unexpected moves. In California, for example, the driver must escort all public school

children across the street (California Highway Patrol, 1979). Furthermore, driver selection criteria are very strict. Drivers with any history of sex crimes or drug uses are prohibited from being bus drivers.

Ambulance drivers on the other hand are expected to be trained as paramedics to avoid further complications of injuries that the person may have when the ambulance arrives. The ambulance driver must know how to move a person on to a stretcher to avoid further damage to broken backs or necks and how to administer oxygen and other advanced first aid techniques.

In like manner, the driver providing human service transportation must be properly screened and trained to provide a service that is between the requirements of the traditional, "for-hire" carrier (which generally avoids carrying individuals with special needs unless the handicapped persons provide their own escorts), the school bus driver (who carries immature and inexperienced individuals with a very special need) and the ambulance driver (who provides a service that is specifically designed to serve individuals with a variety of very serious special needs).

This chapter is designed to identify the tasks that the driver of a human service transportation program must be able to perform. This chapter has been designed to be comprehensive so that the readers can select those tasks which apply to their agency. For example, driving in sand may be important for a Florida driver while driving in snow may not. A Head Start driver, likewise, may not be concerned about assisting the blind or passengers confined to wheelchairs.

The tasks which a human service driver may be expected to perform can be grouped into seven general skill areas:

1. General driving skills;
2. Accident avoidance skills;
3. Passenger assistance skills;
4. Human relations skills;
5. Emergency first aid skills;
6. Nonmedical emergency skills; and
7. Basic transportation operations skills.

The remainder of this chapter will present a detailed description of the required skills by these categorized areas.

### General Driving Skills

General driving skills can be broken down into five categories:

1. Predriving safety check of vehicle;
2. General driving skills;
3. Special vehicle related skills;
4. Environmentally related skills; and
5. Geographic specific skills.

Because of the many high school driver training programs, these skills are well defined. Appendix B provides an extended list of some of the driving skills that are most important to human service agencies.

### Accident Avoidance

Although general driving skills are very important, the professional driver must be able not only to control his own vehicle, but also to predict what other drivers will do in order to avoid situations in which other drivers may create an accident causing situation. Thus, the driver should know:

1. How to predict and avoid a collision with the vehicle ahead;
2. How to predict and avoid a collision with the vehicle behind;
3. How to predict and avoid a collision with an oncoming vehicle; and
4. How to predict and avoid an intersection collision.

The driver should also know how to avoid:

1. Vehicle-pedestrian accidents;
2. Accidents with fixed objects;
3. Railroad crossing accidents;
4. Collisions with cyclists; and
5. Backing accidents.

#### Passenger Assistance Skills

The driver of the human service vehicle is responsible for helping the passenger use the vehicle and any special equipment that is provided. The passenger cannot be expected to know how to safely use lifts, ramps, tiedowns, vehicle storage facilities for packages and other transportation equipment. Therefore, the driver must know how to recognize individual handicaps, weaknesses or special needs so that the driver can provide the assistance necessary to prevent injury. The ability to recognize each passenger's special conditions and special needs is therefore paramount for the driver transporting handicapped individuals. Appendix C provides a list of specific passenger conditions that the driver must be able to recognize and assist the passenger to cope with while being transported.

#### Human Relations Skills

The human service agency driver should possess basic human relation skills to assist in dealing with passengers. This means that the driver needs to recognize passenger concerns, discipline problems and other needs. The

driver is the person responsible for the safe operation of the vehicle, and the driver must recognize this. The driver must thoroughly understand the appropriate procedure to follow in controlling discipline problems. Discipline questions range from the unruly behavior of young children to the erratic behavior of the mentally or emotionally handicapped.

Even though bus or van riders are together for only a short time, repeated contact leads to conversation and friendly relations. Friendly relations may lend to group-like behavior. That is, as the passengers come to recognize each other, they are likely to establish expectations for the behavior of each other while they are in the vehicle. The driver can contribute to this process by instructing the groups in safe behavior patterns such as seat belt usage. Further, the driver can enlist the aid of regular passengers in promoting and enforcing safe behavior. The group of passengers can become a valuable asset in stimulating safe behavior.

The driver should be able to respond to requests for information and should seek to be informed on matters concerning the agency and its transportation program. The passengers need to have confidence in the drivers competence and concern for them.

Often passengers of human service agencies require assistance in boarding or getting off a vehicle. The techniques employed are described elsewhere, but the offer of assistance to a passenger can be made in a way that the passenger feels is very haphazard and nonprofessional. Drivers and escorts should master the techniques of offering help to clients in a reassuring way. The passenger's desire to sue in case of an accident is often determined by the passenger's feeling that the driver was unprofessional and did not do everything possible to prevent injury.

When rendering passenger assistance, the passengers should always be made to feel that they are in control and that the driver is merely assisting. If a driver provides assistance in a way that takes control away from the passenger and the passenger is injured, a liability suit is highly probable.

The driver also needs to be instructed in coping with individuals who attempt to establish incorrect relationships with the driver. Some passengers will attempt to build on the driver's sympathy to borrow money, to get the driver involved in the passenger's personal problems or to involve the driver in interpassenger disagreements. The driver should be instructed on when to become involved.

#### Emergency First Aid Skills

The driver of the human service vehicle is responsible for a large number of passengers, many of whom are highly susceptible to injury. Therefore, the driver must know what action to take in case of an emergency. If the agency operator is in a rural area where trained medical assistance is not available or would take a long time to arrive, this training is crucial. If bodily injury occurs, the driver should be instructed on how and when to administer first aid. This instruction should include treatment for the following:

1. Wounds--especially where bleeding makes emergency treatment mandatory;
2. Shock--whether from accident or sickness;
3. Burns;
4. Fractures;
5. Stroke;
6. Fainting;

- 7: Epileptic attack;
- 8: Seizures;
- 9: Foreign objects in eye;
- 10: Solid items lodged in a person's throat; and
- 11: Heart attack.

In addition to this special training, the driver should have a well spelled out emergency plan. When should the driver administer first aid? When should the driver request emergency help before administering first aid? When should the driver leave the passengers to get assistance? When should the driver stay with the vehicle and wait to be discovered? The plan will depend upon the type of client being transported, the nearness of professional assistance and the communication with potential professional assistance, the nature of the injuries and many other site-specific conditions. The drivers should be completely familiar with a well defined plan for coping with such emergencies.

First aid raises a very important question. The agency will probably be held to be negligent if the driver (or escort) is not trained to render first aid, because a reasonable and prudent person would expect that first aid would be rendered when transporting the elderly and handicapped on a regular basis. On the other hand, if the driver (or escort) attempts to provide first aid and complicates the injury due to the use of incorrect procedures, the agency can be liable. The agency should develop this emergency plan in close consultation with its local legal council.

#### Nonmedical Emergencies

In the normal run of the driving day it is possible that certain non-medical emergencies will arise. If the vehicle stalls or becomes disabled,

the driver must have a plan to know how to react to the emergency so that passengers are not injured or that their injuries are not complicated. For example, the driver should know what to do under the following conditions:

1. A vehicle with passengers in wheel chairs or blind stalls on a railroad track.
2. The vehicle has a flat tire on a busy interstate highway. The passengers are primarily employees of a sheltered workshop who may not be experienced in staying out of traffic.
3. A vehicle that stalls in very warm climates has several passengers with prosthetic devices who can easily become overheated.
4. A vehicle transporting the handicapped or elderly in a rural northern area in winter stalls. How should the driver protect the passenger from the cold and summon help?
5. A vehicle has a flat tire or stalls on a curve or just over a hill where it is hard for an oncoming vehicle to see it. How should the driver decide when to stay with the passengers and maintain discipline, to leave the vehicle to place flashes or other warning devices or to evacuate the vehicle when the passengers may not be easy to supervise and keep together outside the vehicle.
6. A vehicle enters an area where there has been an accident involving a truck carrying toxic material.

In essence, these are many routine problems that may disable a vehicle without causing any harm to anyone but that place the passengers in situations where they are subject to severe injury if they stay in the vehicle and the vehicle is hit by a second vehicle or if they leave the vehicle and become likely to be injured by other traffic, the weather or getting lost.

The driver needs an emergency plan. The emergency plan should consider such complications as snow, fog, heavy traffic, cold weather and other conditions which would subject the passengers to extreme risk. The plan should include placement of emergency flares and warning devices as well as when not to use flares, as in the case where there has been an accident and gasoline fumes are present. The plan should provide for reassuring the passengers,

directing traffic, obtaining witnesses, notifying authorities, filing reports and any other procedures that should be followed.

### Basic Transportation Operations Skills

Since the driver has control over the vehicle and is most closely involved with action that can substantially affect cost, the driver should be trained to recognize costly or dangerous transportation practices and to provide feedback to the operations manager so that corrective action can be taken. If the operations manager attempts to prevent the driver from making suggestions, the manager will lose the best source of information for program operators. One of the most important characteristics of good drivers is that they feel they are professional drivers. They identify with the mission of the agency and know this input is important. Drivers should know and understand the cost of operating a human service vehicle, including fixed costs (such as insurance, depreciation and license fees), variable costs (fuel cost, maintenance and cleaning cost, tires, oil), driver cost per mile (salary, fringe benefits, volunteer recruitment cost, supervision cost) and total cost per mile. With information such as this, the driver can identify wasteful practices such as the case of the agency that drove 25 miles (round trip) at an average cost of 65¢/mile to save 2¢ per gallon on the purchase of fuel (22-gallon tank).

Maintenance must be performed on the vehicle. Drivers can help in maintenance management in three ways.

1. Drivers can remind the maintenance manager that the maintenance work has had to be redone. Since a driver is only involved with one vehicle, it is easier for the driver to remember what work has already been done than for the manager who is responsible for many vehicles.
2. Drivers will be more aware of the driving practices and the impact of these practices on maintenance costs.

3. Drivers can begin to compete with other drivers in their ability to control cost. (It is very beneficial to have drivers compete with each other to see how many miles they can get per gallon or per set of tires.)

If drivers understand the cost of running empty miles (deadheading) out to pick someone up, they may have alternative routing suggestions. If they understand the concept of ridesharing (adding passengers to fill empty seats on an existing trip), they can help encourage program beneficiaries to group trips so that fewer runs need to be made. If they understand the concept of time sharing (using the vehicle for another purpose when vehicle and driver are idle), the drivers can begin looking for other uses that will generate revenue when vehicle and driver are sitting idle.

If the drivers are aware of the accident experience of the agency, they can develop ideas on how to prevent similar accidents in the future, and they should be encouraged to share these ideas with other drivers.

### Conclusion

This chapter presented a description of the task of human service agency drivers. The tasks were grouped into seven general areas. These included:

1. General driving skills;
2. Accident avoidance skills;
3. Passenger assistance skills;
4. Human relations skills;
5. Emergency first aid skills;
6. Nonmedical emergency skills; and
7. Basic transportation operation skills.

It is recommended that all drivers be proficient in general driving skills with special knowledge of specific skills required by local conditions.

In addition to controlling their own vehicles, drivers must be able to predict what the other drivers will do and to avoid accident-causing circumstances created by other drivers. It is also recommended that drivers of the human service vehicles be able to assist passengers who are handicapped, elderly or young. Therefore, drivers must learn special passenger assistance skills and how to operate special equipment which may be needed by handicapped individuals. It is also recommended that the drivers understand the characteristics of human relations in dealing with passengers. If an accident should happen, the drivers must be able to administer a minimum level of first aid and emergency skills to save lives. Nonmedical emergencies often arise, and drivers should have a well understood plan to protect the passenger from injury after the vehicle becomes disabled. Finally, the drivers must be able to recognize and avoid costly or dangerous transportation practices which will help keep the agency's cost and passenger injuries at a minimum.

In summary, the drivers are the agency's field force. They can be involved in identifying problems, managing vehicles, making suggestions and promoting safety programs. The drivers are the individuals who create the situations where liability is incurred. The safety and attitude of the passenger and the public are largely determined by the driver. It does not matter if the drivers are agency employees driving agency vehicles, volunteers driving agency vehicles, staff members using their own vehicles, part-time employees using their own vehicles, volunteers, or contractors--the situation is virtually identical and similar training is needed. Part-time employees or volunteers who live near the passengers or who are known by the passengers may know the special needs of the clients and may be able to avoid some of the problems that may occur when passengers are hauled by a complete stranger.

Reference

California Highway Patrol  
1979 School Bus Drivers and Carriers Handbook

## CHAPTER 4

### DRIVER SELECTION

A good driver selection program is based on an exact description of the job, establishing minimum criteria which a candidate must possess to perform the job and understanding the personal traits that make an excellent employee, so that when two applicants both meet minimum requirements, there will be a basis for selection.

#### What is Expected of the Driver?

The first step in the use of Chapter 3 is to identify those tasks that apply to an agency. Does the agency transport individuals who are blind, who need door-through-door service while sitting in a wheelchair or who are young children with discipline problems? Does the agency operate in rural areas, in severe cold weather or on toll roads? Identify those skills that are essential for the agency. It should be remembered, for example, that a bus driver, an ambulance driver and a human service driver are not expected to have similar skills. A bus driver is primarily responsible for operating the vehicle. The human service driver, on the other hand, is more like a paramedic, hospital worker, little league coach or social worker whose primary responsibility is helping people, and the driver happens to drive as part of this assistance. The primary duty of the human service agency driver may be to assist program beneficiaries whether they need assistance with a wheelchair, help into the vehicle, help in fastening their seat belts, help in locating a drug store, help into the hospital, first aid or help in scheduling their next appointment. The driving duties simply complement the primary responsibility.

Some systems, have two individuals--an escort and a driver. Even in these systems, the "driver" performs the duties of an escort first and

a driver second. Many drivers have difficulty bridging the gap from professional driver to professional escort since entirely different skills are required. Thus, the first step in an effective driver selection program is to define what the driver is expected to do.

#### What are the Minimum Job Requirements?

Once the agency has determined exactly what is expected of the driver, it must determine the minimum requirement for a person to be able to perform the job. The basic questions are:

1. Can the applicant perform the job?
2. Does the applicant identify with the mission of the agency and indicate a desire to work with the type of program beneficiaries that the agency transports?
3. Does the applicant exhibit proven driving skills and a safe driving record?
4. Does the evidence show that the applicant can be trained to the degree required?
5. Does the applicant show the degree of emotional maturity and self control necessary for the job?

Minimum standards must be set for each of these areas.

#### Can the Applicant Physically Perform the Job?

Does the individual have the physical strength to perform the job? This is very important where the job requires taking wheelchair passengers up flights of stairs, for example. In some cases, it may not be important, but where passengers must be assisted, the applicant must have the ability to provide the required assistance. An easy test for this strength is to have the applicant demonstrate the ability to take a person up a typical ramp or set of stairs. The examiner should be able to demonstrate correctly the methodology for performing the act correctly so that lack of knowledge would not be confused with lack of physical strength. The person in the wheelchair should

not be extremely heavy or extremely light. The weight selected for the wheelchair test should probably be set so that the applicant could transport at least 85 to 90 percent of the agency's passengers. The agency may have other special needs for which it must consider physical strength.

Does the applicant have a physical condition that might cause sudden loss of control over the vehicle or the person being assisted? Dangerous conditions for drivers might include epilepsy, diabetes, angina pectoris, high blood pressure and chronic illness. Such persons may have valid driver's licenses, but they represent too high a risk to have them driving passenger-carrying vehicles. These conditions can be screened in two ways. The application blank should ask questions about these illnesses (see Appendix D for a suggested application form). The applicant should be required to have a physical examination similar to the one that the U.S. Department of Transportation requires of all truck and bus drivers as well as many school bus drivers (see Appendix E). This form requires the physician to certify whether or not the driver is physically fit to drive. An additional advantage of a thorough physical examination by a reliable physician is that a medical history can reveal preexisting problems which might be aggravated by the driver's activity. Adequate screening can avoid extensive sick days, worker's compensation claims and the need to reassign disabled workers to nondriving duties. This physical examination can also identify back problems, hernia problems and other physical conditions which can become chronic if the applicant had to provide extensive passenger assistance.

Does the applicant have chronic physical conditions or require medication which may interfere with normal driving skills? If so, does the individual understand the effect of the illness or drug and know how to compensate for this effect? These conditions should be screened in the same manner as other

physical conditions, using the application and a thorough examination. The examining physician should be familiarized with the "Over 55 Alive" training program and asked if this course would be adequate to allow the person to be a safe driver.

Is the person under sufficient stress to detract from driving ability? This is a difficult area to measure, but usually the recent death of a family member, recent or pending involvement in divorce proceedings or the taking out of bankruptcy could possibly mean the applicant should be given nondriving duties for a period of time until the stress period is over. Individuals who use driving, particularly reckless driving, as a tension or stress-relieving mechanism, should be avoided. Persons who display an abnormal amount of aggression or who are under regular psychiatric treatment should also be avoided as drivers.

Does the Applicant Identify With the Mission of the Agency and Indicate a Desire to Work With the Program Beneficiaries Whom the Agency Transports?

Motivation is a difficult subject to measure with a written test. The most effective method of determining motivation is through personal interviews. General questions (Why are you applying for this job? Why do you feel that you would be a good human service driver?) should provide some insight into the applicant's understanding of the job requirements. If the applicants only respond that they like to drive, then the interviewer should explain that much of their time is spent on nondriving duties such as helping people in wheelchairs, leading the blind, placing children in child restraint devices, escorting individuals to medical facilities or other such duties as the drivers may expect at the specific agency. The applicants should thoroughly understand that driving is purely a secondary duty and that they will be expected to provide many personal assistance duties. This explanation should be augmented

with pictures of agency passengers to reinforce what is expected. After a complete and frank description of the duties, the applicant should again be asked a question such as "Why do you feel you would make a good driver for the agency?" The purpose of this question is to determine the degree to which the person identifies with the mission of the agency and shows empathy or understanding toward the passengers being transported.

Another good measure of the social empathy of the applicant is prior participation in social types of activities, including volunteer work, work on a rescue squad, police work, hospital work, coaching of youth groups, working with church groups, care of children or family members who had special needs and other types of compassionate service.

In many agencies it may be better to select as a driver a person who is an average driver but who has worked in a hospital, worked with the elderly at church and raised a large family, rather than someone who has driven a truck without an accident in 15 years but shows no tendency toward social involvement with groups that need assistance.

#### Does the Applicant Exhibit Proven Driving Skills and a Safe Driving Record?

As an absolute minimum, the applicant must be able to present a current driver's license and indicate four to five years of driving experience. (Hopefully, the applicant will have a year's experience driving the general type of vehicle, such as a van, station wagon or bus that is to be used since the accident rate is much higher during the first several months of driving a new vehicle.)

Next, the agency should check the applicant's motor vehicle record with the appropriate state agency (see Appendix F for a sample form to be used in

regulating an applicant's motor vehicle record). An average driver is involved in one accident every 12 years and one moving violation every three years. Drivers with two or more accidents or convictions in a three-year period have two and one-half times the accident frequency of drivers with clean records (Travelers Insurance Company, 1976b).

The person's motor vehicle report and the application should be compared because many states are very lax in recording either accidents or violations on the individual's driver's license. Other states are very strict. The Travelers Insurance Company (1976a) recommends the following minimum requirements for new drivers:

1. Consider the amount of miles driven--Exposure is an important factor in risk.
2. Recent history is a better predictor than past history.
3. Distinguish between statutory violations such as operating an unregistered vehicle, driving while license suspended; major violations such as driving while intoxicated, hit and run, negligent homicide, reckless driving resulting in injury or property damage; and capital violations such as murder or assault with a motor vehicle, theft of a motor vehicle.
4. Do not hire a person whose record shows a capital or major violation or five or more statutory violations within a three year period.
5. Place on probation or terminate any driver currently employed who, when reviewed, shows a record like that in #4.
6. Increase driver training for any driver involved in more than one incident per year.

In addition to checking the person's accident and violation record from the application and the state motor vehicle record, the agency should be able to establish an actual road test which includes situations very similar to those that the driver will experience on the job. A 15 to 20 mile test can be established to give applicants adequate opportunity to show how well they can perform each of the required tasks.

The road test should consist of behind-the-wheel travel over a preselected route containing such routine maneuvers as stopping at intersections--including those with and without stop signs, traffic lights or crosswalks; backing in and out of parking spaces and driveways; parking--to include angle parking, parallel and terminal parking; lane changing; passing--to include passing on multiple lane highways in the same direction and passing on two-lane roads in opposite directions; merging and diverging from entrance and exit ramps on expressways; and backing.

Preferably the individual responsible for conducting the driving test will be thoroughly familiar with the Driver Performance Measurement Test developed at Michigan State University (see Appendix G for a description of this program) which appears to be the most reliable test to measure driving habits immediately without waiting several years for accidents to occur. It considers both the demands of traffic situations and what drivers do in response to those situations. It includes situations in which neither violations nor accidents need occur. It considers drivers' behavior and their change in response to other drivers' behavior. It provides data on drivers' performance in a variety of circumstances.

The test also includes an analysis of driving habits which are highly critical. This includes visual search techniques employed by the driver to detect possible hazardous situations when approaching blind intersections, accident sites, congested traffic or areas with pedestrian traffic and the ability of the driver to take defensive steps toward decreasing the dangers of hazardous situations.

## Does the Evidence Show that the Applicant Can be Trained to the Degree Required?

The ability of the individual to be trained is largely determined by the driver's desire to be trained. In the high school driver training program where the driver training courses are often viewed simply as an obstacle that must be overcome before the driver's license can be obtained, there is very little evidence to show that driver training is effective. The defensive driving course indicates that more mature middle aged drivers (35 to 55 years of age) who have a sincere interest in the context of the course reduce their accident rates by up to 50 percent. Even defensive driving courses report a much lower impact on less mature drivers.

Thus, evidence of trainability is very similar to the individual's ability to identify with the mission of the agency and desire to be trained. (One advantage of volunteer drivers is that they usually have a commitment to the mission of the agency or they would not volunteer, and they desire to be trained or they would not spend the time to attend. Thus, volunteers have a tendency to be self-selected individuals who have high motivation.

Basically, the human service agency is looking for nonrigid or adaptive individuals who can be molded into contributing employees toward the agency's overall mission. This mission will be somewhat site specific. For example, it may take different attitudes to drive a Head Start bus than to transport the blind or the frail elderly.

The applicant's motivation and ability to learn new skills as well as adaptability to new environments and situations is very important. Motivation can also be assessed through references from previous jobs. This is an excellent opportunity to determine if the person readily accepts responsibility for mistakes or whether the person constantly blames someone else for all problems.

The former supervisor was in a position to observe the applicant and can provide information to the motivational issue.

Does the Applicant Show the Degree of Emotional Maturity and Self-Control Necessary to Perform the Job?

Individual maturity is a difficult variable to measure but is essential to the selection of a driver who will be responsible for the safety and welfare of human service beneficiaries. School systems, as in the State of California, categorically disqualify any individual who has ever been convicted of any sex offense. Individuals convicted of drug related offenses must wait seven years before they can be considered to drive a school bus. Driving under the influence of alcohol or drugs or other activities which would indicate drug or alcohol abuse should also be evaluated very carefully. Evidence of lack of self-control such as involvement in fighting or disorderly conduct, especially with fellow workers, should be closely scrutinized. (The importance of this is obvious if the driver loses temper with a passenger or with another driver in case of an accident.)

Frequently, unexplained job changes may provide insights into interpersonal conflicts with fellow workers or customers. Dishonorable discharges from the military or other evidence of poor judgment, lack of self-control or rebellion should be thoroughly investigated. These tendencies may not be so critical for a truck driver, but since the primary responsibility of the human service agency is assisting clients it is important not to select an individual who will abuse, take advantage of or harm the often defenseless program beneficiaries transported by the agency. Reason must be used. An individual who exhibits many small abuses during the preceding months is a much poorer applicant than an ex-con or ex-alcoholic with several serious incidents but a seven-year spotless record since joining Alanon or receiving a parole. One

group, for example, uses ex-convicts who have exhibited a major change in attitude and have manifested a sincere desire to change by providing leadership and assistance to their local community. Proper attitude and the desire to serve will be very important maturity factors for these drivers.

The agency will need several items to screen drivers. An application form is used to identify physical problems, to determine prior driving experience, to obtain the driver's license number for the motor vehicle check, to determine experience in volunteer and other human services type of activities and to locate references which can be contacted to determine the driver's emotional maturity. A motor vehicle record request form is used to obtain a copy of the driver's motor vehicle record. A physical examination should be performed by a licensed physician who should be thoroughly familiar with the qualifications of a driver. Each agency will want to develop a check list to make sure each area is covered.

Once the data has been collected on the various applicants, the agency should consider its ability to attract good applicants.

First, the agency should review Chapter 3 and identify those minimum skills and abilities which the driver must possess to effectively transport the agency's program beneficiaries.

Second, the agency should inventory the potential drivers in the community to determine the agency's ability to attract drivers. The agency should not be too quick to discount the fact that psychic income is the real attraction of the job, especially in the case of volunteers. Thus, the payment scale should emphasize both dollar income and "psychic income" to the driver. This emphasis may strongly influence the potential driver pool (especially volunteer and part-time employees) available to the agency. It has been

suggested that drivers constantly be given feedback on the importance of the job. For volunteers or quasi-volunteers, this feedback could be in the form of human service checks which could be received every month to indicate the number of trips that could not have been served without the volunteer's effort or alternately what it would have cost the agency to provide the transportation that the volunteers provided.

Third, the agency should consider which employees will be most likely be reliable employees. High absenteeism rates create a need for expensive backup employees. High turnover rates are a major concern of an insurer since a high turnover rate generally indicates poor employee morale. High turnover generally leads to poor driver selection and training, since much time is spent screening and training drivers who work only a few days. The problem is compounded if the better drivers leave and the agency retains only those who cannot get a job anywhere else. Also, the agency should probably avoid those employees who are likely to quickly leave for better paying jobs unless the applicant pool is extremely small. This is frequently the case with young drivers who are looking for a more glamorous or high paying job. Mature individuals who know the community, who desire to help their friends and the community, and who are not looking for a new glamour career are probably the most desirable driver candidates. Special consideration may be given to individuals who are not totally dependent upon their income for support such as retired military employees, off-duty firemen and policemen, farmers between crop seasons, housewives who are looking for employment while the children are in school and students looking for employment while attending school.

Fourth, the agency should consider the needs of their beneficiaries and determine the potential for ridesharing or timesharing (Ketola, 1979). If

there are small groups of program beneficiaries who do not need special assistance in areas where existing transportation providers (such as other agencies, taxicabs, commuters using their own vehicles, intercity or transit buses) are already operating, this service can be shared and a driver need not be hired. If the program beneficiaries need trips only during limited periods of the day, the agency should look toward time sharing (hiring part-time drivers and/or off-duty firemen and policemen, or others using their own vehicles) to provide service during that period.

Fifth, the agency should categorize the program beneficiaries by the type of transportation needed. By consolidating passengers requiring special assistance the remaining passengers may be transported with substantially less sophisticated equipment and driver training. For example, schools may have separate transportation programs for Head Start children, for shelter workshops, for special education groups, for mobile high school students and for extremely handicapped students.

Sixth, the agency should decide which services can be provided better by existing volunteer, contractor and nonprofit agency programs which also supply transportation.

Seventh, the agency should decide the degree to which it can employ the handicapped. This requires a special evaluation of the person's disability in light of the tasks outlined in Chapter 3. Severely handicapped individuals may be excellent drivers of specially equipped vehicles if passengers do not need assistance. In other cases, handicapped individuals must be able to drive the vehicle, to assist passengers who have special needs and to evacuate a vehicle in case of accident or emergency. No general rules should exclude the handicapped from applying for full- or part-time positions, but much care must

be taken in ensuring that handicapped individuals can effectively perform the assigned tasks. In no case should the agency use drivers who are subject to uncontrolled epilepsy, heart attacks, high blood pressure, uncontrollable diabetes or other conditions which can cause sudden loss of vehicle control or that severely affect their ability to use judgment in operating the vehicle. Passenger safety is paramount.

Eighth, the agency should not reject the use of low income or minority employees nor should it employ individuals simply because they belong to a disadvantaged group or are available at low or no cost to the agency, such as CETA (Comprehensive Employment and Training Act) employees. Each disadvantaged employee should be screened just as any other employee is screened. To be acceptable as a driver, the applicant must be physically qualified, must identify with the mission of the agency, must have a good driving record, must be able to exhibit self-control and nonrebellious behavior and must be trainable, just as any other driver. It is better to screen out those individuals who have a high propensity to accidents than to give them a job where they are highly likely to have an accident and be responsible for the accidental death or injury of a passenger.

#### Categorizing Applicants

After considering all these factors, the manager can group applicants into three groups. The hireable individual will have the required physical, mental and attitudinal characteristics needed for the job and will also have mastered most or all of the skills and attitudes which are taught in the training program. Such an individual is a desirable employee, but perhaps a person who will cost the program more than the agency can afford to pay.

The trainable candidate possesses the requisite physical, mental and attitudinal characteristics but requires training in skills needed to perform the transportation and passenger assistance tasks conducted by the agency. A number of skills detailed above are trainable. For example, an individual may not have experience driving a van or loading and unloading a wheelchair-bound client using a ramp. These skills can be taught in the agency's training program. Individuals falling into this category should be expected to have a satisfactory motor vehicle operation record.

The potentially trainable candidate would be expected to have the requisite physical and mental abilities. However, this individual would differ from the first two types in that inappropriate social characteristics may have been learned, along with habits, leading to a poor driving record. Employment of this type of candidate requires an extra step--diagnosing the cause of the poor driving record. Probably the trainer will be able to assess how difficult the poor driving habits will be to correct. The potentially trainable candidate may have a poor driving record due to attitudes. Thus the training must focus on job enrichment programs that professionalize the drivers and allow them to take pride not only in their job but also in the service which the agency provides.

Unless the agency has a manager familiar with job enrichment programs, the success of the potentially trainable driver may be quite low and results in high insurance rates and accidental death and injury to the clients. If the agency has a highly motivated manager who can help potentially trainable drivers experience something that helps them identify with the mission and purpose of the agency, then the success of the potentially trainable driver may be quite high.

On the other hand, an agency manager who visualizes CETA employees as free labor for 18 months before they are sent out the "revolving door," who feels that CETA employees should have no decision making authority, who feels that training is too expensive to waste on employees who will only work for 18 months and who feels that free employees cannot be screened, can be assured of a high-risk, unsuccessful program. Thus, the ability to use potentially trainable candidates is largely determined by the manager's ability to motivate and use basic job enrichment skills in professionalizing the drivers.

If it is determined that the applicant's poor habits will persist even after training, the individual should not be hired.

#### Legal Consideration in Selecting Driver

In an era of nondiscrimination and affirmative action programs, many program managers are concerned about their ability to screen out undesirable drivers if the applicant happens to belong to a group that has traditionally been discriminated against. The central question lies in the balance between meeting "quotas" and in selecting safe drivers. Laws have been passed which prohibit discrimination on the basis of age, sex or race. Age and sex may be used as bona fide occupational qualifications, but courts have been reluctant to support either of these unless a strong argument can be mounted that all members of the excluded group could not perform the duties of the job safely and efficiently. Appendix H discusses these issues in more detail and should be reviewed before developing minimum requirements for the job.

In summary, the safe operation of a transportation program begins with the selection of drivers who possess the basic skills needed to drive, and the attitudes and motivation necessary to be trained to assist the program beneficiaries.

## References

Ketola, Norm

1979 Planning guidelines for coordinated agency transportation services.  
Unpublished paper prepared under HEW Contract 1-5 76 74 02.

Travelers Insurance Company

1976 Commercial Automobile Manual, Engineering Division

Travelers Insurance Company

1976 Manual for Safety Engineers

## CHAPTER 5

### DRIVER TRAINING

Once a qualified driver has been selected, the agency must professionalize the driver and provide adequate training so that the driver fully understands what is expected and know how to do it.

#### Professionalization of Driver

An important ingredient of the training process is the motivation of the employee. If driving the vehicle is simply a job and the driver is simply "putting in hours," then the training will probably not be effective. Human service professionalism consists of both the driver's motivation for helping the agency accomplish its human service mission and the driver's willingness to accept responsibility for preventing accidents. Candidate motivation is a key element in the driver selection process. This innate motivation must be cultivated and augmented by the manager of the human service agency to help the new drivers identify with the needs of the program beneficiaries and recognize the importance of the agency's mission.

The second step, getting the driver to accept responsibility for accidents, is accomplished by continual training and an ongoing attitude fully understood by both the driver and manager about the definition of an "avoidable" accident. The Travelers Insurance Company defines an "avoidable" accident very well. This material, presented in Appendix I, should be clearly discussed with a new driver, and the driver probably should be given a copy for reinforcement. Professionalization occurs when the driver fully realizes that an accident can cause physical injury or accidental death to a passenger and that the driver is the essential individual who determines not only if the agency's mission is accomplished but also if the mission is accomplished

without injury to the clients. The importance of the driver's role is reinforced when the driver feels that the most professional training available is being given. With this training, the driver is expected, as a professional, to see that transportation is provided safely, that passengers are assisted effectively, that vehicles are maintained adequately and that all preventable accidents are avoided.

### Basic Driving Skills

In general, the agency will only hire individuals who already know how to drive. It is important that only experienced drivers be hired because the probability of becoming involved in an accident decreases with driving experience.

In spite of selecting only experienced drivers, it is important for drivers to be screened to locate specific driving traits or habits that need to be improved. This is done by selecting a well chosen driving test site of approximately 20 miles and including each situation in which new drivers can be expected to function. Appendix B provides a long list of general driving skills. From this list the recruiter can identify specific skills needed by the agency and identify good sites for having the applicant demonstrate these skills. If the applicants are weak on several skills, the manager may either demonstrate the appropriate procedures or can contract with local driver education teachers to work with the applicant for several hours to remove this deficiency.

### Driver Improvement Programs or Accident Avoidance Programs

Given that the human service agency driver has been professionalized and possesses basic driving skills, it is possible to further reduce the probability of accident by teaching the driver how to avoid accidents caused

by someone else. Perhaps the most effective course available is National Safety Council's Defensive Driving Course developed in 1964. Details of this course are presented in Appendix J. Many organizations have had instructors trained to present this course locally. Typically, police departments require repeating traffic offenders to take defensive driving from a local police officer. Most governmental agencies teach it to regular users of motor pool vehicles and thus have a local instructor. A short search should locate a qualified instructor in a local community. If not, the National Safety Council may be contacted for the address of a local instructor. In addition, a number of states such as Massachusetts, North Carolina and Oregon and cities such as Chicago offer driver improvement programs; but since most are offered only for the chronic traffic violators or accident-prone drivers, it may be best not to mix "professionalized" drivers with problem drivers to avoid losing the value and image of the training.

#### First Aid and Emergency Medical Skills:

When transporting large groups of individuals who may not only have pre-existing physical impediments, but who are also subject to injury within the vehicle (even if it is not involved in an accident), the driver should know how to administer first aid. This is especially true if the vehicle is operating in rural areas where professional medical treatment may not be readily available. Appendix K lists courses that are available locally, including first aid, advanced first aid, and cardiopulmonary resuscitation. The agency will need to develop specific guidelines on when first aid should be administered.

## Passenger Assistance Techniques

The drivers of intercity and transit buses are primarily concerned with safe operation of the vehicles they drive under the assumption that the passengers can take care of themselves as far as getting into and out of the vehicle, getting to and from the bus stop, finding seats and other routine activities. However, the frequent reason for starting human service transportation programs is that many human service beneficiaries are unable to get to the bus stop, unable to board the bus, unable to find or use traditional seats and, in general, unable to use the traditional types of transportation service. Thus, a major difference between a bus driver and a human service driver is the need for the human service driver to be able to recognize the need for specialized assistance and to give that assistance to each human service program beneficiary being transported. This includes wheelchair management, leading the blind, recognizing special client needs, placing children in child restraint devices and other skills necessary to help the individual program beneficiaries adapt their bodies to use the human service vehicles. Appendix L presents information on a course that has been designed to train drivers to provide passenger assistance. Appendix M presents information on training individuals to select and use child restraint devices for passengers under four years of age.

## Human Relation Skills

One of the advantages of operating a traditional intercity or transit bus is that only certain individuals can use it. Young children generally do not ride unless accompanied by an adult who can help them use the system. Airlines require that a child be at least five years old to travel alone. The mentally retarded, the extremely frail and the incompetent do not usually

ride on traditional public transportation. Generally, except on school buses, there are few discipline problems. Human service drivers must be able to respond to all of these situations; but unfortunately no formal courses have been identified which teach these concepts. (School systems usually have programs designed to handle discipline problems with unruly children or teenagers.) Hopefully, a course on human relation skills for human service agencies will be developed soon.

### Nonmedical Emergency Skills

As of this date, the research team has been unable to find any training for human service contingency programs. This is another course that needs to be developed. Human service agencies need instructors for helping develop contingency plans and train drivers in nonmedical emergency procedures. Each state has detailed procedures indicating where flares or reflectors should be placed for disabled vehicles and each state has accident reporting forms and procedures; but there is a need for detailed contingency plans for use by human service agencies which transport individuals who could suffer extensive injury because they cannot quickly exit the vehicle, who are not able to readily adapt to conditions outside the vehicle, who are not able to endure exposure to the elements or who cannot be left alone while the driver goes to summon help or emergency aid. Specialized courses on contingency planning and training need to be developed.

### Basic Transportation Skills

A course needs to be developed to teach basic transportation concepts. It is estimated that an adequate training course would require approximately eight hours of instruction. Part of this training will include items such as measuring driver reaction time and conducting accident review boards.

Appendix N presents information on sample driver skill programs and accident review boards. These training programs should also address risk management concepts, transportation economics, transportation maintenance and many other basic transportation concepts.

#### Specialized Training for Older Drivers

A special training program has been developed for the over 55 year old driver. This training program is designed to help the over 55 driver recognize and adapt to the fact that certain bodily functions begin to react slower after this age. This program also teaches the over 55 driver to understand that many of the prescription drugs often administered to the over 55 driver may severely affect driving judgment and reaction time. Appendix O describes this program for the over 55 driver.

#### Specialized Retraining of Drivers

Even though drivers are well trained, they need to be continually evaluated to see if retraining is needed in specific areas. The first step is to know how to identify specific training needs. The Travelers Insurance Company suggests that this can be accomplished by classifying all accidents to identify areas where retraining is needed. Appendix P presents the classification scheme suggested by Travelers Insurance Company's safety engineers.

#### In-House vs. Professional Training

One of the fundamental questions that an agency must address is whether to provide training using in-house personnel or whether to use professional teachers in a formalized program. There is a tendency for many agencies to try to conserve funds by using existing employees to train drivers. This approach is appealing from several points of view. First, it conceals the

true cost of training, since the cost is in the form of reduced productivity, driver salaries and administrative salaries instead of indirect training expense. Second, it makes the agency feel self-sufficient in that it feels that it is able to train drivers anytime it desires.

There are, however, several problems with in-house training. Training invariably takes a back seat to the primary responsibilities of the in-house personnel conducting the training. Therefore, training must take a back seat to the employee's "real job." Training is often haphazard with short, irregular sessions given when time is available. When under time pressure, the trainer may try to "get the training over with" as quickly as possible. Training responsibility is often delegated to someone who may intuitively do an effective job but who may not know why or how to teach someone else. Drivers do not sense the importance of training when it is done in a haphazard fashion. In-house training is often very informal, and there is no assurance that all areas will be covered since a formalized outline is seldom followed.

Ironically, professionalized training often offers many advantages, including lower costs and greater flexibility. It is often less expensive to hire professional trainers than to prepare existing employees to be teachers or trainers. For example, it will cost approximately \$4,000 to develop a training team to conduct passenger assistance training. This includes salaries, visual aids, travel and other costs. The agency must train approximately 325 drivers (\$14,000 salary + 15 percent fringe benefits) with no turnover of instructors before it reaches the break even where it is cheaper to train drivers in-house.

Agencies are not usually large enough to offer regular training sessions for new drivers unless they combine their efforts with those of other agencies. Thus, the cost of in-house training becomes very expensive if done one-to-one. (The salary of the trainer is usually greater than the cost of the professional training where the professional training is done in groups.)

Drivers are much more impressed with the importance of the training when it is done in a formalized classroom with certificates, uniform patches and other forms of formalized recognition. It gives the drivers the feeling that the subject was important enough for the agency to send them to a special school. The professional program is usually better prepared and better able to keep the driver's attention; and the professional program is designed to assure that all important areas are covered.

In case of accident, the public invariably raises the question: What was the condition of the vehicle and how qualified was the driver? Therefore, proof that the agency gave the driver the most professional training available helps the agency's defense and avoids the potential of public criticism.

Insurance companies are familiar with known training programs, but in-house efforts are of unknown quality and, thus, there is uncertainty about the quality of the training in the mind of the underwriter.

Goldstein (1974), in quoting a study by Lefkourtz, suggests that the best training would be to integrate off-site training, using simulation, with on-site follow up training by the manager when the employee returned to work. This follow-up focuses on interaction between the employee and the supervisor (and possible other employees) to discuss the training experience

and to discuss the ways that the training specifically relates to the employee's job situation.

This reinforces the off-site professional training, allows the driver to transfer the learning to the actual job situation and bonds the driver to the employer with a sense of pride, professionalism and identification with the mission of the agency.

This dual approach would allow the best training for employees. That is professional, off-site, planned instruction, followed by an on-the-job follow-up phase. Each type of training would be doing what it can do best, and the agency would discover the most cost effective way to train its employees.

#### Reference

Goldstein, Irwin L.  
1974 Training: Program Development and Evaluation. Behavioral Science in Industry Series II. Monterey, California: Brooks/Cole Publishing Co.

## CHAPTER 6

### ADMINISTERING A DRIVER SELECTION AND TRAINING PROGRAM

The manager of the human service agency has many transportation options. While these different options allow the selection of cost-effective alternatives, they also require increased managerial attention since a slightly different management approach must be used to administer each option.

Some of the options available to a human service agency transportation manager include referrals to other providers, use of the agency's fleet, use of privately-owned vehicles and contracting. Other transportation providers available may include transit, taxicabs, intercity bus lines, air lines, other human service agencies, charitable organizations, volunteer programs and consolidated transportation programs. The agency's fleet may be driven by full-time drivers, part-time drivers, volunteers or agency staff (whose primary duties are other than transportation). Privately-owned vehicles used for transportation services may be owned by agency staff, part-time agency employees, volunteers or friends, family and neighbors of agency clients. Vans used by private company commuter vanpool programs may be loaned during noncommuting hours.

Several contracting options are available to the agency. Contracts may be signed for a specific trip, a specific program beneficiary, a specific route, an on-call service, part of the seats on a vehicle already making the trip (ridesharing) or all services needed by the agency. User-side subsidy programs, voucher programs and block purchase of tickets are also options.

#### Defining Selection and Training Needs

When considering each of these options, the agency manager must consider two questions. What special skills and training are actually needed to transport program beneficiaries safely? To what degree can the agency determine

driver selection criteria and influence the drivers to be trained? The first question is one that the agency can answer directly. The agency can determine both the typical needs of its program beneficiaries and the special needs of individual program beneficiaries. For example, consider a congregate meal site that has 50 senior citizens that it needs to transport. One of these individuals has an extremely weak upper torso and another wears an artificial limb and is extremely sensitive to temperature changes, especially heat. The agency may contract for buses or vans to transport the majority of the passengers, but must use an automobile with a good air conditioning system, adequate seat belts, shoulder belts and a padded dashboard to provide transportation for the special cases. In this case, it would be cruel and a flagrant disregard for the safety of those with special needs to get them to use the same lift-equipped vehicle unless it had adequate seat belts, shoulder straps and cooling. Once the needs of the passengers are determined, the required training can be defined.

The answer to the second question is determined by the degree of influence that the agency has over the driver. If the agency desires to send a program beneficiary on a transit bus or airline, then the agency will have little or no influence over the training of the driver. On the other hand, if the agency contracts with another organization (public, nonprofit, or contractor) to provide transportation in a specific geographic area for a six-month period of time, the manager will be able to specify the degree of training required. If the driver is a full- or part-time employee, then the agency not only is expected to set standards, but is legally responsible for the correctness of the standards, especially if the agency owns the vehicle. Volunteers, family, friends and neighbors of the passenger can also be trained, but it is done through motivation and appealing to the desire of the driver to better serve

the person to whom they have a commitment to serve. Thus, each management option requires a slightly different management approach. However, proper driver selection and training will be an important component in each case.

## CHAPTER 7

### DRIVER SELECTION AND TRAINING BIBLIOGRAPHY

- Aetna Life and Casualty  
1976 "Find fleet safety programs cut cost." *Automotive Fleet* (May).
- Adams, Howard, Jr.  
"Municipal Fleets. An Engineering Approach." *Fleet Safety*. The Travelers Engineering Division.
- Adams, Howard, Jr.  
1979 Occupant Protection Program Progress Report No. 2 (April). Washington, D.C.: U.S. Department of Transportation.
- All-Industry Research Advisory Committee  
1979 Automobile Injuries and Their Compensation in the U.S. Chicago: All-Industry Research Advisory Committee.
- American Insurance Association  
1973 A Control Program for Motor Vehicle Fleets. New York: Engineering and Safety Service.
- American Red Cross  
1973 Advanced First Aid and Emergency Care: Instructor's Manual.
- American Red Cross  
1973 Standard First Aid and Personal Safety: Instructor's Manual.
- American Red Cross  
1974 Cardiopulmonary Resuscitation
- American Trucking Association  
1979 Truck Driver Training. A Manual for Driver-Trainers. Washington, D.C.: Department of Safety, American Trucking Association.
- Barrett, Gerald U. et al.  
1977 "Information processing skills predictive of accident involvement for younger and older commercial drivers." *Industrial Gerontologist* (Summer): 1973-81.
- Becker, W. C. et al.  
1959 "Factors in parental behavior and personality as related to problems behavior in children." *Journal of Consulting Psychology* 23: 107-18.
- Beno, John A.  
1979 The State of the Art for Driving Programs for the Aged Driver and the Needs of Iowa.
- Blake, Joseph A.  
1974 "Occupational thrill, mystique and the truck driver." *Urban life and Culture* 3 (July): 205-20.

- Botwinick, Jack  
1967 Cognitive Processes in Maturity and Old Age. New York: Springer.
- Botwinick, Jack  
1973 Aging and Behavior: A Comprehensive Integration of Research Findings. New York: Springer.
- Botwinick, Jack and L. W. Thompson  
1968 "Age differences in reaction time: an artifact?" The Gerontologists 8: 25-8.
- Botwinick, Jack and M. Storandt  
1974 "Cardiovascular status, depression effect, and other factors in reaction time." Journal of Gerontology 29: 543-48.
- Brown, S. and P. Bohnert  
1968 Alcohol Safety Study: Drivers Who Die. Waco, Texas: Baylor University Press.
- Butler, R. N. and M. I. Lewis  
1973 Aging and Mental Health: Positive Psychological Approaches. St. Louis: C. U. Mosby.
- California Coalition for Insurance Reform for Non-Profit Agencies  
1978 Risk Management and Auto Liability Insurance Manual.
- California Department of Motor Vehicles  
1966 A Profile Study of the Financially Irresponsible Driver in California.
- California Highway Patrol  
1979 School Bus Driver's and Carrier's Handbook.
- Carlson, William L. and David Klein  
1970 "Familial vs. institutional socialization of the young traffic offender." Journal of Safety Research 2(1) (March): 13-25.
- Clark, Verneta J.  
1977 Single Variable Tabulations for 1973-1976 North Carolina Accidents. Chapel Hill: University of North Carolina Highway Safety Research Center.
- Cohen, Albert K. and Harold M. Hodges, Jr.  
1963 "Characteristics of the lower-blue-collar-class." Social Problems 10 (Spring): 303-34.
- Dannefer, W. Dale  
1977 "Driving and symbolic interaction." Sociological Inquiry 47: 33-8.
- Davis, Frank W., Jr. et al.  
1979 The Social Service Insurance Dilemma: Problems, Analysis, and Proposed Solutions. Washington, D.C.: U.S. Department of Transportation.

- Davis, F. W. and K. Oen  
 1977 Solving Public Passenger Transportation Problems: A Need for Policy Reorientation. Washington, D.C.: U.S. Department of Transportation.
- Deaux, Kay K.  
 1971 "Horn-honking at the intersection: a replication and extension." Journal of Social Psychology 84 (June): 159-61.
- Doob, A. N. and A. E. Gross  
 1968 "Status of frustration as an inhibitor of horn-honking responses." Journal of Social Psychology 76 (June): 213-18.
- Dunlap and Associates, Inc.  
 1968 Driver Education and Training. Washington, D.C.: U.S. Department of Transportation.
- Epperson, William U. and Richard M. Harano  
 1975 "An evaluation of some additional factors influencing the effectiveness of warning letters." Accident Analysis and Prevention 7 (December): 239-47.
- Fatal Accident Reporting System  
 1976 Annual Report. Washington D.C.: U.S. Department of Transportation.
- Federal Highway Administration  
 1977 Analysis & Summary of Accident Investigations 1973-1976. Washington, D.C.: U.S. Department of Transportation.
- Fell, James C.  
 1976 "A motor vehicle accident causal system: the human element." Human Factors 18: 85-94.
- Finch, J. R. and J. P. Smith  
 1971 Psychiatric and Legal Aspects of Automobile Fatalities. Springfield, Illinois: Thomas.
- Goldstein, Irwin L.  
 1974 Training Program Development and Evaluation. Behavioral Science in Industry Series II. Monterey, California: Brooks/Cole Publishing Co.
- Goffman, Erving  
 1963 Stigma: Notes on the Management of a Spoiled Identity. Englewood Cliffs, New Jersey: Prentice-Hall.
- Haddon, William Jr.  
 1972 Approaching the Reduction of Road Losses--Replacing Guesswork with Logic, Specificity and Scientifically Determined Fact. Washington, D.C.: Insurance Institute for Highway Safety.
- Haddon, William, Jr. and Albert Benjamin Kelley  
 1970 The "Underwriter" Columns on Highway Loss Reduction. Washington, D.C.: Insurance Institute for Highway Safety.

- Hagger, Rona and Dax E. Cunningham  
 1977 The driving records of multiproblem families. Social Science and Medicine (January): 121-27.
- Harano, R. M. et al.  
 1975 "The prediction of accident liability through biographical data and psychometric tests." Journal of Safety Research 7 (March): 116-52.
- Henderson, William H.; Raymond E. Dabney and David D. Thomas  
 1978 Passenger Assistance Techniques. A Training Manual for Vehicle Operators of Systems Transporting the Elderly and Handicapped. Fort Worth: Transportation Management Associates.
- Henderson, William H. and David D. Thomas  
 1978 Teaching Passenger Assistance Techniques. A Manual for Systems Transporting the Elderly and Handicapped. Fort Worth: Transportation Management Associates.
- Hendricks, Jon C. and C. David Hendricks  
 1977 Aging in Mass Society: Myths and Realities. Cambridge, Massachusetts: Winthrop.
- Highway Loss Data Institute  
 1977 Automobile Insurance Losses Collision Coverages. Variations by Make and Series. 1977 Models During Their First Year. 1976 Models During Their First Two Years. 1975 Models During Their First Three Years.
- Hood, Thomas C. et al.  
 1979 Market Opportunity Analysis for Short-Range Public Transportation Planning--Transportation Services for the Transportation Disadvantaged. National Cooperative Highway Research Program Report 209. Washington, D.C.: Transportation Research Board.
- Hurvitz, Nathan  
 1965 "Control roles, marital strain, role deprivation, and marital adjustment." Journal of Marriage and the Family 27 (February): 29-31.
- Insurance Information Institute  
 1978 Insurance Facts
- Jones, Margaret H.  
 1978 "The reliability of driver performance--test reliability or driver stability." Unpublished Manuscript. Traffic Safety Center, University of Southern California.
- Ketola, Norm  
 1979 "Planning guidelines for coordinated agency transportation services." Unpublished paper prepared under contract HEW 1-5 76 74 02.
- Kilgore, Gloria and Gabriel Salmon  
 1979 Technical Notes Summaries and Characteristics of States' Title XX Social Services Plans for Fiscal Year 1979. U.S. Department of Health, Education, and Welfare.

- Klein, David and Julian A. Waller  
1970 Causation, Culpability and Deterrence in Highway Crashes. Washington, D.C.: U.S. Department of Transportation.
- Kuhn, Manfred H.  
1960 "Self-attitudes by sex and professional training." Sociological Quarterly 1 (Winter): 39-55.
- Kuhn, Manfred A. and C. A. Hickman  
1956 Individuals, Groups and Economic Behavior. New York: Holt, Rinehart, and Winston.
- Kwong, K. W. and R. C. Peck  
1976 Longitudinal Study of California Driver Accident Frequencies I: An Exploratory Multivariate Analysis. Sacramento: California Division of Highways.
- Layton, Barby  
1975 "Perceptual noise and aging." Psychological Bulletin 82: 875-83.
- LeGarde, John C. et al.  
1971 "A highway safety scare film and its effect on performance and mood of males and females." Behavioral Research in Highway Safety 2 (Fall): 83-97.
- Little, Peter W.  
1966 "How to establish and operate a driver training program." Motor Truck News of New York (September).
- Maccoby, Eldor and Carol Jacklin  
1974 The Psychology of Sex Differences. Palo Alto, California: Stanford University Press.
- McCord, W. et al.  
1961 "Familial correlates of aggression in nondelinquent male children." Journal of Abnormal and Social Psychology 62: 79-93.
- McCurray, L.  
1970 "Emotional stress and driving performance: the effect of divorce." Behavioral Research in Highway Safety: 100-14.
- Moe, Gerard L., Gene R. Kelley, and David E. Parlow  
1973 Truck and Bus Driver Task Analysis. Washington, D.C.: U.S. Department of Transportation.
- National Center for Health Statistics  
1970 "Health in the later years of life." Department of Health, Education and Welfare, Washington, D.C.
- National Highway Traffic Safety Administration  
1977 Fact Book Statistical Information on Highway Safety. Washington, D.C.: U.S. Department of Transportation.

- National Retired Teacher's Association  
1979 Program Leader's Guide 55 Alive/Mature Driving.
- National Safety Council  
1975 Instructor's Manual Defensive Driving Course. National Safety Council  
Driver Improvement Program.
- National Safety Council  
1977 Accident Facts.
- Newgarten, Bernice L. and R. J. Havinghurst  
1975 Society and Education. Boston: Allyn and Bacon.
- Nolan, R. O. et al.  
1973 Driver Performance Measurement Research Volume 2. Guide for  
Training Observer/Raters in the Driver Performance Measurement Procedure  
(Including Course and Content). Washington, D.C.: U.S. Department  
of Transportation.
- Peck, R. C., R. S. McBride, and R. S. Coppin.  
1969 "The Distribution and Prediction of Driver Accident Frequencies."  
Accident Analysis and Prevention 2 (October 14): 243-99.
- Peck, Raymond C.  
1976 "Toward a dynamic system of driver improvement program evaluation."  
Human Factors 18: 493-506.
- Planek, Thomas et al.  
1974 "An evaluation of the National Safety Council's Defensive Driving  
Course in various states." Accident Analysis and Prevention 6  
(December): 271-97.
- Promisel, David M. et al.  
1969 School Bus Safety-Operator Age in Relation to School Bus Accidents.  
Washington, D.C.: U.S. Department of Transportation.
- Prothero, Jon C.  
1978 "Evaluation of an experimental treatment for problem drivers."  
Human Factors 20(4): 489-93.
- Public Technology, Inc.  
1979 Elderly and Handicapped Transportation: Local Government Approaches.  
Washington, D.C.: U.S. Department of Transportation.
- Reinfurt, D. W. et al.  
1978 Injury Scaling Research. Chapel Hill: University of North Carolina  
Highway Safety Research Center.
- Robertson, Leon S. et al.  
1973 "Jail sentences for driving while intoxicated in Chicago: a judicial  
policy that failed." Law and Society Review 9 (Fall): 55-67.
- Robins, L. N.  
1966 Deviant Children Grow Up. Baltimore: Williams and Wilkins.

- Rosenberg, Nathan et al.  
1972 "Alcoholism and drunken driving: evidence from psychiatric and driver registers." Quarterly Journal of Studies on Alcohol 33: 1129-43.
- Schuster, D. H.  
1974 "The effectiveness of official action taken against problem driver: a five-year follow-up." Journal of Safety Research 6 (December): 171-76.
- Sears, R. R. et al.  
1957 Patterns of Child Rearing. New York: Harper and Row.
- Selzer, Melvin L.  
1969 "Alcoholism, mental illness, and stress in 96 drivers causing fatal accidents." Behavioral Science 14: 1-8.
- Selzer, M. L. and C. E. Payne  
1962 "Traffic accidents, personality and alcoholism: a preliminary study." Journal of Abnormal Psychology 4: 21-6.
- Selzer, M. L. et al.  
1968 "Fatal accidents: the rate of psychopathology, social stress, and acute disturbance." Journal of Psychiatry 124: 1028-36.
- Shaffer, John W. et al.  
1977 "Social adjustment profiles of female drivers involved in fatal and nonfatal accidents." American Journal of Psychiatry 134 (July): 801-04.
- Shinar, David  
1978 Psychology on the Road. The Human Factor in Traffic Safety. New York: John Wiley and Sons.
- Shanka, D. B., Editor  
1979 Transportation Energy Conservation Data Book: Edition 3. Oak Ridge: Oak Ridge National Laboratory.
- Shover, Neal et al.  
1977 "Responses of the criminal justice system to legislation providing more severe threatened sanctions." Criminology 14 (February): 483-500.
- Signori, Edro I. and Roland G. Bowman  
1974 "On the study of personality factors in research on driving behavior." Perceptual and Motor Skills 38: 1067-76.
- Smart, R. G.  
1967 "Are alcoholic's accidents due solely to heavy drinking?" Journal of Safety Research 1: 174-77.
- Sobel, Raymond and Ralph Underhill  
1976 "Family disorganization and large auto accidents." Journal of Safety Research 8:

- Soliday, Stanley M.  
1975 "Development and preliminary testing of a driving hazard questionnaire." Perceptual and Motor Skills 41: 763-70.
- Sterling-Smith, Robert S. and James C. Fell  
1973 A Human Factors Analysis of Most Responsible Drivers in Fatal Accidents. Washington, D.C.: U.S. Department of Transportation.
- Survey Research Center; University of Michigan  
1970 Public Attitudes Toward Auto Insurance. Washington, D.C.: Government Printing Office.
- Taylor, Donald H.  
1976 "Accidents, risks, and models of explanation." Human Factors 18: 371-80.
- Tillman, W. A. and G. E. Hobbs  
1973 "The bus driver: a study in role analysis." Human Relations 26 (February): 101-12.
- Travelers Insurance Company  
1976 Commercial Automobile Manual, Engineering Division
- Travelers Insurance Company  
1976 Manual for Safety Engineers
- Treat, J. R. et al.  
1977 Tri-Level Study of the Causes of Traffic Accidents. Report No. DOT-HS-034-3-535-77. Bloomington: Indiana University.
- U.S. Department of Transportation  
1978 Transportation for the Elderly and Handicapped: Programs and Problems.
- Waller, A. J.  
1965 "Chronic medical conditions and traffic safety: a review of the California experience." New England Journal of Medicine 273 (December 23): 1413-20.
- Waller, A. J.  
1967 "Cardiovascular disease, and traffic accidents." Journal of Chronic Diseases 20 (August): 615-20.
- Waller, A. J.  
1967 "Identification of problem drinking among drunken drivers." Journal of the American Medical Association 200 (April 10): 114-20.
- Waller, A. J.  
1968 "Suggestions for educational programs about alcohol and highway safety." Traffic Safety Research Review 12 (September): 66-70.
- Waller, A. J.  
1969 "Medical impairment and highway crashes." Journal of the American Medical Association 208 (June 23): 2293-96.

- Waller, A. J.  
1970 "The role of alcohol in collisions involving trucks and the fatally injured." Arch-Environ Health 29 (February): 254-58.
- Waller, A. J. and T. J. Goo  
1969 "Highway crash and citation patterns and chronic medical conditions." Journal of Safety Research 1 (March): 13-27.
- Welford, A. T.  
1951 Skill and Age: An Experimental Approach. London: Oxford University Press.
- Welford, A. T.  
1969 "Age and skill: motor, intellectual and social." In Decision Making and Age. Ed. A. T. Welford. Basel, Switzerland: S. Karger.
- Whittenburg, John A. et al.  
1974 Driver Improvement Training and Evaluation. Washington, D.C.: U.S. Department of Transportation.
- Wilde, Gerald  
1976 "Social interaction patterns in driver behavior: an introductory review." Human Factors 18: 477-92.
- Wooten, Jim  
1979 "A model of driving behavior--social and psychological correlates of the safe driver." Unpublished manuscript, Transportation Center, The University of Tennessee.
- Yeburg, Betty  
1974 Sexual Identity: Sex Roles and Social Change. New York: Wiley.

## APPENDIX A

### AN ANALYSIS OF THE LEGAL DUTY OF THE FOR-HIRE CARRIER

The duty of common carriers with reference to the safety of their passengers is founded upon principles of negligence. The origin of the theory of liability dates back to ancient Roman Law, but the actual theory utilized in modern practice can be traced to 1791. Courts have used various forms of expression, in some instances, conflicting, as to what constitutes negligence or due care on the part of the carrier. Some authorities have characterized the care required of common carriers of passengers as "the utmost care and diligence," St. Louis S.F.R. Co. V. Murray, 55 Ark 248, 18 S.W. 50, or "the utmost caution characteristic of very careful men," Pennsylvania Co. V. Roy, 102 U.S. 451, or they have stated that a common carrier of passengers is bound to protect its passengers as far as human care and foresight will go, Stokes v. Saltonstall, 38 U.S. 1 (13 Peters 181). While it is generally held that a common carrier of passengers is not an insurer of the safety of its passengers it has been said that its duty to protect its passengers stops just short of insuring the passenger against injury. In a few cases, it has been simply stated that common carriers of passengers must exercise "a high degree of care," "a very high degree of care" or "extraordinary care" for the safety of its passengers (14 Am Jur. 2d 916 and the cases cited therein).

The high standard of care required of passenger carriers finds its origin before the time of Christ. Under Roman Law, innkeepers as well as carriers clearly owed an absolute duty of care to their patrons for willful damage or theft to movable property placed in their Inns or ships. As a corollary, the notion of duty toward passengers developed. The standard of care was not as stringent, because of the reasoning that a person was more capable of protecting himself from harm than an inanimate object, such as a crate of commercial goods, Roman Digest, 47, P. 5 & 6.

The carrying of passengers for hire is a relatively modern practice. Although there are many earlier reported cases involving the loss of goods, the first case of an action to recover damages by a passenger is White vs. Boulton, 120 Eng. 98 (1791). The case is an action against the proprietors of the Chester Mail Coach for the negligence of their driver which caused the coach to overturn and a passenger's arm to be broken. Lord Kenyon stated that the carrier was bound "to carry the passengers safely and properly."

The next case, Aston vs. Heaven, 2 Esp. R. 533, in 1797 was once again against the proprietors of a stage coach for injuries incurred by a passenger when the coach overturned due to the alleged negligence of the driver. The passenger's attorney argued that the coach owners were liable in all cases except where the injury was caused by an act of God or by the King's enemies. The court held that as against carriers of persons, the action stands alone on the grounds of negligence, but the carrier is liable for the "smallest negligence." In Crofts vs. Waterhouse, 3 Bingham 321 (1825), the court enunciated the strict doctrine known today.

The coachmen must have competent skill, and use that skill with diligence; He must be well acquainted with the road he undertakes to drive; He must be provided with steady horses; a coach and a harness of sufficient strength and properly made, and also with lights by night. If there be the least failure in any one of these things, the duty of the coach proprietor is not fulfilled then he is answerable for any injury or damage that happens. p.324.

In 1839, the United States Supreme Court reviewed the English authorities in Stokes v. Saltonstall, 38 U.S. 114 (13 Peters 181). The Supreme Court adopted those holdings with the following statement:

Although the passenger carrier does not warrant the safety of the passengers at all events, his undertaking and liability as to them go to this extent: that he or his agent shall possess competent skill; and that as far as human care and foresight can go, he will transport them safely. p. 117.

The best historical analysis of the English decision is the 1845 Massachusetts opinion in the case of Ingalls v. Bills, 50 Mass. 1 (9 Metcalfe 1),

which involved the plaintiff's injuries caused by an accident occurring when an undiscoverable defect in the axle of a stagecoach broke. The court noted: "It must be borne in mind that the carrying of passengers for hire, in coaches, is comparatively modern in practice . . ." *Supra*, p. 7. After reviewing the precedents, the court said:

The law respecting common carriers has been rigidly enforced, and probably there has been a little relaxation of the doctrine, as maintained by the ancient authorities respecting this species of contract as in any one branch of the common law. This arises from the great confidence necessarily residing in persons engaged in this employment. Goods are entrusted to their sole charge and oversight for which they receive a suitable compensation; they have been, and still are held responsible for the safe delivery of the goods, but with two exceptions, act of God and the King's enemies; so that the owners of goods may be protected against collusive robberies, against thefts and embezzlements, and negligent transportation. But in regard to the carriage of passengers, the same principles of law have not been applied; and for the obvious reason, that a great distinction exists between persons and goods, the passengers being capable of taking care of themselves, for and of exercising that vigilance and foresight, in the maintenance of their right, which the owners of goods cannot do, who have entrusted them to others. *Supra*, pp. 6-7.

On the basis of the line of stagecoach cases, the Supreme Court had no problem in applying the same rule to railroads. In Pennsylvania Company v. Roy, (1880) 102 U.S. 451, the Court affirmed the lower court by saying:

These principles are very generally recognized as fundamental in the law of passenger carriers. Those thus engaged are under an obligation arising out of the nature of their employment and on the grounds of public policy vigorously enforced, to provide for the safety of passengers whom they have assumed, for hire, to carry from one place to another . . . public policy and safety require that they be held to the greatest possible care and diligence--that the personal safety of passengers should not be left to the sport of chance, or the negligence of careless agents. p. 455.

By virtue of the precedents stated, the common law rule is clear. A carrier is not an insurer of the safety of the passengers; however, a carrier owes the passengers whom it undertakes to transport "the highest degree of care for their safety as is consistent with the practical considerations and the conduct of its business," Mann v. Virginia Dane Transportation Co., Inc. 283 N.C. 734, 198 SE2d 558. This recent North Carolina case is indicative of

the current state of the law in this country. It remains as a rule which flows from Roman origins regarding the carriage of goods and its corollary regarding the carriage of passengers.

The fundamental assumption which reduces the risk of the for-hire carrier from that of being an absolute insurer of the safety of the passengers (except in the case of an act of God or the King's enemies) to the highest degree of care was the fact of "the passengers being capable of taking care of themselves." In the case of the elderly, the young and the handicapped, the passengers are generally limited in their ability to take care of themselves although there have not been any cases to indicate the way the courts would evaluate the carrier's obligation to these individuals. The traditional for-hire carriers did not attempt to serve these transportation needs unless escorts or fully capable adults went with the persons and would assume responsibility for taking care of them. In this way, the carrier could retain the traditional defense that the passengers or the passengers and their escorts were fully capable of taking care of themselves.

An additional area of concern is now developing in the field of federal regulation. In return for federal dollars, local transportation systems are required to adhere to federal regulation. The sanction is an unthinkable loss of federal funds. With each new regulation, there is an increasing possibility that the public transportation system will be liable if a person is injured because the transportation system operated a vehicle that did not meet federal standards. The injured party would have the additional argument that the transportation provider was guilty of negligence per se. Regulation for the transportation of the elderly and handicapped includes:

UMTA	FR 18239 (April 30, 1976) and 45 CFR 609 (1978)
UMTA	49 CFR 609.15 (1978)
UMTA	44 FR 47343
FHWA	23 USC 101 et seq al 142
FHWA	23 CFR 450.120 (1979)
HEW	45 CFR 84
HEW	45 CFR 85 (1978)
ICC	49 CFR 390-397
ICC	49 CFR 1063.8 (1978)

Therefore, the carrier not only is subject to an extended standard of care, but the duty to the public is rapidly being expanded by new regulation.

APPENDIX B  
GENERAL DRIVING SKILLS

Pre-driving Safety Check

The driver should be able to perform a routine daily safety check and to know when the vehicle needs repair.

Brake Lights. Drivers should verify that the brake light comes on when the brake pedal is depressed and turns off when the brake pedal is released.

General Lights. Drivers should clean the headlights and taillights, checking both high and low beams and parking lights. The driver should be able to check turn indicators and any special safety lights and equipment on the vehicle such as a flasher that is used when loading and unloading the vehicle.

Brakes. Drivers should check for free play in the brake pedal, brake fluid level, unusual brake noise, grabbing brakes or increased stopping distance.

Steering. Drivers should check for excess play in the steering wheel and for wheel alignment problems such as pulling to one side.

Horn. Drivers should be sure that the horn will sound.

Tires. Drivers should check for proper tire inflation, cut and treadwear, irregular wear pattern and out of balance tires.

Lubrication. Drivers should know how to check the engine oil level, transmission fluid level, power steering fluid level and the oil level of the hydraulic system of wheelchair lifts.

General Driving Skills

In addition to the pre-driving safety check, the driver should be proficient in general driving skills.

Turning. This is especially important where a van or bus type vehicle (driver forward of front wheel) or a long wheel based vehicle is used. Drivers must not turn too widely or cut corners too closely and hit the curb with the tires.

Maintaining Speed. Drivers should be able to maintain a steady speed both up and down hill and on the level; speed should be steady without alternating between acceleration and coasting.

Stopping. The ability to stop smoothly without disturbing passengers and the ability to stop smoothly at a selected point are essential. (Some bus companies would have a driver stop at a designated line without tipping over a pop bottle set on the vehicle floor.) Drivers should be able to stop without blocking sidewalk. Drivers should not enter intersections far enough to be subject to collision with cross traffic, but should be in a position to see oncoming and cross traffic clearly in both directions.

Backing the Vehicle. Drivers must realize that buses and vans have a blind spot immediately to the rear of the vehicle. Therefore, drivers must be aware of the need to check the blind spot before backing and must be able to back the vehicles using outside mirrors only. They should also know how to negotiate a curve while backing the vehicle using the exterior mirror.

Skid Control. Since 70 percent of motor vehicle accidents involve skidding, drivers should know how to control skids should they occur.

Surveillance. Drivers should know how to properly survey the road for signs of impending danger. This includes:

1. Visual scanning of highway alternating between forward and rear-view mirrors;

2. Avoiding visual fixation on vehicles immediately ahead; and
3. Seeing and responding to traffic controls, such as stop lights, as soon as they become visible, including not proceeding through a traffic light until green even though the vehicle beside starts to pull forward and not letting disturbances in the vehicle distract attention from the road.

Car Following. Drivers must be aware of the reaction time and the time required to stop vehicles so that they do not follow too closely to the vehicles in front of them. Distances will vary with the speeds at which both vehicles are traveling. Drivers should know how to make adjustments for oily, wet, icy and gravel roads.

Passing. The driver should know how to pass another vehicle safely. This includes knowledge of "passing" and "no passing" markings on the highway. The driver should be able to decide when to pass, execute the pass and return to the lane without sudden and abrupt use of speed.

Entering Traffic. Before entering traffic, the driver should know how to use mirrors and glance over the shoulder to check for vehicles front and rear as well as cross traffic. The driver should be able to identify gaps in the mainstream of traffic, to signal and to accelerate smoothly into the lane chosen for travel. In addition, the entrance should be made with enough adequate space to allow other vehicles traveling in that lane to maintain speed.

Leaving Traffic. In leaving traffic, the driver must know how to identify a safe area on the roadside ahead to accommodate the vehicle. The space should also be visible at least 200 feet in either direction. In executing this maneuver, the driver should slow down, exit the highway at a safe speed and apply the brakes. Care should be exercised in curbing the road shoulder. Last, but not least, the driver should make sure the vehicle is clear of the roadway before stopping.

Lane Changing. When changing into another lane of travel, the driver should know how to use the mirrors for a safety check to the rear and be aware of blind spots that are not covered by the mirrors. When the lane is clear, the driver should signal his intention to change lanes. Then the driver should steer smoothly to the center of the new lane without delay. If an adjustment in speed is necessary it should be made while executing the lane change. After completion of the lane change, the driver should cancel the directional signal.

Parking. In parking a human service vehicle, the driver should seek spaces which allow easy access to reentering traffic with a minimum of danger. Due to the length and width of minibuses, buses and vans, parallel parking should be avoided if at all possible. Angle parking is preferred. In executing this maneuver, the driver should ensure that the fenders and doors clear the other parked vehicles and that there is adequate room for the passenger to exit the vehicle especially where ramps and lifts are used. If parking on a hill becomes necessary, the wheels should be turned sharply away from the curb if on an upgrade and sharply toward the curb if parking on a downgrade. After parking, the driver should routinely check to make sure the transmission is in park (reverse for a manual transmission), that the parking brake is firmly applied, that all electrical units are turned off and that the windows and doors are locked upon evacuation.

Leaving a Parking Space. In leaving a parking space, the driver should check traffic to the rear and maneuver the vehicle out of the parking space, watching for traffic until the vehicle has cleared the other parked vehicles. The driver should know how to leave a parking space using exterior mirrors with full awareness of blind spots that are inherent in vans and buses.

Emergency Areas: The driver should know how to react to an emergency scene such as an accident or fire. The driver should slow down and look for an official directing traffic through the scene. The driver should follow the directions given by the official and drive through the emergency area slowly while watching for any unexpected movement of vehicles and pedestrians on the scene of the emergency situation. The driver should not cross fire hoses unless directed to do so by the officer directing traffic. The driver should also know how to respond to emergency vehicles.

If the vehicle is passing through or near an area where there has been an accident involving the spillage of hazardous materials, windows should be closed and the heater/air conditioner turned off to prevent any fumes from entering the vehicle. Once the area has been cleared and fumes are no longer present, windows should be opened and heater/air conditioner turned on to purge the vehicle.

Being Passed: The driver should constantly be aware of the traffic to the rear by glances in the mirror system of the vehicle. When a vehicle to the rear attempts a pass, the driver should look ahead to make sure space is available for the passing vehicle. The driver should maintain a center position or pull slightly toward the right to allow additional space for the vehicle which is passing. Under no circumstances should the driver speed up, but it is sometimes necessary for the driver to slow down if the passing vehicle needs a larger space to reenter the lane to avoid a collision. If a vehicle is attempting to pass without sufficient room and becomes trapped in the wrong lane, the driver should speed up or slow down to allow the passing vehicle sufficient room to reenter the correct lane.

Being Followed. The driver should know the importance of signaling all intended maneuvers to the following vehicle driver. Constant scanning of the rearview mirrors is necessary to be constantly aware of traffic behind including vehicle speed to let the driver know when to slow down and let the following vehicle pass. When stopping, the driver should check to make sure that the following vehicle is also stopping. When driving at night the driver should avoid looking directly into the mirrors when a vehicle is following closely with high beam lights. The driver should know how to turn the mirror to the night position, to slow down and to let the following vehicle pass; the driver must neither be blinded by nor ignore the following vehicle.

Oncoming Cars. The driver should be trained to maintain a right of center lane position when approaching an oncoming vehicle and must maintain a maximum separation from the other lane as possible. The driver should be trained to watch for vehicles attempting to pass slow-moving oncoming vehicles. Should an oncoming car veer across the center line, the driver should be trained to sound the horn, brake and steer to the right as the situation directs. If a collision appears unavoidable, the driver should be trained to sideswipe the oncoming vehicle or collide at an angle to minimize impact force.

### Special Vehicle-Related Skills

Special Vehicles. Drivers should know laws affecting special vehicles such as school buses and ambulances. If an emergency vehicle appears, the driver should pull to the right and stop to let the emergency vehicle through. The driver should always stop for a school bus loading or unloading children. In a funeral procession, refrain from cutting into it; yield to all vehicles in such a procession.

Approaching Intersections. When approaching an intersection, the driver should slow down and enter the correct passage lane at least 100 feet ahead of the intersection. If a turn is to be executed, the driver should be trained to enter the proper lane 100 feet before the turn or drive on through the intersection. The driver must be aware of the traffic controls and must slow down and prepare to stop if the light changes from green to yellow. The driver should also be aware of other traffic and should be prepared to stop or yield to other vehicles if they insist on the right of way. When stopping at an intersection, the driver should stop before reaching the crosswalk.

Curves: The driver should know how to predict curves by observing the road signs. The driver should know that vans and buses may be top heavy and enter curves at speeds which will enable the curve to be negotiated safely. When driving in the curve the driver will look ahead to anticipate steering corrections, maintain a position in the lane, use a safe speed and, when visibility is restricted, reduce speed and apply brakes as needed.

Lane Usage. The driver should be trained to drive in the far right lane and use the left lane(s) for passing. The driver should be able to maintain lane position and not veer across lane designated lines except to pass. The driver should know that he should only exit from the lane nearest the exit. On a six-lane road (three lanes each way) the driver should pass in the left lane, use the center lane for through traffic movement and use the right lane for slower movement and exiting.

Road Surface Types. The driver should be trained to observe the road and surface and adjust speed and driving habits as conditions arise. The driver should know that weather causes roadway defects such as potholes, broken shoulders and other changes in the road surface. Special care must be used

when driving on defective road surfaces because surface defects are not only causative factors to accidents but have a negative impact on vehicular life. The driver should be trained to slow down and avoid potholes as traffic permits. Erosion from construction projects and water runoff during rains create special hazards.

Wet Roads. The driver should know to anticipate slippery surfaces in the first few minutes of a rainfall because of the oil which has not yet been washed from the road. When driving on these wet surfaces, the driver must increase stopping distances as well as separation between vehicles. Driving at slower speeds should be used to prevent hydroplaning. If deep water rests on the roadway, the driver should drive around it if possible, and if not, should slowly drive through the water. Wet brakes do not stop well, so the driver should be trained to dry the brakes by putting slight pressure on the brake pedal to let heat generated by the dragging brakes dry water from the brakeline. On very cold days, water may freeze on the brakelines and severely impair the whole operation.

Road Shoulders. The driver should periodically check the shoulders of the road for the condition of the shoulders looking for such things as width, surface condition, alignment with pavement and presence of obstructions. If a shoulder is hazardous or no shoulder exists, a slower speed should be used. Should the wheel or wheels on one side of the vehicle drop off the pavement onto the shoulder, the driver should know how to slow down, grasp the wheel firmly, check the side and rear of the vehicle, check the roadway ahead and climb back on to the road.

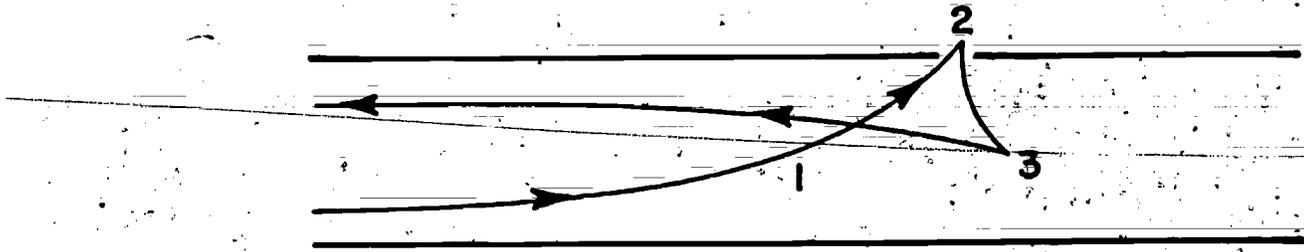
U-Turns. When attempting to make a U-turn, the driver should be trained to check traffic, particularly to the rear. Mid block U-turns (allowed in

some areas) should be made far enough from the intersection to avoid other traffic. U-turns at urban intersections or on divided highways should be made from the lane nearest the center of the roadway. In a residential area or on a narrow street intersection, the driver should pull to the extreme right before making the U-turn.

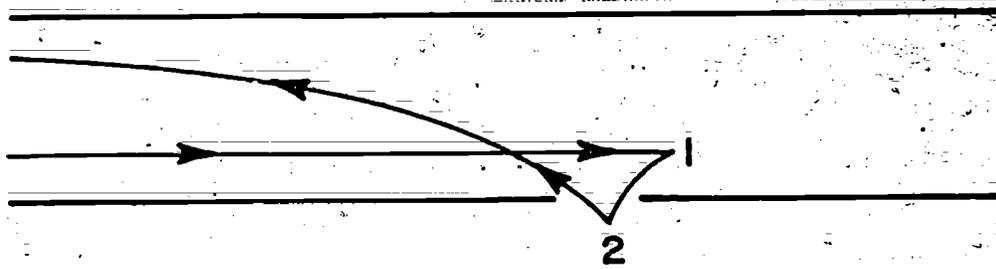
Two and Three Point Turns. In some areas vehicles can legally make two and three point turns. These will be especially important for human service agencies making local pickups in rural and residential areas where it is not easy to go around the block. The turns are complicated by the "blind spots" inherent in vans and buses. Therefore the driver should be well trained. When making a three point turn, the driver should know how to turn left, back up and move forward in the direction from which the vehicle came in a safe manner. On the two-point turn, the driver will drive past the driveway, back up into it, check right and left traffic and then turn right or left onto the highway as desired (see Figure B-1).

#### Environmentally Related Skills

Off-Street Driving. In driving in off-street areas, especially near schools in residential areas, the driver should be trained to look for children playing and other vehicles which could run into the path of the vehicle. This is especially true for vehicles with hoods since children are small and may not be seen easily. When in an alley, check for other traffic entering the area and for pedestrians crossing sidewalks, exiting buildings or entering from back yards. Many yard or building entrances to alleys are often hidden, and people give less care in entering alleys because they do not expect traffic. When in a parking lot, watch for vehicles backing. When leaving an off-street area, the driver should signal, check for safe clearance and exit



**3 Point Turn**



**2 Point Turn**

**FIGURE B-1**

when safe. If a driver should have to back onto the roadway, the driver should check traffic and back cautiously when the road is clear.

Railroad Crossing. The driver should be aware of the round, circular road sign that designates railroad crossings. In approaching railroad tracks, the driver should come to a complete stop when a railroad signal is activated.

If no signal exists, the driver should stop the vehicle, open windows or doors so the train whistle can be heard above the noise in the vehicle and look both ways before crossing at a safe speed. When crossing the tracks, the driver should be trained to not stop on the tracks. This may require waiting for traffic to clear so that the human service vehicle does not become trapped on the tracks. If the vehicle stalls, the driver should attempt to start the vehicle. If a train is close, the passengers should be instructed to exit immediately and leave the area. Since many human service agencies transport individuals who cannot easily exit the vehicle because of age or handicap, special attention should be given at railroad crossings, especially unprotected rail crossings. Special attention should be given to the carburetor to avoid problems which could cause the vehicle to stall on railroad tracks.

Bridges and Tunnels. When approaching a narrow bridge or tunnel, lights should be used to make the vehicle visible. The driver should slow down and remain as far right as possible. The driver should not stop unless the traffic flow requires it. Human service passengers are especially disadvantaged by accidents on bridges or tunnels; consequently special precautions should be taken.

In fog or intense precipitation, the driver should use low beam lights and pull off the road and stop if necessary. In case of sun glare, the driver

should use the sun visor and look down at the roadway to avoid looking directly at the sun. Sunglasses should be used when regular sun glare is encountered. In a sandstorm, the driver should grip the steering wheel more firmly and proceed; if visibility worsens, the driver should pull over at the roadside and stop. Special procedures should be developed to ensure that other vehicles do not hit the vehicle while it is pulled off at the side of the road. The driver should be trained to keep the windshields and windows clean by use of wipers, defroster or cloth where and when necessary.

Night Driving. At night, the driver should be trained not to "overdrive" the headlights (driving at a speed at which stopping distance exceeds the distance of road illuminated by the headlights). In night urban driving, the driver will use the low beam, watch for pedestrians and travel at posted speeds. In night rural driving, the driver should remember to use the dimmer switch when oncoming traffic approaches, focus the eyes on the right side of the road if the oncoming vehicle's lights are too bright, and slow down when being passed. If the situation arises where the driver must park on the shoulder, the driver must position the vehicle well to the right, turn on the four-way flasher and use the appropriate reflectors or flares required by state law.

Vehicle Operation and Performance. The driver must know how to identify vehicle maintenance needs. In addition to the daily safety check covered earlier, the driver should know how to monitor the following items. The windshield, windows and mirrors should be inspected weekly for tightness and possible replacement of damaged mirrors. Wiper blades should be checked weekly. The fan belts and radiator hose should be checked periodically for cuts. The suspension system should be checked for unusual noises and sagging. The cooling system should be checked frequently for proper coolant level. The interior

of the vehicle should be checked frequently for worn or broken parts such as torn seat belts, ripped upholstery, torn carpet or rubber flooring that could trip passengers, broken wheelchair tie downs and loosen padding on lifts, parts or seat backs.

### Geographic Specific Driving

In certain areas of the country, certain conditions will necessitate that special attention be given highway driving, freeway driving, hills, snow, sand, toll plazas, climate and wind. When driving on open highways, the driver should reduce speed on winding or narrow roads; watch for hidden traffic, pedestrians or animals; and cross medians only at designated crossovers. In rural driving, the driver should adjust the speed of the vehicle to that of the traffic as well as to the terrain and visibility. In mountainous terrain, the driver should increase lane separation and should steer closely to the right edge of the roadway.

Freeway Driving. The driver should know how to merge with the freeway traffic by watching the freeway traffic in the rearview mirror, gaining speed on the merge lane and smoothly merging with the traffic flow. The driver should know to give merging traffic the right of way and should not attempt to maintain lane position where traffic is merging into the driving lane. The driver should watch out especially for vehicles trapped behind slow-moving traffic which could possibly dart into the vehicle's path. Should an emergency occur, the driver should stop only on the shoulder or in the median and not on the freeway. If the human service agency transports passengers who lack mature judgment or who have mobility problems, special procedures should be developed for controlling the passengers so that they are not endangered by walking or running in the path of vehicles on the freeway or are not injured if another vehicle hits the rear of the vehicle in which they are riding.

Sand. When encountering sand, the driver should attempt to drive around it rather than through it. If it is necessary to drive through it, the driver should shift to a lower gear. Driving on sand covered surfaces requires an increased stopping distance and more separation between vehicles. Quick turns and sharp braking should be eliminated while driving on sand. If the vehicle becomes stuck in sand, the driver should try to rock the vehicle out by alternating between low gear and reverse. The driver should have an emergency plan for protecting the passenger in case the vehicle becomes stuck in wet sand.

Toll Plazas. When approaching a toll plaza, the driver should be trained to avoid rear-end collisions. Collisions occur when the driver suddenly changes lanes, stops suddenly or makes a false start after paying toll but before the exact change green light comes on.

Climate. In extremely hot weather, the driver should be trained to monitor temperature gauges and to maintain circulation in the cooling system by shifting to lower gear in slow moving traffic, shifting to neutral during the time when traffic is at a standstill or turning off the air conditioner. In cold rainy weather, the driver should be trained to depress the brake pedal periodically to make sure that the brakes are not wet or frozen. If the temperature drops quickly after a rainfall, the driver should be trained to watch for icy spots on the road and especially on overpasses. If the weather is extremely cold, the driver will have the fuel tank filled more often to reduce the chance of ice forming in the gas tank. In every case the vehicle must be protected from accident or breakdown because the passenger becomes very vulnerable to accidents from secondary collision by other vehicles or to exposure to the weather while sitting in an inoperable vehicle.

Hills. When approaching hills, the driver should watch for heavy trucks which often approach upgrades at excessive speed and must adjust the agency

vehicle's speed, as necessary. When negotiating an upgrade, the driver should be aware that some vehicles slow down; thus the driver should be prepared to blend with the traffic. As the crest of the hill is approached, the driver must be trained to slow down to compensate for the limited sight distance ahead and be prepared for meeting oncoming vehicles or other dangerous situations. In negotiating downgrades, the driver should check the rearview mirror to make sure following vehicles have not accelerated excessively. When sharp curves and hills are combined, the driver should be prepared for vehicles which may cross the center line between lanes when taking a curve.

Snow. When preparing to drive in snow, certain precautions are necessary. The driver should know how to put on chains unless snow tires are used regularly. When starting the vehicle, the driver should know how to use materials such as sand, salt, cinders and traction nests in front of the drive wheels to get better traction. When driving and stopping on snow, the driver should increase the following distance between vehicles and allow enough room to come to a safe stop. If the vehicle should become stuck, the driver should be aware of the passenger hazard of racing the engine with the windows closed unless the heater brings in substantial outside air. The driver should know how to use a shovel to get out of deep snow. In very cold areas, the driver should know how to protect the passengers in case the vehicle becomes disabled. This may include the use of an emergency food supply and blankets. The driver should have a well established procedure to guide in deciding when to leave the vehicle for help and when to stay with the passengers.

Wind. When driving in a crosswind, especially in areas where the highway has many cuts and fills, the driver needs to be prepared for sudden wind changes when emerging from a cut where the vehicle is protected to a fill where the

vehicle is subjected to the full force of the crosswind. The large side areas of vans and buses make this very important. If the wind carries sand and other debris, the windows should be closed to protect the passengers.

---

---

## APPENDIX C

### PASSENGER ASSISTANCE SKILLS

As a minimum the driver should be able to recognize and assist those with:

1. Orthopedic conditions;
2. Neurological conditions;
3. Strokes;
4. Visual impairments;
5. Hearing impairments; and
6. Epilepsy.

These medical conditions will generally create the following symptoms:

1. Spasticity;
2. Loss of skin sensation;
3. Loss of balance;
4. Pain;
5. Breathing difficulty;
6. Mobility limitations;
7. Loss of strength and/or control over specific (or all) muscles;
8. Inability to see; and
9. Inability to hear.

These physically handicapped passengers will attempt to cope with these conditions through the use of special assistance devices, such as:

1. Various types of crutches and canes including walkers, white canes, etc;

2. Wheelchairs, including a wide variety of attachments to provide support to various parts of the body;
3. Braces;
4. Prosthetic devices (artificial limbs);
5. Slings;
6. Guide dogs; and
7. Hearing dogs.

The driver therefore should have a thorough knowledge of assisting passengers using these devices into and out of the vehicles. This includes:

1. Wheelchair management;
2. Vehicle boarding assistance;
3. Leading the blind;
4. Seating assistance and transfer techniques for helping clients between chairs and wheelchairs; and
5. Securement of passengers inside of the vehicle (passenger packaging).

This area is frequently overlooked. The inability of a person's upper torso to withstand starting and stopping forces, the inability of the passengers to foresee emergency situations and their inability to react by bracing themselves, the inability of children to use regular seat belts and the inability of users of artificial limbs to withstand temperature variation are all important parts of passenger packaging. Without proper packaging, passengers may be injured during normal vehicle operation.

The driver should also know the importance of:

1. Heating and cooling systems on passengers with various conditions such as artificial limbs;
2. Ventilation, especially if some passengers smoke and others have asthma or emphysema;

3. Smoking;
4. Housekeeping, including the securement of packages, bottles, canes, walkers, clipboards, jacks and other devices that can become flying missiles in case of a collision;
5. Noise levels;
6. Color of vehicle interiors and their effect on the visually impaired;
7. Terrain and its effect on mobility restricted individuals; and
8. Weather.

A knowledge of passenger assistance training techniques reduces injuries when vehicle accidents occur; but, more importantly, this knowledge helps prevent injuries to the passengers during normal activity.

APPENDIX D  
INTERVIEW FORM

Interviewer \_\_\_\_\_ Date \_\_\_\_\_

APPLICANT

Name \_\_\_\_\_ Soc. Sec. No. \_\_\_\_\_

List of addresses for past three years:

Present \_\_\_\_\_ Length of Residence \_\_\_\_\_ Phone \_\_\_\_\_  
Previous \_\_\_\_\_ Length of Residence \_\_\_\_\_

PAST EMPLOYMENT AND EDUCATION

Have you previously worked for this company? \_\_\_\_\_

Where?: \_\_\_\_\_ Position: \_\_\_\_\_

Present or last employer: Name \_\_\_\_\_

Address \_\_\_\_\_

Position \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_

Reason for Leaving \_\_\_\_\_

Second last employer: Name \_\_\_\_\_

Address \_\_\_\_\_

Position \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_

Reason for Leaving \_\_\_\_\_

Third last employer: Name \_\_\_\_\_

Address \_\_\_\_\_

Position \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_

Reason for Leaving \_\_\_\_\_

Military Status: Have you served in the Armed Forces? \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_

Type discharge: \_\_\_\_\_ Branch: \_\_\_\_\_

Education: (check which attended) Grade School \_\_\_\_\_ High School \_\_\_\_\_ College \_\_\_\_\_

Did you graduate from High School? \_\_\_\_\_ College? \_\_\_\_\_

HUMAN SERVICE EXPERIENCE

What experience have you had assisting the following groups?

Pre-school groups:

---

---

---

School children:

---

---

---

Physically handicapped individuals:

---

---

---

Injured individuals:

---

---

---

Elderly individuals:

---

---

---

Have you had work experience on training in following areas? Be sure to include volunteer work.

---

---

---

---

Police work  
Emergency rescue squad  
Fireman  
Hospital

---

---

---

Schools  
Youth Programs  
Other

DRIVING RECORD

List all licenses:

State                      Number                      Type                      Expiration Date

---

---

---

Has license, permit, or privilege to operate a motor vehicle ever been denied, revoked or suspended?

When? \_\_\_\_\_ Why? \_\_\_\_\_  
 \_\_\_\_\_ Where? \_\_\_\_\_

Traffic Arrest Record: (List all arrests, convictions or bond forfeitures during past three years)

Name of Court	Location	Date	Charge	Penalty

ACCIDENT RECORD

List all accidents in which you have been involved during the last three years:

Date	City & State	Nature of Accident	Preventable or Nonpreventable	Number of Injuries/Fatalities

TRAINING RECORD

List any of the following training programs which you have completed.

Course                      Location                      Date                      Do you have certificate

Basic Driving Skills			
Defensive Driving			
First Aid			
Cardiopulmonary Resuscitation			
Passenger Assistance			
Basic Trans. Skills			
Human Relations Skills			
Emergency Procedures			



**DEPT. OF TRANSPORTATION  
PHYSICAL QUALIFICATIONS &  
EXAMINATIONS OF DRIVERS**

A person is physically qualified to drive a motor vehicle if he—

(1) Has no loss of a foot, a leg, a hand, or an arm, or has been granted a waiver pursuant to § 391.43.

(2) Has no impairment of the use of a foot, a leg, a hand, finger, or an arm, and no other structural defect or limitation, which is likely to interfere with his ability to control and safely drive a motor vehicle, or has been granted a waiver pursuant to § 391.43 upon a determination that the impairment will not interfere with his ability to control and safely drive a motor vehicle.

(3) Has no established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control.

(4) Has no clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure.

(5) Has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his ability to control and drive a motor vehicle safely.

(6) Has no clinical diagnosis of high blood pressure likely to interfere with his ability to operate a motor vehicle safely.

(7) Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his ability to control and operate a motor vehicle safely.

(8) Has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability to control a motor vehicle.

(9) Has no mental, nervous, organic or functional disease or psychiatric disorder likely to interfere with his ability to drive a motor vehicle safely.

(10) Has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or visual acuity, separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70° in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing standard red, green, and amber.

(11) First perceives a forced whispered voice at not less than 5 feet in the better ear without use of a hearing aid, or, if tested by use of an audiometric device, does not have a loss greater than 25-30 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz in the better ear without a hearing aid.

(12) Does not use an amphetamine, narcotic, or any habit-forming drug; and

(13) Has no current clinical diagnosis of alcoholism.

**INSTRUCTIONS FOR PERFORMING AND  
RECORDING PHYSICAL EXAMINATIONS**

The examining physician should review these instructions before performing the physical examination. Answer each question yes or no where appropriate.

The examining physician should be aware of the rigorous physical demands and mental and emotional responsibilities placed on the driver of a commercial motor vehicle. In the interest of public safety the examining physician is required to certify that the driver does not have any physical, mental, or organic defect of such a nature as to affect the driver's ability to operate safely a commercial motor vehicle.

General information. The purpose of this history and physical examination is to detect the presence of physical, mental or organic defects of such a character and extent as to affect the applicant's ability to operate a motor

vehicle safely. The examination should be made carefully and, at least as complete as indicated by the attached form. History of certain defects may be cause for rejection or indicate the need for making certain laboratory tests or a further, and more stringent, examination. Defects may be recorded which do not, because of their character or degree, indicate that certification of physical fitness should be denied. However, these defects should be discussed with the applicant and he should be advised to take the necessary steps to insure correction, particularly of those which, if neglected, might lead to a condition likely to affect his ability to drive safely.

General appearance and development. Note marked overweight. Note any posture defect, perceptible limp, tremor, or other defects that might be caused by alcoholism, thyroid intoxication, or other illnesses. The Motor Carrier Safety Regulations provide that no driver shall use a narcotic or other habit-forming drug.

Head-eyes. When other than the Snellen chart is used, the results of such test must be expressed in values comparable to the standard Snellen test. If the applicant wears corrective lenses, these should be worn while applicant's visual acuity is being tested. If appropriate, indicate on the Medical Examiner's Certificate by checking the box, "Qualified only when wearing corrective spectacles." In recording distance vision use 20 feet as normal. Record all vision as a fraction with 20 as numerator and the smallest type read at 20 feet as denominator. Note ptosis, discharge, visual fields, ocular muscle imbalances, color blindness, corneal scar, esophthalmos, or strabismus, uncorrected by corrective lenses. Monocular or anisopic drivers are not qualified to operate commercial motor vehicles under existing Motor Carrier Safety Regulations.

Ears. Note evidence of mastoid or middle ear disease, discharge, symptoms of aural vertigo, or Meniere's Syndrome. When recording hearing, record distance from patient at which a forced whispered voice can first be heard. If audiometer is used to test hearing, record decibel loss at 500 Hz, 1,000 Hz, and 2,000 Hz.

Throat. Note evidence of disease, irreducible deformities of the throat likely to interfere with eating or breathing, or any laryngeal condition which could interfere with the safe operation of a motor vehicle.

Thorax-heart. Stethoscopic examination is required. Note murmurs and arrhythmias, and any past or present history of cardio-vascular disease of a variety known to be accompanied by syncope, dyspnea, collapse, enlarged heart, or congestive heart failures. Electrocardiogram is required when findings so indicate.

Blood pressure. Record with either spring or mercury column type of sphygmomanometer. If the blood pressure is consistently above 160/90 mm. Hg., further tests may be necessary to determine whether the driver is qualified to operate a motor vehicle.

Lungs. If any lung disease is detected, state whether active or arrested; if arrested, your opinion as to how long it has been quiescent.

Gastrointestinal system. Note any diseases of the gastrointestinal system.

Abdomen. Note wounds, injuries, scars, or weakness of muscles of abdominal walls sufficient to interfere with normal function. Any hernia should be noted if present. State how long and if adequately contained by truss.

Abnormal masses. If present, note location, if tender, and whether or not applicant knows how long they have been present. If the diagnosis suggests that the condition might interfere with the control and safe operation of a motor vehicle, more stringent tests must be made before the applicant can be certified.

Tenderness. When noted, state where most pronounced, and suspected cause, if the diagnosis suggests that the condition might interfere with the control and safe operation of a motor vehicle, more stringent tests must be made before the applicant can be certified.

Genito-urinary. Urinalysis is required.

Acute infections of the genito-urinary tract, as defined by local and State public health laws, indications from urinalysis of uncontrolled diabetes, symptomatic albuminuria in the urine, or other findings indicative of health conditions likely to interfere with the control and safe operation of a motor vehicle, will disqualify an applicant from operating a motor vehicle.

Neurological. If positive. Rhombus is reported, indicate degree of impairment. Pupillary reflexes should be reported for both light and accommodation. Knee jerks are to be reported absent only when not obtainable upon reinforcement and as increased when foot is actually lifted from the floor following a light blow on the patella, sensory vibratory and positional abnormalities should be noted.

Extremities. Carefully examine upper and lower extremities. Record the loss or impairment of a leg, foot, toe, arm, hand, or fingers. Note any and all deformities, the presence of atrophy, semiparalysis or paralysis, or varicose veins. If a hand or finger deformity exists, determine whether sufficient grasp is present to enable the driver to secure and maintain a grip on the steering wheel. If a leg deformity exists, determine whether sufficient mobility and strength exist to enable the driver to operate pedals properly. Particular attention should be given to and a record should be made of any impairment or structural defect which may interfere with the driver's ability to operate a motor vehicle safely.

Spine. Note deformities, limitation of motion, or any history of pain, injuries, or disease, past or present, experienced in the cervical or lumbar spine region. If findings so dictate, radiologic and other examinations should be used to diagnose congenital or acquired defects or spondylolisthesis and scoliosis.

Recto-genital studies. Diseases or conditions causing discomfort should be evaluated carefully to determine the extent to which the condition might be handicapping while lifting, pulling, or during periods of prolonged driving that might be necessary as part of the driver's duties.

Laboratory. List of special findings. Urinalysis is required, as is such other tests as the medical history or findings upon physical examination may indicate are necessary. A serological test is required if the applicant has a history of luetic infection or present physical findings indicate the possibility of latent syphilis. Other studies deemed advisable may be ordered by the examining physician.

Diabetes. If insulin is necessary to control a diabetic condition, the driver is not qualified to operate a motor vehicle. If mild diabetes is noted at the time of examination and it is stabilized by use of a hypoglycemic drug and a diet that can be obtained while the driver is on duty, it should not be considered disqualifying. However, the driver must remain under adequate medical supervision.

The physician must date and sign his findings upon completion of the examination.

The medical examination shall be performed by a licensed doctor of medicine or osteopathy. A licensed optometrist may perform examinations pertaining to visual acuity, field of vision and ability to recognize colors.

If the medical examiner finds that the person he examined is physically qualified to drive a motor vehicle he shall complete the Medical Examiner's Certificate and furnish one copy to the person examined and one copy to the motor carrier/employer.

BEST COPY AVAILABLE

**MEDICAL EXAMINER'S CERTIFICATE**  
*I certify that I have examined*

\_\_\_\_\_  
(DRIVER'S NAME (PRINT))  
IN ACCORDANCE WITH THE MOTOR CARRIER SAFETY REGULATIONS  
(49 CFR 391.41-391.49) AND WITH KNOWLEDGE OF HIS DUTIES, I FIND  
HIM QUALIFIED UNDER THE REGULATIONS.  
 QUALIFIED ONLY WHEN WEARING CORRECTIVE SPECTACLES.  
A COMPLETED EXAMINATION FORM FOR THIS PERSON IS ON FILE

IN MY OFFICE AT \_\_\_\_\_ (ADDRESS)

\_\_\_\_\_  
(DATE OF EXAMINATION)

\_\_\_\_\_  
(NAME OF EXAMINING DOCTOR (PRINT))

\_\_\_\_\_  
(SIGNATURE OF DRIVER)

\_\_\_\_\_  
(SIGNATURE OF EXAMINING DOCTOR)

\_\_\_\_\_  
(ADDRESS OF DRIVER)

Form 9-18A (5/74)  
Printed in U.S.A.

BEST COPY AVAILABLE

APPENDIX F

INQUIRY TO STATE AGENCY FOR DRIVER'S RECORD

Driver's Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Date of Birth: \_\_\_\_\_  
Operator's Lic. No.: \_\_\_\_\_  
Social Security No.: \_\_\_\_\_

Gentlemen:

The above named individual operates a motor vehicle in the course of employment.

Please provide us with an abstract of this individual's driving record covering the previous three years. If no record of violations or accidents exists, so advise.

In the event this format does not satisfy your requirements for making such inquiry, please send us the prescribed form.

Sincerely yours,

\_\_\_\_\_  
(Print) Name of person making inquiry

\_\_\_\_\_  
(Signature of person making inquiry)

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Street City State Zip

C-15066 REV. 5-75 PRINTED IN U.S.A.

COPIES AVAILABLE

## APPENDIX G

### DRIVER PERFORMANCE MEASUREMENT TEST

The Driver Performance Measurement Test is made by individual examiners to test drivers in real traffic situations found in the community in which they will be doing most of their driving. The test is unique in that it permits the examiner to make judgments of the ability of a driver to decrease the impact of traffic hazards that arise. The test not only measures the driver's speed and directional control, but also evaluates the driver's ability to watch for potentially hazardous situations. Each test is designed for specific locations in the driver's community.

At present, training for examiners is available only at the Highway Safety Center at Michigan State University in East Lansing. Training a driver examiner takes six days and costs \$300 per examiner. Examiners are taught in groups of four. Training an instructor to teach examiners requires 16 days and costs \$167 per instructor. Instructors are taught in groups of 12.

Samples of the rating form used by examiners to evaluate drivers are provided on the following pages.

Driver Performance Rating Form  
East Lansing

Segments Passed \_\_\_\_\_  
Segments Tested \_\_\_\_\_

Subject \_\_\_\_\_  
Examiner \_\_\_\_\_  
Date \_\_\_\_\_  
Run No. \_\_\_\_\_

Performance on  
Speed Control      Direction Control

TEST SEQUENCE I      Test Segment Performance      Search      Speed Control      Direction Control

1.1 Bailey Street to Burcham

U \_\_\_\_\_ S      U \_\_\_ S      U \_\_\_ S      U \_\_\_ S

Looks ahead only; decelerates late; suddenly; stops short of good visibility; does not stop.  
Searches all directions; maintains lane position; stops with good visibility.

1.2 Crossing Burcham

U \_\_\_\_\_ S      U \_\_\_ S      U \_\_\_ S      U \_\_\_ S

Does not search all directions; accelerates unevenly; causes slowing or swerving by other drivers; fails to maintain lane positions  
Searches all directions especially left & ahead; accelerates smoothly; yields to cross traffic at Burcham.

GENERAL OBSERVATIONS

Near Accident - Location \_\_\_\_\_  
(Where)

Hazardous Moving Violation(s) \_\_\_\_\_  
(Describe)

Performance Needing Much Improvement \_\_\_\_\_  
(Describe)

NOTE: Relative timing of behavior elements in relation to the behavior pattern in the test segment is one of the criteria for a satisfactory rating in each of the behavior elements.

Driver Performance Rating Form  
(continued)

Subject \_\_\_\_\_  
 Examiner \_\_\_\_\_  
 Date \_\_\_\_\_  
 Run No. \_\_\_\_\_

Performance on  
 Speed Control      Direction Control

TEST SEQUENCE II      Test Segment Performance      Search      Speed Control      Direction Control

2.1 Whitehills Drive and Right Turn on Abbott

U \_\_\_\_\_ S      U S      U S      U S

Searches only occasionally; fails to maintain proper speed and lane position; fails to signal; decelerates suddenly; does not stop; turns fast, fails to maintain control.

Searches systematically, especially right; maintains speed for conditions; signals; stops; and turns right into #2 lane.

611

2.2 Abbott Road Northbound

U \_\_\_\_\_ S      U S      U S      U S

Looks only ahead; fails to adjust speed for conditions; changes lanes left, abruptly.

Looks left, rear; accelerates gradually; centers vehicle in lane; signals and changes lanes smoothly; does not interfere with traffic.

2.3 Left Turn onto Saginaw (M-78)

U \_\_\_\_\_ S      U S      U S      U S

No search ahead; no or late signal; turns and accelerates jerkily; decelerates unevenly; stops abruptly.

Searches continuously, ahead; signals; turns; adjusts speed for conditions; stops gradually.

BEST COPY AVAILABLE

MICHIGAN ROAD TEST PROJECT

Driver Performance Rating Form  
(Continued)

Subject \_\_\_\_\_  
Examiner \_\_\_\_\_  
Date \_\_\_\_\_  
Run No. \_\_\_\_\_

Performance on  
Speed                      Direction  
Control                    Control

TEST SEQUENCE II                      Test Segment Performance

Search

GENERAL OBSERVATIONS

Near Accident - Location \_\_\_\_\_

(Where)

Hazardous Moving Violation(s) \_\_\_\_\_

(Describe)

Performance Needing Much Improvement \_\_\_\_\_

(Describe)

NOTE: Relative timing of behavior elements in relation to the behavior pattern in the test segment is one of the criteria for a satisfactory rating in each of the behavior elements.



MICHIGAN ROAD TEST PROJECT

Driver Performance Rating Form  
(continued)

Subject \_\_\_\_\_  
 Examiner \_\_\_\_\_  
 Date \_\_\_\_\_  
 Run No. \_\_\_\_\_

Performance on

TEST SEQUENCE III	Test Segment Performance	Search	Performance on	
			Speed Control	Direction Control

3.1 Crosses Westlawn

U _____	S _____	U _____	S _____	U _____	S _____
---------	---------	---------	---------	---------	---------

Looks ahead only, fails to reduce speed & accelerates abruptly; encroaches on center of street.

Looks all directions; decelerates & accelerates smoothly; stays in lane.

3.2 Crosses Sunset Lane

U _____	S _____	U _____	S _____	U _____	S _____
---------	---------	---------	---------	---------	---------

Looks ahead only, fails to reduce speed for conditions; accelerates suddenly; encroaches on other lane.

Looks all directions; decelerates & accelerates smoothly; stays in own lane.

3.3 Crosses Forest

U _____	S _____	U _____	S _____	U _____	S _____
---------	---------	---------	---------	---------	---------

Looks ahead only; fails to reduce speed & accelerates suddenly; encroaches on other lane.

Looks all directions; decelerates & accelerates smoothly; stays in own lane.

121

MICHIGAN ROAD TEST PROJECT

Driver Performance Rating Form  
(Continued)

Subject \_\_\_\_\_  
Examiner \_\_\_\_\_  
Date \_\_\_\_\_  
Run No. \_\_\_\_\_

Performance on

Test Segment Performance

Search

Speed  
Control

Direction  
Control

TEST SEQUENCE III

GENERAL OBSERVATIONS

Near Accident - Location \_\_\_\_\_

(Where)

Hazardous Moving Violation(s) \_\_\_\_\_

(Describe)

Performance Needing Much Improvement \_\_\_\_\_

(Describe)

NOTE: Relative timing of behavior elements in relation to the behavior pattern in the test segment is one of the criteria for a satisfactory rating in each of the behavior elements.

## APPENDIX H

### LEGAL CONSIDERATIONS IN DRIVER SELECTION

#### Age Discrimination

Organizations and agencies discriminating against individuals by refusing to hire them because they are, for example, 65 or over, would be in violation of the Age Discrimination Act. Consequently, it is necessary for agencies to be familiar with the prohibitions of the federal Age Discrimination Act.

In December 1967, a law was passed prohibiting discrimination against employees by reason of their age, see 29 USC Art. 623(A). As amended in April 1978, the law is directed at any employment practices that discriminate against people between the ages of 40 and 70. The law provides that it is unlawful to fail to hire or to discharge any individual because of age. It also provides that no one should be denied a promotion or any other opportunity because of age. The purpose of this law is to promote the employment of older persons based upon their ability rather than their age, see 29 USC Art. 621 and Hodgson v. American Hardware Mutual Insurance Company, 329 F. Supp. 225 (D.C., Minnesota, 1971). Since this law deals with the problems of employment of the elderly, it is not clear whether the prohibitions apply to volunteer programs or to other programs where employment may not be involved. It is clear, however, that Congress and the courts do not favor arbitrary age discrimination, nor do they favor preferential treatment of a specified age group, see, for example, Brennan v. Perigon Employment Agency, Inc., 356 F. Supp. 286 (Affirmed, 489 F. 2d 752, 2d Cir 1973).

Congress provided that where age is a bona fide occupational qualification or where the differentiation is based upon reasonable factors other than age,

the prohibitions of 29 USC Art. 623(A) do not apply. The courts are reluctant to find that age is a bona fide occupational qualification. In order to show a bona fide occupational qualification, it is necessary to show that there is a factual basis for believing that all or potentially all the members of a particular age group would be unable to perform the duties of their jobs safely and efficiently and that the job is essential to the business. It is doubtful whether or not individuals, for example, over the age of 65, would be unable to drive a vehicle safely and efficiently. Courts, however, have considered the question of providing transportation and the issue of bona fide occupational qualifications. For example, transporting passengers safely from one point to another has been defined as essential to the business of an intercity bus line; therefore age was recognized as a bona fide occupational qualification for the position of a driver after presentation of substantial documentation of the deteriorating effect of age on a driver's abilities, see Hodgson v. Greyhound Lines, Inc., 499 F. 2d. 859 (7th Cir. Illinois, 1974) and Usery v. Tamiami Trail Tours, Inc., 531 F. 2d. 224 (5th Cir. 1976).

An important factor is what constitutes "good cause" for discharging an individual. It simply must be shown that an employee was fired or retired against the employee's will even though the employee was doing satisfactory work and that the employee was replaced by a younger person in order to establish a presumption of discrimination. Wilson v. Sealtest Foods, Div. of Kraftco Corp., 501 F. 2d. 84 (5th Cir. 1974). The employer must present a reasonable nondiscriminatory explanation for any such discharge. It is up to the court to determine if the explanation is reasonable and nondiscriminatory, Wilson supra. When a reduction in employees is necessary due to a shut down of one of a company's factories, the retention of employees who are best able

to perform the remaining job as determined by an impartial evaluation of each employee is held to be a reasonable nondiscriminatory explanation for not retaining employees based on seniority, Stringfellow v. Monsanto Co., 320 F. Supp. 1175 (W.D. Ark. 1970).

In summation, any employment practice based on age must be supported by facts demonstrating the ability (or lack of it) of a particular age group to perform the duties of a job that is essential to the business. Any discharge for good cause must be supported by reasonable nondiscriminatory explanations which do not defeat the purpose of the law to prevent arbitrary discrimination based on age rather than ability.

The specific issue of human service agencies discriminating against the elderly by refusing to hire elderly individuals to act as drivers has not been raised in court. Consequently, there is an open question as to whether or not the law ultimately would hold an agency to have acted in violation of the Age Discrimination Act. There is ample case law which would seem to suggest that discrimination in the area of driving is not covered within the law, but these cases dealt with common carriers. An almost Catch-22 situation is presented to human service agencies. If it is illegal to discriminate by virtue of age in hiring a driver for human service vehicles, then the agencies could be held liable for violating the Age Discrimination Act if they discriminate. On the other hand, if they do not discriminate and hire persons who, by reason of age, cannot perform safely and efficiently, they could be found liable for failing to hire a competent individual. At this time, the exact resolution of the question is not clear.

## Racial and Sexual Discrimination

Because of the nature of the law, it is necessary to address the issue of agencies discriminating against individuals by reason of sex or race. In March 1972, a law was passed prohibiting the discrimination among employees due to their race or sex, see 42 USC Art. 2000. This law provides that it is unlawful to fail to hire or to discharge any individual by reason of sex or race. It prohibits any difference in pay, terms, conditions or privileges of employment based upon sex or race of an individual. Any denial of promotion or other opportunities because of an individual's sex is also prohibited. The purpose of this law is to eliminate differences in the treatment of men and women employees resulting from sex stereotypes rather than an individual's ability. The following discussion will focus on sex discrimination.

Some human service agencies may desire to discriminate on the basis of sex under the theory that male individuals may be more able physically to handle the job of driver inasmuch as the lifting of wheelchairs may be required.

Where sex is a bona fide occupational qualification reasonably necessary to the normal operation of the business or enterprise, it will not be unlawful to use sex as a determinative factor in hiring, see 42 USC Art. 200E-2(E). The courts are reluctant to find that sex is a bona fide occupational qualification. An employer must show that the essence of the business would be undermined by hiring members of both sexes, see Diaz v. PanAm World Airways, Inc. 442 F. 2d. 385 (5th. Cir. 1971). Since the use of flight attendants was held as not being essential to the airlines' business of safely transporting passengers from one point to another, the courts found no justification for

Hiring only females for the position of flight attendants, Diaz supra. In order to establish bona fide occupational qualification, an employer must also show that it has a factual basis for believing that all or substantially all members of a sex would be unable to perform safely and efficiently the duties of the job, see Weeks v. Southern Bell Telephone and Telegraph Co., 408 F2d 228 (5th. Cir. 1969). Merely labeling a job as strenuous or relying on prevailing stereotypes will not establish a factual basis for such beliefs, see Weeks, supra; Rosenfeld v. Southern Pacific Co., 444 F2d 1219, (9th. Cir. 1971); Dothard v. Rawlinson, 433 U.S. 321, 97 S. Ct. 2720 (1977); Phillips v. Martin Marietta Corp., 400 U.S. 542, 91 S.Ct. 497 (1971). The Supreme Court noted in the case of Griggs v. Duke Power Co., 401 U.S. 424, 91 S.Ct. 849 (1971), as follows: "What Congress has commanded is that any test used must measure the person for the job and not the person in the abstract." The courts have found bona fide occupational requirement for some positions. The Supreme Court decided that the essence of a correctional counselor's job is to maintain prison security and the likelihood that the inmates would assault a woman because she is a woman posed a real threat not only to the woman assaulted but also to the basic control of the penitentiary and protection of its inmates and other security personnel, see Dothard, supra, 2729. It is important to note that at the same time the Supreme Court held that sex was a bona fide occupational qualification for the correctional counselor's position, it determined that the height and weight requirements for the position were discriminatory against women. The Supreme Court suggests that in order to fulfill the intent of Congress to measure the person for the job, a direct test of strength would be more appropriate. The Supreme Court's ruling would suggest that it would be discriminatory for a human service agency to refuse to hire women because they are not as physically strong as men as a general

rule. But it would be proper for the social service agency, in testing for the job of driver, to require the drivers to pass a physical strength test which would determine their ability to lift, for instance, a wheelchair with a 150 pound load. This test would discriminate against most women and a fair percentage of men; consequently, it probably would be permissible and not in violation of this act.

In summary, any distinction drawn among employees because of their sex must be justified by a factual showing that all the members of a particular sex would be unable to perform the job safely and efficiently and that the job in question is essential to the nature of the business. Even though the law is specifically directed to employment practices and therefore not technically applicable to volunteer programs and other programs where salaries are not paid, there is always the possibility that it could be held to be applicable; consequently any discriminatory practice should be discouraged and, if possible, avoided.

## APPENDIX I

### PROFESSIONALIZING THE DRIVER

The following is adapted from the Travelers Insurance Company's Commercial Automobile Manual and discusses procedures used in conducting safety meetings. It forms an excellent basis for helping the driver know what a professional driver is expected to do.

#### What is a Preventable Accident?

An accident is preventable when there is something the driver can do to avoid it. Drivers are expected to drive defensively. Which driver is primarily at fault, who receives the traffic ticket or whether a claim was or was not paid has absolutely no bearing on preventability. If there is anything the insured's driver can do to avoid the collision, then the accident is preventable.

It should be the objective of any person discussing accidents to obtain as many facts as possible and to consider all conceivable angles. A primary objective is to instill in the minds of drivers an attitude of driver awareness. This will help drivers develop an awareness of the hazardous actions of others so that it will be difficult for other motorists to involve them in an accident. Preventability does not take into account adverse weather conditions, the nit-witted actions of other drivers or any other such excuses. Professional drivers are expected to drive in a manner which allows them to avoid conflicts when they do arise. It should be relatively easy in reading an accident report to classify the type of accident and to spot the reason for considering it preventable or nonpreventable. The rules are necessarily strict because there must be a clear-cut definition which considers only the accident involved together with the circumstances surrounding it. Whether a driver has a 25-year safe driver award or whether the driver started driving the day before has no

bearing on whether an accident is or is not preventable. It will only confuse the issue to try to judge the other motorists. Taking a fair attitude does not mean leniency. If a driver is cleared but knows the accident could have been avoided, the driver will lose respect for the program. The idea is not to make the driver feel "burned at the stake," but to improve the driver's attitude. If a driver remains unconvinced that an accident could have been prevented, and if similar circumstances present themselves, the driver is likely to be involved in another just like it.

#### Questions to Consider:

When discussing preventable accidents, these are some questions to consider: Does the driver have a safe driving attitude? Does the driver's report indicate that the driver considers the rights of others or is there evidence of poor driving habits which need changing? Does the driver indicate good judgment? Such phrases as "I did not see," "I didn't think," "I didn't expect" or "I thought" are red flags indicating there is something wrong in the driver's thinking. An aware driver should think, expect and see hazardous situations in time to avoid collisions.

Was the driver under any physical handicap which could have been contributory? Did the accident happen near the end of a long and/or hard run? Is the driver prone to overeating? Had he obtained sufficient sleep the night before? Is his vision faulty?

Was the vehicle defective without the driver's knowledge? A gradual brake failure, a truck which pulls to the left on brake application, faulty windshield wipers and similar items are merely excuses and a driver using them is trying to shift the responsibility. Sudden brake failure, loss of steering, or a blowout can be considered defects beyond his knowledge. The maintenance program should work to prevent these hazards.

Would taking a route through less congested areas reduce the hazardous situations encountered?

### Problems Involved

The following problems concerning preventable accidents should be discussed: Some drivers do not realize that an accident for which they are only partially responsible is just as preventable and is just as expensive to the company as an accident for which they are completely at fault. A decision about whether an accident is preventable or nonpreventable is not really as important as the corrective action which must be taken to prevent another accident of that type. A big question is, if the driver were again to be placed in the same accident-producing situation, what precautions, if any, could now be taken to prevent its happening again?

The legal responsibility has no bearing on preventability. One driver can be legally at fault for running a stop sign, yet the other driver could have avoided the accident. On the other hand, even though the accident was nonpreventable, an employer could be legally responsible if a child running from between parked cars, ran into the back of a truck. Judging preventability was never intended to place or fix blame for a given accident.

When interviewing individual drivers concerning their accidents, it is important that they understand the corrective actions necessary to prevent recurrence. In a situation where a driver may seem particularly belligerent, the driver can often be made to relax by asking personal questions along with a number of questions concerning the accident. Then in a purely conversational tone, the driver could be asked, "When you drive that street tomorrow, if that same situation occurs, how would you avoid an accident?" Nine times out of ten a recalcitrant driver will tell how the accident could have been prevented.

If the driver does not catch on immediately, ask kindly why the driver did not do that to avoid the accident under discussion. Do not ride the driver. Drop the subject and let the driver go thinking over what was said. Thinking is the foundation of premeditated prevention.

### Accident Types

The following will serve as a guide in determining the preventability of an accident:

Backing by a Vehicle. A backing vehicle may strike a moving vehicle, an overhead obstruction or a stationary object. These collisions are normally preventable. The fact that someone was directing the operator in backing does not relieve a driver of the responsibility to back safely.

Rear End Collision. Rear end collisions may be caused by following too closely or by driving too fast for conditions. It is a driver's responsibility to stay a sufficient distance behind the vehicle ahead in order to avoid this type of collision. Darkness, fog, rain, snow, sleet or glare cause reduced visibility. The burden of responsibility is placed on the driver. The vehicle must not be operated beyond the limits of the driver's ability to see ahead.

Noncollision Vehicle Damage. Noncollision damage to trailers and landing gear should be prevented. Drivers are expected to crank the landing gear up, to make sure the king pin is secure and to take other obvious steps to protect equipment. Whenever the action of a driver has caused accidental damage to equipment, the accident should be considered preventable.

Intersection Collisions. When turning, regardless of stop signs, stop lights or rights-of-way, a professional driver should recognize that the right-of-way belongs to anyone who assumes it, and the driver should yield

accordingly. In addition a professional driver is expected to know the turning radius of the unit being driven and be able to avoid clipping others. These accidents are normally considered preventable. When driving straight through, failure to yield the right-of-way, regardless of stop signs or lights, is preventable except when the driver is properly proceeding at an intersection protected by lights or stop signs and the vehicle is struck in the extreme rear side or back.

Sideswipes. These are preventable since operators should not get into a position where they can be forced into trouble. A driver should not swerve, forcing others into an accident. Drivers are expected to be able to gauge distances properly when parking, and it is their responsibility to enter traffic flow safely. The doors of a vehicle should never be open when it is in motion or opened on the traffic side, unless clear of traffic when it is parked. People sitting inside of a parked vehicle can be seen from a sufficient distance; therefore, the operator of an approaching unit should be prepared in case the doors of the vehicle are opened.

Head-On Collisions or Runaway Vehicle. Overhead obstructions or stationary objects can usually be avoided by using common sense. A head-on collision with a vehicle which is traveling in the wrong lane may be preventable. Drivers should not allow themselves to be forced into a position where an accident like this can occur. If a head-on collision occurs while a driver is properly proceeding in the correct lane, and the driver cannot stop the vehicle off the road or take any other action to avoid the collision, the occurrence is considered nonpreventable.

Parked or Stopped Vehicle. It is a driver's responsibility to park the vehicle so that it will remain stationary. This type of accident is preventable. Blaming such a collision on a faulty parking brake is not an excuse.

An accident where a vehicle leaves the highway, including overturning or striking objects off the road, is preventable. Accidents occurring when vehicles are properly and legally parked are considered nonpreventable. Accidents occurring while vehicles are double parked or in "No Parking" zones are preventable.

Pedestrian Collisions. All types of pedestrian accidents, including collision with children and persons coming from between parked cars, are usually considered preventable. There are a few instances where the action of pedestrians is so unreasonable that the driver could not be expected to anticipate such an occurrence.

Animal Collisions. These are normally preventable, unless the movement on the part of an animal was unusual and unexpected. This is also taking into consideration the fact that the driver was aware of animals in the vicinity.

Mechanical Failure. The accident should be considered preventable if the investigation shows a mechanical defect of which the driver was aware or which the driver caused by rough and abusive handling. When a mechanical failure is of a sudden and unexpected nature, not resulting from abuse or ordinary wear, it is normally considered nonpreventable. Bad brakes should not be considered a mechanical failure unless the failure was sudden and the driver could have had no previous knowledge of the condition.

Miscellaneous. It is a driver's responsibility to keep the cargo in mind and be aware of any sudden vehicle movements which may cause damage to the cargo. Driving off the highway to avoid a collision is normally preventable, since drivers should not allow themselves to be placed in such a position. U-turns are a monkey wrench in the smooth flow of traffic, and accidents occurring while this maneuver is attempted are considered preventable. Any accident which does not fall into one of the above types should be considered

impartially to determine if the driver could have done anything, within reason, to avoid the occurrence. Drivers are expected to make allowances for the actions of others and to think far enough ahead to avoid hazardous situations and accidents.

Source: Commercial Automobile Manual, The Travelers Insurance Company  
(used with permission).

## APPENDIX J

### NATIONAL SAFETY COUNCIL DEFENSIVE DRIVING COURSE

The National Safety Council teaches the Defensive Driving Course. This course, consisting of eight one-hour sessions, teaches students how to avoid becoming involved in accidents caused by other vehicles. Course instructors are trained at the National Safety Council headquarters in Chicago. The cost is \$50 tuition and \$30 training kit for each instructor trained. Drivers also can be trained.

A trained instructor may then provide the course locally to as many as 20 to 35 drivers. No special equipment or facilities are needed (except for a classroom and a 16mm projector). No driving practicum is required. A complete instructor's kit, including flannel board, films, flip chart, magnetic chalk board and manual may be leased for \$526 per year. For more information, contact:

National Safety Council  
425 N. Michigan Avenue  
Chicago, Illinois 60611  
(312) 527-4800

The outline of the course is presented below.

#### Session One: Preventable or Not?

The magnitude of the traffic accident problem--you can be a safer driver--the perfect trip--preventable and nonpreventable accidents--traffic safety in our society and you--how to be your own traffic judge.

#### Session Two: The Practice of Defensive Driving

Definition of defensive driving--the six conditions of accidents--the standard accident prevention formula--the pretrip mental inventory--types of fatal accidents--the six positions of the two-car crash--reaction distance,

braking distance and stopping distance--the two-second rule for determining safe following distance.

Session Three: How to Avoid a Collision with the Vehicle Behind

Case histories of accidents from newspaper accounts and a discussion of their preventability--the five elements of defensive driving--how to avoid a collision with the driver following you.

Session Four: How to Avoid a Collision with an Oncoming Vehicle

The strategy of total traffic safety--direct and indirect actions to take in the three phases of an accident--why vehicles cross the center line--four-point defense against head-on collisions.

Session Five: How to Avoid an Intersection Collision

Five case histories of accidents and their preventability--right-of-way at intersections--safe right turn procedures--safe left turn procedures--the four-point plan for intersection safety.

Session Six: The Art of Passing and Being Passed

Emotional reaction to being passed--hazards of being passed--driving with the stream of traffic--dangers of passing other vehicles--illegal passing--the 12 points of a perfect pass.

Session Seven: "The Mystery Crash"

Definition of the "mystery crash"--discussion of filmed reconstruction of mystery crash in terms of six conditions of accidents--driver condition and drugs--driver condition and alcohol.

Session Eight: How to Avoid Other Common Types of Collisions

How to avoid collisions with pedestrians, fixed objects, trains, bicycles, motorcycles and animals--how to avoid backing accidents--building a technique of defensive driving by developing better habits of observation, communication, coordination, navigation and consideration--the Defensive Driving League--graduation.

Source: Instructor's Manual, Defensive Driving Course, National Safety Council.

## APPENDIX K

### EMERGENCY MEDICAL TRAINING PROGRAMS

The American Red Cross offers training programs in first aid, advanced first aid and basic life support (cardiopulmonary resuscitation). These programs are available through most local Red Cross offices. Each program is outlined below.

#### First Aid

- 1 Introduction to First Aid  
Shock  
Respiratory Emergencies and Artificial Respiration
- 2 Swallowed Objects and Choking  
Wounds  
Poisoning
- 3 Specific Injuries
- 4 Drugs and Their Abuse  
Burns  
Frostbite and Cold Exposure  
Heat Stroke, Heat Cramps, and Heat Exhaustion  
Sudden Illness  
Dressings and Bandages
- 5 Bone and Joint Injuries
- 6 Emergency Rescue and Short-Distance Transfer
- 7 Final Examination

#### Advanced First Aid

- 1 Introduction to First Aid
- 2 Respiratory Emergencies and Artificial Respiration
- 3 Wounds
- 4 Test and Problem-Solving
- 5 Poisoning

- 6 Specific Injuries--Head Area
- 7 Specific Injuries--Trunk
- 8 Specific Injuries--Extremities
- 9 Test and Problem-Solving
- 10 Drowning, Water Accidents, and Resuscitation
- 11 Dressings and Bandages; Drugs and Their Abuse
- 12 Burns; Exposure to Radiation; Cold Exposure and Frostbite; Heat Stroke, Heat Cramps, and Heat Exhaustion
- 13 Test; Bone and Joint Injuries
- 14 First Aid for Specific Fractures--Upper Body
- 15 First Aid for Specific Fractures--Hip and Thigh
- 16 First Aid for Specific Fractures--Kneecap, Lower Leg, Ankle, and Foot
- 17 Bone and Joint Injuries--Dislocations, Strains, Sprains
- 18 Sudden Illness
- 19 Emergency Childbirth; Emergency Rescue and Transfer--Without Assistance
- 20 Emergency Rescue and Transfer--With Assistance
- 21 Emergency Rescue and Transfer--Stretcher, Litter, Backboards, and Vehicle Transfer
- 22 Extrication--Removal from Automobile
- 23 Extrication--Removal from Automobile (Continued)
- 24 Test and Problem-Solving
- 25 Course Review
- 26 Final Examinations

### Basic Life Support (Cardiopulmonary Resuscitation)

#### I. Introduction

- A. Background and general principles--breathing and circulation, cardiac arrest, life support, early warning signals.

## II. Basic Life Support

- A. Artificial respiration--airway, infants and children, accident cases.
- B. Artificial circulation--technique for external cardiac compression, infants and children, checking effectiveness of cardiopulmonary resuscitation, proper cardiopulmonary resuscitation sequence for unwitnessed cardiac arrest, pitfalls in performance of cardiopulmonary resuscitation, other basic principles, complications.
- C. Special resuscitation situations--drowning, electric shock, crushed chest syndrome.

## III. Supplementary Techniques for Basic Life Support

- A. Effect of position on artificial circulation
- B. Precordial chest thump
- C. Jaw thrust maneuver
- D. Opening the mouth
- E. Foreign bodies
- F. Gastric distention
- G. Mouth-to-stomach resuscitation
- H. Movement of victim during cardiopulmonary resuscitation
- I. Adjunctive equipment

## APPENDIX L

### PASSENGER ASSISTANCE TRAINING COURSE

The Passenger Assistance Training Course was developed by Transportation Management Associates. Drivers may be trained, or instructors may be trained to teach the course to drivers. The course for training drivers involves six hours of classroom instruction and four hours of practicum. The cost per driver is \$62.50 (\$50.00 tuition, \$12.50 materials), plus the cost of travel to a location where the course is being offered. The course for training instructors involves six hours of classroom instruction, four hours of practicum and four hours of teaching methodology. The cost per instructor is \$330 (\$235 tuition, \$95 materials), plus the cost of travel to a location where the course is being offered. The course is designed for two teachers with a maximum student/teacher ratio of 8:1. The most effective class size is 16. More information is available from either of the following:

David J. Thomas, President  
Transportation Management Associates  
2 Authur Drive  
Fort Worth, Texas  
(817) 293-6801

Raili A. Jeffrey, President  
Transportation Risk Management Services  
8202 Nubbin Ridge Road  
Knoxville, Tennessee 37219  
(615) 522-8702

An outline of the course is presented below.

#### I. Introduction

#### II. Basic Characteristics of Major Disabling Conditions

##### A. Orthopedic Conditions

1. Fractures of the Leg or Foot
2. Amputation of the Leg

3. Amputation of the Arm
4. Arthritic and Rheumatic Conditions
- B. Neurological Conditions
  1. Cerebral Palsy
  2. Spinal Cord Injuries
  3. Disease of the Spinal Cord
- C. Stroke Condition
- D. Visually Impaired
- E. Hearing Impaired
- F. Epilepsy
- G. Miscellaneous Conditions

### III. Basic Considerations in Transporting the Elderly and the Handicapped

- A. Attitudes
  1. Vehicle Operator
  2. Elderly and Handicapped
- B. Functional Factors
  1. Spasticity
  2. Loss of Skin Sensation
  3. Loss of Balance
  4. Pain
  5. Breathing Disabilities
  6. Mobility Limitations
  7. Visual Impairment
  8. Hearing Impairment
- C. Common Assistive Devices
  1. Crutches
  2. Canes

3. Walkers
4. Wheelchairs
5. Braces
6. Prosthetic Devices
7. Slings
8. Guide Dogs

#### IV. Special Considerations in Assisting the Elderly and/or Handicapped Passenger

##### A. Basic Principles

1. Observation
2. Offer of Assistance

##### B. Management of the Wheelchair Passenger

1. Basic Principles
2. Moving Wheelchairs Up Curbs or Single Steps
3. Moving Wheelchairs Down a Curb or Single Step
4. Management of Wheelchairs on Multiple Steps
5. Management of Wheelchairs on Ramps
6. Folding and Unfolding the Wheelchair
7. Vehicle Boarding Considerations
8. Transferring From a Wheelchair to a Vehicle Seat
9. Placement of a Wheelchair in a Vehicle
10. Wheelchair Tie Downs
11. Assisting Passengers to Sit or Stand

#### V. Environmental Considerations Affecting Passengers

##### A. Controlled Environmental Factors

##### B. Uncontrolled Environmental Factors

#### VI. Considerations Involving Vehicle Operation

VII. Emergency Procedures

VIII. Vehicle Maintenance

A. Brakes

B. Steering System

C. Tires

D. Engine

E. Transmission (standard and automatic)

F. Other Systems

1. Electrical

2. Lubricating

3. Cooling

4. Springs and Shock Absorbers

5. Accessories

## APPENDIX M

### SELECTION AND USE OF CHILD RESTRAINT DEVICES

It is important to properly secure all passengers to prevent passenger injury in the event of an accident. However, the seat belts or seat belt/shoulder belt combinations provided in vehicles are not appropriate for young children. An adult lap belt can slip on a child's abdomen and cause internal injury in the event of an accident, while a shoulder belt could bind a young child around the throat. Young children who weigh less than 40 pounds (generally younger than four) must be secured in a proper child restraint device. "A Selection Guide for Child Restraint Devices," developed by the Tennessee Child Passenger Safety Program, is attached. This is a good guide to the types of child restraint devices and the proper use of each.

Once children reach 40 to 50 pounds in weight, they may be restrained in regular adult restraining systems. A ~~lap~~ belt must be secured firmly across the child's thighs, never across the stomach. A cushion may be needed to elevate the child slightly to make the belt fit snugly. A shoulder belt should be added if it does not cross the child's face or neck. If the shoulder belt normally would cross the child's neck or face and it cannot be disconnected from the lap belt, the shoulder belt portion may be placed behind the child.

A child should never be held by an adult. An accident can hurl a child with a force of 20 times the child's weight, more than any adult can hold. In addition, the child can be crushed should the adult also be unrestrained and thrown with a force of 20 times the adult's weight.



## TRANSPORTATION CENTER

The University of Tennessee  
Knoxville, Tennessee 37916  
Phone (615) 974-5255

March 22, 1978

### A SELECTION GUIDE FOR CHILD RESTRAINT DEVICES

#### *What things should you consider?*

When you buy a child restraint device, you are making a very important decision. Of course, you want to select the child restraint device that will provide the best protection for your child. In order to make a good choice for your child, you and your automobile, you should compare the different brands of child restraint devices that are available to see how they meet your family's needs. To help you get started in this comparison shopping, we have included information on the general installation, use requirements and age range of different brands of crashtested child restraint devices in this selection guide. How do you choose which one you want to buy and use with your child? You should think carefully about the following three things:

1. Your child's need for a strong device that will provide good crash protection for his/her size and weight.
2. Your responsibility for installing the device properly and using it correctly each time your child rides in the automobile.
3. The special features of your automobile which may prevent you from using certain brands correctly.

Reread your copy of the Child Passenger Safety Program's brochure entitled *Protecting The Child Passenger: A Matter of Love*. It will help you think about the needs that are special to your situation and how they will influence which device you buy. If you have not already received a copy of the brochure, you will want to pick up this free information from your doctor's office, local public health center, or hospital and use it with this selection guide. The brochure contains descriptions and drawings of the four general types of devices and photographs of common riding practices which are dangerous for children.

#### HOW ARE CHILD RESTRAINT DEVICES DIFFERENT FROM EACH OTHER?

##### *Crash Protection*

One of the more important ways in which child restraint devices differ is in how they perform in crash situations. There are two major ways of testing this performance. One way is called "static" testing. Static testing simply requires that the device withstand a gradual pulling force. Wooden blocks are used to represent the child riding in the device. The Federal Government's standards for child restraint devices are currently based on static tests.

A better way of testing the devices has been developed called "dynamic" testing. The dynamic method is superior to the static method in its recreation of the extreme forces produced in crash situations. Currently, there is not a Federal dynamic crash standard for child restraint devices. It is hoped that a new Federal dynamic crash standard will be put into operation in the near future.

### *Installation and Method of Use*

Proper installation and proper use of your child restraint device are extremely important for the safety of your child. Therefore, you should carefully follow the instructions provided by the manufacturers of your device. Since research has shown that proper installation and use of a child restraint device is the exception rather than the rule, one of the many important things you should consider before purchasing a child restraint device is how easily it can be installed and used. Many of the child restraint devices with the highest safety performance in crash tests are also those which are among the most complicated to install and use properly. If used incorrectly, these devices may offer inadequate protection for your child.

Many car seat types and harnesses require the use of a properly anchored top tether strap. Failing to install the top tether strap anchor and failing to use the tether strap are two of the most frequent ways in which these child restraint devices are misused. When a top tether anchorage strap is present, **IT MUST BE USED**, or the protection of the device is greatly reduced. The proper use of this top tether strap prevents the restraint from tipping too far forward or too far to the side and only allows relatively short head movements in crash situations.

Before you buy a car seat with a top tether strap, make sure that you are prepared to spend the time and effort to anchor it properly in your automobile. *The tether must be attached to sturdy metal.* Therefore, a tether anchor should not be attached to either plastic or cardboard! Once the tether anchor is installed you simply clip the tether strap to it and tighten it. The child restraint device can easily be taken out of the car for such things as cleaning. However, if you plan to use a restraint with a tether in more than one car, you must install an anchor in each car. Most manufacturers only supply one anchor with each device but you can order additional anchors from them.

When used in the front seat, most tethers are anchored by the rear safety belt. (Remember that the center of the rear seat is generally the safest place for a child to ride.) Restraints with a top tether cannot be used in a front bucket seat which has an integral head restraint (the head restraint and tail seat back are one continuous piece) since the tether will slip off the top of the seat. When the child restraint device is used in the back seat of the vehicle, the tether anchor must be bolted to the rear shelf or floor board of the rear storage area.

A second way in which a child restraint device is frequently misused is by failing to use the safety belt system or harness inside the device. Before purchasing a child restraint device check to see how convenient its harness system is to use and adjust. The harness system in some restraint devices can only be adjusted from behind or beneath the restraint..

Other devices for toddlers such as the shields have no inside harness system. For example, shields work by using the automobile lap belt to fasten the shield around the child and do not require buckling of an inside harness system. While shields are hard for parents to misuse, some children may be able to wriggle out of shields more easily than they could from other types. Shields should only be used on the center of the rear seat because they do not provide the same protection for the child in side collisions that some other child restraint devices do.

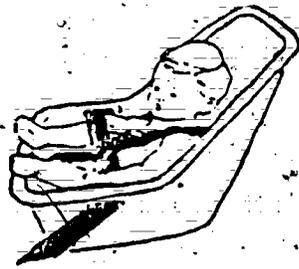
Failure to use the automobile lap belt to fasten down infant carriers and car seats is a frequent misuse of these types. Some automobiles have inertia lap belts that should not be used with child restraint devices. (Inertia lap belts only hold securely during sudden stops or hard braking.) If your automobile has this type of lap belt, you can buy a special clip that will make the lap belt safe for use with a child restraint device. The clips are inexpensive and available from your automobile parts dealer. Some brands have to be resecured with the lap belt each time you put your child in for a ride. Other brands can be left secured to the seat with the lap belt so that you only need to buckle the inside harness system for each ride.

#### *Age and Weight Considerations*

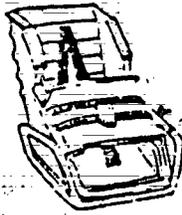
You should start using a child restraint device with babies as soon as they are born. Some child restraint devices are designed just for infants. Other devices are convertible so that you can use them with infants and toddlers. If you select a convertible device, make sure that you always use it in the safest correct position according to the manufacturers instructions.

Some newborns are so small that they may need extra padding in child restraint devices. Simply roll up soft blankets or towels and place them around the baby's sides. You will be ready to begin using a toddler child restraint device or the toddler position on a convertible device when your child reaches about 20 lbs. (usually at around 9 months old).

The next section of this guide is a chart with specific information on the various brands of child restraint devices that have been subjected to dynamic testing. Regardless of which brand you buy, remember to read and follow your manufacturer's instructions carefully. We recommend that you take this selection guide and your child with you when you shop for a child restraint device. You should try the device out with your child in the store. If possible, try it out in your automobile as well.



GM Infant Love Seat



Bobby Mac Deluxe

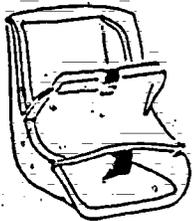
Not Pictured:

Bobby Mac

Dyn-O-Mite

Mopar Child Seat

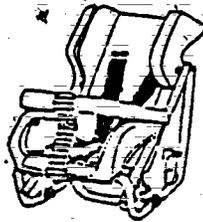
Safe and Easy



Peterson



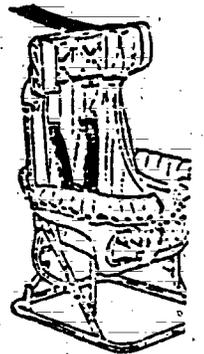
Care Seat by  
Kantwet/Questor



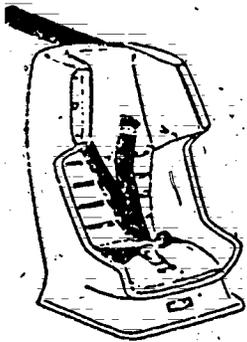
Travtguard



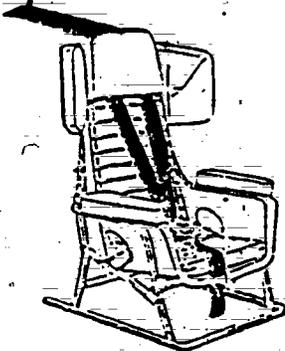
Rose or Infanseat  
Harness



Strolee



GM Child Love  
Seat



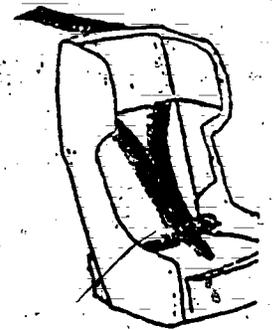
Teddy Tot  
Astroseat V



Century  
Motor-Toter



Car Seat #885 by  
Kantwet Questor



Hedstrom  
Positest

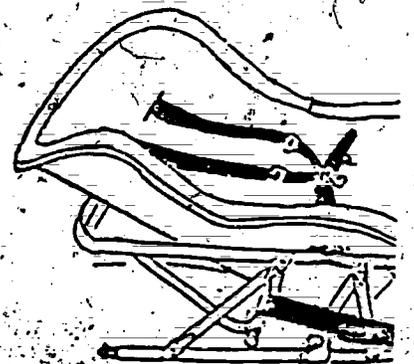


Swyngomatic/Graco



Tot Guard

The Mopar Child  
Seat looks  
much like  
the Tot  
Guard



Bunny Bear

## CHILD RESTRAINT DEVICES

The child restraint devices listed below have been dynamically tested by one or more independent research laboratories. They vary in their performance depending on the type of accident. In the absence of a federal dynamic crash standard neither the Child Passenger Safety Program nor the independent research laboratories can endorse particular brands of child restraint devices. The choice of which child restraint device to use is your responsibility.

Most department stores, discount stores and children's speciality stores carry child restraint devices. Several automobile dealers also carry child restraint devices. The prices vary from store to store.

<u>NAME AND MANUFACTURER</u>	<u>TOP TETHER STRAP REQUIRED</u>	<u>USE ONLY IN CENTER BACK SEAT</u>
<b>INFANT RESTRAINT DEVICES</b>		
(Range is from birth to a weight of about 20 pounds)		
Dyn-O-Mite by Infaseat/Questor		
Infant Love Seat by General Motors		
(Also sold as the Ford Infant Carrier and the Mopar Infant Safety Carrier)		
Trav-L-ette by Century		
<b>TODDLER RESTRAINT DEVICES</b>		
(Range is from when they can sit alone to a weight of about 40-50 pounds)		
Little Rider Harness by Rose Manufacturing Co.	Tether	CB Only
Child Love Seat by General Motors	Tether	
Motor Totor by Century	Tether	
Positest by Hedstrom	Tether	
Swyngomatic Safety Seat by Swyngomatic/Graco	Tether	
Teddy Tot Astroseat V by International Mfg. Co.	Tether	
Mopar Child Seat by Chrysler Corp.		CB Only
Tot Guard by Ford Motor Co.		CB Only
Fitz-All #49-597 by Kantwet/Questor		
<b>CONVERTIBLE RESTRAINT DEVICES</b>		
(These can be adjusted for infants or toddlers)		
Bobby-Mac 2 in 1 by Collier-Keyworth		
Bobby-Mac Deluxe by Collier-Keyworth		
Bunny Bear by Bunny Bear		CB Only
Care Seat by Kantwet/Questor		
Safety Shell #75 by Peterson		
Trav-L-Guard by Century		
Wee Care #597 by Strolee	Tether	
Safe and Easy by Cosco	Tether	

Note: This list will be updated every six months.

## APPENDIX N

### ESTABLISHING AN ACCIDENT REVIEW BOARD

Accident review boards are very important for helping drivers emphasize responsibility for preventing accidents without any negative reactions to management. Recommendations for an accident review board adapted from the Travelers Insurance Company's Safety Engineer's manual are presented.

Decisions concerning the preventability of accidents should be made by the company's own accident review board. The board, in making these decisions, serves at least two purposes. First, it establishes the driver's safety records and eligibility for safe driving awards. Second, it is a means of developing accident prevention techniques. Decisions reached through a board have the added advantage of being more readily acceptable to drivers, and the board offers an opportunity to have active driver participation in the safety program. The board should meet regularly to keep up with the volume of accidents. If the safety director of a fleet is responsible for making an initial determination of preventability about each accident, the board may be used as an appeals board for those decisions which the driver questions.

The board is usually composed of three to seven members. This is a large enough group to handle the work load. It is also enough people to ensure a wide range of opinions. As an example, a five-member board generally includes two driver representatives, two management representatives and the safety director acting as chairman. The board should have authority to request and receive cooperation from anyone within the company who could be helpful in making a determination on a particular case.

The driver representatives should be selected or elected from those who have a safe driving record of at least one year so that they have the respect

of the other drivers. Being selected to be on the board may act as an incentive for safe driving. Board membership should include all eligible drivers so they will maintain an interest in the program.

Management representatives should have a real interest in safety and should be active in this area. A member from top management would also give authority to the decisions. If the company has driver-trainers, they should be in attendance at all meetings because they probably will be the ones to implement suggested corrective measures. The decision of preventability does not concern itself with either monetary values or with legality of acts. Preventability deals only with whether the accident could have been prevented by some reasonable action of the driver.

Meetings should be held at times convenient for the driver members. At the meeting, copies of all written reports should be provided for each member. Visual aid equipment should be used for diagramming accidents. To keep all judgments impartial, the name of the involved driver should not be on the reports. If the involved driver wishes to attend, and a useful purpose can be served by the driver's attendance, then the driver should be allowed to attend. However, the driver should be asked to leave before a decision is made in his case. Secret ballots are suggested, but they are not necessarily mandatory. A written record should be made of all procedures before the accident review board. Following the board meeting, each driver involved in an accident should be informed, through a personal interview, of the decision of the board. The preventive measures recommended should be discussed with the driver. In cases of suspension or discharge, appropriate advice should be given to management so that the proper procedures are followed. All preventive measures recommended by the board should be discussed in the drivers'

meetings without mention of the involved driver. Follow-up material in the form of drivers' letters, bulletins and company newsletters would also be appropriate.

Source: Commercial Automobile Manual, The Travelers Insurance Company  
(used with permission).

## APPENDIX O

### 55 ALIVE MATURE DRIVING COURSE

The 55 Alive Mature Driving Course was designed by the National Retired Teachers Association/American Association of Retired Persons for drivers age 55 and older. The course is taught by volunteers age 55 or older who were trained by the National Retired Teachers Association. A small tuition is charged; remaining program costs are subsidized by the National Retired Teachers Association/American Association of Retired Persons. For more information, contact

National Retired Teachers Association/  
American Association of Retired Persons  
Driver Improvement Program  
1909 K Street, N.W.  
Washington, D.C. 20049  
(202) 872-4772

The course is taught in two three-session segments over a period of seven or eight days. An outline is presented below.

#### Session One: Overview

To define course content, a series of slides describes the characteristics of the driver age 55 and over and establishes the relevance of the curriculum that will follow. Group discussion centers on driving frustrations and effects of aging on individual driving behavior.

#### Session Two: Physical Changes

Discussion is held on the physical changes affecting the eyes as they relate to driving performance. Problems arising from hearing loss, impaired physical movement, slowed reaction time and misuse of medications are examined.

### Session Three: Perception

A series of slides developed by the American Automobile Association and the Highway Traffic Safety Center at Michigan State University present perceptual problems likely to be encountered in various driving environments. Group discussion focuses on major driving hazards in specific driving environments.

### Session Four: Rules of the Road

Basic rules of driving particularly pertinent to the 55+ driver are discussed. These include right-of-way, intersections, turning, passing, backing, entering and leaving freeways, and lane changing. A review of the shapes, colors and types of road signs as well as pavement markings is featured.

### Session Five: Accident Prevention Measures, Adverse Driving Conditions and Other Road Users.

Accident prevention measures and the effects of adverse driving conditions such as night, inclement weather and rush-hour driving are considered. Discussion of other road users spotlights pedestrians, bicycles, trucks, motorcycles, towed vehicles and stray animals. A chart depicting proper techniques for handling unexpected driving emergencies is reviewed.

### Session Six: Local Driving Problems, License Renewal

Group discussion centers on current local driving problems and conditions. A review is made of state license renewal procedures as well as state driving laws and regulations.

Source: Program Leader's Guide 55 Alive/Mature Driving, National Retired Teachers Association.

## APPENDIX P

### CLASSIFICATION OF ACCIDENTS

#### I. Initial Classification

- A. Traffic--accidents in which there is movement by the vehicle(s) involved.
- B. Nontraffic--accidents in which there is no vehicle movement, including fire, theft and injuries to boarding passengers.

#### II. Secondary Classification

- A. Preventable accident
  - 1. Driver at fault
  - 2. Driver not at fault
- B. Nonpreventable accident

#### III. Preventable Accidents

- A. Maintenance and/or management
  - 1. Driver reported vehicle problem or defect, but no correction was made
  - 2. Driver knew about vehicle problem or defect but did not report it
  - 3. Accident caused by defect which should have been discovered during regular inspection

(If an accident is caused by a defect of which neither the driver, maintenance personnel or management knew and which could not be detected during regular inspection, the accident is nonpreventable.)

- B. Vehicle driven too fast for road conditions (irrespective of posted speed limits)
- C. Vehicle following too closely to vehicle ahead
- D. Improper driver judgment
  - 1. Failure to consider potential hazards in congested areas
  - 2. Striking overhead object
  - 3. Allowing vehicle to roll backward while in a forward gear
  - 4. Other

- E. Improper passing
- F. Cutting or crowding
- G. Failure to yield right of way
- H. Failure to obey traffic signal or sign
- I. Not watching road
- J. Improper turning
- K. Improper backing
- L. Improperly pulling into and out of parking space
- M. Vehicle improperly parked
- N. Improper loading and unloading of passengers
- O. Sudden stop or start
- P. Other \_\_\_\_\_

IV. Accident Location

- A. Straight road
- B. On grade
- C. On curve
- D. Driveway, alley or parking lot
- E. Off the highway
- F. Intersection
- G. Other \_\_\_\_\_

V. Type of Accident

- A. Struck other vehicle
- B. Struck by other vehicle
- C. Struck fixed object
- D. Struck pedestrian
- E. Run off the road
- F. Injury to boarding or alighting passenger
- G. Noncollision damage to vehicle

H. Other collision accident \_\_\_\_\_

I. Other noncollision accident \_\_\_\_\_

VI. Action of Agency Vehicle

A. Pulling in or out of parking spaces

B. Passing, cutting or crowding

C. Making turn

D. Going straight ahead

E. Following

F. Backing

G. Parked or stopped

H. Other \_\_\_\_\_

VII. Action of Other Vehicle (if applicable)

A. Pulling in or out of parking space

B. Passing, cutting or crowding

C. Making turn

D. Going straight ahead

E. Following

F. Backing

G. Parked or stopped

H. Other \_\_\_\_\_

162

163

## **NOTICE**

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

This document is being distributed through the U.S. Department of Transportation's Technology Sharing Program.

DOT-I-83-17

DOT-I-83-17

# TECHNOLOGY SHARING

A Program of the U.S. Department of Transportation.

164