COLORADO
Department of Education
School Finance and
Operations Division

Colorado School Bus Driver Trainer Guide

June 2016

SCHOOL TRANSPORTATION UNIT
201 E. Colfax Ave., Room 209, Denver, CO 80203
303-866-6655/ 303-866-6656
transportation@cde.state.co.us
http://www.cde.state.co.us/transportation

Revised 2005, Revised 2011, Revised 2013, Revised 2016

COLORADO
Department of Education
School Finance and
Operations Division

FOREWORD

Researched and Revised By:

Susan M. Miller
Lead Transportation Consultant
School Transportation Unit
Colorado Department of Education

Special Thanks to
Colorado State Pupil Transportation Association
Trainers Committee Members:

Leonard Woofter, Chair
Adams 12
Paul Alvarez , Co-Chair
Adams 14

Andrea Meyer – Premble
Pinnacle Charter School

Carlos Crespo – Cardona
Fountain Fort Carson 8

Debbie Zambrono
Harrison District 2

Debbie Thomas
Widefield 3

Donna Mengel
Fountain Fort Carson 8

John Wells
Widefield 3

Kathy Teeters
Falcon 49

Lois Krohn
Lewis – Palmer

Orville Harder
Academy 20

Shirley Fisher
Widefield 3

Eric Stene
Jeffco

DaNaye Gettel
Jeffco

Reghan Mahaffey
Aspen

Table of Contents

Unit 3 - Driver and Vehicle Readiness

Unit 4 – Skills Training

Unit 5 – Driving Fundamentals

Unit 6 – Defensive Driving

Unit 7 - Mountain Driving

Unit 8 -Adverse Weather and Mountain Driver

Unit 9 -Transporting Students

Unit 10 - Student Management

Unit 11 - Safety Equipment

Unit 12 - Training Techniques for the Adult Learner

Unit 13 – Addendum

UNIT ONE - INTRODUCTION

PURPOSE OF THIS GUIDE

This Guide provides information necessary for training school bus drivers. It includes all of the basic information to develop a training program to fit the needs of your districts student transportation requirements. The purpose of the Colorado School Bus Driver Trainer's Guide is to reduce the potential for school bus crashes and injury or death to school children while being transported to and from school or on school-sponsored trips.

IMPORTANCE OF THIS GUIDE

This Guide is designed to improve school bus driver competency in Colorado. Competent school bus drivers are needed to provide safe and efficient transportation for student riders. The vital link to safety, proper attitude, knowledge, and skill must be developed through interest in safe driving. This is accomplished by improving the driver's ability to cope with the constantly changing driving environment through intensive pre-service training as well as continuing in-service training and activities. Safe transportation of students to and from school and school related activities is an integral part of a sound educational program.

IMPORTANCE OF THE DRIVER

The successful school bus driver observes all traffic signs, rules, and regulations. The public expects top driving performance from members of the school bus driving force. The motoring public may relate improper driver actions to the total school program.

Five keys to being a successful school bus driver are:

- Competence
- Positive attitude
- Communication
- Cooperation
- Safety awareness

A professional driver is generally predictable in his/her behavior. The effective bus driver will be consistent in the management of student behavior. Students respect and obey a person they can count on to act in a controlled manner at all times. Students relate to someone who is friendly, yet firm, and respectful. Inconsistency and lack of discipline may lead students to become disruptive. The successful driver understands and complies with all laws, Colorado Rules for the Operation of School Transportation Vehicles 1 CCR 301-26, and Colorado traffic laws.

UNIT TWO – LEGISLATIVE GUIDELINES

COLORADO DEPARTMENT OF EDUCATION RULES

1 CCR 301-25, Colorado Minimum Standards Governing School Transportation Vehicles

2251-R-1.00 Statement of Basis and Purpose.

The statutory authority for the Colorado Minimum Standards Governing School Transportation Vehicles (hereinafter referred to as "these rules" or "Minimum Standards"), adopted by the State Board of Education on (April 30, 2015) (hereinafter referred to as "effective date"), is found in sections 22-51-108 and 42-4-1904, C.R.S. The purpose of these rules is to provide reasonable and adequate standards of safety for school transportation vehicles that promote the welfare of the students and afford reasonable protection to the public. The purpose of the amendments approved on (insert effective date) is to update the minimum standards to align with recent federal standard and reflect current industry practices, to streamline and consolidate rules and eliminate rules which are redundant of and potentially contradictory to federal standards, and to reduce regulatory burdens for school districts and charter schools. The Commissioner, or designee, may provide an exemption to these Minimum Standards to the extent the Commissioner finds an exemption to be appropriate.

1 CCR 301-26. Rules for the Operation of School Transportation Vehicles

4204-R-1.00 Statement of Basis and Purpose

1.01 Colorado law provides for the State Board of Education to adopt and enforce regulations governing the safe operation of school buses used for the transportation of students pursuant to Sections 22-51-108 and 42-4-1904 C.R.S.

1.02 The purpose of these rules is to adopt and enforce regulations governing the reasonable and adequate standards of safety for school transportation operations and vehicles that promote the welfare of the students and afford reasonable protection to the public. These rules are designed to align with federal standards, reflect current industry practices, and incorporate recommendations from school district and service provider transportation professionals.

1.03 The Commissioner, or designee, may provide an exemption to the Rules for the Operation, Annual Inspection and Preventive Maintenance of School Transportation Vehicles to the extent the Commissioner finds an exemption to be appropriate.

1.04 These rules shall become effective July 30, 2016 for all student transportation.

4204-R-2.00 Applicability of Rules

2.01 These rules and regulations apply to all public school transportation vehicle operations (school bus, multifunction bus, motor coach bus and small vehicle) transporting students to and from school, from school to school, or to and from school related events in vehicles owned, leased or rented by the district or under agreement with the district.

2.02 These rules are not intended to include:

2.02(a) Private motor vehicles used exclusively to carry members of the owner's household; or

2.02(b) Transportation arrangements not authorized by the district including but not limited to; sharing of actual gasoline expense or participation in a car pool; or

2.02(c) The operations of vehicles in bona fide emergency situations consistent with policies of the local board of education; or

2.02(d) Student transportation under public transportation programs subject to the Code of Federal Regulations 49 CFR 390 to 399.

2.03 These rules shall not preclude a school district or service provider from establishing a more rigid standard or policy when deemed necessary by the local board of education or service provider.

FEDERAL STANDARDS

The National Highway Traffic Safety Administration (NHTSA) has minimum design and construction standards for many aspects of all vehicles, especially school buses, called Federal Motor Vehicle Safety Standards (FMVSS). Starting July 1, 1977, these standards were expanded to encompass the concept of compartmentalization. Distance between seats is now less, seat backs are higher, and the metal framework is covered with foam padding. Also, the roof, sides, and floor are heavily reinforced to stay intact. In an accident, the student(s) would remain in their seating compartment. The padded seat back in front of them provides a large area to spread the energy of their body, thus increasing the safety factor in the passenger compartment.

4204-R-16.00 Maximum Driving Time for School Transportation Vehicle Operators

16.01 The school transportation vehicle operator, including small vehicle operators, shall not drive nor shall the school district or service provider permit or require an operator to drive:

16.01(a) In excess of 10 hours or after being on-duty 14 hours until completing 10 hours off-duty. This would include on-duty time for all employers. Ten hours off duty may be consecutive or accumulated in two or more periods of off duty time with one period having a minimum of 6 consecutive hours off duty.

16.01(b) After being on-duty for more than 70 hours in any seven consecutive days.

16.02 The school district or service provider may comply with part 395 of the Federal Motor Carrier Safety Regulations (FMCSR) in place of this section.

16.03 Definitions:

16.03(a) Adverse driving conditions - In case of emergency, an operator may complete the trip without being in violation if such trip reasonably could have been completed absent the emergency.

16.03(b) Day - Means any 24-consecutive hour period beginning at the time designated by the school district or service provider.

16.03(c) On-duty time - Includes all time worked for any and all employers, including all driving and non-driving duties.

16.03(d) Off-duty time - School transportation vehicle operators may consider waiting time at special events, meal stops, and school related events as off-duty if the following criteria are met: (Compensated waiting time does not necessitate on-duty time)

16.03(d) (1) The operator shall be relieved of all duty and responsibility for the care and custody of the vehicle, its accessories, and students, and

16.03(d) (2) The operator shall be at liberty to pursue activities of his/her choice including leaving the premises on which the bus is located.

16.04 All school transportation vehicle operators shall document that they are

in compliance with this section, hours of service.

16.04(a) An operator's daily log, or equivalent, shall be completed for the trip in the operator's own handwriting, when the trip requires a scheduled or unscheduled overnight stay away from the work reporting location.

DRUG AND ALCOHOL

Federal Motor Carrier Safety Administration

382.103: Applicability.

(a) This part applies to every person and to all employers of such persons who operate a commercial motor vehicle in commerce in any State, and is subject to:

(1) The commercial driver's license requirements of part 383 of this subchapter;

(2) The Licencia Federal de Conductor (Mexico) requirements; or

(3) The commercial drivers license requirements of the Canadian National Safety Code.

(b) An employer who employs himself/herself as a driver must comply with both the requirements in this part that apply to employers and the requirements in this part that apply to drivers. An employer who employs only himself/herself as a driver shall implement a random alcohol and controlled substances testing program of two or more covered employees in the random testing selection pool.

All employees who will be subject to testing under DOT drug & alcohol testing will be provided training when they are hired. The training must be documented as part of pre-service training and maintained in the driver qualification file.

https://www.fmcsa.dot.gov/regulations/title49/section/382.103

382.213: Controlled substance use.

(a) No driver shall report for duty or remain on duty requiring the performance of safety sensitive functions when the driver uses any drug or substance identified in 21 CFR 1308.11 Schedule I.

(b) No driver shall report for duty or remain on duty requiring the performance of safety-sensitive functions when the driver uses any non-Schedule I drug or substance that is identified in the other Schedules in 21 CFR part 1308 except when the use is pursuant to the instructions of a licensed medical practitioner, as defined in § 382.107, who is familiar with the driver's medical history and has advised the driver that the substance will not adversely affect the driver's ability to safely operate a commercial motor vehicle.

(c) No employer having actual knowledge that a driver has used a controlled substance shall permit the driver to perform or continue to perform a safety-sensitive function.

(d) An employer may require a driver to inform the employer of any therapeutic drug use.

https://www.fmcsa.dot.gov/regulations/title49/section/382.213

What CDL Drivers Need to Know

DOT drug tests require laboratory testing (49 CFR Part 40 Subpart F) for the following five classes of drugs:

- *Marijuana*
- *Cocaine*
- *Opiates - opium and codeine derivatives*
- *Amphetamines and methamphetamines*
- *Phencyclidine - PCP*

Drug cutoff concentrations can be found on the Substance Abuse and Mental Health Services Administration Web site.

DOT alcohol tests identify alcohol concentration of 0.02 and greater.

NOTE REGARDING NON-DOT TESTING: DOT does not prohibit motor carrier employers from instituting a "company authority" testing program that is in addition to, and distinct from, the required DOT testing program. Under such non-DOT programs, employers could test for other drugs. DOT also does not prohibit employers from using tests of non-urine specimens under a non-DOT

Program. DOT regulations at §382.601 provide that employer materials supplied to drivers may include information on additional employer policies with respect to the use of alcohol or controlled substances, including any consequences for a driver found to have a specified alcohol or controlled substances level, that are based on the employer's authority independent of this part. Any such additional policies or consequences must be clearly and obviously described as being based on the employer's independent authority.

See more at: https://www.fmcsa.dot.gov/regulations/drug-alcohol-testing/which-substances-are-tested#sthash.vLF9fsBN.dpuf

382.121: Employee admission of alcohol and controlled substances use.

(a) Employees who admit to alcohol misuse or controlled substances use are not subject to the referral, evaluation and treatment requirements of this part and part 40 of this title, provided that:

> *(1) The admission is in accordance with a written employer-established voluntary self-identification program or policy that meets the requirements of paragraph (b) of this section;*
>
> *(2) The driver does not self-identify in order to avoid testing under the requirements of this part;*
>
> *(3) The driver makes the admission of alcohol misuse or controlled substances use prior to performing a safety sensitive function (i.e., prior to reporting for duty); and*
>
> *(4) The driver does not perform a safety sensitive function until the employer is satisfied that the employee has been evaluated and has successfully completed education or treatment requirements in accordance with the self-identification program guidelines.*

(b) A qualified voluntary self-identification program or policy must contain the following elements:

> *(1) It must prohibit the employer from taking adverse action against an employee making a voluntary admission of alcohol misuse or controlled*

substances use within the parameters of the program or policy and paragraph (a) of this section;

(2) It must allow the employee sufficient opportunity to seek evaluation, education or treatment to establish control over the employee's drug or alcohol problem;

(3) It must permit the employee to return to safety sensitive duties only upon successful completion of an educational or treatment program, as determined by a drug and alcohol abuse evaluation expert, i.e., employee assistance professional, substance abuse professional, or qualified drug and alcohol counselor;

(4) It must ensure that:

(i) Prior to the employee participating in a safety sensitive function, the employee shall undergo a return to duty test with a result indicating an alcohol concentration of less than 0.02; and/or

(ii) Prior to the employee participating in a safety sensitive function, the employee shall undergo a return to duty controlled substance test with a verified negative test result for controlled substances use; and

(5) It may incorporate employee monitoring and include non-DOT follow-up testing.

382.201: Alcohol concentration.

No driver shall report for duty or remain on duty requiring the performance of safety-sensitive functions while having an alcohol concentration of 0.04 or greater. No employer having knowledge that a driver has an alcohol concentration of 0.04 or greater shall permit the driver to perform or continue to perform safety-sensitive functions.

382.301: Pre-employment testing.

(a) Prior to the first time a driver performs safety-sensitive functions for an employer, the driver shall undergo testing for controlled substances as a condition prior to being used, unless the employer uses the exception in paragraph (b) of this section. No employer shall allow a driver, who the employer intends to hire or use, to perform safety-sensitive functions unless the

employer has received a controlled substances test result from the MRO or C/TPA indicating a verified negative test results for that driver.

382.303: Post-accident testing.

(a) As soon as practicable following an occurrence involving a commercial motor vehicle operating on a public road in commerce, each employer shall test for alcohol for each of its surviving drivers:

> *(1) Who was performing safety-sensitive functions with respect to the vehicle, if the accident involved the loss of human life; or*
>
> *(2) Who receives a citation within 8 hours of the occurrence under State or local law for a moving traffic violation arising from the accident, if the accident involved:*
>
> > *(i) Bodily injury to any person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident; or*
> >
> > *(ii) One or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicle to be transported away from the scene by a tow truck or other motor vehicle.*

(b) As soon as practicable following an occurrence involving a commercial motor vehicle operating on a public road in commerce, each employer shall test for controlled substances for each of its surviving drivers:

> *(1) Who was performing safety-sensitive functions with respect to the vehicle, if the accident involved the loss of human life; or*
>
> *(2) Who receives a citation within thirty-two hours of the occurrence under State or local law for a moving traffic violation arising from the accident, if the accident involved:*
>
> > *(i) Bodily injury to any person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident; or*
> >
> > *(ii) One or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicle to be*

transported away from the scene by a tow truck or other motor vehicle.

*(d) (1) **Alcohol tests**. If a test required by this section is not administered within two hours following the accident, the employer shall prepare and maintain on file a record stating the reasons the test was not promptly administered. If a test required by this section is not administered within eight hours following the accident, the employer shall cease attempts to administer an alcohol test and shall prepare and maintain the same record. Records shall be submitted to the FMCSA upon request.*

*(2) **Controlled substance tests**. If a test required by this section is not administered within 32 hours following the accident, the employer shall cease attempts to administer a controlled substances test, and prepare and maintain on file a record stating the reasons the test was not promptly administered. Records shall be submitted to the FMCSA upon request.*

(e) A driver who is subject to post-accident testing shall remain readily available for such testing or may be deemed by the employer to have refused to submit to testing. Nothing in this section shall be construed to require the delay of necessary medical attention for injured people following an accident or to prohibit a driver from leaving the scene of an accident for the period necessary to obtain assistance in responding to the accident, or to obtain necessary emergency medical care.

(f) An employer shall provide drivers with necessary post-accident information, procedures and instructions, prior to the driver operating a commercial motor vehicle, so that drivers will be able to comply with the requirements of this section.

(g) (1) The results of a breath or blood test for the use of alcohol, conducted by Federal, State, or local officials having independent authority for the test, shall be considered to meet the requirements of this section, provided such tests conform to the applicable Federal, State or local alcohol testing requirements, and that the results of the tests are obtained by the employer.

(2) The results of a urine test for the use of controlled substances, conducted by Federal, State, or local officials having independent authority for the test, shall be considered to meet the requirements of this section, provided such tests conform to the applicable Federal, State or local controlled substances testing requirements, and that the results of the tests are obtained by the employer.

***382.305: Random testing**. (Excerpt)*

(i) (1) The selection of drivers for random alcohol and controlled substances testing shall be made by a scientifically valid method, such as a random number table or a computer-based random number generator that is matched with drivers' Social Security numbers, payroll identification numbers, or other comparable identifying numbers.

(2) Each driver selected for random alcohol and controlled substances testing under the selection process used, shall have an equal chance of being tested each time selections are made.

(3) Each driver selected for testing shall be tested during the selection period.

*(j) (1)To calculate the total number of covered drivers eligible for random testing throughout the year, as an employer, you must add the total number of covered drivers eligible for testing during each random testing period for the year and divide that total by the number of random testing periods. Covered employees, and only covered employees, are to be in an employer's random testing pool, and all covered drivers must be in the random pool. If you are an employer conducting random testing more often than once per month (**e.g.**, daily, weekly, bi-weekly) you do not need to compute this total number of covered drivers rate more than on a once per month basis.*

2) As an employer, you may use a service agent (e.g., a C/TPA) to perform random selections for you, and your covered drivers may be part of a larger random testing pool of covered employees. However, you must ensure that the service agent you use is testing at the appropriate percentage established for your industry and that only covered employees are in the random testing pool.

(k) (1) Each employer shall ensure that random alcohol and controlled substances tests conducted under this part are unannounced.

(2) Each employer shall ensure that the dates for administering random alcohol and controlled substances tests conducted under this part are spread reasonably throughout the calendar year.

(l) Each employer shall require that each driver who is notified of selection for random alcohol and/or controlled substances testing proceeds to the test site

immediately; provided, however, that if the driver is performing a safety-sensitive function, other than driving a commercial motor vehicle, at the time of notification, the employer shall instead ensure that the driver ceases to perform the safety-sensitive function and proceeds to the testing site as soon as possible.

(m) A driver shall only be tested for alcohol while the driver is performing safety-sensitive functions, just before the driver is to perform safety-sensitive functions, or just after the driver has ceased performing such functions.

(n) If a given driver is subject to random alcohol or controlled substances testing under the random alcohol or controlled substances testing rules of more than one DOT agency for the same employer, the driver shall be subject to random alcohol and/or controlled substances testing at the annual percentage rate established for the calendar year by the DOT agency regulating more than 50 percent of the driver's function.

(o) If an employer is required to conduct random alcohol or controlled substances testing under the alcohol or controlled substances testing rules of more than one DOT agency, the employer may—

> *(1) Establish separate pools for random selection, with each pool containing the DOT-covered employees who are subject to testing at the same required minimum annual percentage rate; or*
>
> *(2) Randomly select such employees for testing at the highest minimum annual percentage rate established for the calendar year by any DOT agency to which the employer is subject.*

382.307: Reasonable suspicion testing.

(a) An employer shall require a driver to submit to an alcohol test when the employer has reasonable suspicion to believe that the driver has violated the prohibitions of subpart B of this part concerning alcohol. The employer's determination that reasonable suspicion exists to require the driver to undergo an alcohol test must be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the driver.

(b) An employer shall require a driver to submit to a controlled substances test when the employer has reasonable suspicion to believe that the driver has violated the prohibitions of subpart B of this part concerning controlled

substances. The employer's determination that reasonable suspicion exists to require the driver to undergo a controlled substances test must be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the driver. The observations may include indications of the chronic and withdrawal effects of controlled substances.

(c) The required observations for alcohol and/or controlled substances reasonable suspicion testing shall be made by a supervisor or company official who is trained in accordance with § 382.603. The person who makes the determination that reasonable suspicion exists to conduct an alcohol test shall not conduct the alcohol test of the driver.

(d) Alcohol testing is authorized by this section only if the observations required by paragraph (a) of this section are made during, just preceding, or just after the period of the work day that the driver is required to be in compliance with this part. A driver may be directed by the employer to only undergo reasonable suspicion testing while the driver is performing safety-sensitive functions, just before the driver is to perform safety-sensitive functions, or just after the driver has ceased performing such functions.

(e) (1) If an alcohol test required by this section is not administered within two hours following the determination under paragraph (a) of this section, the employer shall prepare and maintain on file a record stating the reasons the alcohol test was not promptly administered. If an alcohol test required by this section is not administered within eight hours following the determination under paragraph (a) of this section, the employer shall cease attempts to administer an alcohol test and shall state in the record the reasons for not administering the test.

(2) Notwithstanding the absence of a reasonable suspicion alcohol test under this section, no driver shall report for duty or remain on duty requiring the performance of safety-sensitive functions while the driver is under the influence of or impaired by alcohol, as shown by the behavioral, speech, and performance indicators of alcohol misuse, nor shall an employer permit the driver to perform or continue to perform safety-sensitive functions, until:

(i) An alcohol test is administered and the driver's alcohol concentration measures less than 0.02; or

(ii) Twenty four hours have elapsed following the determination under paragraph (a) of this section that there is reasonable suspicion to believe that the driver has violated the prohibitions in this part concerning the use of alcohol.

(3) Except as provided in paragraph (e)(2) of this section, no employer shall take any action under this part against a driver based solely on the driver's behavior and appearance, with respect to alcohol use, in the absence of an alcohol test. This does not prohibit an employer with independent authority of this part from taking any action otherwise consistent with law.

(f) A written record shall be made of the observations leading to an alcohol or controlled substances reasonable suspicion test, and signed by the supervisor or company official who made the observations, within 24 hours of the observed behavior or before the results of the alcohol or controlled substances tests are released, whichever is earlier.

382.309: Return-to-duty testing.

The requirements for return-to-duty testing must be performed in accordance with 49 CFR part 40, subpart O.

382.311: Follow-up testing.

The requirements for follow-up testing must be performed in accordance with 49 CFR part 40, subpart O.

382.413: Inquiries for alcohol and controlled substances information from previous employers.

Employers shall request alcohol and controlled substances information from previous employers in accordance with the requirements of § 40.25 of this title.

Substance Abuse Professional (SAP)
SAPs play a vital role in the drug and alcohol testing program. If an individual tests positive, the employer must refer the individual to a SAP. The SAP will recommend appropriate education, treatment, and follow-up. This does not mean that an employer must retain an employee who has tested positive. Follow your district policy.

Prescription and over the counter drugs (OTC), that affect your job performance are prohibited.

Legal drugs that affect your job performance:

- **Alcohol -** The most abused drug! It depresses the central nervous system. Effects: Impairs judgment, gives a false sense of confidence, reduces vision, hearing is less acute, concentration is difficult, speech and balance are affected, and reactions are slowed.

- **Amphetamines -** Used primarily as a central nervous system stimulant. Example: Dexatrim (weight control). Effects: Changes in perception, over extension of the body's capabilities.

- **Antihistamines -** Found in allergy and cold medicines. Examples: Triaminic DH expectorant, Nyquil. Effects: Drowsiness, dizziness, slowed reflexes, impaired mental and physical abilities.

- **Barbiturates -** Acts on the nervous system. Example: Sleeping pills. Effects: Slowed reflexes.

- **Hallucinogens -** Drugs that produce hallucinations. Examples: Peyote and sometimes ethyl alcohol. Effects: Gives false perceptions, the mind wanders, an individual may be distraught.

- **Hypertension drugs -** Used to control blood pressure. Effects: May cause emotional instability at times.

- **Inhalants -** Produces a quick "high." Examples: Solvents (glue), aerosol sprays (Binaca), anesthetics (ether). Effects: Dulls judgment, slows reflexes, reduces vision, hinders muscle control, distorts perceptions, and may cause sudden unconsciousness.

- **Narcotics -** Depress the central nervous system, relieving pain and inducing sleep. Examples: Codeine, Morphine. Effects: Drowsiness, slowed reflexes, impaired judgment.

- **Tranquilizers -** Anti-anxiety for relaxation. Examples: Valium, Librium. Effects: Drowsiness, slowed reflexes, impaired judgment.

- **Prescription drugs or over the counter medications** - The driver should ask their doctor or pharmacist what side effects a drug may have. There are certain drugs that cannot be taken while performing safety sensitive employment.

Any illegal drug or drugs that have not been prescribed by a licensed doctor are prohibited.

Medical Marijuana

Medical use of marijuana is not protected by the federal Americans with Disabilities Act, because the federal government does not recognize medical marijuana. All school bus drivers with a CDL are subject to drug testing under federal law. A medical marijuana card holder who gets pulled over for suspicious driving will be ticketed with a DUI for being under the influence of marijuana. If a card holder shows up for work and appears to show signs of impairment, the employer has every right to have the employee tested for reasonable suspicion. If the employee tests positive, the driver is subject to the consequences of the district's workplace drug policy. If a card holder is selected for a random drug test and tests positive for THC, the card holder is subject to the district's policy concerning a positive drug test.

Marijuana, students, and school buses do not mix!

TIPS:

- Failure to submit to testing is considered a refusal to test and is treated the same as a positive drug test.
- When your doctor is prescribing medication, let him/her know that you are a CDL driver and ask about any effects on ability to function properly.
- Notify your transportation supervisor when taking any prescription medication.
- When taking a drug test, neither you nor the tester should let the specimen out of your sight until it has been poured into two separate bottles and properly sealed.
- THC can be detected in your system for at least 30 days.

For additional guidance concerning the drug and alcohol testing program, contact your drug testing agency or refer to FMCSR 49 CFR 382.

UNIT THREE - DRIVER AND VEHICLE READINESS

PERSONAL PRE-TRIP

The personal pre-trip is just as important as the vehicle pre-trip.

Factors that influence a driver's well-being are physical, emotional, and mental attitude. Stress in any of these areas can affect driving performance. Under physical, emotional, or mental stress a driver may have trouble concentrating and may experience slowed reaction time.

Being Well rested - Fatigue is one of the major contributing factors to accidents. A well rested driver is more alert to emergency situations and is less likely to misjudge speed and distance. A driver who gets an adequate amount of rest is less likely to overreact to stress created by traffic and passengers.

Drivers must know and be in compliance with the Hours of Service rules and not exceed them. Refer to 1 CCR 301-26, 4204-R-16.00 Maximum Driving Time for School Transportation Vehicle Operators in Unit Two.

Physical health - Both illness and the medicine to combat it can interfere with concentration, coordination, and decision-making abilities. Medications such as cold treatments may cause more problems with driving ability than the illness itself. Behind the wheel of a school bus is no place to combat the flu.

Proper dress - Clothing contributes both to safety and the school bus driver's professional image. Loose clothing, drawstrings, unsecured long hair, and jewelry may be caught in equipment. Shoes with smooth soles or spiked heels may cause ankle injuries or slipping and falling on uneven or slick surfaces. Clothing and footwear must be appropriate for road and weather conditions. Footwear should be firm and stable, with no open toes or heels, and should fit securely to the foot. Remember, as a professional driver, clothing that is provocative, advertises drugs, tobacco, alcohol, or sex should not be worn. Individual districts/service providers shall establish a proper dress code.

Drivers who present a professional image gain respect from their passengers.

Drugs and/or alcohol – The use of any drugs or alcohol prior to or while driving is prohibited. (See Unit Two for specific information)

Confidence - Confidence is also a factor. Over confident drivers may take unnecessary chances. Under confident drivers may not make critical driving decisions in a timely manner.

Emotional and personal problems - Driving is no place to rehearse arguments or re-live family fights. When such strong emotional events dominate a drivers thoughts, safe driving observations or the ability to make sound decisions is affected.

Mental health - Generally speaking, the problems that fall into this category do not come on suddenly and, while treatable, this usually requires time. Mental health is closely related to emotional upsets and/or to physical problems. Being depressed over a long period of time, with or without apparent reason, may be related to physical factors or brain chemical imbalances that characterize a mental condition.

Drivers experiencing on-going mental or emotional problems may need help from a professional. Seeking out available resources is the first step.

Self-esteem - These factors generally cannot be changed in a short period of time, but they do affect driving. Studies show that drivers who lack self-esteem have more accidents.

In conclusion, know when you, the professional driver, are "fit and ready" to drive the school vehicle. Know and acknowledge when you need help in becoming "fit and ready" to safely transport students. Safely transporting students is our business.

PRE-TRIP /POST-TRIP THE VEHICLE

1 CCR 301-26 4204-R-8.00 Pre-trip/Post-trip Vehicle Inspections

8.01 Each school transportation vehicle shall have a daily pre-trip and post-trip inspection performed and documented by the school transportation vehicle operator, or a district/service provider authorized transportation employee. Daily pre-trip inspections shall be completed prior to the vehicle being placed in service. Daily post-trip inspections shall be completed at the end of daily work on each vehicle operated.

8.02 The pre-trip and post-trip inspection requirements for school transportation vehicles, other than small vehicles, shall include at a minimum all items listed on the CDE School Transportation Vehicle (School Bus) - Pre-Trip and Post Trip Requirements (STU-9) Form.

8.03 The pre-trip and post-trip inspection requirements for school transportation small vehicles shall include at a minimum all items listed on the CDE School Transportation Vehicle (Small Vehicle) - Pre-Trip and Post Trip Requirements (STU-8) Form.

8.04 School districts and service providers shall have a procedure in place to verify that students are not left on an unattended school transportation vehicle.

PRE-TRIP

Additional inspection items may be determined by the district/service provider.

Pre-trip inspections contribute to safety and will add miles of trouble-free operation to the life of the school bus. These pre-trip inspections should consistently be routine and thorough.

Regardless of the engineering skill or workmanship incorporated in a school transportation vehicle, it cannot continue to deliver maximum safety, economy, and dependability unless it is properly maintained.

Defects cannot be repaired if they are not documented.

Electronic documentation is acceptable.

The following is an example of checks and tests to determine if your vehicle is safe and in good working order. Inspection will vary according to the type of vehicle being inspected and according to individual district procedure. The pre-trip inspection must be documented on a district form (according to your district procedure). Documentation shall include date, vehicle ID, items inspected, defects reported, and signature of person performing inspection. Additional documentation is required to include the action taken to correct defects.

VEHICLE APPROACH

- Check for signs of fluid leakage underneath, objects hanging, or vehicle leaning. A flashlight is needed when it is dark.

ENGINE COMPARTMENT

- **Oil Level** - Within the safe operating range on dipstick.
- **Transmission Fluid Level** - Within the safe operating range on dipstick.
- **Coolant Level** - Within the safe operating range in sight glass or translucent tank.
- **Power Steering Fluid** - Within the safe operating level on dipstick or reservoir. Note if pump is belt or gear driven.
- **Windshield Washer Fluid Level** - Sufficient fluid for use during entire trip.
- **Water Pump** - Check if secure and not leaking. (Belt or gear driven)
- **Alternator** - Secure, no frayed wires or loose connections. (Belt driven)
- **Air compressor** (if equipped with air brakes) - Secure, no missing or broken bolts. May be belt driven or direct drive.
- **Master Cylinder** (if equipped with hydraulic brakes) - No leaks, fluid in safe operating range.

- **Hoses** - No cracks, cuts, holes, leaks, loose connections, rubbing or excessive wear.
- **Engine Belts** - No more than 1/2 to 3/4 inch play, no fraying, visible cuts, cracks, or excessive wear. Identify each belt individually and know which component the belt operates. Newer buses will have only one belt.
- **Wiring** - Check that it is secured, not frayed, and has no visible signs of rubbing. Wiring should not be broken or exposed.
- **Other items** may include: turbo, frame, exhaust, etc.

INSIDE THE VEHICLE

- **Passenger Entry** - Door opens and closes correctly, steps are secure and free of tripping hazards, treads are not loose or excessively worn, handrail is secure, and there is nothing in the passenger entry that has the potential of catching clothing, backpacks, etc. as passengers are entering or exiting.
- **Driver's Seat** - Seat belt is adjusted, functioning properly and properly secured. Seat secure and adjusted for the driver to reach pedals properly.
- **Clutch/Gearshift** - Before you start the engine, depress the clutch and select neutral. In vehicles with automatic transmissions, select park (if available) or neutral.
- **Starter Interlock System Warning Device** - Device will sound if emergency exit(s) are locked, and vehicle should not start.
- **Low Air Pressure Warning Device** - Warning device may sound when engine is first started and when air pressure is at or below 60 psi.
- **Gauges** - Oil pressure, water temperature, ammeter/voltmeter, fuel, and air pressure gauges (if air-brake equipped)
    - Oil Pressure Gauge - Should be within predetermined range established for the bus. Note: If the bus is equipped with a warning light in addition to the gauge, it may light up as the bus is started, but should go off immediately after the engine starts. If the light remains on or the gauge does not build to proper pressure, shut down the engine and report the problem immediately to fleet maintenance.
    - Temperature Gauge - Indicates temperature of coolant in engine. "Cold" is the proper reading when the engine is first started. The gauge should move slowly to mid-dial as the engine warms up. If the gauge reads "hot" or the temperature warning light comes on, shut off the engine and report the problem immediately to fleet maintenance.
    - Ammeter Gauge - Indicates electrical charge from the alternator to the electrical system. If discharging, stop engine and report the problem to fleet maintenance.

- Voltmeter Gauge - Indicates condition of the battery.
- Gauge - Should be operable and indicating a safe margin of fuel for the trip.
- Air Pressure Gauge - See below.

Do not drive the vehicle if the vehicle fails any part of the brake checks.

- **Park Brake Check** – Hydraulic or air brakes.
  - Start engine. (For air brake equipped vehicles, build air pressure to governed cut-out.)
- **Brake Checks:**
  - **Parking brake check** - With parking brake set and the bus in a forward gear, accelerate to 1,000 rpm. If the vehicle moves, report it immediately to fleet maintenance for adjustment before putting the vehicle in service.
  - **Service Brake Check -** Hydraulic or air brakes. Release park brake. Gently pull forward a few feet and apply the service brake. The vehicle should stop with no pulling to the right or left.
  - **Air Brake Check - 1-2-3-4 Test** - This test procedure is designed to ensure that the safety devices of the air brake system operate correctly as air pressure drops from normal to low air supply. (There may be some variance in ignition key position in order to get gauge readings.)
    - **Compressor - B**uild pressure to governed cut-out. Should read 120-125 psi. Chock wheels if necessary.
    - **Air Pressure Gauge** - Shut off engine, disengage parking brake, fully apply service brake and hold for one minute, checking air pressure gauge. After the initial application drop, air pressure should not drop more than three pounds in one minute.
    - **Warning Devices** - Turn key to on position. "Fan off" air pressure by applying and releasing service brake. Low air warning devices (buzzer, light) must activate by the time the air pressure reaches 60 psi.
    - **Parking Brake Valve** - Continue to "fan off" air pressure. Parking brake valve should close (pop out) between 10 and 40 psi, depending on vehicle. Start engine and restore air pressure to 100-120 psi.
- **Hydraulic Brake Check** – Engine running, pump brake pedal three times, and hold fully depressed for five seconds. The brake pedal should not move.
  - For vehicles equipped with hydraulic assist, with the key off, depress the brake pedal and listen for the sound of the reserve electric motor.

- **Steering Play** - Should be no more than two inches of free-play in a 20-inch wheel when moving steering wheel left and right. The engine should be running on vehicles equipped with power steering. Use one finger in order to get a better feel of the resistance points.
- **Mirrors and Windshield** - Mirrors should be clean, properly adjusted, not cracked or loose and with no obstructions. Windshield should be clean, not cracked, pitted, or shattered and have no obstructions.
- **Wipers/Washer Fluid** - Operate wipers on high and low using washer fluid. Wiper arms/blades should be secure, working properly, not cracked, damaged, or worn.
- **Dash Indicator Lamps** – Should work when the corresponding directional signals, emergency 4-way flashers, 8-way warning system, and when high and low beam headlights are turned on.
- **Horn(s)** - Air horn and/or electric horn working properly.
- **Heaters and Defrosters** - Heaters and defrosters should be working on all speeds. Check all panel switches.
- **Safety Emergency Equipment** - Electrical fuses, if so equipped, or circuit breakers, three red reflective triangles, body fluid cleanup kit, one 24-unit first aid kit, and fire extinguisher properly charged and rated (ABC) with pin secured with plastic tie.

Shake fire extinguisher on a regular (at least once per month) basis.

- **Seating** - No broken or loose seat frames, unsecured cushions, damaged foam or padding. The flip seat next to a side emergency door must fully retract by itself.
- **Emergency Exits** - Emergency windows, roof hatches and service/emergency doors are labeled "Emergency Exit" in two inch letters, and must open and close easily from inside. Warning devices on emergency exit doors and windows must operate properly.

OUTSIDE THE VEHICLE

- **Stairwell Light and Exterior Passenger Entry Light** – Check that light(s) are working and lens are not broken.
- **Mirrors** – Ensure mirrors are securely attached, and properly adjusted, clean, with nothing obstructing the view.
- **Fuel Door** - Door latches properly.
- **Fuel Tank** - Securely attached with no leaks, fuel cap present.

- **Reflective Tape** - Reflective tape on the exterior of the vehicle should be intact.
- **Exterior Lights** - Check that all lights are clean and not cracked or broken and there is no moisture, soot, or dirt inside of lens. Ensure light is coming out of the entire lens area, not just a small portion. Check that all outside lights are illuminated and functioning properly. This would include: front and rear 8-way warning light system (both amber and red lights), low and high beam headlights, taillights, brake lights, left and right turn signals, 4-way hazard flashers (front and rear), and reverse lights. Stop arm must extend completely, with lights flashing alternately. Lenses should not be damaged, and there should be no broken or frayed wires. Reflective red coloring should not be excessively faded.
- **Clearance Lights** - (Red for rear, amber for side and front) All outside clearance lights should be clean and clearly illuminated. Check that none are broken or missing.
- **Reflectors** - Check that reflectors are clean, not missing or broken, are the proper colors (red for back and yellow for front and sides), and reflect or illuminate properly.
- **Emergency Exits** - Check lettering ("Emergency Exit" in two inch lettering), and operation of emergency doors and windows. Doors and windows must have an audible alarm. Emergency exit doors must open and close easily from outside.
- **Battery Box** - Battery is secure, no corrosion, door and battery tray securely latched.

STEERING

- **Steering Box** - Securely mounted, no leaks, missing nuts, bolts or cotter keys.
- **Steering Linkage** – Steering components – Steering column, boot, steering box, pitman arm, drag link, radius arm, and tie rod. No loose or missing nuts, bolts, or cotter keys. No excessive wear, cracks, or broken parts.

FRONT SUSPENSION

- **Springs** - No cracked, shifted, broken or missing leaf springs. No broken, distorted or loose coil springs or shackles.
- **U bolts** are present and secure.
- **Spring Mount** - No cracked or broken spring hangers. No missing or damaged bushings; no broken, loose or missing axle mounting parts.
- **Shock Absorber** - Securely mounted and no leaks.

FRONT WHEELS

- **Rims** - No welded, damaged, or bent rims or rust.

- **Hub Grease/Oil Seal** - No leaks, no loose or missing nuts. Adequate oil level in sight glass, if equipped.
- **Tires**
  - **Tread Depth** - Tread depth minimum 4/32 inch. Recaps not allowed.
  - **Tire Condition** - No cuts or damage to sidewalls, tread, valve caps and stems, and tread evenly worn. ABC's of sidewall inspection - abrasions, bulges or cuts.
  - **Tire Inflation** - Check for proper inflation using a tire gauge or a device such as a mallet to strike the tires. A tire gauge is more accurate and is required for the CDL Skills Test.
- **Lug Nuts** - All present and tight, bolt-holes not cracked or distorted, and no rust behind lug nut, which indicates looseness.

FRONT BRAKES

- **Slack Adjustor** (air brakes) - Inspect according to district procedures. No broken, loose, or missing parts. Angle between push rod and adjustor arm should be a little approximately 90° when brakes are released and not less than 90° when brakes are applied. When pulled by hand, brake rod should not move more than approximately one inch. Slack adjusters are internal on disc brakes between the caliper and brake chamber (non-visible)
- **Brake Chamber** (air brakes) - Securely mounted, not cracked, dented, or showing signs of leaking.
- **Brake Hoses** (air or hydraulic brakes) - Couplings secure, no excessive wear, holes, fraying, cracks, or signs/sound of leaks.
- **Drums/Disc Brakes** - Most brake drums (and shoes), rotors (and pads) are protected by a rock guard and cannot be checked during the pre-trip. Ask your school bus technician for proper pre-trip procedures if there are no rock guards. If drums are visible they should be checked for cracks or other damage. There should not be any grease or oil leaking onto or from the drum area. Check for any missing bolts.

REAR WHEELS

- **Rims** - No welded, damaged, or bent rims or rust.
- **Hub Grease/Oil Seal** - No leaks and no loose or missing nuts. There is no sight glass on rear hubs.
- **Tires:**
  - **Tread Depth** - Tread depth minimum 2/32 inch.

  - **Tire Condition** - No cuts or damage to sidewalls, tread, valve caps and stems, and tread evenly worn. ABC's of sidewall inspection - abrasions, bulges or cuts.
  - **Tire inflation** – Check for proper inflation using a tire gauge or a device such as a mallet to strike the tires. A tire gauge is more accurate and is required for the CDL Skills Test.

- **Lug Nuts** - All present and tight, bolt-holes not cracked or distorted and no rust present, which indicates a loose lug nut.
- **Dual Wheels** - No obstructions between dual wheels. Most school buses are equipped with Budd wheels and no spacers. If equipped with spacers, wheels should be evenly separated, spacers centered, tires not touching each other.

REAR SUSPENSION

- **Springs** - No cracked, shifted, broken or missing leaves. No broken, distorted or loose coil springs or shackles.
- **U Bolts** are present and secure.
- **Spring Mounts** (shackles) - No cracked or broken spring hangers, no missing or damaged bushings, no broken, loose, or missing axle mounting parts.
- **Shock Absorbers** - Securely mounted and no leaks.
- **Air Ride** - Properly inflated, no loose or missing parts, and not damaged. Vehicle sits level.

REAR BRAKES

- **Slack Adjustor** (air brakes) - Inspect according to district procedures. No broken, loose, or missing parts. Angle between push rod and adjustor arm should be approximately 90° when brakes are released and not less than 90° when brakes are applied. When pulled by hand, brake rod should not move more than approximately one inch. Slack adjusters are internal on disc brakes between the caliper and brake chamber (non-visible)
- **Brake Chamber** (air brakes) - Securely mounted, not cracked, dented, or showing signs of leaking.
- **Brake Hoses** (air or hydraulic brakes) - Couplings secure, no excessive wear, holes, fraying, cracks, or signs/sound of leaks.
- **Drums/Disc Brakes** - Most rear brake drums (and shoes), rotors (and pads) are protected by a rock guard and cannot be checked during the pre-trip. Ask your school bus technician for proper pre-trip procedures if there are no rock guards. If drums are visible, they should be checked for cracks or other damage. There should not be any grease or oil leaking onto or from the drum area. Check for any missing bolts.

UNDER VEHICLE

- **Drive Shaft** - Not bent or cracked. Coupling joints secure and free of foreign objects, hangers secure and in place.
- **Exhaust System** - Securely mounted, no cracks, holes, or severe dents. Carbon soot indicates a possible leak. No excessive noise with engine running.
- **Frame** - No cracks, broken manufacturers' welds, or holes in floor. No loose, cracked, bent, missing, or broken cross members.

OPTIONAL EQUIPMENT

Inspect all equipment such as dropdown chains, retarders, wheelchair lifts or ramps, wheelchair and passenger securement and other special needs equipment for missing parts, damage, and proper working condition.

MIRROR ADJUSTMENTS

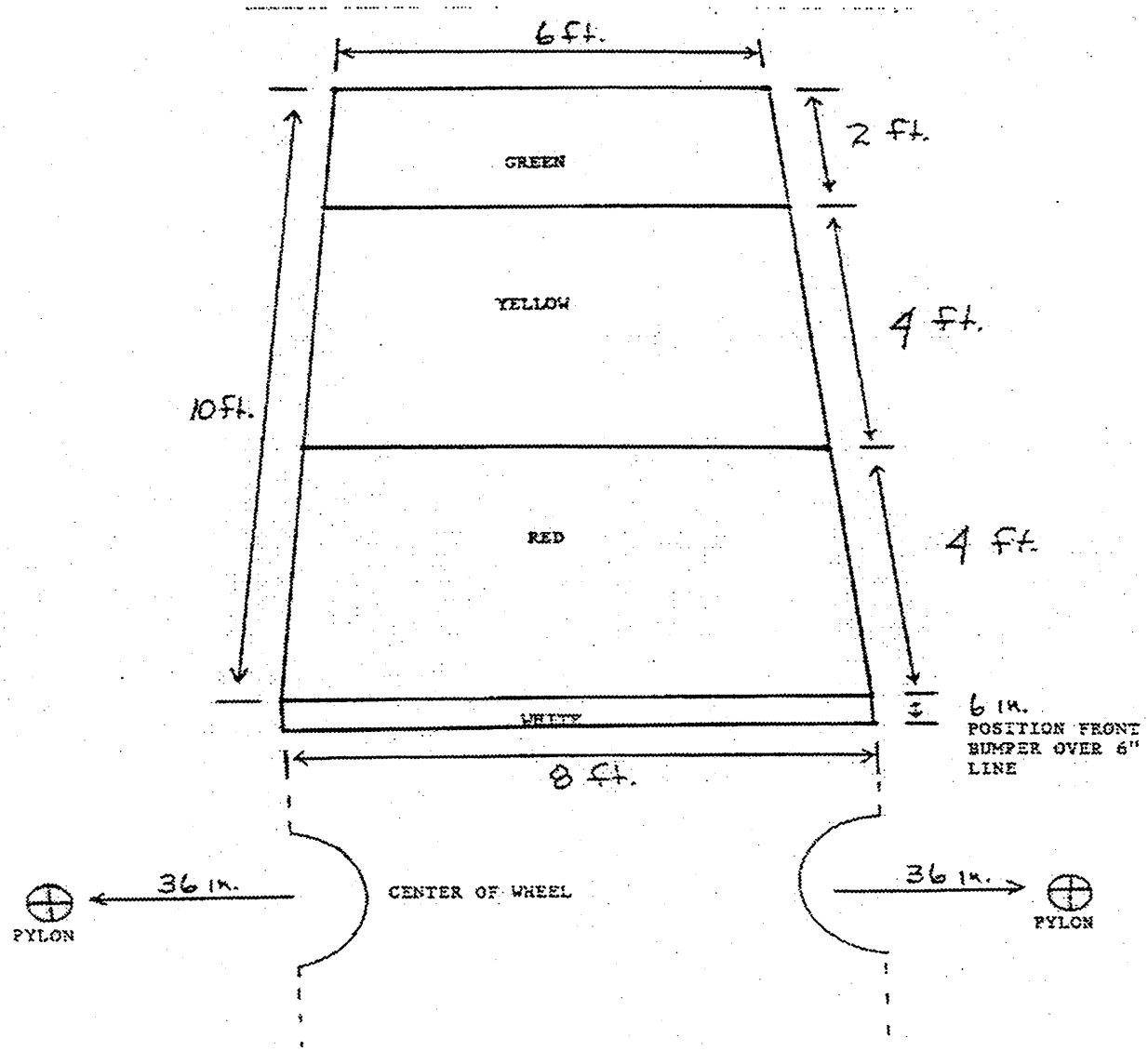
Before departing for a bus route or trip, make sure the mirrors are adjusted properly. The following grids can be painted or marked on the ground in the parking lot to allow each driver to check mirror adjustments before departure. The driver should adjust the seat so they may see properly in the mirrors, sitting straight and back in the seat, with feet flat on the floor.

MIRROR GRID FOR PROPER MIRROR ADJUSTMENT (Pre-FMVSS 111)

Front Mirrors - View front bumper and full painted area.

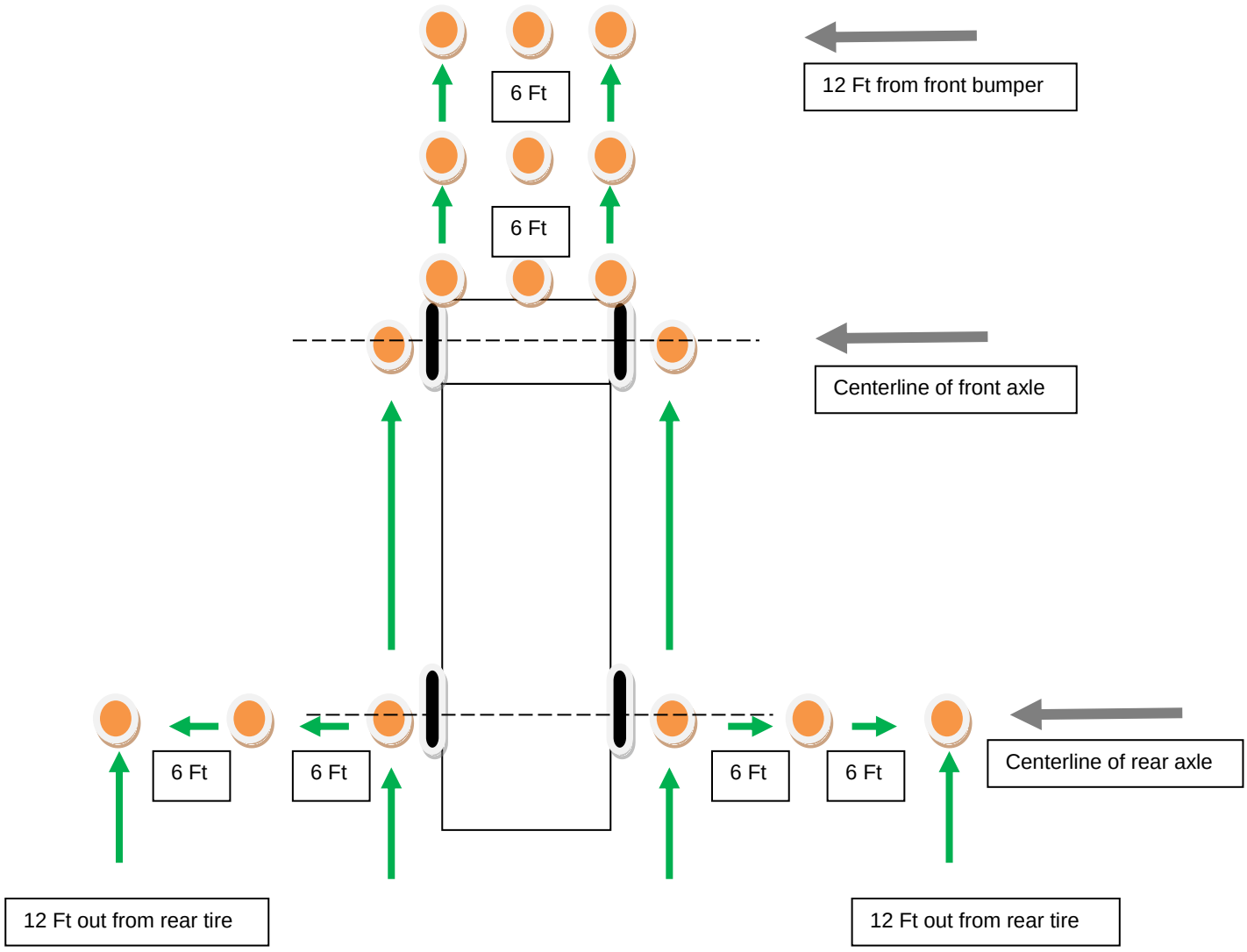
Side Mirrors - View wheel and pylon.

Assists driver when judging distance in front of vehicle.



FMVSS 111, Convex Cross-View Mirrors on School Buses

If there is not sufficient room to paint the grid, try using different colored Frisbees laid out at the distances shown in the diagram.



POST-TRIP INSPECTION

A post-trip inspection can detect problems that have occurred while on the route. Following is an example of a post-trip inspection. Individual districts may establish own procedure. As with the pre-trip, the post-trip must be documented. **Refer to 1 CCR 301-26 4204-R-8.00 Pre-trip/Post-trip Vehicle Inspections**

BUS EXTERIOR

Perform a walk around inspection looking for burned out bulbs, air leaks in tires or bus damage so immediate repairs may be made before the vehicle is needed again. This will prevent the vehicle from being taken out of service for small, easily repaired items.

Walk Around

- Check all lights.
- Look for damage to the vehicle.

Articles left on the Bus

Open windows/doors

Damage Vandalism

Mechanical Problems

BUS INTERIOR

Student Check

- Check for sleeping students or items left on bus. **Refer to 1 CCR 301-26, 4204-R-8.04**
- Clean/sweep bus.
- Close windows.

Operational Problems

- Shut down all electrical equipment.
- Ensure the vehicle is fueled.

DOCUMENTATION

- Record mileage, if required.
- Report vehicle defects.

PREVENTIVE VEHICLE MAINTENANCE

1 CCR 301-26 4204-R-11.00 Maintenance and Repair

11.01 School districts and service provider must ensure all school transportation vehicles are systematically inspected, maintained and repaired to ensure that school transportation vehicles are in safe and proper operating condition.

11.02 School districts and service providers shall have a system to document preventative maintenance, reported defects, and repairs made to school transportation vehicles.

11.03 School districts and service providers shall maintain separate files for each school transportation vehicle with documentation of all annual inspections, all preventative maintenance and all reported damage, defects or deficiencies and the corresponding repair and maintenance performed.

11.04 Any identified damage, defect or deficiency of a school transportation vehicle must be reported to the school district or services provider which:

11.04(a) Could affect the safety of operation of the school transportation vehicle, or

11.04(b) Could result in a mechanical breakdown of the school transportation vehicle, or

11.04(c) Results in noncompliance with Colorado Minimum Standards Governing School Transportation Vehicles (1 CCR 301-25) and/or manufacturer's specifications.

11.04(d) Documentation for reported defects must include name of reporting party, the date and time report was documentation of all of the following:

11.04(d)(1) The name of the school district or service provider.

11.04(d)(2) Date and time the report was submitted.

11.04(d)(3) All damage, defects or deficiencies of the school transportation vehicle.

11.04(d)(4) The name of the individual who prepared the report.

11.05 Following a reported damage, defect or deficiency of a school transportation vehicle, school districts and service providers or a representative agent must repair the reported damage, defects, or deficiencies or document that no repair is necessary, ensuring that the vehicle is in safe and proper operating condition prior to transporting students.

11.06 School districts and service providers shall not transport students in a school transportation vehicle which is not in safe and proper operating condition. A school transportation vehicle shall be designated as "out-of-service" by a school district or service provider, a school transportation annual inspector or the CDE School Transportation Unit.

11.06(a) Exemption - Any school transportation vehicle discovered to be in an unsafe condition while being operated on the highway, roadway or private road may be continued in operation only to the nearest place where repairs can safely be affected. Such operation shall be conducted only if it is less hazardous to the public than to permit the vehicle to remain on the highway, roadway or private road.

11.07 Following a school transportation vehicle being placed "out-of-service", school districts and service providers or a representative agent must make required repairs, ensuring that the vehicle is in safe and proper operating condition prior to transporting students. In the event of being placed "out-of-service" during an annual inspection, the school transportation vehicle must successfully pass a CDE annual inspection prior to transporting students.

11.08 The preventative maintenance inspection on air drum brake systems shall include, at a minimum; that the brake rod travel has been measured and documented. The applied pressure method shall be used.

11.08(a) The inspection interval shall not exceed 4,000 miles for school buses equipped with a manual slack adjuster air brake system.

11.08(b) The inspection interval shall not exceed 6,000 miles for school buses equipped with an automatic slack adjuster air brake system.

11.09 The preventive maintenance inspection on air disc brake systems shall include, at a minimum; inspection and documentation of:

11.09(a) Inspect the pad thickness by checking the mechanical wear indicators

11.09(b) Inspect the visible part of the rotors for cracks, excessive wear, damage, etc.

11.09(c) Inspect running clearance. If the caliper has no movement or appears to move greater than the distances indicated by the manufacturer, then a full wheel removal inspection will be necessary.

11.09(d) The inspection interval shall not exceed 6,000 miles.

11.10 The preventive maintenance inspection for hydraulic brake systems shall include, at a minimum; inspection and documentation of:

11.10(a) proper parking brake operation

11.10(b) proper brake fluid level and clarity

11.10(c) adequate pedal reserve

11.10(d) proper hydraulic/vacuum assist operation

11.10(e) visual inspection for brake fluid leakage

11.10(f) The inspection interval shall not exceed 6,000 miles

11.11 If brake adjustment or repair is needed, the work shall be completed by or supervised by a DOT or equivalent qualified brake inspector meeting the requirements of 49 CFR 396.25.

Preventative maintenance is the regularly scheduled care of a vehicle that will aid in the dependability and maximum life of the various components. It is a carefully organized system of inspections made at regular mileage or time intervals, combined with immediate attention to all reported defects. These inspections are made up of a series of well-balanced checking procedures, combined with the process of cleaning, tightening, lubricating, and adjusting components and systems. It is the best known, simplest, and most economical means of protecting the original investment in the school bus fleet.

The driver has a responsibility in preventative maintenance. The driver is on the road with the school transportation vehicle for a number of hours each day and is in a position to observe its performance under all conditions. Learn to recognize defects and immediately report the symptoms to the vehicle maintenance department. Do not attempt to diagnose the problem. Report anything unusual that you hear, feel, see, or smell. Remember, defects cannot be repaired if they are not reported. All defects shall be documented.

Use all your senses to detect problems with the vehicle.

Driving a school transportation vehicle with a known serious defect will or can endanger the students and is illegal.

Listen for Trouble:

- Sharp knock when picking up speed
- Light knock when engine is running at idle speed
- Dull, regular knock
- Clicking or tapping noises
- Continuous or intermittent squeal or squeak
- Loud exhaust noise
- Engine backfiring, missing, popping, spitting, or overheating
- Steaming or hissing sounds

Feel for Trouble:

- Excessive vibration
- Low speed or high speed shimmy

- Hard steering or steering wander

Look for Trouble:

- Sudden change in engine temperature
- Sudden drop in oil pressure
- Low oil pressure
- No oil pressure
- Excessive oil consumption
- Smoke coming from under the dash or hood
- Scuffed tires or uneven wear
- Irregular air pressure

Smell Trouble:

- Fuel
- Burning wire insulation, rubber, oil, or rags
- Exhaust fumes
- Anti-freeze
- Hot brakes

If you don't report and document a problem, it can't be fixed.

Regardless of the engineering skill or workmanship incorporated in a school transportation vehicle, it cannot continue to deliver maximum safety, economy, and dependability unless it is properly maintained. The repair of school transportation vehicles should be left to a skilled service technician. Thorough, daily pre-trips, and early documentation of defects will prolong the life of the transportation vehicle.

CORRECTIVE VEHICLE MAINTENANCE

This program provides for the immediate repair of broken or worn parts that make driving the vehicle unsafe or illegal. Your help is vital and will be expected in reporting defects of the vehicle. If written reports are made, repairs will be made as soon as possible. If the report is not made, the service technician may not be aware of the problem until it is too late.

SERVICING OF VEHICLES

Be sure each driver is aware of their responsibility with respect to the following items:

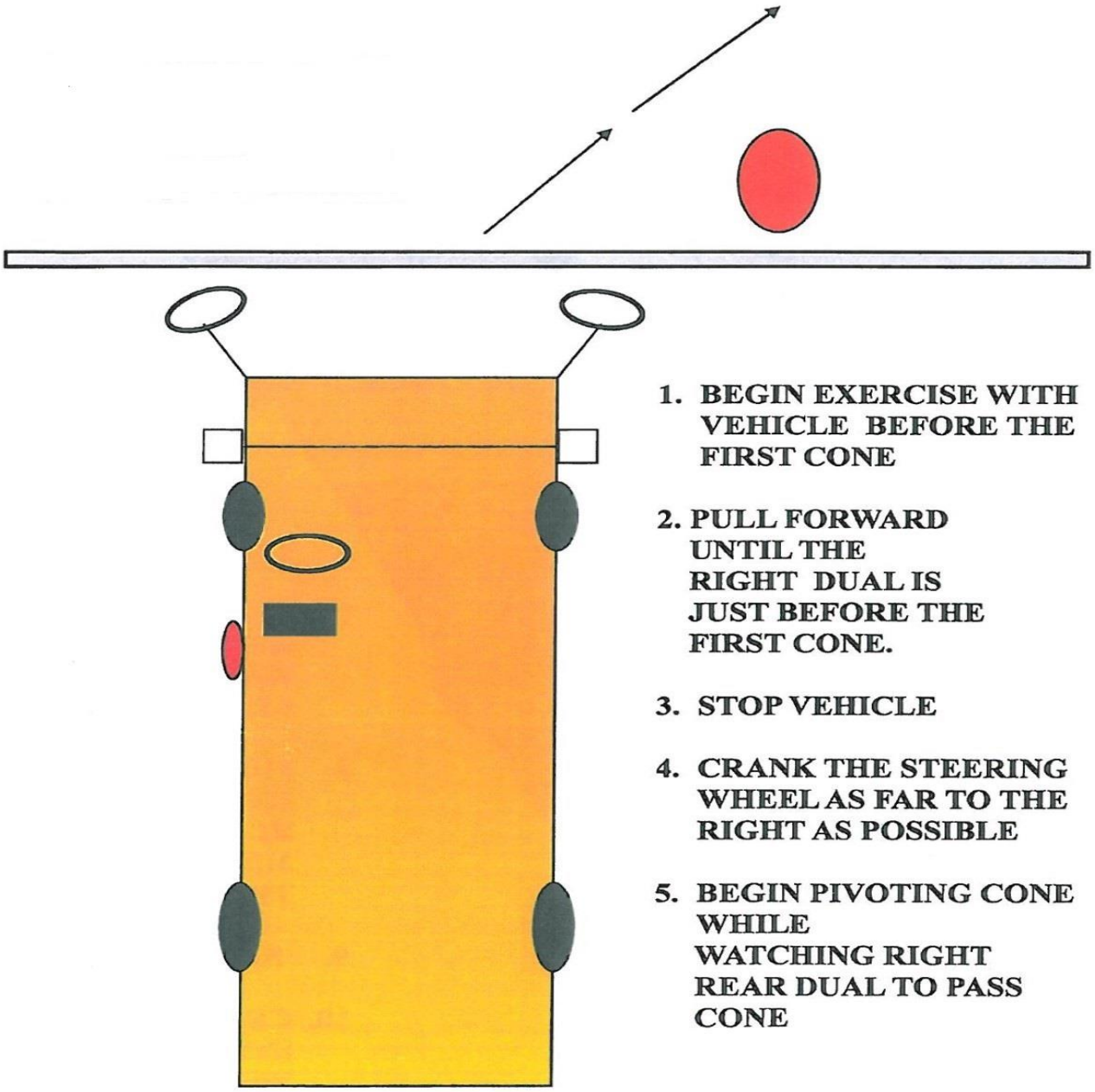
- Fueling
- Adding fluids:
    - Oil, coolant, windshield washer fluid, hydraulic brake fluid, or brake alcohol
    - Power steering fluid and transmission fluid
- Washing vehicles/interior cleanliness
- Mirrors, windshield, driver's window, passenger entrance glass, and rear windows are cleaned on a daily basis
- All lenses, reflectors and reflective tape are free of dirt
- Issuing of safety equipment as needed

UNIT FOUR – SKILLS TRAINING

The following pages will provide you with diagrams and instructions that will assist you as you learn how to maneuver the vehicle you will be driving.

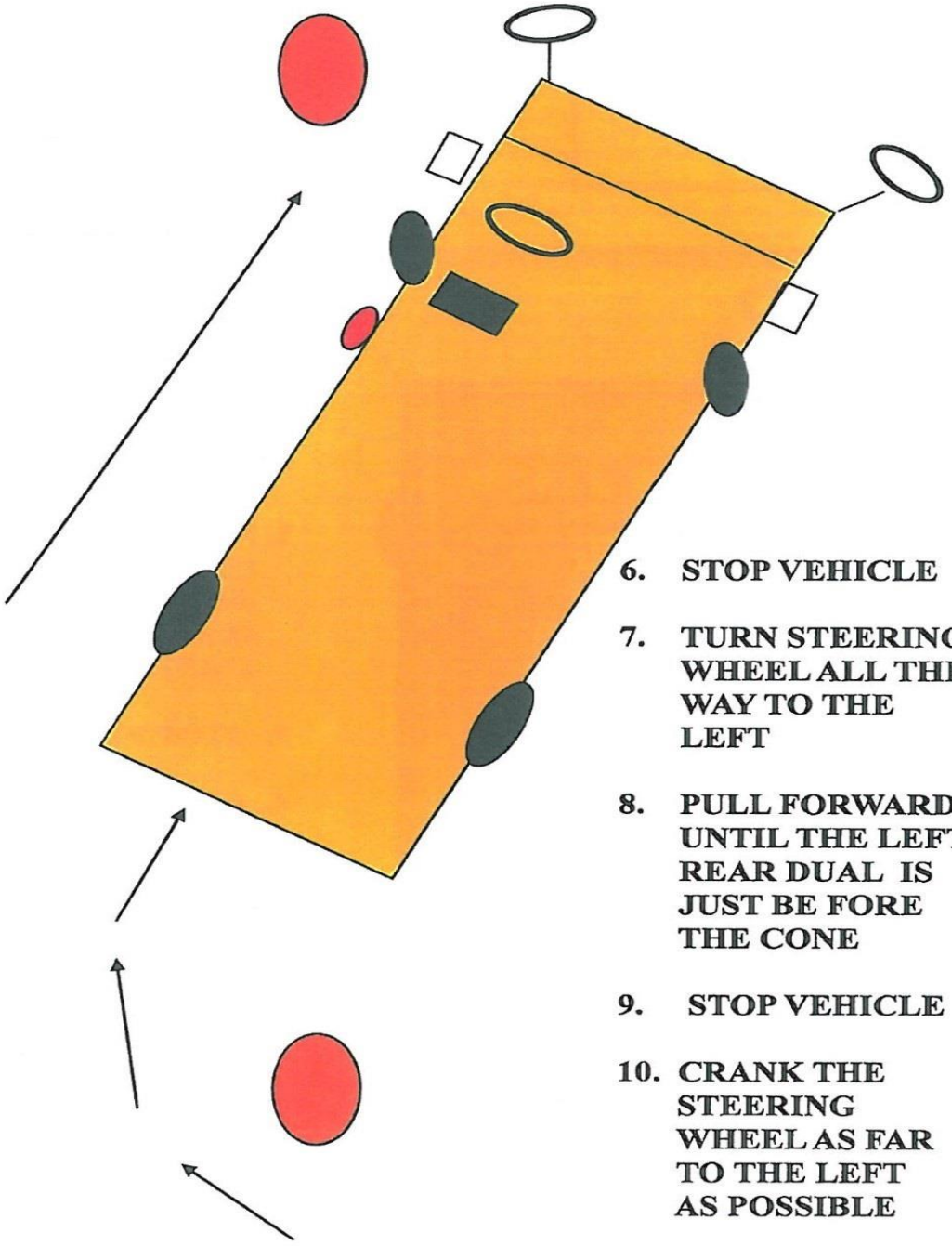
PRACTICE MAKES PERFECT

FORWARD SERPENTINE



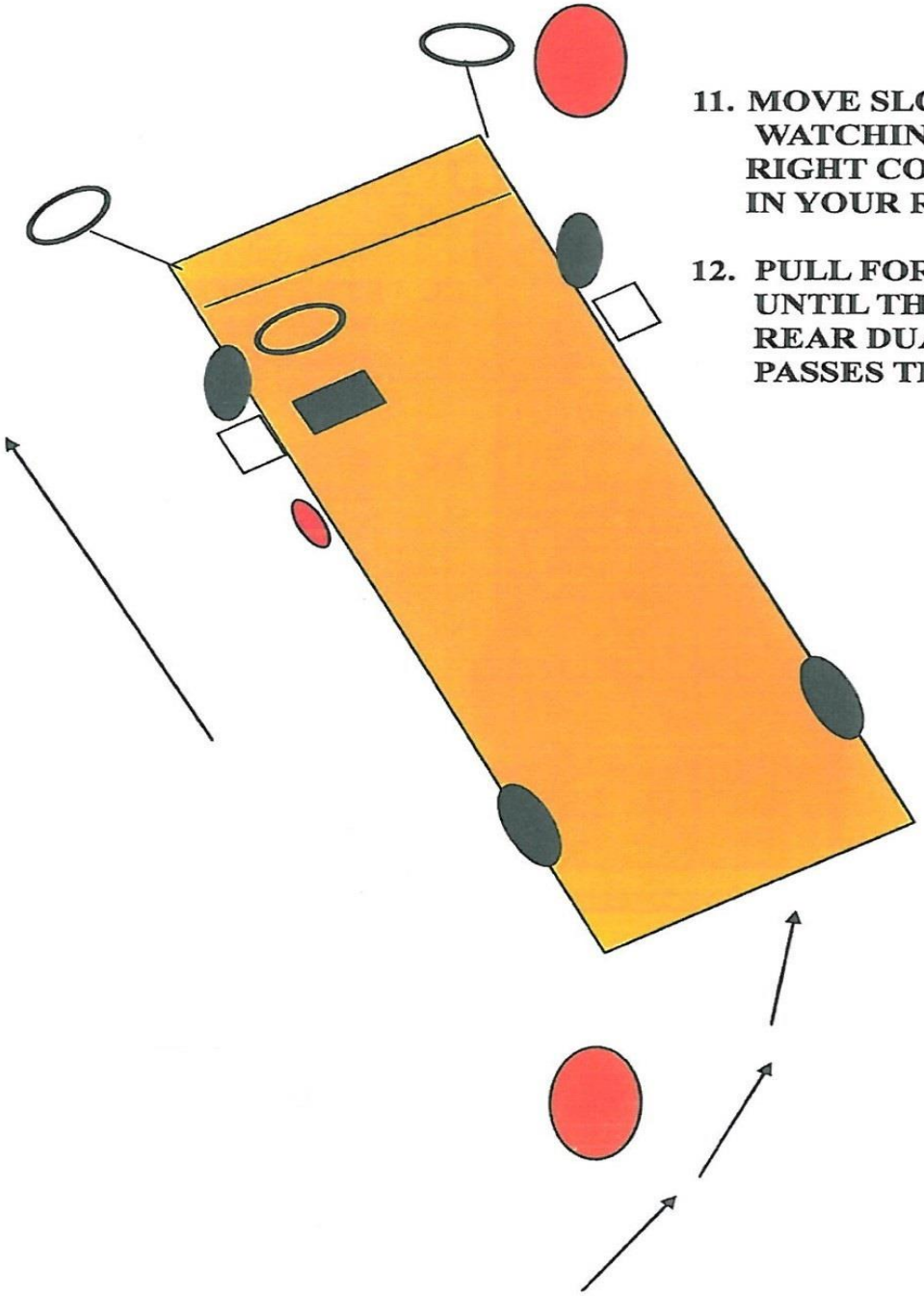
1. BEGIN EXERCISE WITH VEHICLE BEFORE THE FIRST CONE
2. PULL FORWARD UNTIL THE RIGHT DUAL IS JUST BEFORE THE FIRST CONE.
3. STOP VEHICLE
4. CRANK THE STEERING WHEEL AS FAR TO THE RIGHT AS POSSIBLE
5. BEGIN PIVOTING CONE WHILE WATCHING RIGHT REAR DUAL TO PASS CONE

FORWARD SERPENTINE



6. **STOP VEHICLE**
7. **TURN STEERING WHEEL ALL THE WAY TO THE LEFT**
8. **PULL FORWARD UNTIL THE LEFT REAR DUAL IS JUST BE FORE THE CONE**
9. **STOP VEHICLE**
10. **CRANK THE STEERING WHEEL AS FAR TO THE LEFT AS POSSIBLE**

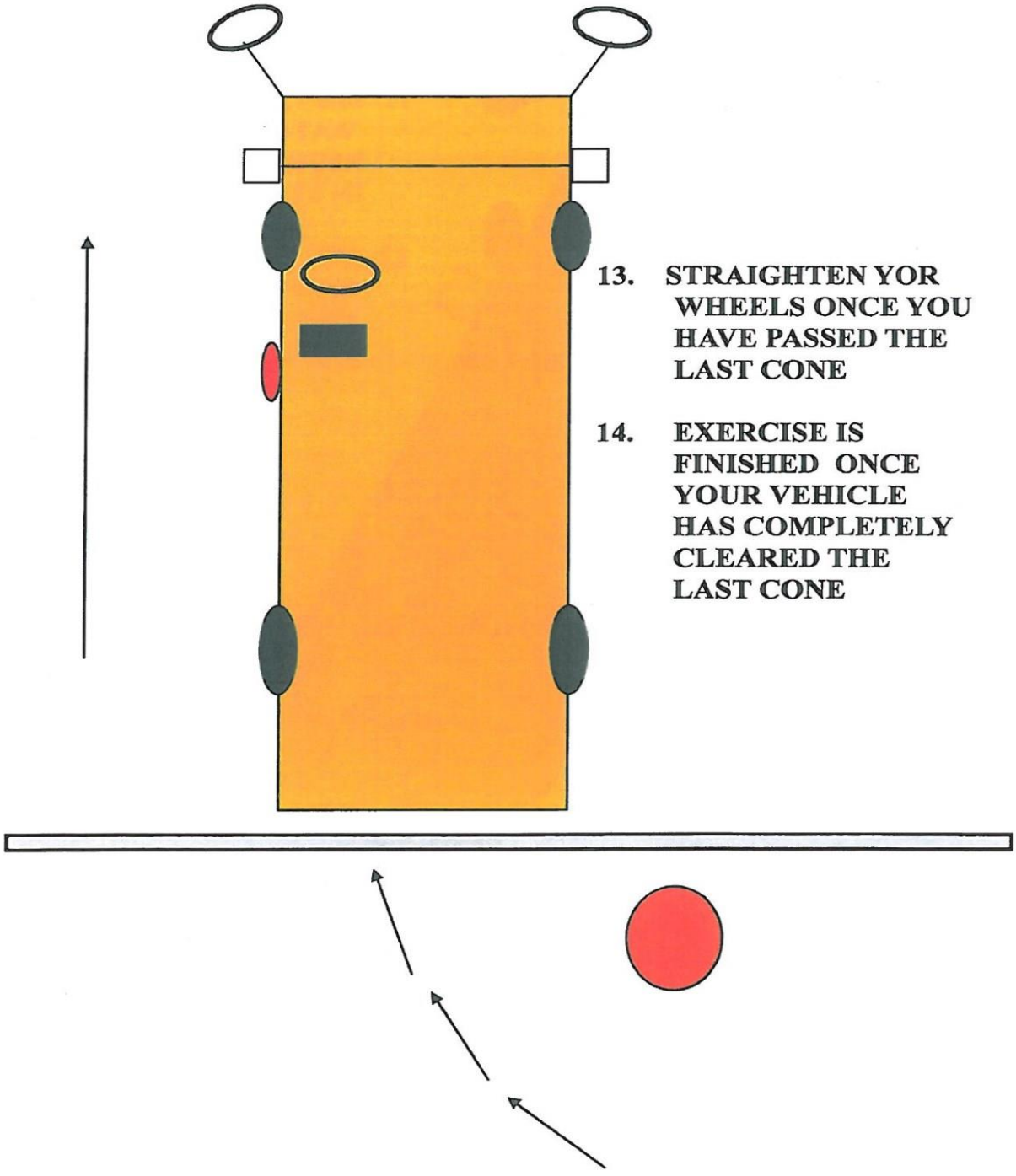
FORWARD SERPENTINE



11. MOVE SLOWLY WHILE WATCHING FOR THE RIGHT CONE TO APPEAR IN YOUR RIGHT MIRROR

12. PULL FORWARD UNTIL THE RIGHT REAR DUAL PASSES THE CONE

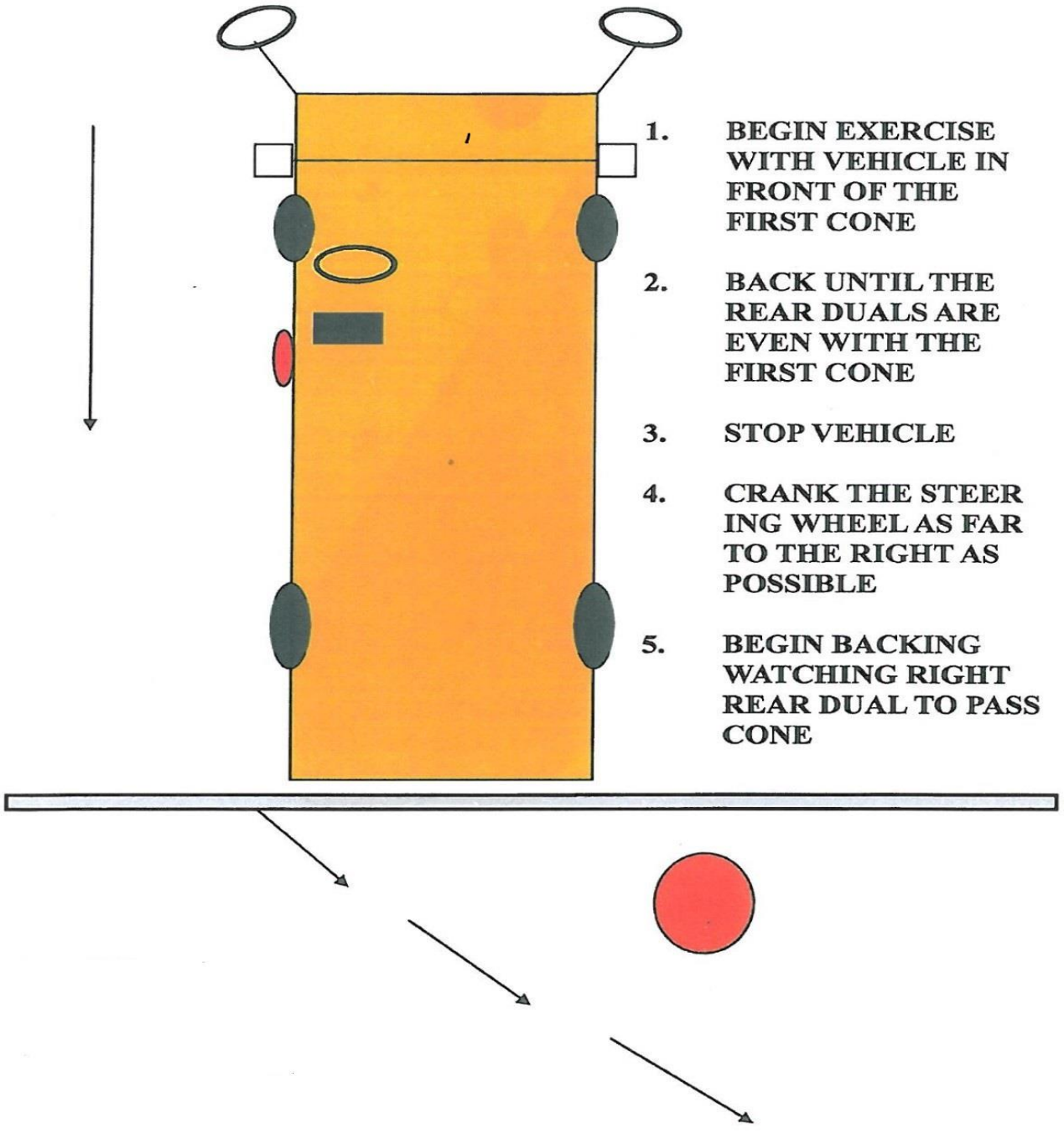
FORWARD SERPENTINE



13. **STRAIGHTEN YOR WHEELS ONCE YOU HAVE PASSED THE LAST CONE**

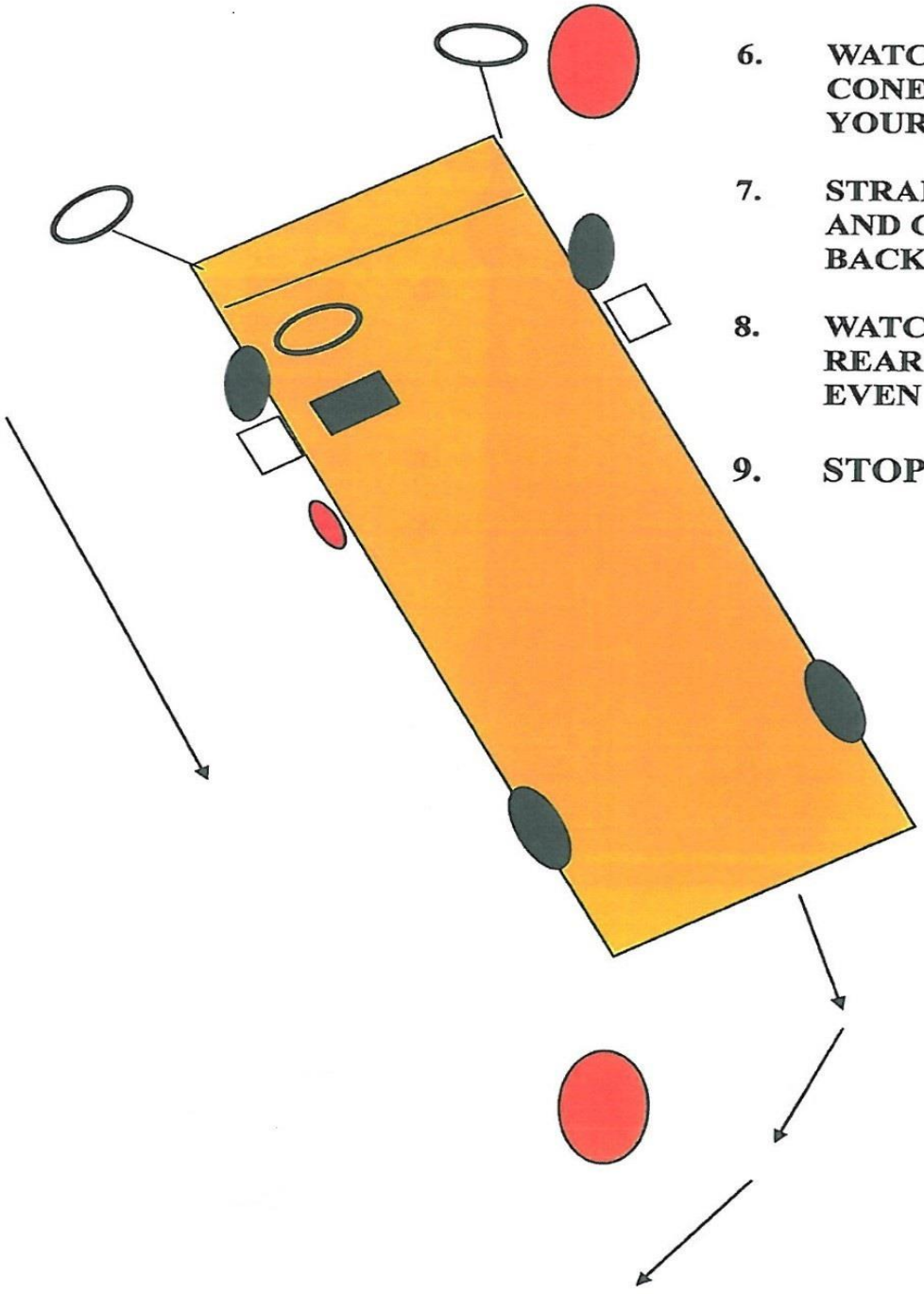
14. **EXERCISE IS FINISHED ONCE YOUR VEHICLE HAS COMPLETELY CLEARED THE LAST CONE**

BACKWARDS SERPENTINE



1. BEGIN EXERCISE WITH VEHICLE IN FRONT OF THE FIRST CONE
2. BACK UNTIL THE REAR DUALS ARE EVEN WITH THE FIRST CONE
3. STOP VEHICLE
4. CRANK THE STEER ING WHEEL AS FAR TO THE RIGHT AS POSSIBLE
5. BEGIN BACKING WATCHING RIGHT REAR DUAL TO PASS CONE

BACKWARDS SERPENTINE



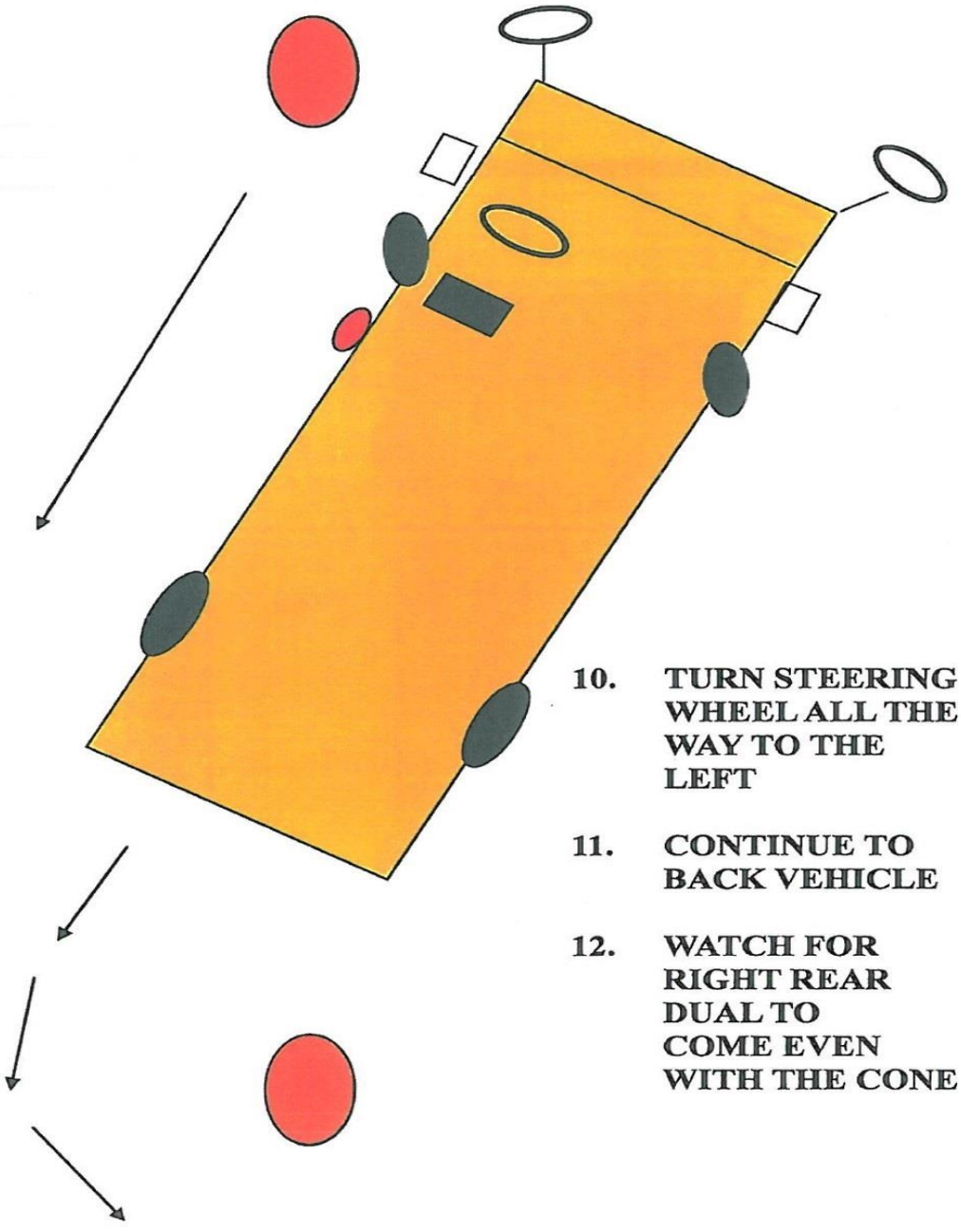
6. WATCH FOR LEFT CONE TO APPEAR IN YOUR LEFT MIRROR

7. STRAIGHTEN VEHICLE AND CONTINUE TO BACK

8. WATCH FOR YOUR LEFT REAR DUAL TO BECOME EVEN WITH THE CONE

9. STOP VEHICLE

BACKWARDS SERPENTINE

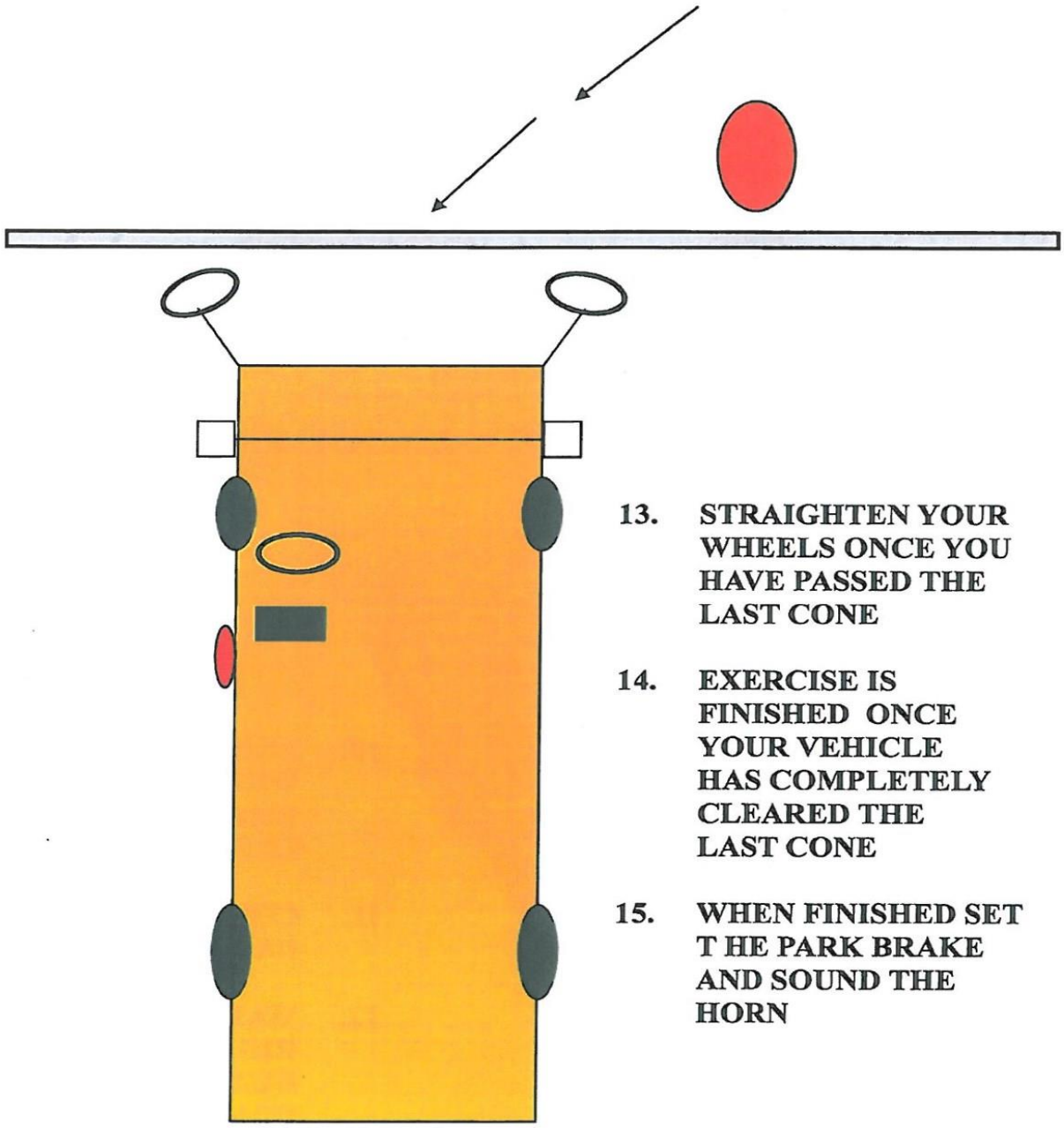


10. TURN STEERING WHEEL ALL THE WAY TO THE LEFT

11. CONTINUE TO BACK VEHICLE

12. WATCH FOR RIGHT REAR DUAL TO COME EVEN WITH THE CONE

BACKWARDS SERPENTINE

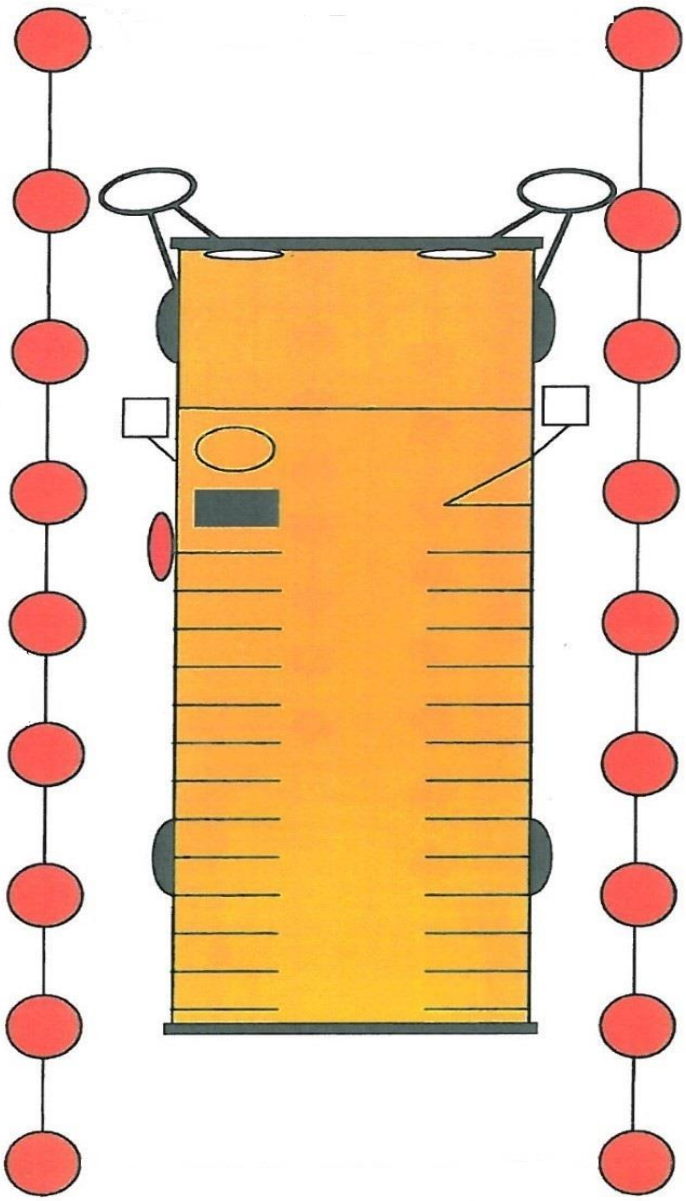


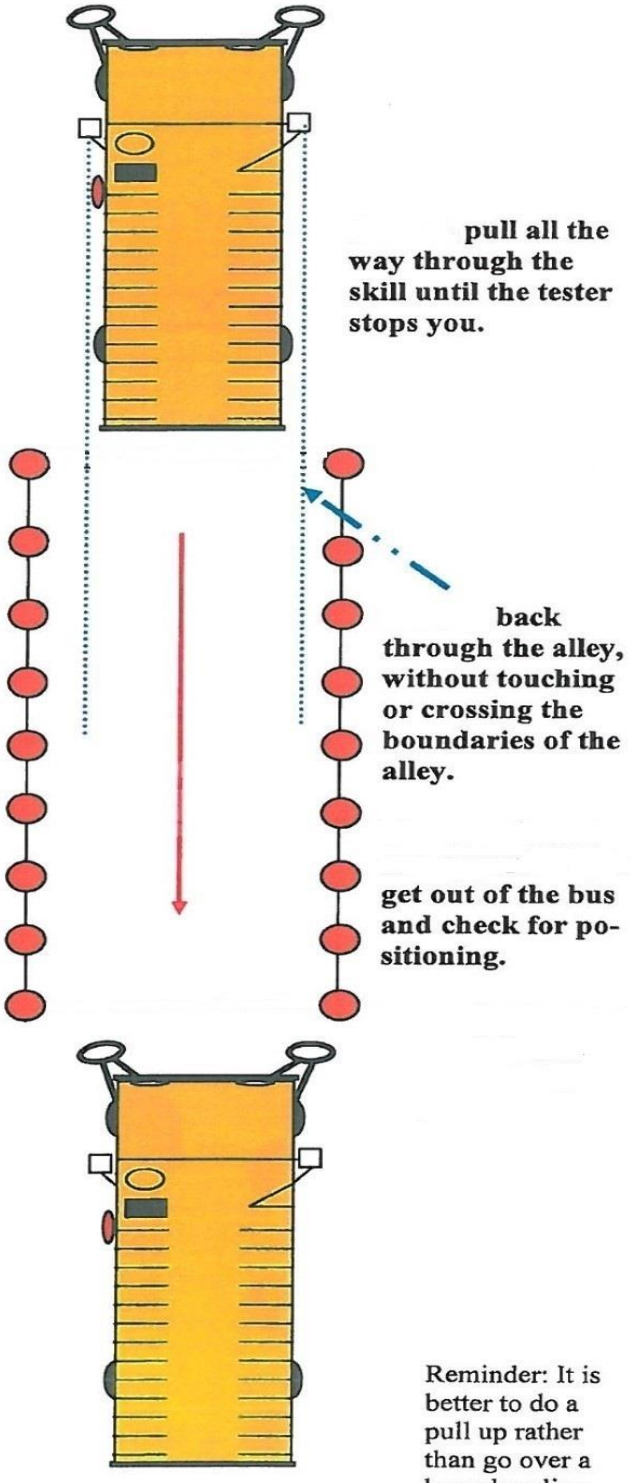
13. **STRAIGHTEN YOUR WHEELS ONCE YOU HAVE PASSED THE LAST CONE**

14. **EXERCISE IS FINISHED ONCE YOUR VEHICLE HAS COMPLETELY CLEARED THE LAST CONE**

15. **WHEN FINISHED SET T HE PARK BRAKE AND SOUND THE HORN**

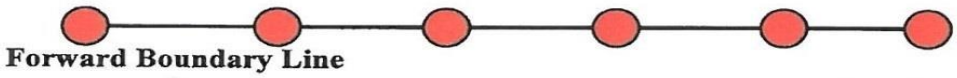
Straight Line Backing



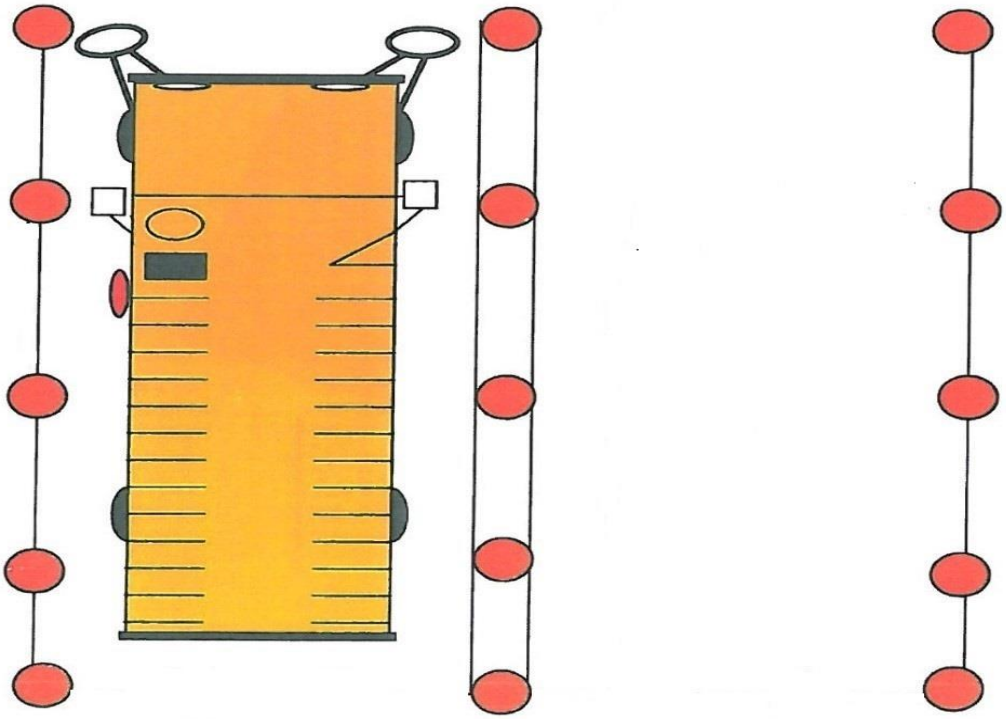

pull all the way through the skill until the tester stops you.
back through the alley, without touching or crossing the boundaries of the alley.
get out of the bus and check for positioning.
Reminder: It is better to do a pull up rather than go over a boundary line.

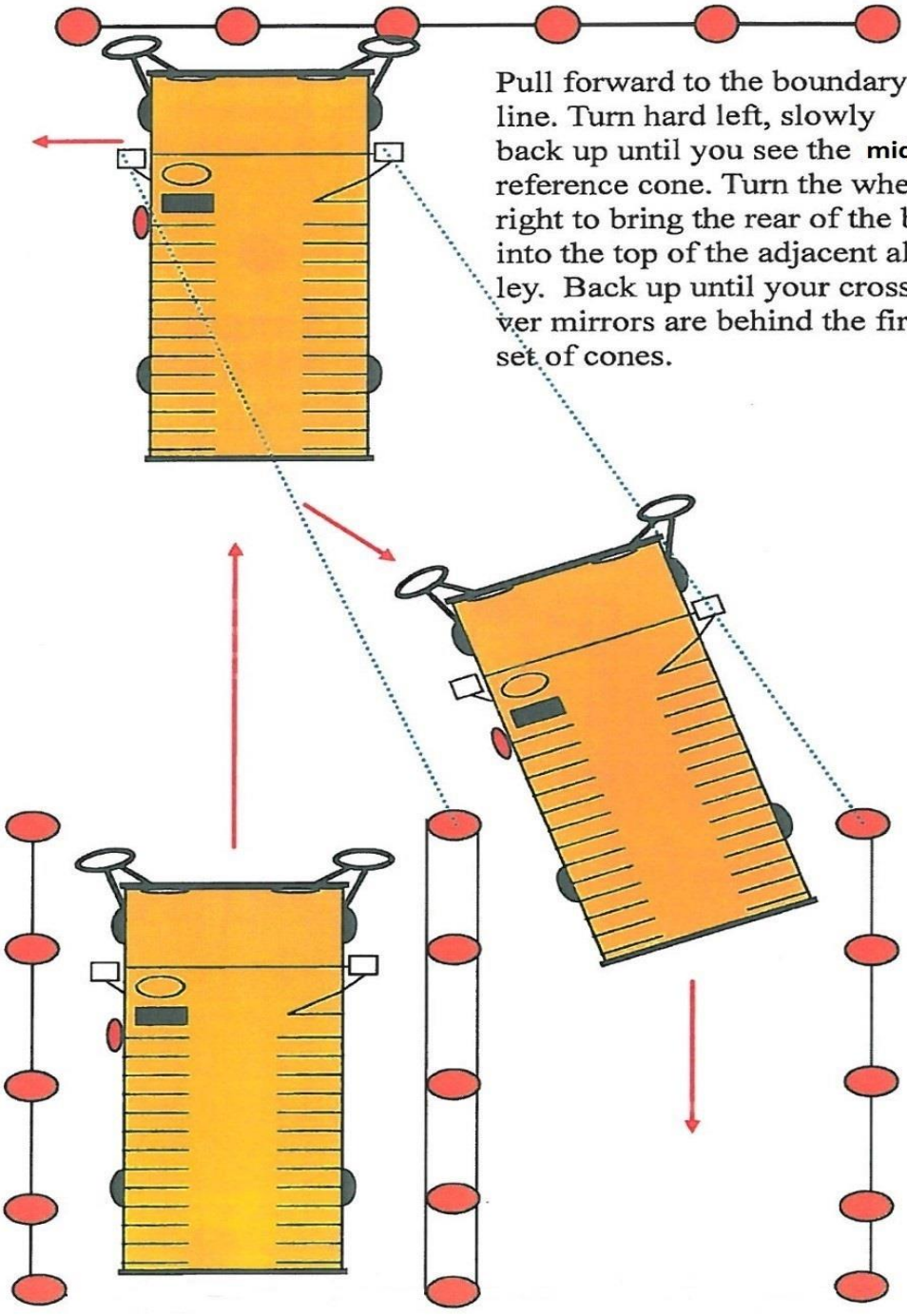
Offset Back Left/Right

Objective: Drive forward and stop before the reference cones on the forward boundary line, then back into the lane on the passenger/ driver side of your vehicle. You are allowed one opportunity to get out of the vehicle and check for positioning. When you are finished set the brake and sound the horn.

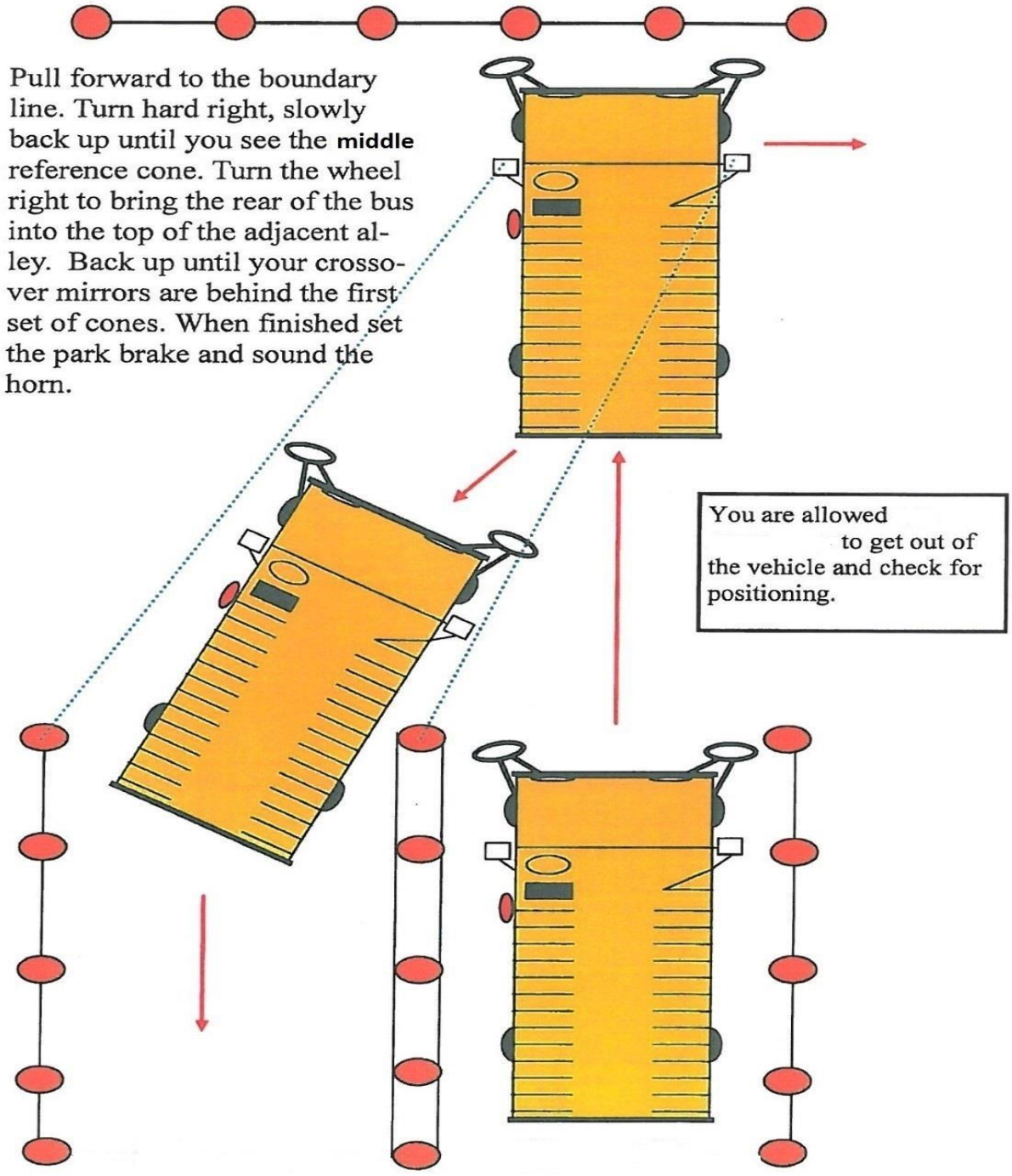


Forward Boundary Line
&
Reference cones





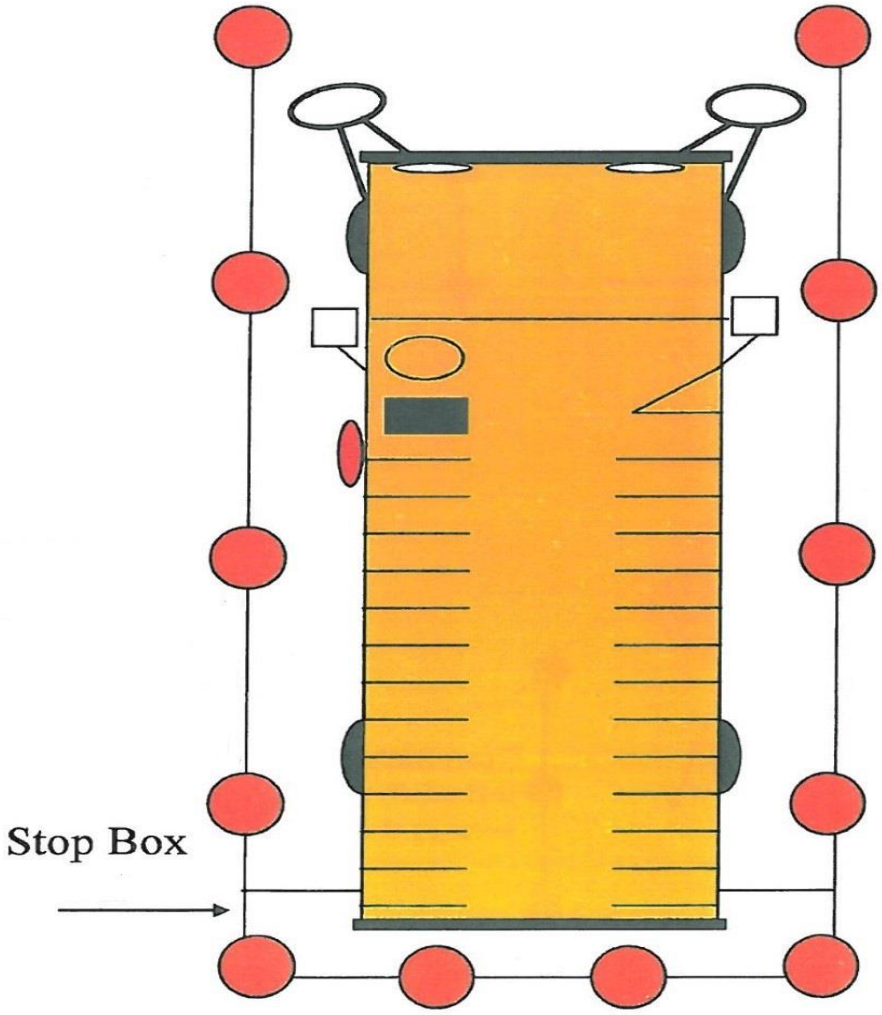
Pull forward to the boundary line. Turn hard left, slowly back up until you see the **middle** reference cone. Turn the wheel right to bring the rear of the bus into the top of the adjacent alley. Back up until your crossover mirrors are behind the first set of cones.

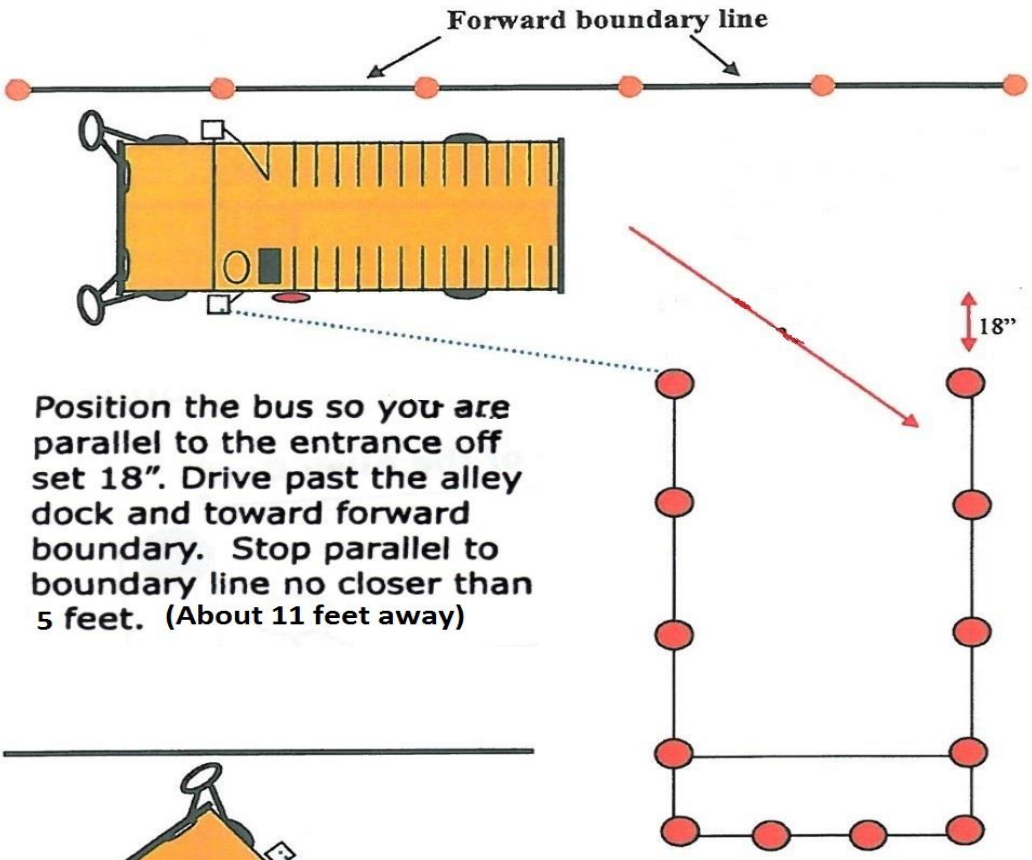

Pull forward to the boundary line. Turn hard right, slowly back up until you see the **middle** reference cone. Turn the wheel right to bring the rear of the bus into the top of the adjacent alley. Back up until your crossover mirrors are behind the first set of cones. When finished set the park brake and sound the horn.
You are allowed to get out of the vehicle and check for positioning.

Alley Dock

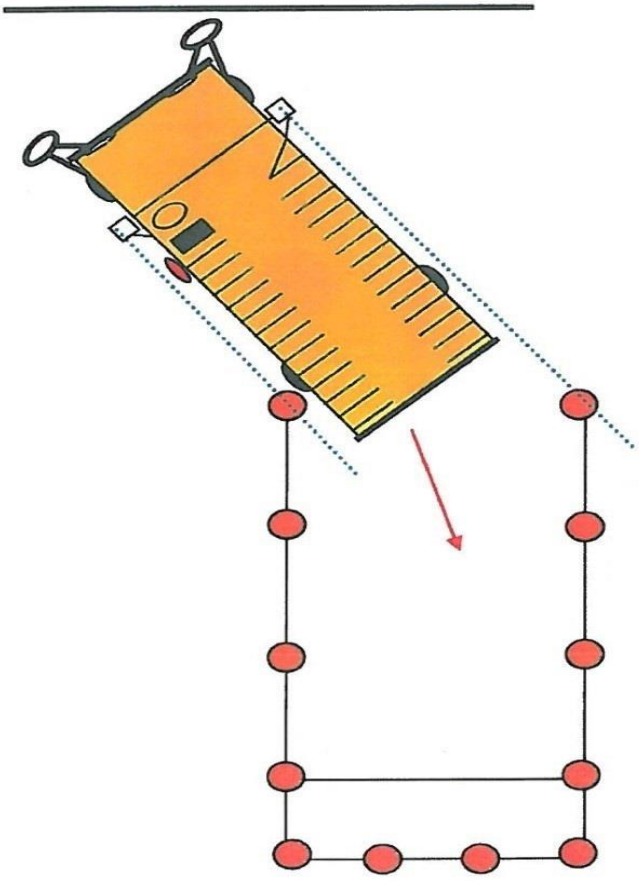
Exercise Boundary

(* This represents a street curb—



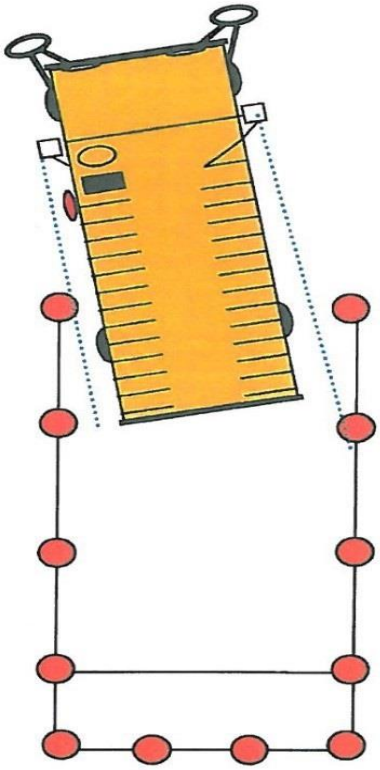


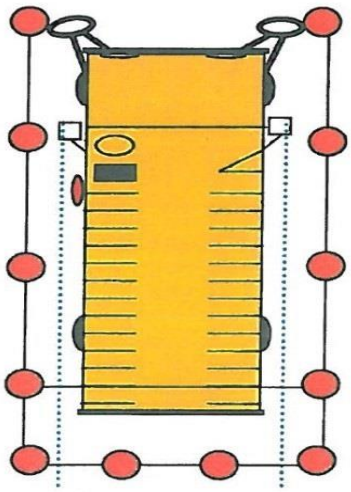
Position the bus so you are parallel to the entrance off set 18”. Drive past the alley dock and toward forward boundary. Stop parallel to boundary line no closer than 5 feet. (About 11 feet away)



Begin backing.
Turn the stering wheel left (rainbow turn) until first right cone is seen in the right mirror.

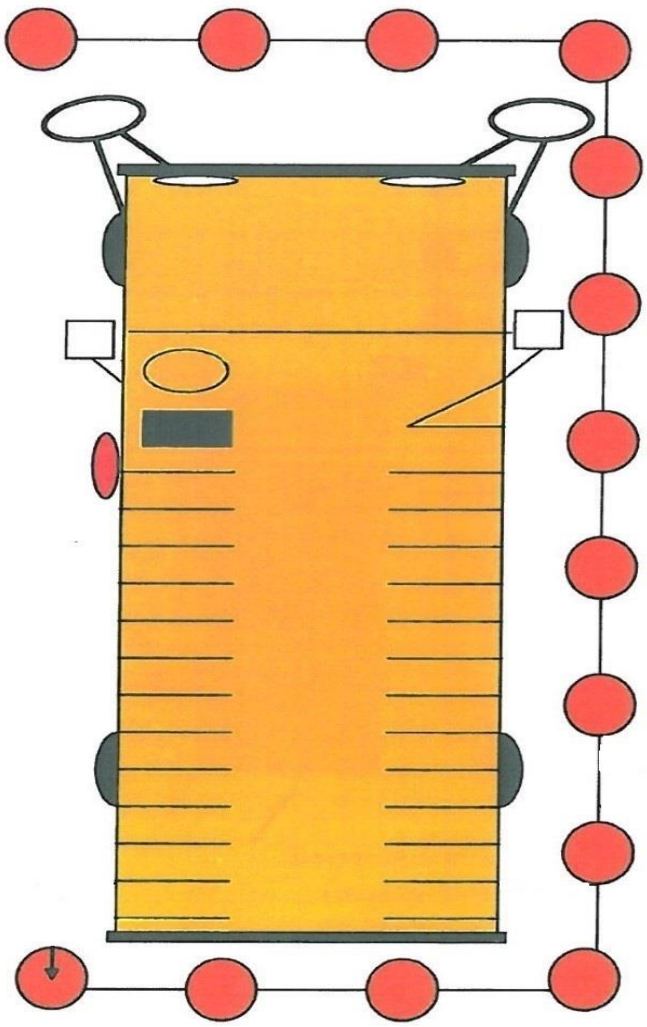
Straighten you wheels and backup. Turn slightly left or right as needed to position the bus between the cones.



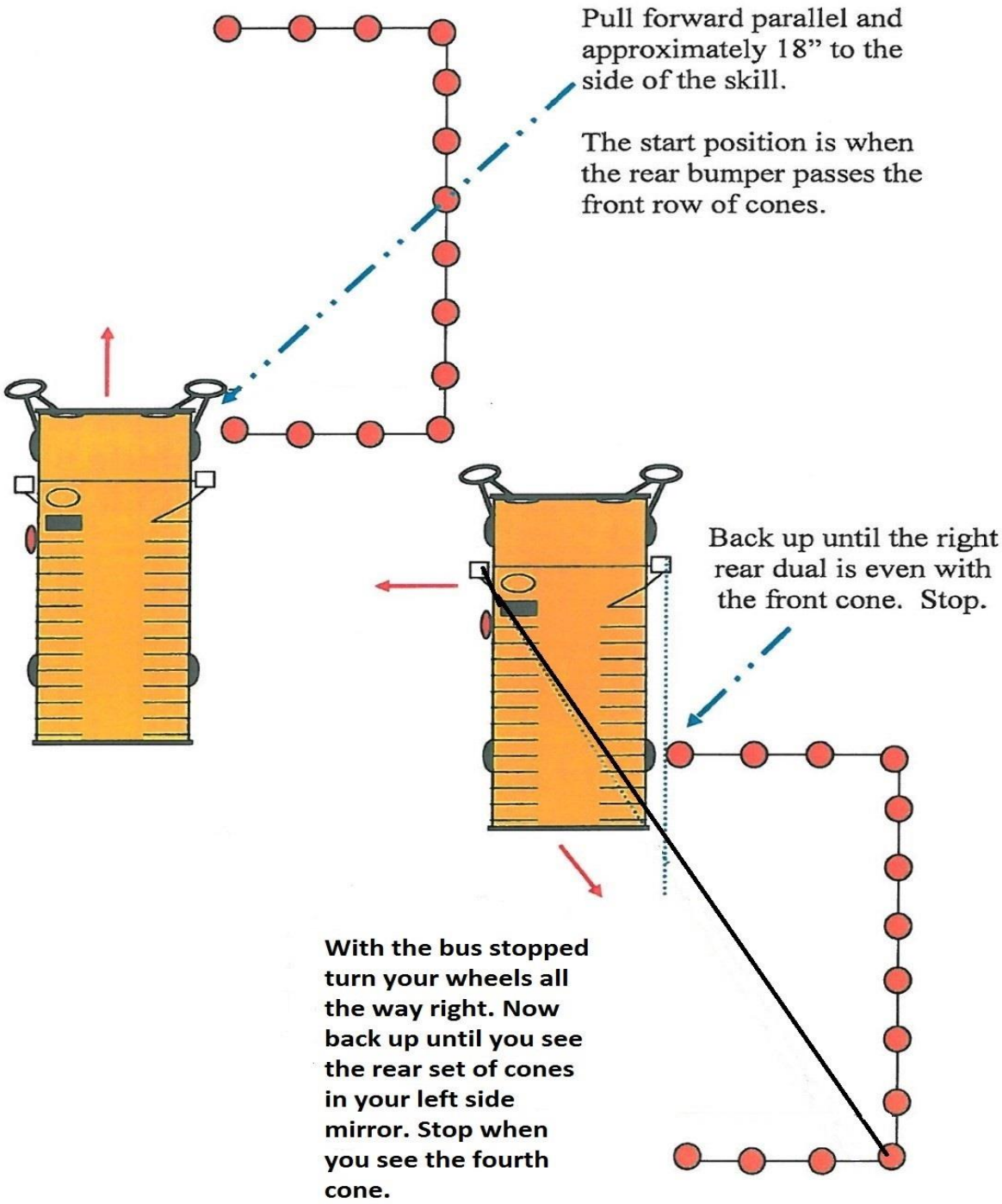


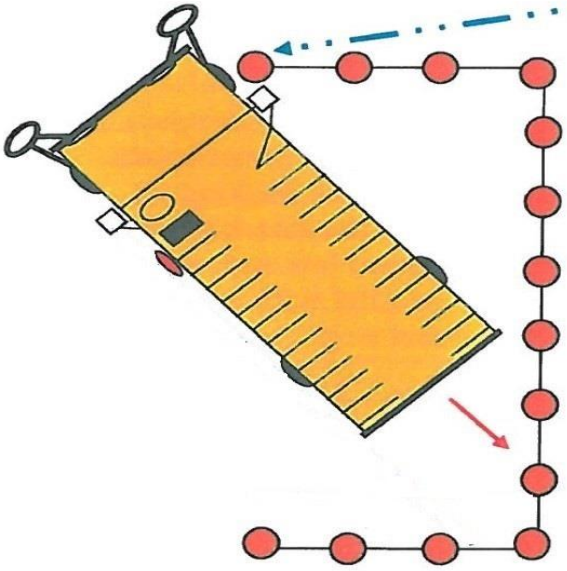
Back up until the bumper is positioned in the rear box using the reference point. You are allowed to get out of the vehicle and check for positioning. When finished set the park brake and sound the horn.

Parallel Park / Conventional

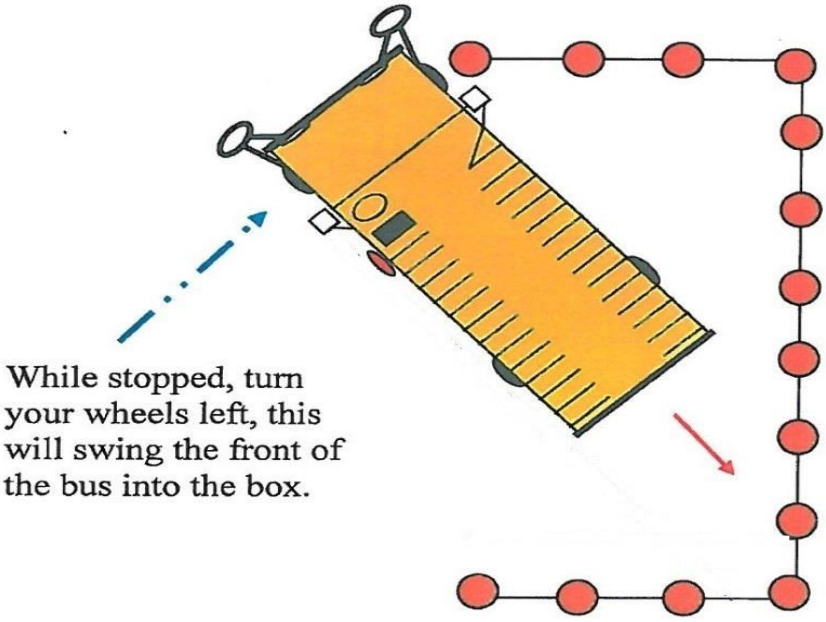


Drive by the parallel parking space, stop, and then back the entire vehicle into the space. Park as close to the curb as possible.

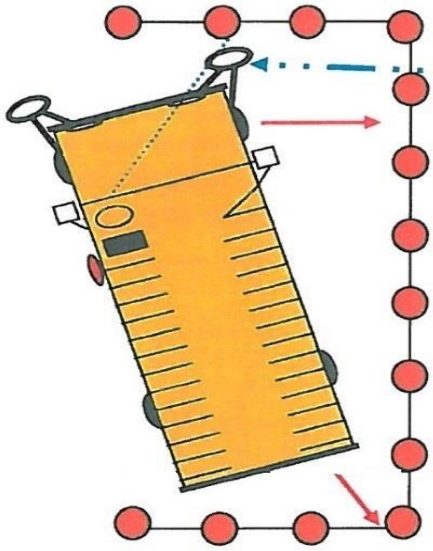

Pull forward parallel and approximately 18" to the side of the skill.
The start position is when the rear bumper passes the front row of cones.
Back up until the right rear dual is even with the front cone. Stop.
With the bus stopped turn your wheels all the way right. Now back up until you see the rear set of cones in your left side mirror. Stop when you see the fourth cone.



With the bus stopped, straighten your wheels and back straight until your reference point is just before boundary line. Stop.

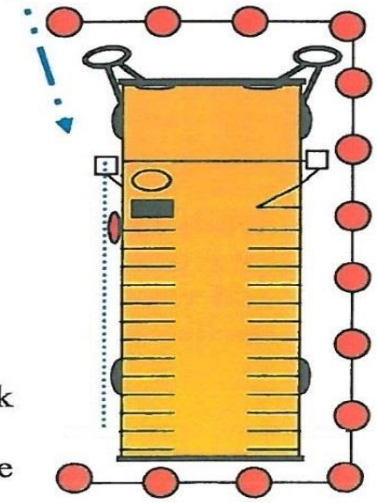


While stopped, turn your wheels left, this will swing the front of the bus into the box.



Watch the right crossover mirror as you back up in order not to encroach on the front row of cones. Continue backing up with the steering wheel turned left until the bus is parallel with the box line and stop.

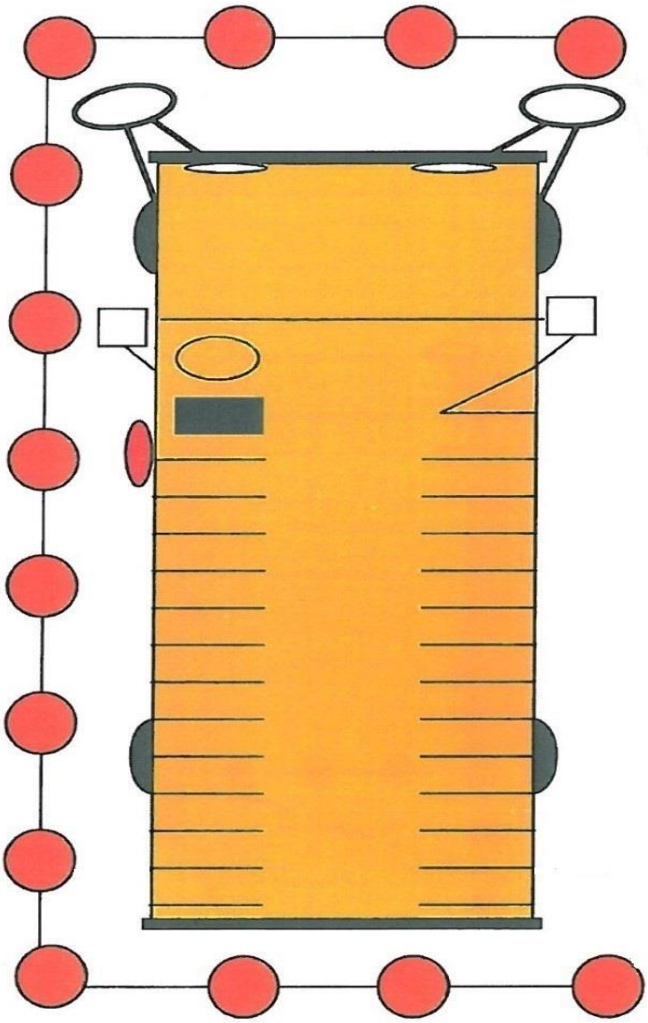
Straighten the steering wheel and back up straight until your reference point is in your left side mirror is even with the rear set of cone.



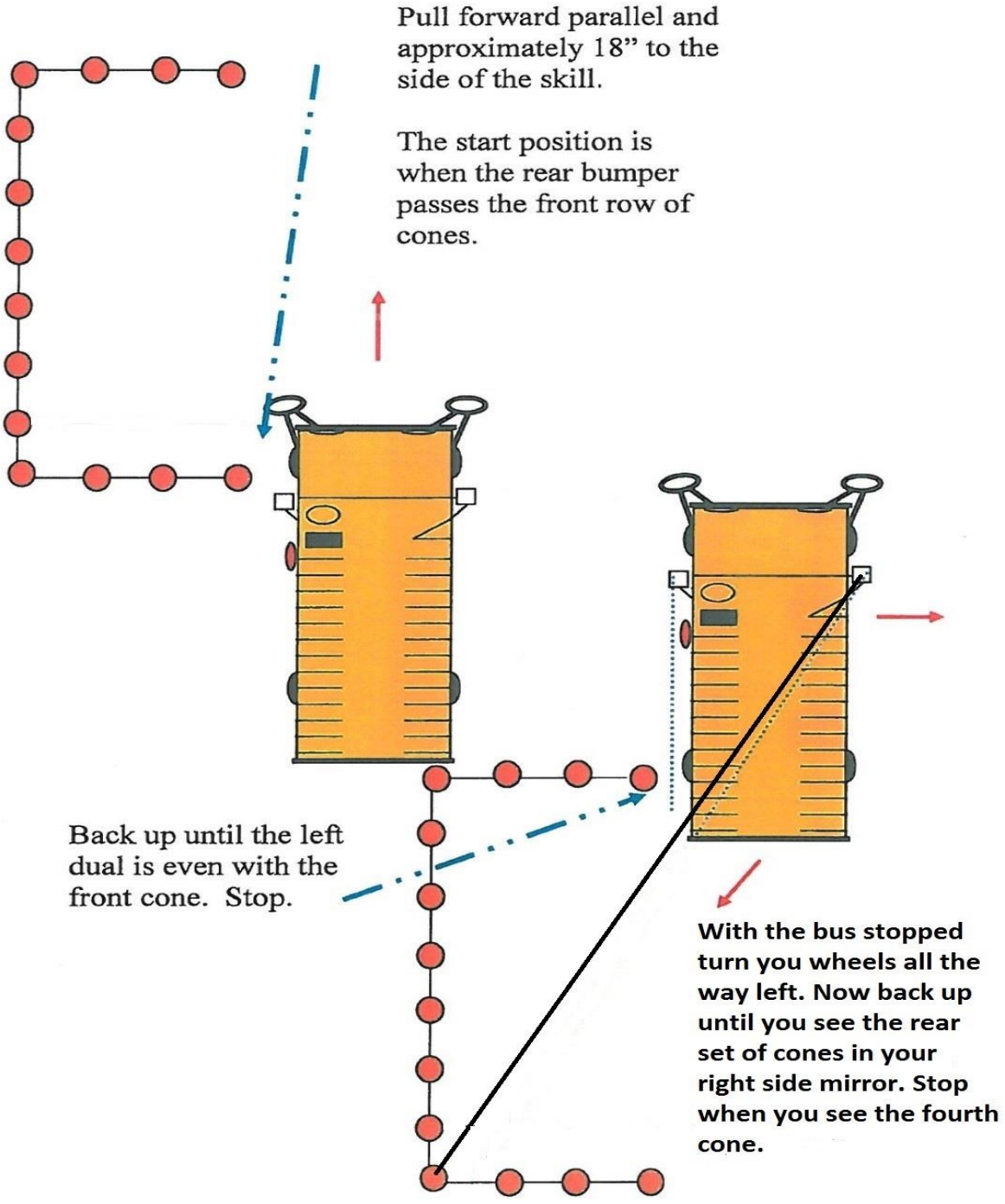
You are allowed to get out of the vehicle and check for positioning.

The vehicle must be in the box. You are allowed to get out of the vehicle and check for positioning. When satisfied with the position of the bus set the park brake and honk the horn once.

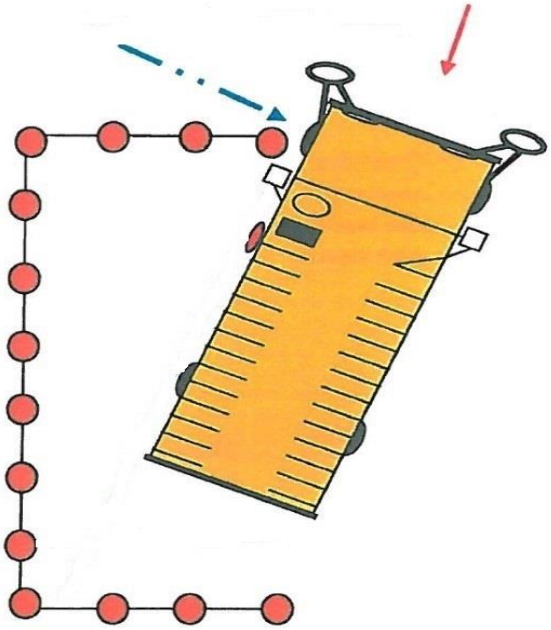
Parallel Park / Sight Side



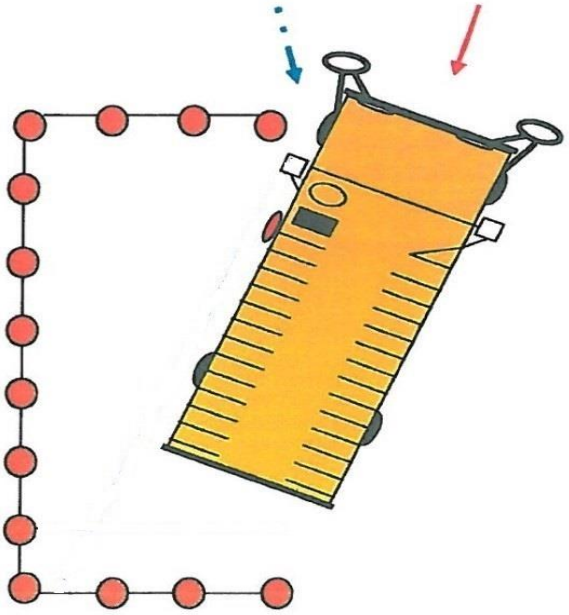
Drive by the parallel parking space, stop, and then back the entire vehicle into the space. Park as close to the curb as possible.

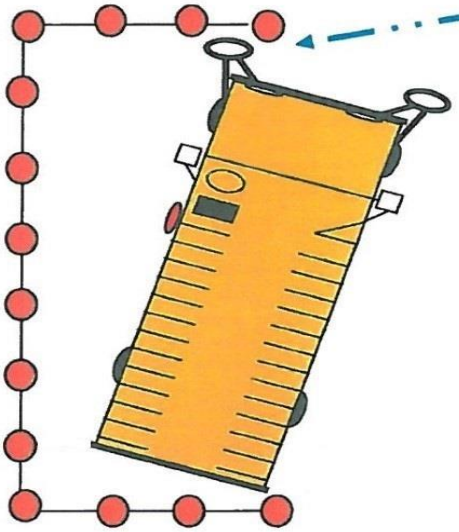

Pull forward parallel and approximately 18" to the side of the skill.
The start position is when the rear bumper passes the front row of cones.
Back up until the left dual is even with the front cone. Stop.
With the bus stopped turn you wheels all the way left. Now back up until you see the rear set of cones in your right side mirror. Stop when you see the fourth cone.

With the bus stopped, straighten your wheels and back straight until your reference point is just before the boundary line. Stop.



While stopped turn your wheels left this will swing the front of the bus into the box.

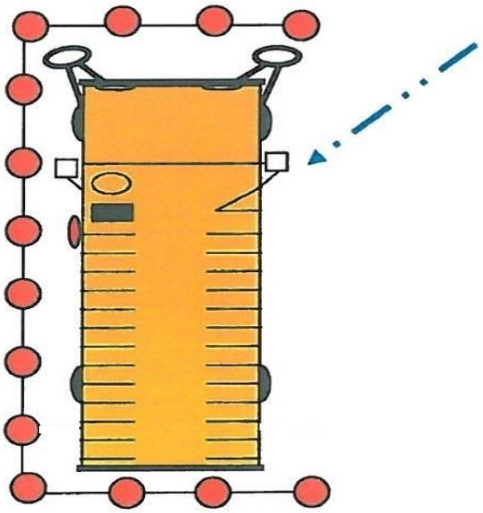




Watch the left crossover mirror as you back up in order not to encroach on the front row of cones.

Continue backing up with the steering wheel turned right until the bus is parallel with the box line and stop.

Straighten the steering wheel and back up straight until your reference point is in your right side mirror is even with the rear set of cone.



You are allowed to get out of the vehicle and check for positioning.

The vehicle must be in the box. You are allowed to get out of the vehicle and check for positioning.

When satisfied with the position of the bus, set the park brake and honk the horn once.

UNIT FIVE - DRIVING FUNDAMENTALS

Perhaps in no other phase of educational operations do school administrators, transportation staff, and drivers accept more responsibility for student life and welfare than during the mass movement of children in school transportation vehicles on the public highways, streets, and roads of Colorado.

Therefore, it is essential not only to provide adequate equipment, but also to strive continually to improve operational safety and efficiency.

CDL trainees driving with a temporary instruction permit (TIP) shall not transport students until they are fully licensed with an "S" Endorsement.

Verify with the district risk management and insurance carrier for guidance prior to transporting with students with a new licensed driver.

ON THE ROAD

Training the new driver on the road or sharpening the skills of the veteran driver can be both very rewarding and challenging. A positive and friendly attitude, as well as a quiet and calm demeanor, is a must. One of the greatest challenges can be to make the driver feel comfortable by relieving some of the anxiety the driver may be experiencing. Light conversation, such as encouraging them to talk about themselves, can create this atmosphere.

Taking frequent breaks and learning to recognize when the driver is stressed can help the trainee achieve success. When you sense the driver is tired or stressed about performing a certain skill or series of skills, lighten the conversation, find a place to stop, get out, and stretch. If you feel the driver is resentful or negative to what is being asked, encourage the trainee to express their opinion. Be ready to give a positive reason for the request.

Give positive reinforcement for good driving skills. For instance, "That was a great right turn." If the trainee is having difficulty with a certain maneuver or skill, be encouraging and positive in how you describe the problem. For example, "I noticed you have some difficulty with…." State the problem, followed by a positive suggestion on how to improve their skill.

Language can be very important when giving directions to the driver (For example, "Turn right here," **WRONG!** Clearer directions would be, "At the next intersection, I would like you to turn right"). An important phrase to use when asking the driver to perform a driving maneuver is: "When you think it is safe to do so, please…" Try to give directions as far in advance as necessary without confusing them. Speak in a calm voice. Startling the driver may cause the trainee to do something unsafe.

Some drivers get almost too comfortable with the vehicle or become complacent. A driver may turn corners a little too fast, not slow down for bumps

in the road, or brake too hard. A good technique is to take the wheel and have them sit in the back of the bus while you mirror their driving habits. The new driver will soon recognize how the students feel. Passenger comfort may greatly increase rapport between the driver and students. This technique works for all new trainees as well as the veteran driver who have become too comfortable with the bus.

STANDARD OPERATING PROCEDURES

Please follow your district vehicle operating procedures.

Getting Ready to Drive - After completing the pre-trip inspection (see Unit Two), it's time to position yourself for driving.

- Become familiar with all controls and lights on the vehicle.
- Adjust the seat to enable you to reach and operate the panel and floor controls easily and comfortably.
- Check all mirrors for optimum rear vision of traffic behind the vehicle, for proper vision to both sides and across the front of the vehicle. (See Unit Two, Pre-Trip Inspection.)
- Properly fasten and adjust seat belt. (1 CCR 301-26, 4204-R-14.01)
- If vehicle is equipped with a manual transmission, review shift pattern.

Starting the Engine - The procedure used in starting a vehicle engine must become a routine matter. It must incorporate principles of safety and be performed in conjunction with good engine preventative maintenance practices.

- Ensure parking brake is set to keep the vehicle from moving.
- Depress clutch pedal (standard transmission).
- Shift gear lever into neutral position (standard/automatic).
- Turn on ignition key to complete electric circuits.
    - In vehicles with a diesel engine and glow plugs or air inlet heater, wait until the indicator light has shut off before engaging the starter. These components must warm up to the proper temperature before the engine will start.
    - Allow vehicle to cycle through computer set-up, or "Wait to Start" (if equipped), and ABS light, if so equipped.
- Turn the key farther to engage starter.
    - Use accelerator sparingly.
- Warm up engine without racing the engine. Check with the service technician for proper rpm during warm-up time as authorized by your district.

- Check instrument gauges ensuring they are registering properly. (See Unit Two, Pre-Trip Inspection, for specific gauges.)

Shifting an Automatic Transmission

Most school buses are equipped with an automatic transmission.

- Depress foot brake before releasing the park brake.
- Move selector lever or push button selector to the drive position.
    - The drive position will be sufficient on level terrain and without a load.
    - With a load and/or uneven terrain, a position of lower range will be necessary.
- Release parking brake.
- Release foot brake and depress accelerator (prevent rolling).
- Manual shifting up or down the gear range, or staying in a particular gear may be necessary depending upon load and/or terrain. When going down a hill, shift into a gear or next lowest gear that would be used going up the hill. Shift one gear at a time without lugging the engine.

****Refer to Unit Seven, Mountain Driving, for more information.****

Read the manufacturer's manual or ask the service technician for recommended gear selection. Always emphasize proper gear usage and encourage the driver to practice using the gears.

Transmission shifting procedures should follow district, fleet, and owner manual procedures.

In the lower ranges (1, 2, and 3), the transmission will not shift up above the highest gear selected unless the recommended engine governed speed for that gear is exceeded. Do not exceed governed engine speed.

Shifting a Standard Transmission

- Shifting gears is a phase of vehicle driving that requires skill and practice. You must learn the correct range of speed (or tachometer range) in changing gears upward or downward. You must shift the gears without losing your view of the road. Many school buses have synchromesh standard transmissions. Generally, vehicles are equipped with either four (4) or five (5) speed standard transmissions.
- Learn the gear positions and shift pattern.
    - Check chart on shift lever or on the dash.
- Depress clutch pedal.

- Shift gear lever into starting position.
  - With average terrain and load, this should be first or second gear. Check district procedure.
  - Never start out in a gear higher than second, as this places undue load and wear on the engine and clutch.
  - Drivers must always be aware of the gear they are in.
- Depress foot brake.
- Release parking brake.
- Release clutch gradually to friction point and hold. You will at this point, have the clutch just at the point of friction and the foot brake ready to release. Friction point is when clutch starts to engage and vehicle begins to move.
- Release the foot brake.
- Hold friction point and slightly depress accelerator increasing the power to prevent stalling.
- Release the clutch.
  - Slowly and gradually release the clutch to the remainder of the pedal travel while slowly increasing acceleration.
  - Remove foot from clutch pedal completely.
  - Increase to proper rpm before shifting to next higher gear.
- Shift to next higher gear.
  - Depress clutch pedal and release accelerator.
  - Shift to next higher gear.
  - Release clutch smoothly and more quickly than in starting gear. Depress accelerator smoothly and quickly.
  - Prevent loss of vehicle speed.
  - Do not race the engine and slip the clutch.
  - Remove foot from clutch pedal completely.
- Proceed in this gear until proper vehicle speed is reached for shifting to next higher gear.
- Repeat step 11 of procedures until the vehicle is in cruising gear.
- Skipping a gear in shifting up or downshifting causes undue engine and clutch wear. **NEVER SKIP A GEAR**!
- Shift up or down as necessary to prevent engine lugging or excessive rpm.

If you are in doubt, and/or using your brakes too much, shift to the next lower gear.

- When going down a hill, shift into the gear that would be used going up the hill, or one gear lower. Ratios vary according to equipment. Check district procedures for proper shifting speeds and rpm.

  Refer to Unit 7, Mountain Driving

- Approximate miles per hour (mph) before shifting up or downshifting (mph may vary slightly depending on make of engine, transmission, gear ratio, and terrain.)
- Never allow the vehicle to "coast" in neutral.

WARNING--Allowing your vehicle to coast in neutral is against state law (42-4-1009, C.R.S., Coasting prohibited). This practice can result in severe transmission damage. Use the proper shifting pattern and speeds for your standard transmission.

SPEED LIMIT WHEN NOT POSTED

42-4-1101(3) C.R.S. "No driver of a vehicle shall fail to decrease the speed of such vehicle from an otherwise lawful speed to a reasonable and prudent speed when a special hazard exists with respect to pedestrians or other traffic or by reason of weather or highway conditions."

REDUCED SPEED ZONES

At various locations, such as school zones and construction zones, a reduced speed is required during certain hours or periods of the day when temporary hazards exist. Signs will indicate when the lower speed limit is in effect.

Unless otherwise posted, Colorado speed limits are as follows (42-4-1101 (1) C.R.S.):

20 M.P.H. - on narrow, winding mountain highways or on blind curves.

25 M.P.H. - in any business district, as defined in section 42-1-102(11).

30 M.P.H. - in any residential district, as defined in section 42-1-102(80)

40 M.P.H. - on open mountain highways.

45 M.P.H. for all vehicles in the business of transporting trash, where higher speeds are posted, when said vehicle is loaded as an exempted vehicle pursuant to section 42-4-507(3)

55 M.P.H. - on other open highways which are not on the interstate system, as defined in 43-2-101(2), C.R.S., and are not surfaced, four-lane freeways or expressways.

65 M.P.H. - on surfaced, four-lane highways which are on the interstate system as defined in section 43-2-101(2) C.R.S. or are freeways or expressways.

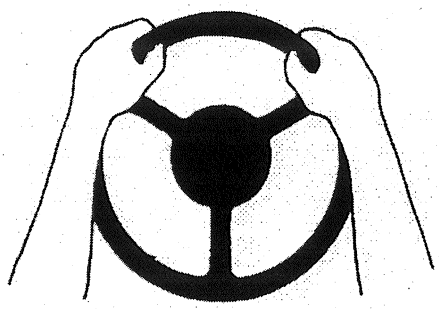
STEERING AND TURNING

You must be able to assume the proper steering position and make all turning maneuvers smoothly and correctly. Learn the correct procedures to prepare for the turn, make the turn, and re-enter the traffic pattern. When you are confronted with an unusual turn, turnaround or round-a-bout, use extreme caution. The interstate highway systems upon which you may travel may force you to use additional skills and judgment in making a turn properly and safely.

- Use one of the three steering positions following this procedure:
- Grip the steering wheel with both hands at all times.
- Hands on outside of steering wheel with thumbs facing upwards along the portion of steering wheel facing the driver.

NOTE: USING AN "UNDERNEATH GRAB" TECHNIQUE IS NOT PERMITTED.

The 10 and 2 position:



The 9 and 3 position:

Some driving experts feel the 9-3 hand position is the best overall.

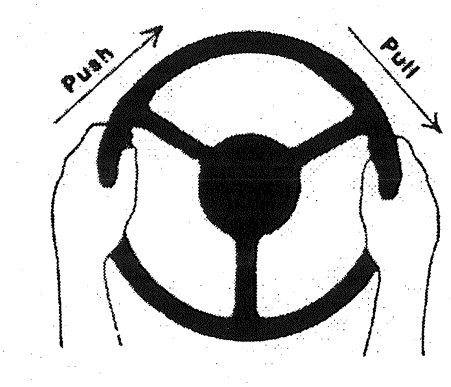
The 8 and 4 position:

(Recommended when air bags are installed in the steering wheel)

Turning Method

- The push-pull steering method is recommended while turning. One hand pulls, and the other hand pushes.
- By using the push-pull method, the driver will always have a good grip position on the steering wheel.

Push-Pull Method



Preparing for Turns

- Check traffic to the front and rear of vehicle.
- Check traffic to either side of vehicle.
- Give proper signal to move vehicle into correct lane.
- Completely enter the **proper** lane and cancel turn signal.
- Always use the outside lane for double/triple turns.

The 689 Rule: In a large vehicle, it takes 6 seconds to cross an intersection, 8 seconds to make a right turn and accelerate to 30 mph, and 9 seconds to make a left turn and accelerate to 30 mph.

RIGHT TURN

Making a Right Turn

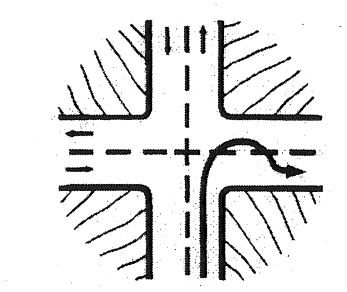
- Activate right turn signal at least 100 feet before desired turning point (200 feet when traveling over 40 mph).
- Reduce speed and downshift standard transmission to proper gear needed to execute the turn.

- Position vehicle in **proper** lane. Use outermost lane for double/triple turns.
- When required stop at point of entry into the intersection, at sign, signal, or crosswalk line (with wheels straight).
- Check for a clear right-of-way. Check traffic 3 times (left, right, left), prior to executing your turn look for:
  - Traffic signals, signs, pedestrians, or vehicles.
  - Check right and left mirrors.
  - Yield right-of-way to vehicles already on the road.
  - Turning vehicles must yield right of way to pedestrians in a crosswalk.
  - Look for suitable gap in traffic, and when safe, accelerate smoothly into lane.
  - If stopping is necessary, keep front wheels straight and brake pedal depressed. This activates the brake lights and prevents rolling. If struck from the rear, this will keep your vehicle from being pushed into the traffic lane. Do a traffic check using both outside mirrors before proceeding.

Check again for both bicyclists and pedestrians before completing the turn.

- Execute the turn.
  - Drive into the intersection and make the turn smoothly and without strain on the engine.
  - Never shift gears during a turn. You should downshift prior to making the turn.
  - Check left and right mirrors while executing the turn. Check left mirror for tail swing.
  - Enter the **proper** lane and cancel turn signal if necessary.
  - After completing a right turn upon a multiple lane highway, resume proper speed; check traffic in both outside mirrors.

- If you are driving a bus that cannot make a right turn without swinging into another lane, turn wide as you complete the turn, as shown in the diagram below. Look to right and left to determine whether there are vehicles in motion on the roadway to be entered.



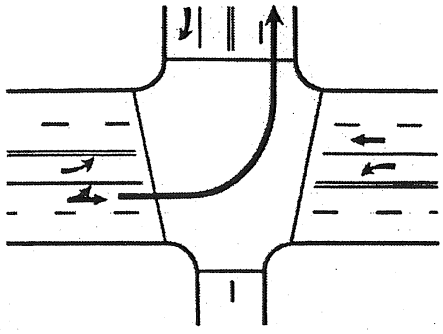
LEFT TURN

Making a Left Turn

- Activate left turn signal at least 100 feet before desired turning point (200 feet when traveling over 40 mph).
- Reduce speed and downshift standard transmission to proper gear needed to execute the turn.
- Position vehicle in the proper lane. Use outermost lane for double/triple turns.
- When required stop at point of entry into the intersection, at sign, signal, or crosswalk line (with wheels straight).
- Check for clear right-of-way. Check traffic 3 times (left, right, left), prior to executing your turn. Check for:
  - Traffic signals, signs, pedestrians, or vehicles.
  - Check right and left mirrors.
  - Yield right-of-way to vehicles already on the road.
  - Turning vehicles must yield right of way to pedestrians in a crosswalk.
  - Look for suitable gap in traffic and when safe, accelerate smoothly into lane.
  - If stopping is necessary, keep front wheels straight and brake pedal depressed. This activates the brake lights and prevents rolling. If struck from the rear, this will keep your vehicle from being pushed into the oncoming traffic lane. Do a traffic check using both outside mirrors before proceeding.

Check again for both bicyclists and pedestrians before completing the turn

- Execute the turn.
  - Drive straight approximately half-way into the intersection, make turn smoothly and without strain on the engine.
  - Never shift gears during a turn. You should downshift prior to making the turn.
  - Check left and right mirrors while executing turn. Check right mirror for tail swing.
  - Enter the **proper** lane and cancel turn signal if necessary.
  - After completing a left turn upon a multiple lane highway, resume proper speed, check traffic in both outside mirrors, activate right turn signal, and move into right lane as soon as it is safe to do so.



Important: If in doubt ALWAYS yield the right-of-way. Never take it!

CROSSING INTERSECTIONS

- Observe traffic ahead, to the left and to the right, at least three times, when approaching an intersection.
  - Cover brake pedal to be prepared to brake if needed.
  - Watch for any vehicles that are approaching the intersection.
  - Watch for approaching vehicles that are signaling but may not be turning.
  - When stopped and your vision is obscured by buildings, trees, parked vehicles, or blind spots created by parts of your vehicle, stop at the

intersection and lean forward or back in your seat to eliminate the blind spots before proceeding.

- Always yield the right-of-way.

- Check traffic using all outside mirrors.

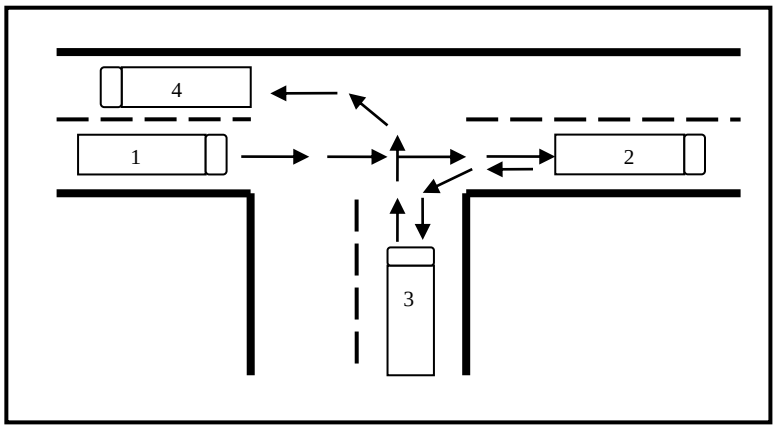
LANE USE AND POSITION ON THE ROADWAY

- Center vehicle in the proper lane. Do not encroach on other lanes.
- The shoulder or parking lane is only for stopping and parking.
- When there is more than one lane for traffic going the same direction, travel in the farthest right driving lane unless passing or turning to the left.
- When following other vehicles, drive at a safe distance behind. Use the 4-second rule as described in Unit Six, Managing Space.

CHANGING LANES

- Look for traffic behind and beside you before deciding to change lanes. Do not change lanes in or near an intersection. Any person who violates any provision of this section commits a Class A traffic infraction.
- Move your head enough and lean forward or back in the seat to eliminate any blind spots.
- On a multi-lane road, look for vehicles about to enter the new lane from an adjacent lane.
- Check all mirrors to observe any vehicles passing, closing fast from the rear, or vehicles about to enter the new lane. Use proper turn signal 100 feet (200 feet if going over 40 mph) before lane change (allow the signal to flash at least three times).
- Ensure the proper following distance from the vehicle in the lane you are changing into. Ensure at least one and one half bus lengths following distance for the vehicle that will be behind you. When a vehicle is attempting to pass the bus, and an oncoming vehicle is too close for the passing vehicle to complete the pass, consider:
  - Slowing the bus to allow the passing vehicle to safely pass before oncoming vehicle reaches or
  - As a last resort, move the bus to the shoulder, parking lane. Leave the roadway only if doing so doesn't create a hazard for vehicle or passengers.

TURNING AROUND



EXECUTING A BACK-UP TURNAROUND

- Tap brake to activate brake signal well in advance of turnaround.
- Use 4-way hazard lights and tap horn before backing.
- Stop bus in proper position on roadway.
  - One bus length beyond the road to be used. (Position 2)
  - There should be good visibility in either direction.
- Before backing, check traffic to the front and rear.
- If possible, have traffic pass the bus before backing.
- Back off of the main roadway into least traveled roadway or driveway. Use right and left mirrors. (Position 3)
- Pull forward to re-enter main roadway. (Position 4)
- **ALWAYS** have students **inside the vehicle** while making a back-up turnaround.

BACKING IN A STRAIGHT LINE

Careful planning can minimize the need for backing; however, there are situations that require backing maneuvers. A bus driver must be able to back into a given space without allowing the bus to scrape or hit stationary objects. This maneuver must be made safely and without interfering with other traffic.

- Stop bus in correct position to begin backing maneuver.
- Direct a responsible person, if available, to stand outside, near rear of bus in plain view of the driver, to signal for safe backing.

- Check the mirrors to make certain the way is clear.
- Honk horn or use audible warning device and activate 4-way hazard lamps before backing.
- Using the mirrors, back slowly and smoothly in a straight line.
- Stop at desired point.
- Follow district procedures.

1 CCR 301-26, 4402-R-12.09 Colorado Rules for the Operation, Maintenance and Inspection of School Transportation Vehicles

12.09 *The school transportation vehicle operator shall use extreme caution when backing. Before backing on a roadway, highway or private property, the horn or audible warning device shall be sounded and four-way hazard lamps actuated or there shall be a person outside the vehicle giving direction.*

12.09(a) Backing a school transportation vehicle when students are outside of the vehicle at a student stop is prohibited.

42-4-1211(1) (a) (b), (2) C.R.S. Limitations on backing

The driver of a vehicle, whether on public property or private property which is used by the general public for parking purposes, shall not back the same unless such movement can be made with safety and without interfering with other traffic.

The driver of a vehicle shall not back the same upon any shoulder or roadway of any controlled-access highway.

Any person who violates any provision of this section commits a Class A traffic infraction.

STARTING AND STOPPING ON A HILL

Standard Transmission

Stopping on a hill (upgrade)

- Check traffic in all directions using mirrors
- Use retarder, if equipped, to slow the vehicle
- Apply the service brake lightly for a smooth stop and hold (See Unit 7, Maintaining Vehicle Control With the Retarder.)
- Allow extra distance between the bus and the vehicle ahead
- Depress clutch with left foot. Apply the parking brake before shifting into neutral

Starting on a hill (upgrade)

- Check traffic in all directions using ALL mirrors
- With park brake set and left foot on the clutch, place transmission in gear; let the clutch out slowly to the friction point
- Hold clutch at the friction point
- Release park brake with enough acceleration to hold the weight of the bus without drifting backward
- Release clutch until completely engaged to pull the bus smoothly up the hill
- Check traffic using all outside mirrors

Stopping on a hill (downgrade)

- Check traffic in all directions using mirrors
- Downshift and use the engine compression to reduce speed
- Use retarder or engine brake, if equipped, to slow vehicle
- Apply steady pressure to service brake pedal as needed to bring the vehicle to a smooth stop *See Unit 7 Maintaining Vehicle Control with the Retarder.*

Reminder: When stopped, always give the vehicle in front of you plenty of room. You should be able to see the rear wheels where they meet the pavement. This will give advanced warning when it begins to move. This applies whenever stopped in traffic. There should be a minimum of 15 feet of distance between the vehicles.

Automatic Transmission

Stopping on a hill (upgrade)

- Check traffic in all directions using ALL outside mirrors
- Take foot off accelerator
- Use retarder, if equipped to slow vehicle (See Unit Seven, Maintaining Vehicle Control With the Retarder)
- Apply the service brake lightly for a smooth stop; hold
- Allow extra distance between the bus and the vehicle ahead
- Apply the park brake

Starting on a hill (upgrade)

- Check traffic in all directions. Make eye contact with other drivers and pedestrians. Use all outside mirror
- Place transmission in gear
- Accelerate slightly, release park brake, keeping vehicle from rolling back

Stopping on a hill (downgrade)

- Check traffic in all directions using ALL outside mirrors
- Take foot off accelerator
- Downshift and use the engine compression to reduce speed
- Use retarder, if equipped to slow vehicle (See Unit Seven, Maintaining Vehicle Control with the Retarder)
- Brake smoothly and evenly
- Apply the park brake if needed

OVERTAKING AND PASSING

When overtaking or passing other vehicles, follow these steps:

- Check traffic signs and markings to determine if passing is allowed
- Check traffic using mirrors, making sure there is no oncoming traffic or traffic from behind preparing to pass
- Make sure any vehicles ahead of you that are passing have completed their pass, your view of the road ahead is clear, and an acceptable gap is present
- Activate left turn signal at least 100 feet (200 feet if going over 40 mph) before executing passing maneuver (allow the signal to flash at least three times)
- When clear, pull smoothly into passing lane
- Cancel left turn signal
- Move smoothly past the vehicle at a safe speed within the speed limit
- Activate right turn signal
- Move back into right lane when at least one and one-half bus lengths ahead of the passed vehicle. After returning to the lane, perform another traffic check
- Cancel right turn signal
- Use extra caution when:

- The vehicle to be passed is towing a trailer, has an open trunk lid, ice or snow on the rear window, or objects in the rear window that may restrict the view
- If the vehicle in front of you is about to pull out and pass
- While being passed, the vehicle moves laterally toward the bus
- The driver of the other vehicle appears inattentive
- There is reduced visibility due to weather condition
- Passing a large vehicle - Remember, they have blind spots.
- When there is an intersection or a driveway
- Do not pass when the driver of the lead vehicle is:
  - Signaling or otherwise indicating a left or right turn, or changing lanes preparing to pass
  - Decelerating suddenly
  - Passing pedestrians, cyclists, or animals
  - Being passed by another vehicle
  - Weaving or wandering

ROUNDABOUTS

- Observe the lane use recommendations on signs as you approach the roundabout.
- Yield to traffic in the roundabout
- Slow the vehicle
- Maneuver the vehicle at the posted speed limit
- If the loop is too small for the vehicle to be able to stay in one lane, once the circle is clear, use the center of the two lanes combined
- If the loop is too small for the vehicle to go through, a different route must be found
- It is illegal for a vehicle to go through a roundabout in the wrong direction
- Check mirrors often
- Signal to exit

Slowing down allows motorists in adjoining lanes to clear the roundabout and make entry and exit maneuvers easier and safer.

STOPPING AND PARKING THE VEHICLE

Stopping a school bus smoothly and safely is one sign of a professional driver. A professional driver keeps the vehicle under control at all times. A professional driver knows that braking distances increase greatly as the speed and weight of the vehicle increases. By using correct stopping procedures, the maintenance costs on the braking system will be reduced.

Vehicle weight and road conditions affect stopping distances. A fully loaded bus may need eight times the stopping distance on snow or ice, as compared to an empty bus on a dry road. For more information on stopping see Unit Six, Controlling Speed.

- Stopping in low gear or at 10 mph and less:
  - Depress clutch pedal and release accelerator (standard transmission)
  - Apply service brake gradually by increasing pressure
  - Reduce brake pressure slightly, (not completely) just before coming to a stop to prevent jerking
  - Shift gear lever into neutral position, release clutch, and remove foot from clutch pedal (standard transmission)
- Stopping when in cruising gear:
  - Release accelerator and depress service brake pedal
  - When proper rpm is obtained, downshift to next lower gear
  - This reduces heat buildup in the brake systems and extends the life of the brakes (standard transmission)
- Retarders:
  - Some vehicles have “retarders” that provide another way of slowing a vehicle.
  - They reduce brake usage and excessive wear on the brakes.
  - There are different types of retarders.
  - The retarder should be used to slow the bus.
  - Apply the service brake if greater slowing or stopping is needed.
- Parking the vehicle:
  - Shift into low gear on level terrain or upgrade and reverse gear on downgrade (standard transmission)
  - Use normal stopping/parking procedures for vehicles with an automatic transmission
  - Turn wheels into curb
  - If there is no curb, turn the wheels to the right

The direction you turn the wheels depends on whether you are facing uphill or downhill and if there is a curb.

- Set park brake
- Turn off ignition and remove ignition key
- Release clutch and take foot off service brake (standard transmission)

RAILROAD CROSSING PROCEDURES

1 CCR 301-26, 4204-R-17.14

School transportation vehicle operators of School Buses, Multifunction Buses and Motor Coach Buses are not required to stop at crossings controlled by a red, amber, green traffic control signal when it is in the green position or when the crossing is controlled by a police officer or human flag person.

Reminder: Scan the whole area as you approach the crossing.

- The 4-way hazard lamps are activated not less than 200 feet from the railroad crossing to alert other motorists of the pending stop for the crossing.
- Use a prearranged signal to alert students of the need for quiet aboard the bus when approaching railroad tracks. Turn off all heaters, fans, and accessories.
- Stop the bus as far to the right of the roadway as possible without forming two lanes of traffic unless the highway is marked for four or more lanes of traffic.
- Stop the bus within 50 feet but not less than 15 feet from the nearest rail.
- When it is quiet aboard the stopped bus, open the service door and operator window, listen and look in both directions along the track(s) for any approaching train(s) and for signal indicating the approach of a train.
- When the tracks are clear, close the service door prior to placing the bus in motion. Proceed in a gear low enough to permit crossing the tracks without having to manually shift gears. Cancel the hazard lamps after the bus has cleared the tracks.
- When two or more tracks are to be crossed, do not stop a second time unless the bus is completely clear of the first crossing with at least 15 feet clearance in front and at least 15 feet clearance to the rear, commonly referred to as ‘storage area.’

- When an intersection is located beyond the tracks, before proceeding, verify that the storage area is sufficient in case you are required to stop at the intersection (entire length plus 15 feet).
- Do not pass or change lanes when crossing the tracks.

Be especially alert at multi-track crossings. Be aware that mechanical failure of traffic control devices can occur.

LIGHT RAIL TRACK CROSSING PROCEDURES

General Information

The Regional Transportation District (RTD) light rails tracks, in and around the Denver Metro area, are points of extreme danger. School transportation vehicle operators must exercise the utmost care when approaching, traveling alongside, and crossing light rail tracks.

The RTD light rail tracks are not a distance away from the road like most railroad tracks. They are in most cases, a part of the same street motorists drive on. The light rail tracks run parallel to traffic, traveling in the same direction as traffic, or against the traffic flow. There are several locations where the RTD light rail tracks cross major streets.

Light rail vehicles (LRV) may approach from either direction. Pay attention to all sets of tracks. Even though a train may have left the crossing on one track, another train may be approaching on another track. They are very quiet and appear to be traveling slower than they actually are. Each car weighs 40 tons and is equipped with a bell, an emergency siren, and three bright lights that can be seen two to three blocks away. Two of the lights are in the "normal" headlight positions, and the third is in the middle, at the top of the LRV. LRV have turn signals to indicate which direction they are turning.

In most cases, there are no physical barriers such as curbs or medians separating the vehicle traffic from the LRV rails. The rails are set in concrete and are a lighter color than the asphalt on the street. Certain weather and light conditions will reduce the visibility of this subtle difference.

In some areas the tracks are close to parking areas. Motorists can become confused as to where to park.

Warning Signs

A yellow, diamond shaped warning sign with a black symbol of a streetcar indicates the location of the LRV tracks. At the intersections or by the tracks, these signs have a black bi-directional arrow below the streetcar symbol. Before intersections, these signs have the term "AHEAD" below the streetcar symbol.

The illuminated no left turn or no right turn signal flashes when a train is about to cross the intersection of a track that runs adjacent to the roadway.

Procedures for Light Rail Crossings

Treat light rail crossings as a railroad crossing except for the use of the hazard lights. Use the hazard lights only when necessary, as they are not recommended or required. Most light rail intersections are controlled by a traffic light.

- Instruct passengers to be quiet when stopping at a LRV crossing. Turn down the radio.
- Stopping on the tracks is unsafe and against the law.
- Always observe the "Stop Here on Red" sign and the white safety strip (stop line) location.
- Traffic light controlled intersections govern both the motorist and the LRV. Treat these locations like any other traffic light controlled intersection. Look and listen in the appropriate directions for LRV, motorists, and pedestrians before crossing the tracks.
- At un-controlled intersections, a school bus operator, when stopped shall open the driver's side window and the service door. Look and listen in both directions for LRV, motorists, and pedestrians. Close the service door before proceeding across the tracks.
- Never cross the light rail tracks until the entire vehicle's length can safely clear the tracks.
- Never back across the light rail tracks.

School transportation operators should not park their vehicles near a light rail track or crossing. When parking near light rail make sure you have a safe loading and unloading area, you won't get hit by the train, and you are not blocking the view of the tracks.

UNIT SIX – DEFENSIVE DRIVING

INTRODUCTION

It only takes a split second of carelessness or one distracted moment, and a child can be killed or injured for life. Accidents can be prevented by driving defensively.

There are six major causes of car collisions and accidents:

- **Driver Incompetence** – A great number of drivers lack the proper training on road safety. Many of them even defy the traffic regulations such as tailgating, speeding, and many more road rules that tend to protect the motorist, including them, from harm.
- **DUI Driver or Intoxication** – Driving a car after drinking liquor excessively is very dangerous, for it impairs driving capabilities. It is illegal to operate a Commercial Motor Vehicle (CMV) if your blood alcohol concentration (BAC) is .04% or more.
- **Distractions** – Motorists are expected to exercise extreme concentration in driving. However, so many distractions tend to divert their attentions and make their driving too risky. Examples are active discussions with the passengers, improper use of cell phones, texting, loud car stereos, etc.
- **Adverse Weather** – Weather is a large factor in safe road travel. Studies show that many car accidents occur during bad weather conditions, making the road surfaces slippery and affecting clear visibility.
- **Poor Road Design** – The state has the obligation to make sure that our roadways are properly designed and safe for public use. The government sets up road safety signs and equipment. The temporary road safety signs take priority over the permanent signage. Failure to obey these may cause an incident or accident that risks the lives of workers, passengers, and drivers.
- **Vehicle Defects** – Motorists and car owners should inspect and service the vehicle prior to a trip. Taking these precautions lessens the chances of road catastrophes.

THE THREE A's OF DEFENSIVE DRIVING

- Attitude
- Awareness
- Actions

DEFENSIVE DRIVERS

- Stay positive
- Stay aware
- Expect the unexpected
- Stay in control
- Act, don't react

ATTITUDE - YOUR FIRST DEFENSE

Most traffic accidents are caused when a driver performs poorly. In most cases poor driving performance is caused by a poor attitude. Keep a positive attitude.

Your attitude affects

- How an individual drives
- Reaction time
- How passengers behave
- Level of alertness
- In short, how a driver performs behind the wheel

Make your first defense a positive attitude

- Before you start your day, adjust your attitude
- Leave your personal baggage at home
- If you're running late, relax and get positive
- Know you're a good driver

Steer clear of road rage

What happens when driving down the road and some careless driver cuts you off, or tailgates, or drives erratically in your direction – even waves a fist or a gun? Road rage! What do you do?

- Steer clear of it
- You can't control another person's attitude, only your own
- Never take a driver's behavior personally
- Avoid eye contact
- Stay within the posted speed limit

- Keep at a safe distance from other vehicles
- Use your horn sparingly
- If you have to, count to ten
- Get your students to school or home safely
- If necessary, and safe, pull off (if the aggressive driver follows, do not stop)

AWARENESS - EXPECT THE UNEXPECTED

Stay alert; be aware and prepared for anything. After you have been driving a route for a while, you get used to the road conditions and traffic flow. Never get too comfortable. Stay alert; expect the unexpected. Be ready for situations that may change without notice; there usually is not much time to think it out.

- Driving conditions can change
- Traffic patterns can change
- The route can change
- Student's behavior can be unpredictable
- The vehicle can have an unexpected problem
- The time it takes to get from Point A to point B can vary

Stay alert, be aware, and prepared for anything - even before pulling out of the lot.

- Find out about road conditions before departure
- Listen to morning and afternoon weather and traffic reports
- Talk to the supervisor and other drivers about road hazards
- If a substitute or new driver, ask about safety hazards before the first run
- If new to the area, study local maps
- Before the start of a route, do a proper pre-trip inspection of the vehicle.

Awareness reminds you that children are apt to do the craziest things at the worst possible times.

ACTION - TAKE CONTROL OF SAFETY

Defensive drivers act; they don't react. Take actions to make sure you and your passengers stay safe. Keep in mind you are responsible for the most precious cargo there is.

- When you act, you are in control of what you do
- When you react, you respond impulsively to others' behavior
- When you think of action, think control
- That is the goal

BASIC RULES OF DEFENSIVE DRIVING

- Always wear your seatbelt
- See it, predict it, act upon it
- Evaluate the "big picture" 15 seconds ahead
- Scan mirrors every 5-8 seconds
- Use the "4 second rule" when following other vehicles
- Know your peripheral vision = 180 degrees of visibility
- Goal is to see 360º - use mirrors to see what cannot be seen when turning your head
- Keep your eyes moving
- Always allow yourself an out
- Stay within the posted speed limits
- Signal all turns and lane changes
- Never tailgate
- Keep a safe distance between your vehicle and the vehicle in front of you
- Avoid other drivers' blind spots – the rear and sides of a car and directly behind a truck
- Make sure other drivers see you
- Turn your head when making lanes changes to check blind spots
- When passing, signal lane changes
- Check both rear and oncoming traffic
- If you can see an oncoming vehicle, do not risk passing
- Be especially cautious when visibility is reduced

- On hills, dips, and curves, decrease your speed
- Stay to the right in case an approaching driver is in the center of the road
- Be aware of stale green lights

ON THE ROAD

Lane Lines - Yellow and white broken and solid lines are to aid you in lane driving and passing. Following is a description of the differences in lines and their purposes.

- A broken yellow line marks the center of a two-way, two-lane road. Drive on your half of the road and pass with care.
- A broken white line separates traffic lanes on a one-way street or roadway of a divided highway. Observe lane-use rules and change lanes only when it is safe to do so.
- A solid yellow line on your side of the road or a double solid yellow line in the center of the road marks a no-passing zone. Do not pass when the solid yellow line is on your side.
- A double-solid yellow line may also mark the center of a two-way, two-lane or four-lane street. Do not drive to the left of this center line.
- Two separate sets of double-solid yellow lines represent a dividing strip on a very wide street or highway where there is not a physical separation of two-way traffic. Do not drive to the left of the solid yellow lines.
- A solid white line (fog line) marks the outside edges of far left and right traffic lanes.
- Crossing a painted center line or painted center island is allowed for a left turn into an alley, private road, or driveway when such movement can be made safely.

Refer to the current revision of the Colorado Drivers' Manual.

Highway Signs - There are three sign classifications

- Warning - Diamond shape is used to warn of existing or possible hazards on roadway or adjacent areas.

- Regulatory - Vertical rectangles are generally used for regulatory signs, which tell you what you must do.

Regulatory Signs: These signs tell you of laws and regulations that apply at a specific location. They are black or red on a white background. Failure to obey these signs is a traffic violation.

Lane Control Signs: These signs give direction and where you can turn and often use an arrow symbol. The signs are along the road or hanging over the road. Sometimes arrows may be painted on the road.

Prohibited Signs: These signs indicate you cannot do something, for example, no left turn, or no U-turn.

Passing Signs: These signs tell you where it is safe to pass another vehicle and where you cannot. Passing areas are based on how far you can see ahead. Where it is permitted to pass, you may do so only if it is safe.

Warning Signs: These signs are yellow or fluorescent green with black symbols and most are diamond shaped. They warn you to slow down and be prepared to stop if may warn of intersections, different types of highways, traffic entering your area, curves, etc.

Advisory Speed Signs: These cautionary signs show the safe speed around curves, corners, and off-ramps.

Railroad Crossings: Many railroad crossings have signs or signals to warn drivers

Work Zone Signs: These signs have an orange background with black letters or symbols. They are used with other traffic control devices or flag persons to help direct traffic safely through work areas and to protect highway workers

Guide Signs: These signs have a green background and provide directional and mileage information to specific destinations.

- Service Signs: These signs have blue backgrounds and provide directions to service facilities. Signs with brown backgrounds indicate recreational, historic or cultural areas.
- Route Signs And Markers: The shape of the sign indicates the type of roadway: Interstate, U.S., State or County highway
- Disabled Parking Signs - These signs mark special parking areas for only those vehicles displaying a disabled parking permit.
- Guide - Horizontal rectangles are generally used for guide signs, which show location, direction or other special information.

Right-of-Way - At an uncontrolled intersection, the vehicle on the right has the right-of-way. Left-turn traffic must yield to all other traffic except when a left turn arrow is present.

42-4-108 C.R.S. Public officers to obey provisions - exceptions for emergency vehicles.

(1) The provisions of this article applicable to the drivers of vehicles upon the highways shall apply to the drivers of all vehicles owned or operated by the United States, this state, or any county, city, town, district, or other political subdivision of the state, subject to such specific exceptions as are set forth in this article with reference to authorized emergency vehicles.

(2) The driver of an authorized emergency vehicle, when responding to an emergency call, or when in pursuit of an actual or suspected violator of the law, or when responding to but not upon returning from a fire alarm, may exercise the privileges set forth in this section, but subject to the conditions stated in this article. The driver of an Colorado Revised Statutes 2013 284 Title 42 authorized emergency vehicle may:

(a) Park or stand, irrespective of the provisions of this title;

(b) Proceed past a red or stop signal or stop sign, but only after slowing down as may be necessary for safe operation;

(c) Exceed the lawful speeds set forth in section 42-4-1101 (2) or exceed the maximum lawful speed limits set forth in section 42-4-1101 (8) so long as said driver does not endanger life or property;

(d) Disregard regulations governing directions of movement or turning in specified directions.

(3) The exemptions and conditions provided in paragraphs (b) to (d), in their entirety, of subsection (2) of this section for an authorized emergency vehicle shall continue to apply to section 24-10-106 (1) (a), C.R.S., only when such vehicle is making use of audible or visual signals meeting the requirements of section 42-4-213, and the exemption granted in paragraph (a) of subsection (2) of this section shall apply only when such vehicle is making use of visual signals meeting the requirements of section 42-4-213 unless using such visual signals would cause an obstruction to the normal flow of traffic; except that an authorized emergency vehicle being operated as a police vehicle while in actual pursuit of a suspected violator of any provision of this title need not display or make use of audible or visual signals so long as such pursuit is being made to obtain verification of or evidence of the guilt of the suspected violator. Nothing

in this section shall be construed to require an emergency vehicle to make use of audible signals when
such vehicle is not moving, whether or not the vehicle is occupied.

(4) The provisions of this section shall not relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of all persons, nor shall such provisions protect the driver from the consequences of such driver's reckless disregard for the safety of others.

(5) The state motor vehicle licensing agency shall designate any particular vehicle as an authorized emergency vehicle upon a finding that the designation of that vehicle is necessary to the preservation of life or property or to the execution of emergency governmental functions. Such designation shall be in writing, and the written designation shall be carried in the vehicle at all times, but failure to carry the written designation shall not affect the status of the vehicle as an authorized emergency vehicle.

***42-4-224, 5 (b) C.R.S. Horns or warning devices** (excerpt)*

(b) The driver of a snowplow, while engaged in the removal or control of snow and ice on any highway open to traffic and while displaying the required flashing yellow warning lights as provided by section 42-4-214, shall not be charged with any violation of the provisions of this article relating to parking or standing, turning, backing, or yielding the right-of-way. These exemptions shall not relieve the driver of a snowplow from the duty to drive with due regard for the safety of all persons, nor shall these exemptions protect the driver of a snowplow from the consequences of a reckless or careless Colorado Revised Statutes 2013 322 Title 42 disregard for the safety of others.

(6) Any person who violates any provision of this section commits a class B traffic infraction. 42-4-108, C.R.S.

If you are stopped at a student stop to unload, and an emergency vehicle is approaching:

- Keep the students on the bus if possible.
- If the students are still on the bus, cancel your 8-ways and activate your hazards.
- Leave the 8-ways on if the students have exited the bus.
- If students are already off the bus, signal them about the emergency vehicle and try to keep them clear.
- Let the operator of the emergency vehicle make the decision when it is safe for him to proceed.

Remember, keeping the students safe is your number one priority.

Pedestrians must obey the same traffic controls as vehicles, e.g. signal lights and stop signs. At uncontrolled pedestrian crossings, the pedestrian has the right-of-way.

Headlights - A vehicle must have headlights with high and low beams. State statute requires that headlights must be on between the hours of sunset and sunrise. Also, CDE rules specify: 1 CCR 301-26, 4204-R-234.01. Headlight Operation

The school transportation vehicle's headlights or daytime running headlights shall be activated while the vehicle is in motion.

SEEING

To be a safe driver, the driver must know what is taking place around the vehicle. In a large vehicle like a school bus, this is accomplished by proper mirror use. You should check the side mirrors, both left and right, regularly and often, approximately every 5 to 8 seconds. Inadequate surveillance is a major cause of accidents.

Look Far Enough Ahead

- Scan far enough ahead to be able to react safely to situations
- Look ahead along your intended path of travel about 12 to 15 seconds
- At lower speeds, this is about one city block
- At highway speeds, this is about one quarter of a mile
- When following a large vehicle, allow additional space so you may have a greater range of sight

Get the Big Picture

- Eyes should be constantly on the move to obtain the "big picture" by using all mirrors
- Look ahead; use left side, right side, and student management mirrors every 5-8 seconds to check traffic
- Shift your attention back and forth, near and far

Traffic

- Look for vehicles coming onto the highway, into your lane, or turning
- Watch for brake lights from slowing vehicles
- See far enough ahead to enable you to adjust your speed or change lanes if necessary, to avoid a problem

It is important to know what is going on behind and to the sides of your vehicle. There are "blind spots" that your mirrors cannot show you. Doing mirror checks regularly and often, (approximately every 5 to 8 seconds) will let you know where other vehicles are around you, and when they move into your blind spots. Following these rules will eliminate surprises.

Hills and Curves

- Look for hills, curves, or anything that may make slowing or changing lanes necessary
- When driving uphill in a school bus, watch for traffic in all directions, paying particular attention to the sides and rear of the vehicle
- Do mirror checks often and use 4-way hazard lights if traveling under 25 mph
- Activate your hazard lights if the speed of your vehicle impedes the normal flow of traffic
- When going around a curve, check your mirrors to be sure the rear of the vehicle is tracking correctly in your lane and not encroaching into the other lane

Traffic Signals and Signs

- Pay attention to traffic signals and signs
- If a light has been green for a long time (stale green), it will probably change before you get there; start slowing down and be ready to stop
- Crosswalk signal with a flashing hand is an indication the light is about to change
- Traffic signs may alert you to road conditions indicating the need to change speed or lanes

Lane Changes, Turns, Merging, and Tight Maneuvers

- Scan mirrors thoroughly before changing speed or direction
- A minimum of 6 mirror checks should be performed during lane changes, turns, merges and tight maneuvers
- Check both left and right outside mirrors prior to, during, and at the completion of the maneuver

Mirrors

1 CCR 301-25, 2251-R-30.00

30.00 Exterior mirrors shall meet FMVSS 111.

HAZARDS OF THE ROAD

A hazard is any road condition or road user (driver, bicyclist, pedestrian, animal) that may create a danger. Recognizing a hazard allows you time to be prepared and ready to react if an emergency develops.

Always Have a Plan - A professional driver is constantly looking for hazards. Many hazards turn into emergencies. Being watchful and prepared to act will give you time to plan a way out of an emergency. Always have and escape route.

Following are examples of hazards to be aware of

- **Animals** - Wild animals or domestic livestock may be on or next to the roadway and are very unpredictable. Swerving to avoid them can cause loss of control of your vehicle. Ninety percent of deer/vehicle collisions occur between dusk and dawn.
- **Bicycles** – Bicycles, especially when ridden by children can be unpredictable. Give them plenty of room when passing.
    - 42-4-1008.5, C.R.S. – Crowding or threatening bicyclist. The driver of a motor vehicle shall not, in a careless and imprudent manner, drive the vehicle unnecessarily close to, toward, or near a bicyclist.
    - Any person who violates subsection (1) of this section commits careless driving as described in 42-4-1402.
- **Children** - Children may not be looking for traffic and may create a hazard. They see traffic from a very different perspective. Always expect the unexpected.
- **Conflicts** - Conflicts are a hazardous condition. When a change in speed and/or direction to avoid hitting other vehicles occurs, a conflict with other vehicles may be created. Conflicts occur at intersections where vehicles meet, at merge areas (such as on and off ramps), and where

there are forced lane changes (such as the end of a lane, forcing a move to another lane of traffic). Other situations include slow moving or stalled traffic in the roadway and crash scenes. Watch for drivers who are in conflict with others. Depending on the way they react to the situation, it may put them in conflict with you.

- **Confused drivers** - A slow, confused driver often changes direction suddenly or may stop without warning. Tourists may be unfamiliar with the area near freeways or major intersections. Hesitation, driving very slowly, frequent use of brakes, or stopping quickly may indicate the driver is looking for a street or house number.
- **Crash scenes** - People involved in a crash are distracted and may not be observant of oncoming traffic. Often at the scene of a crash, people run across the roadway without looking, while passing motorists tend to slow down or stop suddenly. You must also be alert for emergency vehicles and equipment arriving at the scene.
- **Disabled vehicle** - Be especially alert when approaching a disabled vehicle stopped along the roadway. Drivers changing a tire or checking the engine may not pay attention to roadway traffic.
- **Distracted people** - People who are distracted in some way present a hazard for drivers. Pedestrians and bicyclists may be distracted by wearing portable stereos with head sets, having their back to the traffic, looking elsewhere, or hurrying to get out of the inclement weather. Drivers or pedestrians talking on cell phones or texting may not be paying attention.
- **Drivers in a hurry** - Drivers in a hurry may feel your school bus is preventing them from getting to their destination on time. They may pass you without leaving a safe gap in the oncoming traffic, or they may cut too close in front of you, causing you to brake suddenly. Drivers of postal vehicles and local delivery vehicles are often in a hurry stepping out of their vehicle or re-entering the flow of traffic.
- **Drivers Under the Influence** - Motorists under the influence of drugs or alcohol are a hazard to themselves and to motorists. Be especially alert around closing times for sporting events or nightclubs. Watch for drivers who have trouble staying in their lane, do no maintain a constant speed, stop without reason, or show other signs of being under the influence of alcohol or drugs.
- **Drop -offs** - Uneven pavement and the shoulder of the road present a road hazard. If the tires of the vehicle drop off the edge of the pavement, it could cause the vehicle to tilt, hitting roadside objects. It may also be difficult to steer the vehicle back on to the roadway.
- **Fallen objects** - Avoid objects that have fallen onto the roadway. Hitting an object may cause damage to, or loss of control of, the vehicle.

- **Impaired drivers** - An impaired driver may be sleepy, ill, or under the influence of drugs, alcohol, or medications. Some of the signs to look for are weaving, erratic speed, and inappropriate stops.
- **Obstructed views** - Be alert for drivers of vehicles with the rear window blocked. Their view may be limited or obstructed.
- **On/off ramps** - Many freeway and turnpike on and off ramps have posted speed limit signs. These should be considered maximum speeds for large vehicles. Use special caution on downhill and curved parts of the ramp. Entrance and exit ramps may be very short and can exit to the left instead of to the right.
- **Parked vehicles** - Parked vehicles can be a hazard. Watch brake lights, backup lights, exhaust fumes, front wheels turned to the traffic side of the road, and other clues that might indicate the driver is about to move the vehicle.
- **Pot Holes** – These can develop quickly, especially in the spring. Hitting potholes may cause loss of steering control and damage to the bus.
- **Shopping areas** - People in and around shopping areas are often not watching closely because they are looking for a certain store or looking into store windows. They may be carrying packages, talking to a companion, or supervising one or more children.
- **Trucks** – Be cautious when driving around large trucks, especially in hazardous road and weather conditions.
    - Avoid tailgating a truck. Trucks need twice as much stopping distance.
    - Never pull out in front of a truck or cut a truck off.
    - Do not drive in a truck's blind spot. Drive where you can be seen. Trucks have a deep blind spot directly in front of the cab, off to the right and left sides, and to the immediate back. These blind spots make up what is called the NO-ZONE.
    - Never drive in a truck's NO-ZONE.
    - Remember: If you cannot see the driver's face in the truck side-view mirrors or cannot see the whole cab in your rear-view mirror when you are in front of the truck, then you are in a truck's NO-ZONE and must adjust the vehicle position as soon as possible.
- **Work zones** - Work zones with construction vehicles and workers require caution and courtesy on the driver's part. Lanes may be narrow and uneven. Keep your eyes focused ahead and use your 4-way hazard lamps to warn drivers behind you of the need for caution.

COMMUNICATING

Signaling - Other drivers do not know what you are going to do until you tell them. Therefore, signaling is important for safety. Situations that require signaling include turning, lane changing, slowing, stopping, passing, and parking.

Directional Signals - Directional signals are used to communicate with surrounding traffic when you are going to perform a maneuver that requires a change in your path of travel. Three good rules for using turn signals are:

- **Signal early** - Signal well before the maneuver you are about to execute. It is the best way to keep others from trying to pass you.

  The signal should be activated:

  - at least 100 feet before the maneuver when the speed limit is 40 mph or less
  - at least 200 feet when the speed limit is over 40 mph
- **Signal continuously** - You need both hands on the wheel to complete the maneuver safely.
- **Cancel signal** - When you have finished the maneuver and established your desired path of travel, cancel the signal.

Lane Changes - Activate the turn signal before changing lanes. Change lanes slowly and smoothly. Perform traffic checks prior to, during, and after executing lane changes. If changing several lanes, “take possession” of each lane prior to proceeding to the next lane.

Passing - Whenever you are about to pass a vehicle, pedestrian, or bicyclist, assume they do not see or hear you. They could suddenly move in front of you. At night, flash your headlights from low to high beam and back. Drive carefully to avoid a crash.

When It’s Hard to See - At dawn or dusk, or in rain or snow, you need to make your vehicle more visible. If you are having trouble seeing other vehicles, other drivers may have trouble seeing you. Leave the headlights on low beam; high beams can bother people in the daytime as well as at night.

Slowing Down - Warn drivers behind you when you need to slow down. A few light taps on the brake pedal to flash the brake lights will warn drivers behind you. Use the 4-way hazard lamps when you are driving less than 25 mph when in an area with a higher posted speed limit or are stopped. Warn other drivers in the following situations:

- **Trouble ahead** - The size of your vehicle may make it hard for drivers behind you to see hazards ahead. If you see a hazard that will require slowing down, warn the drivers behind by flashing your brake lights.

- **Tight turns** - Most car drivers do not know how slow you have to go to make a tight turn in a large vehicle. Give drivers behind you warning by braking early and slowing gradually.
- **Stopping on the road** - When stopping on the road for any reason other than student stops, warn drivers behind you by activating your brake lights, turn signals, or hazard lights. Do not stop suddenly.
- **When parked at the side of the road** - After pulling off the traveled portion of the road and stopping, activate the 4-way hazard lamps. This is very important at night. Do not trust the tail lights to give warning. Drivers have crashed into the rear of a parked vehicle because they thought it was moving normally. If you must stop on a road or the shoulder of a road, place the reflective triangles appropriately as soon as possible. See Unit Eleven, Emergencies.

Driving Slowly - Drivers often do not realize how fast they are catching up to a slow moving vehicle until they are very close. In Colorado, if you are a traffic hazard; such as stopping at a railroad crossing, traveling under 25 mph on a highway or interstate, or parked, you must use the 4-way hazard lamps to alert other drivers. Do not use the hazard lamps otherwise. (Laws regarding the use of hazard lamps differ from one state to another. Check the laws of other states where you might drive.)

Horn - Using the horn can let others know you're there and may help to avoid a crash. Use your horn when needed. However, it can startle others and could be dangerous when used unnecessarily.

Eye Contact - By establishing eye contact, you have a better indication that the other driver or pedestrian sees you. Do not rely on eye contact alone.

Do Not Direct Traffic - Some drivers try to help others by signaling when it is safe to pass or to pull out into the traffic lane. Do not do this. Directing traffic may cause an accident, and you could be held liable.

EMERGENCIES

Emergencies - Traffic emergencies occur when a collision is imminent. Vehicle emergencies may occur when tires, brakes, or other critical parts fail. Following the safety practices in this Guide can help prevent emergencies. If an emergency develops, your chances of avoiding a crash depend upon taking appropriate action.

Steering to Avoid a Crash - Stopping is not always the safest action to take in an emergency. When you do not have enough room to stop, you may have to steer to avoid a crash. You can almost always steer to miss an obstacle more quickly than you can stop. An evasive maneuver may be needed to avoid a collision. However, be aware of the consequences of swerving, one of which is rolling over. (See Unit Seven, Mountain Driving, for exceptions.) Doing frequent mirror checks will allow you to be aware of your options.

Grip the Wheel Firmly with Both Hands - Do not apply the brake while you are turning. Locking your wheels while turning may cause the vehicle to skid out of control. Turn just enough to clear what is in your way. The sharper you turn, the greater the chance of a skid or rollover. Be prepared to "counter-steer" (i.e., to turn the wheel back in the opposite direction once you have cleared whatever was in your path.) Think of emergency steering and counter steering as a two-part action.

Where to Steer - If an oncoming vehicle has drifted into your lane, it is safest to move to the right. The driver may realize what has happened and respond by returning to his/her own lane. Using mirrors allows you to know which lane is empty and can be safely used. Moving right onto the shoulder may be the only available escape route. Care should be taken to determine that the shoulder is strong enough to support the weight of a large vehicle. Try to avoid using the brakes until your speed has dropped to 20 mph; then brake gently. Always check traffic in the mirrors and signal what you intend to do. If possible, keep one set of wheels on the pavement, which helps maintain control.

Leaving the Road - In some emergencies, you may have to drive off the road. This option could be less risky than facing a collision with a larger vehicle. However, a head-on collision with a small vehicle may be preferable to facing a drop-off next to the road.

Returning to the Road - If you are forced to return to the road before you stop, use the following procedure. Hold the wheel firmly and turn sharply enough to get right back onto the road safely. Do not try to edge gradually back onto the road as the tires might grab unexpectedly, causing you to lose control. When both of the front tires are on the paved surface, counter-steer. The two turns should be made as a single "steer-counter-steer" movement.

Stopping Quickly and Safely - When someone suddenly pulls out in front of you, the natural response is to apply the brakes. This may work if there is enough distance to stop. The correct use of brakes is necessary. You should brake in such a way as to keep your vehicle in a straight line to allow you to turn if necessary. The best method for maximizing braking is "Threshold Braking" for stopping in the shortest distance. This is true whether the bus is equipped with anti-lock braking systems (ABS) or not.

When using the threshold braking method, apply the brakes up to the point of locking the wheels. Keep the steering wheel movements small. If you need additional steering, or if the wheels lock, back off the brakes lightly until the wheels begin rolling again. In vehicles with ABS, apply the brakes the same way. If the wheels do lock, the ABS system will release and reapply the brakes very quickly. Do not release pressure on the service brake. Releasing and reapplying (pumping) the brakes will cause the ABS system to fail. Never pump or "stab" the brakes.

Hydraulic Pressure - When the system does not build up pressure, the brake pedal will feel spongy or go to the floor. If possible, downshift to the next lowest gear. Pumping the brakes may generate enough hydraulic pressure to stop the vehicle. If needed the park brake may be used.

Loss of Air Pressure - If the low air pressure warning comes on, stop and safely park the vehicle as soon as possible. Enough air may be in the system to make a smooth stop. Controlled braking is possible only while air remains in the system. The spring brakes will activate when air pressure drops into the range of 45 to 10 psi. Depending on the roadway surface, large vehicles may skid even at speeds under 20 mph if spring brakes activate. It is safer to stop normally while there is enough air in the system to operate the service brake.

Find an Escape Route - While slowing the bus, look for an escape route, such as an open field, side street, or escape ramp. Take care that the bus does not roll backward after stopping. Find an obstacle to stop the bus if possible.

Brake Failure - Brake failure occurs if there is loss of pressure or over-heating. Brakes kept in good condition rarely fail.

Brake Failure on a Downgrade - Escape ramps may be used, should it become necessary. Also, soft gravel resists the motion of the vehicle and turning uphill may stop the vehicle. See additional information in Unit 7 Mountain Driving.

TIRE FAILURE

Prevent Tire Blowout

- Prevent with a proper pre-trip inspection.
- Proper inflation of the tires is important because:
    - Low inflation or lack of tread increases the effect of hydroplaning, reduces cornering ability, and increases the chance of a blowout.
    - Stopping distance is increased from poor contact with road surface.
    - Over-inflation increases the chance of tread separation and tire failure.
- Avoid curbs.
- Report defects or damage.

Recognize Tire Failure - Quickly knowing there is a tire failure allows more time to react. Having just a few seconds to remember what to do helps control the situation. Major signs of tire failure are:

- **Sound** - The loud “bang” of a blowout is easy to recognize. Because it can take a few seconds for your vehicle to react, you might think it was some other vehicle. Any time you hear a tire blow, assume it was yours.

- **Vibration** - If the vehicle thumps or vibrates heavily, it may be a sign that one of the tires has gone flat. With a rear tire, that may be the only sign you get.
- **Feel** - If the steering feels "heavy," it is probably a sign that one of the front tires has failed. Sometimes failure of a rear tire will cause the vehicle to slide back and forth or "fishtail." However, dual rear tires usually prevent this.

How to Handle a Tire Blowout

- Use proper hand placement.
- Hold the steering wheel firmly - If a front tire fails, it can twist the steering wheel out of your hand. The way to prevent this is to keep a firm grip on the steering wheel with both hands at all times. Weight of the bus will shift.
- Do not apply the service brake.
- Stay off of the brake - It's natural to want to brake in an emergency. However, braking when a tire has failed could cause loss of control.
- Slowly accelerate the vehicle to even out.
- Accelerating slightly may help with control. Unless you're about to run into something, stay off the brake until the vehicle has slowed down. Then brake very gently, pull off the road and stop.
- Move your vehicle to a safe location.
- Pull the park brake to stop the bus.
- After coming to a stop, get out and check all the tires, even if the vehicle seems to be handling properly. If one of the dual tires goes out, the only way to know it is to get out and thump it.
- Look for signs of fire.

MANAGING SPACE

To drive safely, you need space all around your vehicle. When things go wrong, space gives you time to think and to take action.

Having space available when something goes wrong, requires managing space. While this is true for all drivers, it is very important for drivers of large vehicles. Large vehicles take up more space and require more space for stopping and turning.

Space Ahead - Of all the space around your vehicle, it is the area ahead of the vehicle (the space you are driving into) that is most important. At least a 15-

second lead time can help with planning for an upcoming problem. You need space ahead in case you must stop suddenly. According to accident reports, the vehicle that buses most often run into is the one in front of them. The most frequent cause for this type of crash is following too closely. Remember, if the vehicle ahead of you is smaller than yours, it can probably stop faster than you can.

When stopped at an intersection behind another vehicle, allow extra space between vehicles by waiting four seconds before you start out.

How much space should you keep in front? You need at least one second for each 10 feet of vehicle length at speeds below 40 mph. At greater speeds, you must add one second for safety. For example, if you are driving a 40-foot bus, you should leave four seconds between you and the vehicle ahead (five seconds if traveling over 40 mph).

To know how much space you have, wait until the vehicle ahead passes a shadow on the road, a pavement marking, or some other clear landmark. Count off the seconds like this, “one thousand-and-one, one thousand-and-two” and so on, until your front bumper reaches the same spot. Compare your count with the rule of one second for every 10 feet of length. If you are driving a 40-foot bus and counted up to two seconds, you are following too close. Drop back a little and count again until you have four seconds of following distance (five seconds, if you’re traveling over 40 mph). After practicing, you will know how far back you should be. Remember, adverse road conditions increase stopping distance.

When stopped behind another vehicle at a traffic light or stop sign, remain far enough behind that vehicle to see where its tires meet the pavement.

Space Behind - You can’t stop others from following too closely. In school buses, it is often hard to see a vehicle that is close behind you. You may be tailgated when you are traveling slowly. Drivers trapped behind slow vehicles often follow too closely. Look for shadows on the road or reflections to determine if someone is following closely behind you.

Many drivers in cars follow too closely during adverse weather. If you are being tailgated, here is how to reduce the chances of a crash:

- Avoid quick changes. If you have to slow down or turn, signal early and reduce speed very gradually.
- Increase your following distance. Opening up room in front of you will help you avoid having to make sudden speed or direction changes. It also makes it easier for the tailgater to get around you.
- Do not speed up. It is safer to be tailgated at a low speed than at a high speed.
- Avoid tricks. Do not flash your brake lights.
- If a heavy load is slowing you down, stay in the right lane if possible. Activate hazard lights if under 25 mph or become a hazard.

- When traveling uphill, do not pass another vehicle unless you can get around quickly and safely.

Space to the Sides - School buses are wide and take up most of a lane. Safe drivers will manage what little space they have. You can do this by keeping the vehicle centered in the lane, and avoid driving alongside others.

Some dangers when traveling alongside other vehicles are drivers changing lanes suddenly and being trapped when you need to change lanes.

Find an open spot where you aren't near other traffic. When traffic is heavy, this may be difficult or even impossible. If you must travel near other vehicles, keep as much space as possible between you and them. Drop back or pull forward so you are sure the other driver can see you.

On multi-lane roadways, vehicles tend to travel in herds. Try to drop back or move ahead of the cluster so you do not become a part of someone else's mistake.

Strong winds make it difficult to stay in the lane. Lighter vehicles may have more difficulty than heavier ones. Strong winds can be especially bad coming out of tunnels or after crossing bridges. It is best to avoid driving alongside others whenever possible.

Space Overhead - Hitting overhead objects is a danger. Always make sure to have overhead clearance. Do not assume that the heights posted at bridges and overpasses are correct. Repaving, ice, or packed snow may have reduced the clearances since the heights were posted.

Know the height of your bus. (This changes when vents and roof hatches are added and opened).

- If you are uncertain whether there is adequate space to pass under an object, take another route.
- Warnings are often posted on low bridges or underpasses, but not always.
- Some roads can cause a vehicle to tilt. If there is a problem clearing objects such as signs or trees along the edge of the road, drive a little closer to the center of the road.
- Before backing into an area, get out of the vehicle and check for overhanging objects, such as trees, branches or electric wires. You may not see them while you are backing. (Also check for other hazards at the same time.)

Space Below - Many drivers forget about the clearance space under their vehicles. Under-storage compartments may lower the clearance of the vehicle. Drainage channels and other depressions across roads can cause the long rear overhang of school buses to drag. Cross such depressions carefully.

CONTROLLING SPEED

Driving too fast to control the vehicle is a major cause of fatal crashes. You must adjust your speed to driving conditions. These include traction, curves, visibility, traffic, and hills.

Stopping Distance - There are three things that add up to total stopping distance:

Perception Distance + Reaction Distance + Braking Distance =

Total Stopping Distance

Perception Distance - This is the distance your vehicle travels from the time your eyes see a hazard until your brain recognizes it. The perception time for an alert driver is about 3/4 second. At 55 mph, you travel 60 feet in 3/4 second.

Reaction Distance – This is the distance traveled from the time your brain tells your foot to move from the accelerator until your foot is actually pushing the brake pedal. The average driver has a reaction time of 3/4 second. This accounts for an additional 60 feet traveled at 55 mph.

Braking Distance - The distance it takes to stop once the brakes are applied. At 55 mph, on dry pavement with good brakes, it can take a heavy vehicle about 170 feet to stop, about 4 1/2 seconds. For vehicles equipped with air brakes, allow an additional half-second for the air to flow through the lines to the brakes. At 55 mph, this equals 32 feet. This is known as **"air brake lag distance."**

Total Stopping Distance - At 55 mph it will take about five seconds to stop and your vehicle will travel about the distance of a football field.

Hydraulic Brakes - (PD + RD + BD) 60 + 60 + 170 = 290 feet.

Air Brakes - (PD + RD + BD +LD) 60 + 60 + 170 + 32 = 322 feet.

Effect of Speed on Stopping Distance - Whenever you double speed, it takes about four times as much distance to stop, and the vehicle will have four times the destructive power if it crashes. High speeds increase stopping distances greatly.

By slowing down a little, it will greatly reduce your braking distance.

Speed and Curves - Drivers must adjust their speed for curves in the road. If you take a curve too fast, two things can happen. The wheels can lose traction and continue straight ahead, causing the vehicle to skid off the road, or the wheels may keep their traction causing the vehicle to roll over. Tests have shown that

vehicles with a high center of gravity can roll over at the posted speed limit for a curve.

- Slow to a safe speed before you enter a curve. Braking in a curve is dangerous.
- Slow down as needed. Don't ever exceed the posted speed limit for the curve. To help maintain control, be in a gear that will allow a slight acceleration through the curve.

Reminder – The posted advisory speed is normally set for cars, not buses.

Speed and Distance Ahead - You should always be able to stop within the distance you can see ahead. Fog, rain, or other conditions may require a slower speed to enable you to stop within that distance. At night, you can't see as far ahead with low beams as you can with high beams. When using low beams; slow down.

Caution – Never outdrive the range of what your headlights illuminate.

Speed and Traffic Flow - Drive at the speed of the traffic if possible, without traveling at an illegal or unsafe speed. Maintain a safe following distance.

A common reason drivers exceed the speed limit is to save time. Anyone trying to drive faster than the speed of traffic will not be able to save much time. The risks involved are not worth it. Going faster than the speed of other traffic results in:

- Frequently passing other vehicles, thus increasing the chance of a crash.
- Fatigue, which also increases the chance of a crash.

When driving on a highway with a posted speed limit of 75 mph, the bus should be 5 – 10 mph below speed limit.

Speed on Downgrades - Traveling at an appropriate speed is the most important thing when descending long, steep hills safely. If you do not go slowly enough, overuse of the brakes can cause them to become so hot (brake fade) they will not slow the vehicle down. Shift the transmission to a lower gear and check the brakes before starting down the grade. Pay attention to warning signs for long downhill grades ahead. Descending steep hills safely is discussed more in Unit Seven, Mountain Driving.

PROPER BRAKING TECHNIQUES

Remember: The use of brakes/retarder on a long and/or steep downgrade is only a supplement to the braking effect of the engine. Once the vehicle is in the proper low gear, apply the retarder, if equipped. The following is the proper braking technique:

- Downshift the transmission prior to the crest of the hill.
- Be in the proper gear.
- Apply the brakes/retarder just hard enough to feel a definite slowdown.
- When speed has been reduced to approximately 5 mph below your "safe" speed, release the brakes. (This brake application should last for about 3-5 seconds).
- When your speed has increased to the "safe" speed, repeat steps 2 and 3. For example, if the "safe" speed is 40 mph, you would not apply the brakes until the speed reaches 40 mph. You now apply the brakes hard enough to gradually reduce the speed to 35 mph and then release the brakes. Repeat this as often as necessary until you have reached the end of the downgrade.
- If braking is occurring often, the bus is not in a low enough gear.

DRIVING AT NIGHT

Driving at night creates a greater risk for drivers. Hazards are not as visible as during daylight hours, so there is less time to respond. Drivers caught by surprise are less able to avoid a crash. Three factors that affect night driving are: the driver, the roadway, and the vehicle.

Driver Conditions - People cannot see as sharply at night or in dim light. Also, the eyes need time to adjust to seeing in dim light. Most people have noticed this when walking into a dark movie theater. Drivers can be blinded for a short time by bright light. Some drivers are especially bothered by glare. People have been temporarily blinded by the high beams of an oncoming vehicle. It can take several seconds to recover from glare. Even two seconds of glare blindness can be dangerous. A vehicle going 55 mph will travel more than half the distance of a football field during that time. Avoid experiencing glare blindness by looking to the right side of the road when someone coming toward you has very bright lights.

Fatigue and lack of alertness may increase at night. The body's need for sleep is beyond a person's control. Most people are less alert at night, especially after midnight. This is particularly true if you have been driving for a long time. Drivers may not react as quickly to hazards, increasing the chance of a crash. When you are sleepy, the only safe cure is to get off the road and get some sleep. If you do not, you are risking your life and the lives of others.

Roadway Conditions - In the daytime there is usually enough light to see well. This is not true at night. Some areas may have bright streetlights; others will have poor lighting. On most roads, you will probably have to depend entirely on your headlights.

Less light means you will not be able to see hazards as well. Road users who do not have lights are hard to see. There are many crashes at night involving pedestrians, joggers, bicyclists, and animals.

Even when there are lights, the road scene can be confusing. Traffic signals and hazards can be hard to see against a background of signs, shop windows, and other lights. Use a slower speed when lighting is poor or confusing so you are able to stop within the distance you can see ahead.

Vehicle Conditions - At night, your headlights will usually be the main source of light enabling you to see and others to see you. Visibility is not nearly as good at night with your headlights as in the daylight. Low beams allow you visibility of about 250 feet while high beams allow about 350-500 feet. Adjust your speed to keep stopping distance within sight distance (The ability to stop within the range of your headlights.)

Night driving can be more dangerous if you have problems with your headlights. Dirty headlights may give only half the light they should. This cuts down your ability to see, and it makes it harder for others to see you. Make sure all lights are clean and working properly. Headlights can be out of adjustment. If they don't point in the right direction, they don't give you a good view and can blind other drivers. Have a qualified person make sure they are adjusted properly.

In order for you to be seen easily, the following must be clean and working properly:

- Reflectors
- Turn signals
- Clearance lights
- Reflective tape
- Taillights
- Headlights
- Brake lights

At night, your turn signals and brake lights are even more important for communicating to other drivers what you intend to do. Make sure they are clean and working properly.

It is essential at night to have a clean windshield and mirrors. Bright lights at night can cause dirt on the windshield or mirrors to create a glare of its own, blocking your view.

Most people have experienced driving toward the sun just as it has risen or is about to set and found that they can barely see through a windshield that appears alright in the middle of the day. Clean the windshield on the inside and outside for safe driving at night.

Deaths from vehicle collisions occur three times more often in the evening, so pay special attention while driving in the late afternoon, early evening, and early morning hours.

Dangers

- Visibility may be reduced.
- Peripheral vision is not as sharp.
- Darkness impairs your ability to judge distances, movements and colors.
- More likely to become sleepy.
- Night blindness makes objects appear further away.
- Depth perception in mirrors is distorted.
- Slow down and drive with greater caution.

Precautionary Measures

- Before starting to drive at night, give your eyes an extra five minutes to adjust to the dark.
- Properly pre-trip your vehicle and know the location of your switches.
- Never wear sunglasses when driving in low light conditions.
- CDE requires headlights to be on when the vehicle is in motion.
- Slow down and leave at least 300 feet between you and the vehicle ahead of you.
- Dim the lights before they cause glare for other drivers; within 500 feet of an oncoming vehicle and within 500 feet of a vehicle in front of you.
- Use high beams when you can. Some drivers make the mistake of always using low beams. This seriously cuts down on their ability to see ahead. Use high beams when it is safe and legal to do so.
- Do not look directly at the high beams of an approaching vehicle – look forward and slightly to the right.
- Flip your rearview mirror to the night position in order to reduce glare when driving a smaller vehicle.
- Light inside the vehicle makes it harder to see outside. Keep the interior light off and adjust the instrument lights as low as possible and still be able to read the gauges.

- Stop driving if you are sleepy. People often do not realize how close they are to falling asleep. You are in a very dangerous condition. The only safe cure is to sleep.

UNIT SEVEN - MOUNTAIN DRIVING

This section provides information on safe travel in the mountains. Mountain driving presents unique situations that require greater attention to the same driving skills and expertise expected of all school bus drivers. Steep grades, winding roads, blind curves, falling rocks, wildlife, sightseeing motorists, bicyclists and unpredictable weather can present additional risks and consequences. There is a reduced margin for error and minor mistakes can develop into major problems. Mountain driving requires a high level of concentration and a respect for the terrain. (See personal pre-trip – Unit 3)

42-4-1901 (1) (a), C.R.S. Except as provided in paragraph (a) of subsection (2) of this section, passengers of any school bus being used on mountainous terrain by any school district of the state shall not occupy the front row of seats and any seats located next to the emergency doors of such school bus during the period of such use.

(b) For purposes of this section, mountainous terrain shall include, but shall not be limited to, any road or street which the department of transportation has designated as being located on mountainous terrain.

42-4-1901 (2) (a) The provisions of paragraph (a) of subsection (1) of this section shall apply to:

42-4-1901 (2) (a) (I), C.R.S. Passengers of any school bus which is equipped with retarders of appropriate capacity for purposes of supplementing any service brake systems of such school bus; or

42-4-1901 (2) (a) (II), C.R.S. Any passenger who is adequately restrained in a fixed position pursuant to federal and state standards.

This unit focuses on maintaining control, transmission and retarder usage, braking, pitch and grade, chains, and other skills for safe school bus operation in the mountains. CDE recommends frequent skill refresher training for mountain drivers.

TARGET SPEED

Target speed is the speed a driver determines is safe for a driving condition. When the bus speed increases above the target speed, the driver slows to 5 mph below the target speed and allows the bus speed to increase naturally back to the target speed. Repeat this process as needed. If this process is happening often, the driver has not shifted down to a gear that will provide the engine compression to hold the vehicle at or below the target speed.

MAINTAINING CONTROL

To maintain control of a school bus on steep mountainous terrain, follow the steps below for safe control:

1) Engine Compression/Transmission
2) Retarder Use (if equipped)
3) Service Brake Use

A driver is in control when the school bus is kept at a safe road and engine speed. A safe school bus speed is either at or below the posted limit. The bus manufacturer determines safe engine speed (revolutions per minute/rpms).

ENGINE COMPRESSION/TRANSMISSION

Engine compression is the first source of braking power, even if the bus is equipped with a retarder. When coming down a long steep grade, descend in a gear that is low enough to climb that same grade. On steeper grades and/or with a loaded bus, use at least one gear lower. Be aware that if the engine reaches maximum rpms, automatic transmissions can up-shift, even when manually locked in gear.

Select the proper gear for the grade before starting to descend and keep the bus in that gear to the bottom of the grade. Avoid the possibility of not being able to shift into the next lower gear, if needed. This is especially important with a standard transmission. Maintain the manufacturer's recommended rpm range for the gear selected in order to avoid over-revving or lugging, which may damage the engine.

Discuss recommended rpm ranges for all types of buses in the fleet.

RETARDER

The retarder is designed to slow the bus to maintain a safe speed. The retarder will not completely stop the bus. Use the retarder for all slowing needs. Proper use of the retarder will improve safety and save money by avoiding wear on the bus's braking system.

Retarders control only the rear wheels. This gives the driver complete control of the steering system. Some retarders work in reverse as well as forward gears. This helps to prevent the service brake from overheating. The retarder can overheat when used for long periods. Cool the retarder by discontinuing use for 10 minutes at a minimum of 15 mph before stopping the bus. Use only the service brakes in this cool down period.

1 CCR 301-25, 2251-R-33.00 Retarder (optional, see Section 42-4-1901, C.R.S.)
33.01 Retarder manufacturers shall certify that their product system shall maintain the speed of the bus loaded to maximum GVW at 19.0 miles per hour on a 7 percent grade for 3.6 miles.

33.02 School buses equipped with electro-magnetic retarder(s) shall have increased electrical system capacity commensurate with the needs of the retarder system.

33.03 Indicator light(s) shall indicate when retarder is in operation.
Types of Retarders

Electromagnetic

The most common type of retarder is electromagnetic. Mounted on the driveshaft of the bus, this retarder slows the driveline to the rear tires using electromagnetic forces. These retarders have four positions of braking. Positions 1 and 2 are the most commonly used. Use positions 3 and 4 only for short amounts of time due to the drain it places on the battery system. When an emergency stop is required, activate the hand control from the "off" position to the fourth position in one single action. Activation of electromagnetic retarders can also occur with the engine off as long as there is a source of electrical power on older models.

NEVER DRIVE AGAINST A RETARDER!

It will overheat and can cause a fire.

Stop and Go Traffic Use

Use positions 1 and 2 for normal slowing and 3 and 4 for firmer or emergency slowing. When it becomes necessary to slow down, release the accelerator and apply the retarder hand control to the desired position. To come to a complete stop, apply the service brake. Switch the retarder hand control to the "off" position when no longer needed.

Downhill Descent Use

Use the retarder to reduce speed and allow engine compression to keep the bus at a safe speed. Listen to the engine and watch the gauges for speed to increase; apply the retarder until 5 mph below target speed. The bus is in too high of a gear if the need for fourth position occurs. Slow the bus using the service brakes and shift the transmission to a lower gear.

Slippery Road Conditions

Use the retarder cautiously in the first position in order to slow the bus on slippery roads. Before shifting into position one, make sure the engine rpm's are low to minimize the torque from suddenly going to the rear wheels. Over-retarding on slippery roads can break the traction of the rear wheels. If this happens, disengage the hand control. As soon as the bus regains traction, you can lightly accelerate to pull out of a skid. If use of the retarder is still needed, use cautiously. The operator has little control when the retarder system is electronically hooked into the service brake system. It is best to turn the retarder switch off when slippery conditions exist.

Hydraulic

Hydraulic retarders are fluid braking systems, which decrease the speed of the bus by slowing the automatic transmission. Brake application or accelerator release activates this type of retarder. There is generally no other type of control. The hydraulic retarder does not have the four positions of braking, as the electromagnetic retarder does. These retarders have a variety of styles and positions. Please refer to your bus operation manual for detailed instructions. With all hydraulic retarders, avoid continuous use as the transmission can overheat. The transmission retarder will not function if the engine is off.

Engine/Exhaust Brakes

These systems are an optional auxiliary braking system that assists but does not replace the service brake system. Both brakes perform in the same manner. The engine brake is inside the engine, and the exhaust brake is in the exhaust system. The engine or exhaust brake switch, located on the control panel (in combination with the accelerator or brake pedals), allows the driver maximum use of the engine or exhaust brake. The exhaust brake is a butterfly valve mounted in the exhaust manifold pipe. An air cylinder shuts the butterfly valve when there is a release of the accelerator and the brake switch is in the “on” position. This restricts the flow of the exhaust gases and retards the engine. This retarding action carries throughout the engine and drivetrain, slowing the bus and reducing the need for frequent service brake applications.

When using on a steep grade, make sure that the brake switch is in the “on” position. Once there is a release of the accelerator pedal, the retarder will come on. While going down the grade, use a gear low enough to descend safely with minimum application of the service brakes. As a general guideline, use the same gear as you would to ascend that same hill. Do not allow the engine to exceed its governed speed or serious engine damage could result. Apply the service brakes to reduce the engine rpms. Shift into a lower gear to make a slower descent.

Engine or Exhaust Brake Operating Characteristics

Operators will experience the following when engine or exhaust brakes are in operation:

- Exhaust smoke will appear normal.
- Engine temperature will remain in the normal operating range.
- Road speed during descents will decrease.

Vehicle weight and grade of the decline will affect the amount of braking force required to slow the bus. If the bus is equipped with these types of brakes, the operator may not always be able to feel the retarding force; however, it is preventing the bus from gaining speed.

It is important to engage the different stages of the secondary braking system prior to the requirement or the need for additional braking in order to have the feel of the braking action.

SERVICE BRAKES

In mountain driving, the force of gravity plays a major role. Gravity will make the bus speed up when going down steep grades. The heavier the load, the faster the bus will gain speed. Go slowly enough to avoid the use the service brakes to maintain a safe speed. Prolonged use of the service brake causes brake "fade" (less stopping power). Brake fade occurs when heat build-up causes the brake lining to glaze or deteriorate at high temperatures. This decreases or eliminates the effectiveness of the brakes, and in extreme cases, can cause a fire. Never exceed a safe controlled speed. For long downhill grades, maintain safe speed by properly using engine compression and the retarder (if so equipped). This helps ensure minimal use of the service brakes. Use the service brakes intermittently, with enough time between applications to keep the linings, drums, and/or rotors cool.

PASS CHECKS

Pull over at a safe location prior to beginning a decent. As you enter the parking area, apply firm pressure on the brakes checking for proper stopping and that the bus does not pull. Do a walk around to ensure all lights are working. Stop at each wheel and feel the hub for signs of heat. Look at the slack adjusters to ensure they are all indicating proper adjustment. Look at all tires for damage and proper inflation. Place the bus in the proper gear to descend the downgrade.

When approaching a downgrade where a full check of the vehicle is not possible, prior to reaching the apex of the hill, firmly apply the brakes to feel for proper brake response and no pulling in either direction. Shift down to the proper gear prior to the apex of the hill.

PULLOUTS

Use pullouts to allow traffic backed up behind the bus to pass safely. If a pull out is large enough, maneuver the front of the bus so that you can look over your shoulder for oncoming traffic before reentering the roadway. Do not rely solely on the mirror if the opportunity to square off and look exists.

PITCH AND GRADE

One of the hardest techniques to learn may be reading terrain. Maintain a safe scanning distance and scan the entire area for changes in grade, upcoming curves, wildlife, and traffic. When possible, look through the trees beyond the curve before entering.

Tips for Reading Terrain

- Whitewater – indicates a steep grade
- Objects that seem to change size rapidly – indicate a steep grade
- Canyon walls that appear to close in ahead of the bus – indicate a possible narrow road ahead
- Do not blindly follow the traffic ahead of you – other drivers may misinterpret terrain.

CURVES

Pitch and Grade

Pitch and grade affect how mountain drivers maneuver through curves. Long, wide curves in the mountains may remain slippery for continuous periods, due to the pitch of the road or position of the sun. During a downhill curve, the bus may accelerate on its own. Do not brake in a turn, especially during adverse conditions. Apply the retarder or service brake (depending on conditions) well in advance of the curve and allow the speed of the bus to decrease gradually. Once the bus has reached the apex of the turn, gradually accelerate. This helps the bus track correctly through the lane. Braking through a turn may cause the bus to skid and make control difficult.

When approaching curves, notice how the road pitches from side to side in relation to the curve and the grade. Often, the operator can drive at a higher speed if the curve maintains a pitch that follows the direction of the turn (on-camber) than if the curve is flat or off-camber. The amount of acceleration out of the curve will depend on the degree of pitch. A skid can occur by accelerating too early when negotiating curves with a relatively flat pitch.

Speed

Slow to a safe speed before entering any curve. Braking in a curve is dangerous because it is easier to lock the wheels and cause a skid. Do not exceed the posted speed limit for the curve. Since the posted speed limit is for small vehicles, the bus speed should be 5-10 mph below the posted limit. To help maintain control, be in a gear that will allow slight acceleration through the curve. When entering a curve while going downhill, allow gravity to provide the slight acceleration.

Lane Position

Watching the lane position will help avoid head-on collisions. On tight curves, especially switchbacks, watch the tail swing. Stay centered in the lane to keep a safe clearance on all sides of the bus. Hugging the outside of a curve increases the chance of dropping a tire off the paved portion of the road onto a soft shoulder. Hugging the inside of a curve places your mirrors into the space of other motorists. If possible, adjust the speed and space to avoid driving alongside another vehicle in a curve on a multilane highway. On a right hand curve, move as far to the outside of the lane as possible. It is essential to pay attention to where the right rear tires are in relation to the pavement. On-coming traffic tends to take their half out of the middle when negotiating a left hand curve.

Overhead

Be aware of rocks that overhang the road. Off-tracking brings the center of the bus closer to the overhanging objects. When entering a tunnel, be aware of the curve of the edges and top. The vehicle height may fit through the middle, but not on the outer edges.

CHAINS

Chaining is crucial to mountain driving in adverse weather. The Department of Transportation requires the use of chains on commercial motor vehicles on many mountain passes. The two most common types of chains are automatic and conventional. There are several methods for installation. Below are some commonly used methods and tips for safely chaining a bus.

Automatic Chains

These chains permanently fasten to the rear suspension of the bus. They activate from a dashboard switch that opens an electric over air solenoid mounted on the frame rail. Air pressure from the buses on board air brake system or an auxiliary air source flows to two air cylinders that lower two chain wheels down until they contact the tire sidewall. The friction between the tire

and the chain wheel causes the chain wheel to rotate. Each chain wheel has lengths of chain attached to it. The centrifugal force created causes the chains to flail out and pass between the tire and road surface to enhance traction in snow and ice. The additional traction also reduces stopping distance in these same slippery conditions. When in the "off" position, the solenoid exhausts the air in the cylinder, and the spring in the cylinder returns the chains to the retracted position.

Advantages:

- Increased safety as the bus is always equipped and has quick access on short notice. Typical engagement time is two seconds.
- Automatic chains dramatically reduce the time spent installing conventional chains, increasing productivity of the operator. More importantly, routes can remain on schedule.
- Automatic chains can eliminate body damage caused by broken conventional chains, which at times can be a mission disabling failure.
- Advantages in hauling force, acceleration and stopping distance are dramatic.

Disadvantages:

- The operator must realize that this system is not a "fix all" (avoid a false sense of security).
- Operator activation is required.
- The system, per design, is limited to ice and a maximum of up to four inches of snow. The operator may have to install conventional chains in deep snow conditions.

The operator may lower or raise automatic chains at any time during speeds less than 30 mph. To avoid damage, do not raise the chains if the bus is not in motion. If the chains are raised when not in motion, damage can occur to the chains, arm mechanism, and air system.

Conventional Chains

The operator must install and remove conventional chains. Always plan ahead when chaining is a possibility. If there are is any doubt about traction, it is best to chain up to avoid safety issues.

When determining locations to install and remove conventional chains, always find a safe location that is out of the way of traffic. If passengers are on-board, they should remain inside of the bus. Make sure the engine is off and the brake is set so the bus will not move.

Chaining Steps:

- Operator Preparation - Stretch muscles before lifting chains.
- Lay chains out on the ground to confirm that the chains are lying correctly with each side parallel. If not, straighten them to assure that all reinforcement bars will face the road surface instead of gouging into tire.
- Choose the proper chaining method to use.
    - Drape over the tire (Recommended in most circumstances).
        - Hooks on inside, clasps on outside, cross-links be perpendicular to tire and all reinforcement bars on cross-links facing away from the tire.
        - Roll the bus over chains. Determine the optimal direction to roll (forward or backward) by assessing which direction has the most room. Avoid rolling over the hook and clasp end of the chain, if possible. If on a slope, always make sure the operator is on the upward side of the tire when fastening chains.
        - Place a mark at one side of the front passenger door and drive the bus with the front wheels straight until the opposite side of the entry door is lined up with the mark.
        - Fasten the chains. The inside hooks should be fastened first. Do not hook on the end link. The identical number of links on the inner hook and outside clasp is ideal to fasten the chains. Attach the stretchers/tighteners on the outside of the tire. Drive forward 50-100 yards, remove the stretchers, tighten the chains and reattach the tighteners.
    - In-place chaining (usually done if bus is unable to move).
        - Drape the chains over tire so that the cross-links at the bottom do not hinder the effort to fasten the inside hook to the chain link.
        - Use a chain tightener or coat hanger to guide the link between the dual tires to fasten the chain link with the inside hook.
        - Pull the chains as tight as possible. A good tip is to use your knee against the tire to spare using only your back. Fasten the chains with the outside clasp and attach the tighteners. When the bus is moving and out of danger, remove the tighteners, readjust the chains, fasten both the inside hook and outside clasp, and reattach the tighteners.

Remember that when the bus is empty, chain traction is limited. Never drive over 30 mph when chains are installed on the tires.

Removal Steps:

Remove conventional chains only when the road surface provides safe traction without the use of chains.

- Find a safe area away from traffic and keep the students on the bus.
- Remove the tightener.
- Loosen the outer clasp.
- Unhook the inner hook first to prevent the chains from dropping between freezing wheels.
- Drive over the chains in a manner that prevents the tires from running over clasps or hooks.
- Stretch the chains out to check for broken or badly worn links.
- Bundle chains for storage.
- Place the tightener perpendicular to the cross-links and pull each individual link over the tightener while inspecting the condition of each link.
- Fasten the tightener at the ends and place in the desired storage area.

If there are any doubts about the condition of any part of the chains, take them to a mechanic or other repairperson for inspections and/or replacement.

Additional Tips:

- Carry additional tighteners in case of breakage.
- Inspect and install all chains in the fall to ensure proper condition and fit. Every element of a chain is a moving part. Check for broken chain links and verify the hooks and clasps are in good operating condition.
- Label all chains with paint to confirm they are the proper ones for that particular bus and add this check to the daily pre-trip inspection.
- If installation of new tires occurs on the bus, always check the chains for proper size.

https://www.codot.gov/travel/winter-driving/TractionLaw

https://www.codot.gov/travel/library/Brochures/ChainTips.pdf

CDOT Fact Sheet —Traction Law and Passenger Vehicle Chain Law

Traction Law (Code 15) — Use George's Head to Check Your Tread

- If weather conditions require, CDOT will implement a Traction Law.
- Under a Traction Law, motorists will need to have either snow tires, tires with the mud/snow (M+S) designation, or a four-wheel/all-wheel drive vehicle — all tires must have a minimum one-eighth inch tread.

Passenger Vehicle Chain Law (Code 16) — Chain Up or Stay Off

- During severe winter storms, CDOT will implement a Passenger Vehicle Chain Law — this is the final safety measure before the highway is closed.
- Under a Passenger Vehicle Chain Law, every vehicle on the roadway is required to have chains or an alternative traction device (like AutoSock).

Fines

- Motorists driving with inadequate equipment during a Traction Law or Passenger Vehicle Chain Law could be fined more than $130.
- If a motorist blocks the roadway because they have inadequate equipment during a Traction Law or Passenger Vehicle Chain Law, they could be fined more than $650.

Test Your Tread

- Find out if your tires are safe for winter driving by doing the Quarter Test:
    - o Insert a quarter upside down into your tire tread, with Washington's head going in first.
    - o If the top of the head is covered by tread, you're good to go.
    - o If the top of his head is visible at any point around the tire (test multiple points), you can't drive when a Traction Law is called — you also likely need new tires.

Traffic Facts

- At 60 MPH on snowy pavement, winter tires require 310 ft. to stop. All-season tires require more than double that (668 ft.).
- In 2014, one of the worst traffic delays on the I-70 Mountain Corridor was caused by unprepared motorists. Severe delays were caused by 22

vehicles spinning out and causing crashes — 19 of those vehicles had worn tires.

• Traffic accidents — not volume — account for as much as 60 percent of all traffic delays.

• A crash that only takes 10 minutes to clear can delay traffic for an hour.

Statewide Tire Deals

• To help motorists prepare for winter driving, CDOT has partnered with tire companies across the state to offer discounts on new tires.

• To find a tire company with deals near you, visit winter.codot.gov/tires.

DELINEATORS

Delineator posts are green posts with colored reflectors. They are in high risk and informational areas of roadways to convey a variety of messages to motorists. Below are some specifics on delineators.

Delineator—a retro-reflective device mounted above the roadway surface and along the side of the roadway in a series to indicate the alignment of the roadway, especially at night or in adverse weather.

Type III

1) Three Amber Front Reflectors - These are designed to warn the motorist of existing objects. These objects may not always be in the roadway, but are close enough to the edge of the road, to be a potential hazard. Typically, they are near underpass piers, bridge abutments, guardrails, and culvert heads. If a guardrail approach end is not flared, there will be a Type III delineator immediately in advance of the approach end.
2) Two White Front and One Red Back Reflector - These are designed to warn motorists of acceleration and deceleration lanes ahead. The red reflector is for warning motorists of the wrong way.
3) Two Amber Front and One Red Back Reflector – These are normally installed in medians for left-turn deceleration lanes.
4) One Blue and Two Yellow Front Reflectors - These are installed at crossover locations of divided highways.
5) Three Blue Front Reflectors - These are for Department of Transportation maintenance crew workers. These are installed at the bridge joints.
6) Three Green Front Reflectors – These are for Department of Transportation maintenance workers. These are installed in front of

approaching guardrails with flare ends, not on bridges. They can be found in front of curb heads.

7) Red Reflectors – Runaway truck ramps are bordered on each side by red reflectors spaced not more than 50 feet apart.

Delineation Posts - The white and amber reflectors on the green posts along the roadway are called cat eyes. The color and number of cat eyes on a post indicate a particular hazard or condition at the edge of the roadway.

- Edge of the road — single white
- Right side of roadway — single white
- Left side of roadway — single amber
- On and off ramps — two white
- Minor problem area — single amber
- Moderate to serious problem area — two amber
- Life-threatening problems — three amber

  (Culverts, bridges, guardrails, heavy crossroad traffic)

Delineator panels are a striped marker consisting of a vertical rectangle with alternating black and retro-reflective yellow stripes sloping downward at an angle of 45 degrees toward the side of the obstruction on which traffic is to pass. These types of delineators can be seen on the end of guard rails, on bridges, etc.

EMERGENCY STOPS

The braking systems on the bus are mechanical systems and can fail. The following emergency stopping procedures are to be demonstrated and practiced during on-the-road (hands-on) training. These simulations will prepare the operator for cases in which any or all braking systems fail. Except where noted, use a road or highway with little or no traffic and with good visibility for the simulations.

Every Which Way Simulation

This simulation is to practice when there is a need to stop the bus when the service brakes fail to operate. The operator will experience the use of all available means to stop a bus. Shift down to the first gear of the automatic transmission, set the retarder to the fourth position, and pull the park brake. As the bus slows, the transmission will automatically downshift. In a standard transmission, the operator will downshift through the sequence as the engine speed slows.

Full Four Wheel Lock Simulation

This simulation is to practice when the service brakes are functioning and the engine is running. The operator will experience the forces involved in severe use of the brakes. The operator will get the feel of a bus skidding. At 25 mph, the driver will release their grip on the steering wheel and press hard on the brake pedal. Note any tendency of the bus to pull right or left. Make sure there is room on both sides of the lane for the bus to pull in either direction.

Retarder Stop Simulation

This simulation is to practice when the engine stalls, the parking brake is broken, and there are hot fading brakes (engine failure in which the automatic transmission is inoperable). Use the electric retarder to slow the bus. Let up on accelerator and place the retarder in position four. When slowed to an idle, shift the transmission into neutral and use a soft shoulder to stop.

Park Brake Simulation

This simulation is to practice when the service brakes and retarder are inoperable with the speed too fast for downshifting to slow the bus. Depending on the service brake defect, the park brake may be inoperable or already set due to a loss of air pressure. Select a flat, straight portion of the road with a full-width shoulder lane where the bus can pull completely out of the travel lane. At highway speed, turn on the hazard lamps, let up on the accelerator, pull the park brake, and carefully pull the bus into the shoulder lane as it slows to a stop.

Ride-It-Out Simulation

This simulation is to practice when the retarder is inoperable or not present, the parking brake is broken and hot, the brakes are fading, and the engine is running. Simulate stopping a bus without the use of the brakes or retarder. Select a downgrade that will allow the bus transmission, when placed in the highest gear, to maintain the approximate posted speed limit. The downgrade should decrease for safe simulation of the procedure. At the top of the descent, let up on the accelerator, put the gear selector in first (if automatic), and ride out the descent. As the bus slows, the transmission will automatically downshift. In a standard transmission, the operator will downshift through the sequence as the engine and road speed slow. Turn on the hazard lamps at 25 mph and pull into the shoulder lane. At an idle in first gear, pull the right side wheels into the soft shoulder dirt, shift the transmission into neutral, and allow the bus to stop.

Escape Ramps

To stop runaway vehicles safely without injuring operators or passengers, escape ramps are on many steep mountain grades. These ramps use a long bed of loose soft material (pea gravel) to slow a runaway vehicle, sometimes in combination with an upgrade. The operator should know all escape ramp locations on any assigned route. Signs show operators where ramps are located. Escape ramps save lives and equipment. Use them if the bus has lost all forms of braking.

DESTINATION PRE-TRIP

Conduct a modified post-trip once at the destination. This will help discover any mechanical defects before leaving. Some very important items to check when in the mountains are:

- Retarder Operation – Check this while driving. When in first position, check that brake lights activate. This will only occur when moving at 6 mph or higher in some newer models.
- Left and right turn signals.
- Headlights, brake lights, tail lights, and clearance lights are all operational.
- Emergency door buzzer.
- Tires, lug nuts, tire chains, and exhaust system.
- Leaks under the bus.
- Perform a standard brake test.

Your district may require other items. Follow district procedures for checking any additional items.

CRASHES

If faced with a head-on collision, it MAY be a better option because of the size and weight of the bus and the fact that the operator and passengers sit above the impact zone. Swerving may cause the bus to slide out of control and leave the roadway and/or cause the bus to rollover. However, if facing a head-on collision with a large truck, avoidance by steering out of the way into the oncoming lane MAY be the best option, even if you must take the right-of-way from a car.

Plan ahead as you drive. Look for spots to use as escape routes. Sideswiping hillsides, rocks, trees, or guardrails may be the best alternative to slow the bus in an emergency.

Deer, elk, or other wildlife may suddenly appear in the roadway. The operator's choices are to swerve or hit the animal. The safer choice is to hit the animal rather than swerving and possibly losing control of the bus. Swerving will place your passengers in greater danger. It is natural to react by swerving, but knowledge of the possible consequences should override that decision.

OTHER MOTORISTS/BICYCLES

Sightseeing motorists and/or tourists may drift to either side of the roadway. Many motorists are also uncomfortable driving on mountain roads. They may fear driving towards the outside of the lane and crowd the center of the road. Pay attention to other vehicles' tire to ground contact, which indicates their exact position in their lane. Be aware that motorists may park on mountain shoulders, around curves, and walk on the roadway.

More and more people are riding bicycles in the mountains. In most cases, they ride in the traffic lane. Bicycles, especially when ridden by children can be unpredictable. Give them plenty of room when passing.

- 42-4-1008.5, C.R.S. – Crowding or threatening bicyclist. The driver of a motor vehicle shall not, in a careless and imprudent manner, drive the vehicle unnecessarily close to, toward, or near a bicyclist.
- Any person who violates subsection (1) of this section commits careless driving as described in 42-4-1402, C.R.S.

Never outdrive your ability to stop in the distance you can see.

PASSENGER WELL-BEING

When planning a mountain trip and driving in the mountains, think about your passengers. When was the last break for them to stretch their legs? Take stretch breaks, as needed, in safe pullout areas.

Remember that many passengers suffer from motion or carsickness. Have these passengers sit up front with one or more windows open for fresh air. If known ahead of time, discuss other remedies with parents/guardians. Slowing down more in curves may help these individuals. The driver may feel comfortable with the speed on winding roads; however, they should watch the passengers in the rear of the bus to determine if they are comfortable as well.

Anyone can suffer from altitude sickness. Make sure they drink fluids and remain quiet (sitting or laying down), and get them to a lower altitude as soon as possible.

DRIVER CARE

When driving long distances, note that operators may experience fatigue or minor aches and pains. Be sure before leaving to position the bus seat so the back is completely against the seat back with feet flat on the floor. Consider using a lumbar roll or rolled-up towel between the lower back and seat back. Adjust the seat up or down, so the hips are slightly higher than the knees. The back of the knees should not rest on the edge of the seat. Adjust the seat forward or back, so the knees are at a slight bend when fully pushing the pedals.

Arms should comfortably reach the steering wheel and controls with minimal leaning or twisting.

Remember to adjust the mirrors to avoid twisting or placing the body in an uncomfortable or awkward position. To combat fatigue, perform stretches before and after driving.

UNIT EIGHT – ADVERSE WEATHER

In this unit, there is information on adverse weather conditions, driving techniques, and information pertinent to School Bus Driving in all weather conditions experienced in Colorado.

Becoming aware of the effects on the performance of the vehicle and the proper procedures to counter the effects of the conditions will provide the understanding required to respond correctly. Slow down, pull over, or make the decision to reschedule. Safety must be the driver's primary concern.

WIND

Strong winds affect the handling of a school bus. It may be harder to steer and stay within the lane of travel during high winds. Wind gusts can push on the side of the bus, causing it to thrust sideways. In extreme situations, roof hatches have popped open and ripped off. Extreme wind may also cause difficulty keeping the bus in the proper lane of traffic. Overcompensated steering can cause the bus to tip over or leave the lane of travel. Wind may blow around debris that can hit the bus causing damage or injuries.

Strong winds increase just prior to, and in the beginning of a change in weather. During thunderstorms, dust storms, and blizzards, visibility can be severely impaired. Operators should be cautious when crossing bridges and overpasses, driving between hills, exiting tunnels, on open straight-aways, and when passing high-profile vehicles.

Tips for driving in strong winds:

- **Grip -** Keep a strong grip on the steering wheel. Anticipate wind gusts.
- **Speed Reduction -** Reduce speed to lessen the effect of the wind, or pull off the road and wait.
- **Pull Over -** Pull onto a solid shoulder, side road, or parking lot.
- **Call -** Contact Dispatch to convey the situation and ask for instructions.
- **Observe Surroundings -** Watch for blowing debris, falling trees or power lines. Reduced visibility may occur from blowing dust, sand, or snow.
- **Prepare -** Always be prepared for the unexpected.

TORNADOS

A tornado is a violently rotating column of air. In the northern hemisphere, tornados rotate counterclockwise. They develop in warm, moist air, in advance of an eastward

moving cold front. Most tornados move southwest to northeast. The average forward speed of a tornado is 30 mph, but can be up to 70 mph. When the temperature is between 65 and 84 degrees and the dew point is above 50, the dangers of a tornado are at the highest. They often accompany severe thunderstorms. Tornados are common in eastern Colorado. Though they are rare, tornados are possible in the mountains, foothills, and western valleys.

Tornado Signs:

- Green-colored Sky
- Hail
- Wall Cloud
- Funnel Cloud

Many say a tornado sounds like a freight train approaching. If a tornado does not appear to be moving, it may be coming toward you. If you are in the bus and see a tornado, evacuate to a safe location, preferably a building. When in a building, go to an interior room or basement, away from windows, and have all passengers sit and cover their heads with their hands. When in the direct path of a sighted tornado and shelter in a building is not available and an evacuation is ordered, escort passengers to a nearby ditch, culvert, or depression. Direct all passengers to lie face down on the ground with their hands covering their head. They should be far enough away so the bus cannot topple on them. Avoid areas that are subject to flash floods. Never go under a bridge or overpass. This area can become the equivalent of a wind tunnel.

Microbursts and Macro Bursts

Microburst's and Macroburst's are intense, localized downdrafts of air that spread on the ground causing rapid changes in wind direction and speed. They are capable of producing winds of more than 100 mph that can cause significant damage. A macroburst can cause more damage to a widespread area than a microburst. They are hard to detect, so be careful when thunderstorms and high winds are in the area. Keep a tight grip on the steering wheel and pay attention to weather watches and warnings.

LIGHTNING

Sudden storms can produce lightning. If a severe storm produces lightning, the safest place is in the bus. Avoid touching metal objects or pulling over in high-risk areas (canyons, near power lines, or tall trees).

WATER ON ROADWAYS

Water on brake drums will reduce braking efficiency. A light application of the brakes can prevent excessive water between the drum and brake pads. During excessively wet conditions or after passing through standing water, it may be necessary to apply the brakes slightly for a short distance to dry them out and restore normal braking.

Never attempt to drive in flowing water, as the depth and force of the current is unknown. Dangers may not be visible. There may be debris, downed power lines, or washed out portions of the road.

SLIPPERY SURFACES

Bus braking or steering cannot occur unless there is traction. Road conditions may reduce traction and require slower speeds. When slick road conditions exist, it will take longer to stop and be harder to steer the bus without skidding. Slippery surfaces can more than double stopping distances.

Common Slippery Surfaces:

- **Shaded Areas** - Shady parts of the road may remain icy and slippery long after open areas have melted and dried.
- **Bridges** - When the temperature drops, bridges will freeze before roads. Be especially careful when the temperature is near freezing (32° F).
- **Snow** - There are different types of snow that provide different levels of traction. The most traction comes either from dry granular or very cold snow. Packed snow may provide better traction than freshly fallen snow. As variations in temperature occur, at or near the freezing/melting point (32°F), vehicles will have the least amount of traction. This presents the most dangerous road conditions of ice on snow, or snow on ice.

Roads are most hazardous when snow or ice begins to melt. Take extra caution on packed snow or icy roads when the outside temperature is near the melting/freezing point (32° F).

Black Ice

When the temperature is below freezing and the road appears wet, it could be black ice. This is a thin layer of transparent ice that can be present anywhere, especially in high-traffic intersections and windswept areas.

Hail - While similar to ice, hail provides a unique set of hazardous circumstances. Hail on roadways can produce an extremely slippery and uneven road surface. Large hail can break the windshield and windows. Children should protect themselves from flying glass should a window break.

Rain - When it starts to rain, the water mixes with oil and other road grime making the road very slippery. Standing water on the roadway may lead to additional challenges such as hydroplaning.

Hydroplaning - Hydroplaning can occur on any wet road surface. The first 10 minutes of a light rain can be the most dangerous. When a tire encounters more water than it can scatter, water pressure in the front of the wheel pushes water under the tire, thus separating the tire from the road surface with a thin film of water. The result is loss of traction, steering, braking, and power control.

How to avoid hydroplaning:

- Slow down when roads are wet. The faster the speed, the harder it is for tires to scatter water properly.
- Stay away from puddles and standing water.
- Do not use cruise control, if equipped.
- Drive in a lower gear.
- Avoid hard braking.
- Try to avoid making sharp or quick turns.

Mud/Mudslides - Wet, non-paved or paved roads where excessive mud is present can be slippery and may be virtually impassable.

Heat - Excessive heat may cause the tar in the road pavement to rise to the surface. These areas can become soft or slippery.

Other - Anti-icing and de-icing materials used on roadways (i.e. gravel, magnesium chloride, and salt) to improve traction. In some instances, these materials can decrease traction.

If the bus is equipped with a retarder, see Unit 7 for detail concerning retarder use on slippery surfaces.

SKIDS

A skid happens when a vehicle's tires lose traction on the road. Some common ways this can happen are:

- **Over-braking** - Either braking too hard and locking up the wheels or using the retarder when the road is slippery.
- **Over-steering** - When the operator turns the wheels sharper than the bus can turn at a given moment.
- **Over-acceleration** – When the drive wheels spin due to too much power sent from the operator.
- **Driving too fast** - Serious skids result from driving too fast for road conditions. Operators who adjust their driving to the conditions do not over-accelerate and do not have to over-brake or over-steer from gaining too much speed.

Drive-Wheel Skids

The most common skid is one where the rear wheels lose traction through excessive braking or acceleration. Rear wheel braking skids occur when the rear drive wheels lock. This usually happens on slippery surfaces. Because locked wheels have less traction than rolling wheels, the rear wheels usually slide sideways in an attempt to "catch up" with the front wheels. In a bus, the vehicle will slide sideways into a "spin out".

To correct a drive-wheel skid:

- Stop accelerating.
- Stop braking to allow the rear wheels to roll again.
- Turn into the direction of the skid by looking where you want the bus to go.
- Counter-steer after control of the bus resumes by turning the steering wheel in the direction desired.

Front-Wheel Skids

Driving too fast and having inadequate tread depth on the front tires causes most front-wheel skids. In this type of skid, the front of the bus tends to go in a straight line regardless of how much the steering wheel is turned. This causes extreme difficulty (if not impossibility) when steering around a curve or turn.

To correct a front-wheel skid, release the accelerator and do not brake. This will allow the front wheels to turn again and regain traction.

Learning to stay off the brake and react quickly during a skid takes a lot of practice. The best place to practice this is on a large driving range or "skid pad".

WINTER DRIVING

Weather conditions can be unpredictable, placing extra demands on the bus and operator. Always be prepared for winter roads and adjust speed to the existing conditions. Three key elements to safe winter driving are to stay alert, slow down, and stay in control. Drive according to highway and weather conditions. Some bridges and overpasses in Colorado are heated or have de-icing sprayers. This creates an abrupt change in road conditions. Scan ahead and be aware of these locations.

In winter and especially during poor weather conditions, it takes longer to stop on a slippery road. It is important to leave plenty of space between the bus and the vehicle ahead to avoid sudden braking situations. A guide to safe spacing in these conditions is to double the "four – five second rule".

Using a lower gear than you normally would for the type of road helps the driver maintain control of the vehicle in winter driving conditions.

Be aware that snow on the road may be slippery, drifted, or hard-packed. It can also be smooth, soft, rutted, or slick-tracked. Slick track happens when traffic has packed the snow enough to cause icy conditions. Because the bus usually tracks wider than the preceding vehicles that formed the hard pack, ruts or slick tracks, maintaining control may be difficult. Rather than allowing the bus to sway back and forth between the two narrow tracks or ruts, adjust lane positioning to ride in the untracked snow within the lane. Riding outside of the tracks or ruts will help to maintain speed and steering control.

Wet snow can cause slushy roads. Heavy slush can build up in the wheel wells of the bus and can affect steering. Remember to look ahead to recognize hazards in plenty of time to respond.

REDUCED VISIBILITY

School Bus Operators can expect to experience any and all of the following driving hazards that may result in reduced visibility. The most important response is to slow down. Maintain a speed that allows safe continuation in these conditions:

Fog	Terrain
Sun	Smoke
Dust	Hail/Graupel
Rain	Darkness
Snow	Light variations
Debris	Vegetation

ADDITIONAL HINTS AND REMINDERS

- Check road conditions prior to departure.
- Speed should be conservative when conditions are less than perfect. Maintain a speed that allows you to stop quickly in the event of the unexpected.
- Know your limits and the bus's limits. Pull off to a safe location rather than continuing in adverse or unsafe conditions.
- Test traction and braking ability in a safe location free from traffic or other hazards.
- False shoulders exist in all seasons (i.e. snow, tall grasses and heavy rains). Be aware of your surroundings at all times.
- Increase following distance.

UNIT NINE - TRANSPORTING STUDENTS

Awareness reminds you that children are apt to do the craziest things at the worst possible times.

LOADING/UNLOADING PROCEDURES

The loading and unloading of passengers presents the driver with tremendous responsibilities and requires the use of sound judgment. The driver must execute the proper procedures for interacting with other vehicular traffic, in directing pupils crossing the roadway and in managing pupils who are loading and unloading from the bus.

This unit deals with the proper use of alternately flashing and hazard warning lights as well as the procedures for safe loading and unloading of passengers. Learning and using these procedures will assist the driver in safely transporting their passengers to and from school. This is the point where students and drivers are exposed to many hazards Ignoring these procedures could result in serious injury or death to one or more of their passengers or other highway users.

Proper uses of the alternately flashing lights include:

- Activated only by the driver
- Required if school pupils must cross the roadway
- Used only when stopped or stopping on a highway, street, or private road
- Used only for the purpose of receiving or discharging school pupils
- Must be activated not less than 200 feet before the stop
- Alternately flashing red lights must be deactivated before resuming motion.

Improper uses of the alternately flashing lights include:

- Not used for reasons other than loading or unloading school pupils
- Not used on private property, including driveways
- Not used while backing, or used in making turns or turnarounds
- Not used when stopping at railroad crossings
- Not used for inclement weather driving

When loading and unloading:

- Never take your eyes off what is happening outside the bus.
- Count children as they enter/exit.
- Make sure you know the location of each student and make sure they are a safe distance from the bus before pulling away once you unloaded at the bus stop.
- If you can't locate a child, check your mirrors. DO NOT MOVE!!
- If you still can't find the child, secure the bus.
- Check around and under your vehicle.
- DO NOT Move until you have located the child.

1 CCR 301-26, 4204-R-17.00 Route Planning – Student Loading and Discharge

17.01 School transportation small vehicles, Type A Multifunction Buses with 15 or fewer passenger capacity (counting the driver) and School Buses (Types A, B, C, and D) may be used to transport students to and from school. Multifunction Buses Type B, C and D and Motor Coach Buses shall not be used to transport students to and from school.

17.02 The location of student stops shall consider factors including:

17.02(a) Ages of the students.

17.02(b) Visibility.

17.02(c) Lateral clearance.

17.02(d) Student access.

17.02(e) Control of other motorists.

17.02(e) (1) Student stops for Type A Multifunction Buses with 15 or fewer passenger capacity (counting the driver) and school transportation small vehicles should be located off of the roadway whenever possible.

17.03 School transportation vehicle operators shall stop at least 10 feet away from students at each designated stop. The school transportation vehicle operator shall apply the parking brake and shift the vehicle into neutral or park prior to opening the service door of a bus or passenger door(s) of a small vehicle.

17.04 The school transportation vehicle operator shall stop as far to the right of the roadway, highway or private road as possible before discharging or loading passengers, allowing sufficient area to the right and front of the vehicle but close enough to the right to prevent traffic from passing on the right so students may clear the vehicle safely while in sight of the operator.

17.05 Student stops shall not be located on the side of any major thoroughfare whenever access to the destination of the passenger is possible by the use of a road or street which is adjacent to the major thoroughfare.

17.06 If students are required to cross a roadway, highway or private road on which a student stop is being performed, they are prohibited from crossing a roadway, highway or private road constructed or designed to permit three or more separate lanes of vehicular traffic in either direction or with a median separating multiple lanes of traffic. This does not include crossing the roadway, highway or private road with the assistance of a traffic controls signal or with the assistance of a crossing guard.

17.07 Four-way hazard lamps shall be used on private property such as parking lots.

17.08 Alternating flashing red warning signal lamps shall not be activated within 50 feet of an intersection if the intersection is controlled by a traffic control signal.

17.09 Routes shall be planned as to:

17.09(a) Eliminate, when practical, railroad crossings.

17.09(b) Have stops be a minimum of 200 feet apart since alternating flashing amber warning signal lamps must be activated a minimum of 200 feet in advance of the stop.

17.09(b)(1) Exception: Student stops located in areas where wildlife may create a high risk of threat to students' safety while they are waiting and/or walking to a student stop, may designate student stops less than 200 feet apart upon detailed written approval by the school district board of education and/or their designee. A copy of the written approval shall be kept in the school transportation office and route operators shall be given written notice of the exception and have it indicated on route sheets.

17.10 Pursuant to Section 42-4-1903(2), C.R.S., school transportation vehicle operators are not required to actuate the alternating flashing red warning

signal lamps on a school bus when the student stop is at a location where the local traffic regulatory authority has by prior written designation declared such actuation unnecessary and when discharging or loading passengers who require the assistance of a lift device and no passenger is required to cross the roadway. Further, Type A Multifunction Buses with 15 or fewer passenger capacity (counting the driver) and school transportation small vehicles do not have the functionality to control traffic. In these instances, the school transportation vehicle operator shall stop as far to the right off the roadway as possible to reduce obstruction to traffic, activate the four-way hazard warning lamps a minimum of 200 feet prior to the student stop, continue to display the four-way hazard warning lamps until the process of discharging or loading passengers has been completed, and deactivate the four-way hazard lamps before resuming motion. Students are prohibited from crossing any lanes of traffic to access the student stop or after disembarking.

17.11 School transportation vehicle operators shall not relocate a student stop without approval of the school district or service provider.

17.12 School transportation vehicle operators of School Buses, Multifunction Buses and Motor Coach Buses, whether transporting students or not, shall apply the following procedures during the process of approaching, stopping and crossing railroad tracks:

17.12(a) Activate the four-way hazard lamps not less than 200 feet from the railroad crossing to alert other motorists of the pending stop for the crossing.

17.12(b) Stop the bus within 50 feet but not less than 15 feet from the nearest rail.

17.12(c) When stopped, the bus should be as far to the right of the roadway as possible and should not form two lanes of traffic unless the highway is marked for four or more lanes of traffic.

17.12(d) Use a prearranged signal to alert students to the need for quiet aboard the bus when approaching railroad tracks. Turn off all noise making equipment (fans, heater, radio, etc.)

17.13 After quietness aboard the stopped bus has been achieved, bus operators shall open the service door and operator window. The bus operator shall listen and look in both directions along the track(s) for any approaching train(s) and for signals indicating the approach of a train.

17.13(a) If the tracks are clear, the bus operator shall close the service door and may then proceed in a gear low enough to permit crossing the

tracks without having to manually shift gears. The bus operator shall cancel the four-way hazard lamps after the bus has cleared the tracks.

17.13(b) When two or more tracks are to be crossed, the bus operator shall not stop a second time unless the bus is completely clear of the first crossing and has at least 15 feet clearance in front and at least 15 feet clearance to the rear.

17.13(c) Before crossing the tracks, the bus operator shall verify that there is enough space after the tracks for the bus plus 15 feet if it is necessary to stop after crossing the tracks.

17.14 School transportation vehicle operators of School Buses, Multifunction Buses and Motor Coach Buses are not required to stop at crossings controlled by a red, amber, green traffic control signal when it is in the green position or when the crossing is controlled by a police officer or human flag person.

Section 42-4-1903
School buses – stops-signs-passing
(1) (a) The driver of a motor vehicle upon any highway, road, or street, upon meeting or overtaking from either direction any school bus that has stopped, shall stop the vehicle at least twenty feet before reaching the school bus if visual signal lights as specified in subsection (2) of this section have been actuated on the school bus. The driver shall not proceed until the visual signal lights are no longer being actuated. The driver of a motor vehicle shall stop when a school bus that is not required to be equipped with visual signal lights by subsection (2) of this section stops to receive or discharge schoolchildren.

(b) (I) A driver of any school bus who observes a violation of paragraph (a) of this subsection (1) shall notify the driver's school district transportation dispatcher. The school bus driver shall provide the school district transportation dispatcher with the color, basic description, and license plate number of the vehicle involved in the violation, information pertaining to the identity of the alleged violator, and the time and the approximate location at which the violation occurred. Any school district transportation dispatcher who has received information by a school bus driver concerning a violation of paragraph (a) of this subsection (1) shall provide such information to the appropriate law enforcement agency or agencies.

(II) A law enforcement agency may issue a citation on the basis of the information supplied to it pursuant to subparagraph (I) of this paragraph (b) to the driver of the vehicle involved in the violation.

(2) (a) Every school bus as defined in section 42-1-102 (88), other than a small passenger-type vehicle having a seating capacity of not more than fifteen, used for the transportation of schoolchildren shall:

(I) Bear upon the front and rear of such school bus plainly visible and legible signs containing the words "SCHOOL BUS" in letters not less than eight inches in height; and

(II) Display eight visual signal lights meeting the requirements of 49 CFR 571.108 or its successor regulation.

(b) (I) The red visual signal lights shall be actuated by the driver of the school bus whenever the school bus is stopped for the purpose of receiving or discharging schoolchildren, is stopped because it is behind another school bus that is receiving or discharging passengers, or, except as provided in subsection (4) of this section, is stopped because it has met a school bus traveling in a different direction that is receiving or discharging passengers and at no other time; but such lights need not be actuated when a school bus is stopped at locations where the local traffic regulatory authority has by prior written designation declared such actuation unnecessary.

(II) A school bus shall be exempt from the provisions of subparagraph (I) of this paragraph (b) when stopped for the purpose of discharging or loading passengers who require the assistance of a lift device only when no passenger is required to cross the roadway. Such buses shall stop as far to the right off the roadway as possible to reduce obstruction to traffic.

(c) The alternating flashing yellow lights shall be actuated at least two hundred feet prior to the point where the bus is to be stopped for the purpose of receiving or discharging schoolchildren and the red lights shall be actuated only at the time the bus is actually stopped.

(3) Every school bus used for the transportation of schoolchildren, except those small passenger-type vehicles described in subsection (1) of this section, shall be equipped with school bus pedestrian safety devices that comply with 49 CFR 571.131 or its successor regulation.

(4) The driver of a vehicle upon a highway with separate roadways need not stop upon meeting or passing a school bus which is on a different roadway. For the purposes of this section, "highway with separate roadways" means a highway that is divided into two or more roadways by a depressed, raised, or painted median or other intervening space serving as a clearly indicated dividing section or island.

(5) Every school bus shall stop as far to the right of the roadway as possible before discharging or loading passengers; except that the school bus may block the lane of traffic when a passenger being received or discharged is required to cross the roadway. When possible, a school bus shall not stop where the visibility is obscured for a distance of two hundred feet either way from the bus. The driver of a school bus that has stopped shall allow time for any vehicles that have stopped behind the school bus to pass the school bus, if such passing is legally permissible where the school bus is stopped, after the visual signal lights, if any, are no longer being displayed or actuated and after all children who have embarked or disembarked from the bus are safe from traffic.

(6) (a) Except as provided in paragraph (b) of this subsection (6), any person who violates any provision of paragraph (a) of subsection (1) of this section commits a class 2 misdemeanor traffic offense.

(b) Any person who violates the provisions of paragraph (a) of subsection (1) of this section commits a class 1 misdemeanor traffic offense if such person has been convicted within the previous five years of a violation of paragraph (a) of subsection (1) of this section.

(7) The provisions of this section shall not apply in the case of public transportation programs for pupil transportation under section 22-51-104 (1) (c), C.R.S.

Section 42-4-1904
Regulations for school buses - regulations on discharge of passengers - penalty - exception
(1) The state board of education, by and with the advice of the executive director of the department, shall adopt and enforce regulations not inconsistent with this article to govern the operation of all school buses used for the transportation of schoolchildren and to govern the discharge of passengers from such school buses. Such regulations shall prohibit the driver of any school bus used for the transportation of schoolchildren from discharging any passenger from the school bus which will result in the passenger's immediately crossing a major thoroughfare, except for two-lane highways when such crossing can be done in a safe manner, as determined by the local school board in consultation with the local traffic regulatory authority, and shall prohibit the discharging or loading of passengers from the school bus onto the side of any major thoroughfare whenever access to the destination of the passenger is possible by the use of a road or street which is adjacent to the major thoroughfare. For the purposes of this section, a "major thoroughfare" means a freeway, any U.S. highway outside any incorporated limit, interstate highway, or highway with four or more lanes, or a highway or road with a median separating

multiple lanes of traffic. Every person operating a school bus or responsible for or in control of the operation of school buses shall be subject to said regulations.

(2) Any person operating a school bus under contract with a school district who fails to comply with any of said regulations is guilty of breach of contract, and such contract shall be cancelled after notice and hearing by the responsible officers of such district.

(3) Any person who violates any provision of this section is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than five dollars nor more than one hundred dollars, or by imprisonment in the county jail for not more than one year, or by both such fine and imprisonment.

(4) The provisions of this section shall not apply in the case of public transportation programs for pupil transportation under section 22-51-104 (1) (c), C.R.S.

LOADING PROCEDURES

There is a safe technique in making stops that protect all involved. These steps should be practiced in the same sequence so they become habit.

1. Check mirrors and traffic.

Students will be loading soon and we must scan the traffic scene to locate students and traffic hazards. A mistake here could be tragic!

2. Apply brakes lightly and slow down.
As you approach the bus stop, you must have your bus under control. Slowing down gradually will give you the control you need in case someone runs out in front of your bus.

3. Activate alternately flashing amber lights at least 200 feet in advance of the stop in the city and at least 500 feet in rural areas.
Driving an eight light system bus means that the amber lights come on when you activate the switch and the red lights come on when you open the service door. Remember that 200 feet is the minimum distance. You may activate your lights earlier. Always watch for other large vehicles that take additional distance to stop. Give them enough distance to stop or let them pass before you activate your lights.

4. Do not pull closer than 10 feet to waiting pupils.
Stop short of the line of waiting students for their safety. You must teach your students to stay back 10 feet from the bus and wait for your signal to board the bus. In winter weather your bus could also slide during the stopping procedure. Train your students well for their survival.

5. If pupils do not cross the road to get to their home or to the bus, activate right turn signal.
Stop the bus as far to the right of the roadway or private road as practicable. It is important to consider a safe bus stop where pupils will wait for the school bus.

6. If pupils cross the road to get to their home or to the bus, stop the bus on the roadway or private road.
Per Section 42-4-1903 "the school bus may block the lane of traffic when a passenger being received or discharged is required to cross the roadway "for the safety of your pupils who are being boarded or discharged from the bus.

7. Apply the parking brake, shift the bus to neutral.
It is possible that your foot could slip off the brake and the bus could move. Place your bus in neutral or park and set the parking brake at every student stop.

8. Cancel turn signal if activated, check mirrors and traffic.
Check to see what the traffic around your bus is doing before you open your door. Hopefully, all traffic has stopped or is stopping for your bus.

9. Open the door (8 light system will change amber lights to red) as a signal for students to enter the bus. Pupils crossing the road may require an additional signal.

10. Have students enter or leave the bus in an orderly manner. Be sure all students are accounted for. COUNT THEM AND TRACK THEM!! This is the most dangerous step in our loading and unloading procedure. You must account for every student. More than half of all school bus rider fatalities are pupils struck by the bus which they were entering or leaving. Drivers are responsible for the safety of all their pupils, including those that must cross the roadway or street. Instruct pupils in safe use of the handrail. Count the students as they get off the bus and count them again as they move away from the bus. It is especially important to count and track students who must cross the road at the bus stop.

Procedure for students:

- Use handrails when boarding vehicle.
- Students should go directly to their seats as prescribed by the district.
- Remain seated when the bus is moving.

11. Check to see that students are seated and close the door (this will deactivate the red lights on the 8 light system buses).
Students may fall if you start up before they are seated. Do not rush the seating procedure. Remember that small children may take considerable time to enter the bus and climbing the steps is a major event. Help them if you can!

12. Allow traffic to clear, where practicable.
If it is possible, you must allow stopped traffic to clear. Failure to allow traffic to clear may result in a motorist trying to pass unsafely because they do not want to get trapped behind
your bus.

Section 42-4-1903 (5) *….. The driver of a school bus that has stopped shall allow time for any vehicles that have stopped behind the school bus to pass the school bus, if such passing is legally permissible where the school bus is stopped, after the visual signal lights, if any, are no longer being displayed or actuated and after all children who have embarked or disembarked from the bus are safe from traffic.*

13. Activate left turn signal.
Your stop procedure is almost complete and you must move back into traffic. Your left turn signal is your signal that indicates that you will be re-entering the traffic flow.

14. Check mirrors and traffic.

15. Enter the traffic lane.
Everything looks good and it is time to get back on the road. A second look in the mirrors may help to avoid a collision.

16. Cancel left turn signal.

This order must be followed at all student stops:

- ***The brake is set***
- ***Transmission shifted to neutral***
- ***Door is open with stop arm out***
- ***Reverse procedure for leaving stop***

"Brake is the first thing on and the last thing off!!!"

At the Bus Stop

If a backing turnaround is required on the route, load students onto the bus *before* backing into turnaround. Unload students *after* making the turnaround. When making a backing turnaround, students should remain seated at all times. Use extra caution.

Don't impede the regular flow of traffic. If a build-up occurs behind you, display professional courtesy.

- If possible, activate right turn signal, pull to side of road only if entire vehicle can get off the road and stop.

- Allow vehicles to pass.
- Check traffic using all outside mirrors.
- Activate left turn signal.
- Resume position on road.

Unloading Procedures

1. Unloading students poses additional problems. Follow loading procedures with these additions:
   - You are responsible for the safety of all students crossing the roadway regardless of grade level.
   - When stopped, not rolling, give the vehicles behind you a chance to react by activating the flashing red warning lights before you open the door.
   - Students should stay seated until the door opens fully.

Do not allow students to get off the school bus until all traffic has stopped.

   - A backing turnaround must be completed before students are unloaded.
   - **Do not allow enough room on the right for a motorist to squeeze between the bus and the curb or edge of the pavement for students that are not crossing**
   - Students shall be instructed to walk a distance of approximately ten (10) feet in front of the school bus and wait for operator's signal before crossing the roadway.
   - When it is safe to cross, establish eye contact with the student/s, and give the pre-arranged signal for crossing. The signal should be clear enough that motorists will not mistake it as a signal to proceed.

Use outside P.A. system, if available. Follow district procedures.

- Instruct students to pause and look both ways before continuing beyond the bus.
- Check traffic in both directions before allowing students to cross a roadway.
- While performing this operation, remember you are not a traffic officer and have no rights other than those of a regular motorist. Do not signal any motorist to do anything.
- When students have safely crossed the road, and/or cleared the unloading zone, count students; cancel the flashing red warning lights by closing the door.

Count your students; know the location of each of them prior to resuming operation. DO NOT move until you know where every student is.

- If a driver of a motor vehicle violates the stop arm law, follow district procedure for reporting.
- Use safe procedures to allow stopped traffic to move on.
- Place transmission in gear.
- Release park brake.
- If the students are crossing, the bus should be toward the center of the lane – no need for turn signal.
- Check traffic using all outside mirrors.
- When safe, gradually resume correct position on roadway and continue.

When unloading students on school grounds, bus stops should be planned so that students get off on the curbside, without having to cross in front of traffic. School bus loading zones should be located in a separate area from parent drop off areas when possible.

Stop Arm Violators

42-4-1903 *– Requires drivers to report stop arm violators to the district. In addition, it addresses the specific requirements a driver must observe when approaching a school bus in the active process of loading/unloading students.*

School bus drivers are professionals drivers and should never "trap" a motorist. If stopping at an intersection, allow traffic to clear the intersection prior to activating the stop arm and red lights. A school bus operator should always perform the requirements of the position in a professional manner.

Some important observations to attempt to make if someone disregards your stop arm:

Location – closest intersection, landmark

Time of day

Direction Bus is headed

Direction of car headed

What type of car? (sedan, SUV, large truck, small truck)

Color of Vehicle

Description of Driver – do the best you can

License Plate (State, number, color)

Other contributing factors – damage to the vehicle

REPORT ROUTE HAZARDS

If, during the process of performing your route, you notice something that has become a hazard follow district procedures for reporting such incidents. This could be a snow bank that is too high to see over, a tree in the road, construction, etc.

These hazards and the corrective action may need to be listed on the route description for the substitute driver.

Review the district procedure on reporting route hazards and how to determine when a change is warranted. The driver shall never change a stop without following district procedures.

NEVER, NEVER change a bus stop location without following district procedures.

FIELD/ACTIVITY TRIPS

Making a trip into a congested city or area that a driver is unfamiliar with can be a frightening experience for the small city or rural school bus driver. It does not have to

be. Rural districts can help their employees overcome this apprehension with three easy procedures.

- The first helpful activity is to have a driver lesson plan in place that addresses the topic of a trip to an unfamiliar, busy city.
- The second is to have resources available for the actual trip.
- Have a process set up to gather feedback from drivers who make these trips, building resources and helpful hints for future reference.

NEW TRIP DRIVER TRAINING

Build a training session that compares the hazards in the local area to what a driver might expect in an urban area. Driving on a trip is different from driving a regular route. The hazards may be different, yet the driver's awareness, needs, and defensive driving techniques will be quite similar.

- Establish a skills course of maneuvers the driver might encounter in the city. For example, parallel parking and tight right turns.
- Implement basic map reading skills, stress relieving techniques, and a good mastery of emergency procedures.
- Include information regarding procedures for on-ramps with traffic lights, multi-lane highway usage, Denver Light Rail, and turning on a red light after stopping.
- Review the hours of service rules.
- Have a good procedure in place to develop itineraries to be utilized by the department and the schools transportation serves.
- Develop a short pre-trip program, including minor maintenance, specialized training, and basic vehicle troubleshooting techniques to be used before leaving from the destination.

There are important differences to be aware of.

An unfamiliar route.

- Trip sponsors and their responsibilities.
- Sponsors are generally responsible for maintaining order on the bus and accounting for students. The driver will find students who are not familiar with ridership rules and there may be excited behavior due to the nature of the trip. Review district procedures regarding student management during special trips. A student roster is highly suggested. Sponsors should keep the bus clean.

- When the destination has been reached, make certain all passengers know which school bus, and at what time they are to board for the return trip.
- Check that no passenger(s) board the bus at any time unless authorized by you or by a sponsor. Only authorized passengers are allowed to ride the bus.

Storage of large and oversized equipment.

- The equipment must be stored or secured to reduce the danger to a minimum, in case of an emergency stop or an accident. The driver must make a reasonable and prudent determination that all carry-on items are properly handled in order to minimize the danger to all others.
- Store band instruments and other large items in the storage compartment under the bus, if so equipped.
- If there is no under storage area, make sure the items are stored and secured away from the front and rear doors, are not stacked above seat back height and are out of the aisle.
- Other options may include: equipment truck, cargo van, or a second bus as an equipment bus.
- Emergency evacuation instruction shall be given prior to departure. Instruction should include use of roof hatches, emergency doors, and emergency windows.

DO NOT EVER BLOCK THE EMERGENCY DOOR(S) OR WINDOWS.

The school district documentation should provide the following information:

- Destination and date.
- Nature and purpose of trip.
- Departure and expected return times.
- Number of passengers to be transported.
- Equipment to be transported.
- Rest stops and overnight arrangements (if applicable).
- Authorized signature and school contact.

When the trip is completed, fill out a district activity/field trip report or the documentation required by district procedure. Items may include: mileage, student list, actual number of passengers, time departed/returned, and problems that were encountered, if any can be on the form.

4204-R-8.00 Pre-trip/Post-trip Vehicle Inspections

8.01 Each school transportation vehicle shall have a daily pre-trip and post-trip inspection performed and documented by the school transportation vehicle operator or a district or service provider authorized transportation employee. A daily pre-trip inspection shall be completed prior to a vehicle being placed in service. A daily post-trip inspection shall be completed at the end of daily operation of each vehicle.

4204-R-16.00 Maximum Driving Time for School Transportation Vehicle Operators

16.04 All school transportation vehicle operators shall document that they are in compliance with this section, hours of service.

16.04(a) An operator's daily log, or equivalent, shall be completed for the trip in the operator's own handwriting, when the trip requires a scheduled or unscheduled overnight stay away from the work reporting location.

4204-R-18.00 Emergency Evacuation Drills

18.02 Students on school related events shall receive emergency evacuation instruction prior to departure.

18.03 School district and service provides shall maintain records documenting that the required evacuation drills were conducted and/or evacuation instruction was given

LEGAL REQUIREMENTS DURING FIELD/ACTIVITY TRIPS

ALL regulations governing the operation of school transportation vehicles (1 CCR 301-26) are applicable on trips and drivers are held responsible to know and comply with all rules. Some of the most common, but not exhausted, lists of the rules that apply are;

4204-R-11.00 Maintenance and Repair

11.01 School districts and service providers must ensure all school transportation vehicles are systematically inspected, maintained and repaired to ensure that school transportation vehicles are in safe and proper operating condition.

11.02 School districts and service providers shall have a system to document preventative maintenance, reported defects and repairs made to school transportation vehicles.

11.03 School districts and service providers shall maintain separate files for each school transportation vehicle with documentation of all annual inspections, all preventative maintenance and all reported damage, defects or deficiencies and the corresponding repair and maintenance performed.

11.04 Any identified damage, defect or deficiency of a school transportation vehicle must be reported to the school district or service provider which:

11.04(a) Could affect the safety of operation of the school transportation vehicle, or

11.04(b) Could result in a mechanical breakdown of the school transportation vehicle, or

11.04(c) Results in noncompliance with Colorado Minimum Standards Governing School Transportation Vehicles (1 CCR 301-25) and/or

manufacturer's specifications.

11.05 Documentation for reported defects must include all of the following:

11.05(a) The name of the school district or service provider.

11.05(b) Date and time the report was submitted.

11.05(c) All damage, defects or deficiencies of the school transportation vehicle.

11.05(d) The name of the individual who prepared the report.

11.06 Following a reported damage, defect or deficiency of a school transportation vehicle, school districts and service providers or a representative agent must repair the reported damage, defects or deficiencies, or document that no repair is necessary, ensuring that the vehicle is in safe and proper operating condition prior to transporting students.

11.07 School districts and service providers shall not transport students in a school

transportation vehicle which is not in safe and proper operating condition. A school transportation vehicle shall be designated as "out-of-service" by a school district or service provider, a school transportation annual inspector or the CDE School Transportation Unit.

11.07(a) Exemption - Any school transportation vehicle discovered to be in an unsafe condition while being operated on the highway, roadway or private road may be continued in operation only to the nearest place

where repairs can safely be affected. Such operation shall be conducted only if it is less hazardous to the public than to permit the vehicle to remain on the highway, roadway or private road.

4204-R-12.00 Operation of a School Transportation Vehicle

12.01 A school transportation vehicle shall not be operated in a manner which is unsafe or likely to cause an accident or damage of the vehicle.

12.02 A school transportation vehicle shall not be placed in motion on a roadway, highway or private road with the passenger entry door/service door open.

12.03 A school transportation vehicle's headlights or daytime running headlights shall be activated while the vehicle is in operation.

12.04 A school transportation vehicle shall not be fueled while students are on board, except in instances when unloading the students would present a greater hazard or peril to their safety.

12.05 Use of tobacco products as defined in Section 18-13-121(5), C.R.S., use or possession of controlled substances, use or possession of alcohol and use or possession of marijuana aboard any school transportation vehicle shall be prohibited at all times.

12.06 A school transportation vehicle operator shall not consume food unless the vehicle is stopped at a safe location with the park/emergency brake set.

12.07 When a school transportation vehicle is equipped with a roof mounted strobe lamp, the use of the strobe lamp is permitted only when the vehicle presents a hazard to other motorists, such as loading or unloading students in inclement weather or to enhance visibility of the vehicle when barriers inhibit such visibility.

12.08 A school transportation vehicle operator may use the strobe, in addition to the four-way hazard lamps, to warn other motorists that the vehicle is not in motion or is being operated at a speed of twenty-five miles per hour or less.

12.09 The school transportation vehicle operator shall use extreme caution when backing. Before backing on a roadway, highway or private property, the horn or audible warning device shall be sounded and four-way hazard lamps actuated or there shall be a person outside the vehicle giving direction.

12.09(a) Backing a school transportation vehicle when students are outside of the vehicle at a student stop is prohibited.

12.10 School transportation vehicles including Type A, B, C and D School Bus, Multifunction Bus and Motor Coach Bus shall not be operated with a trailer or other vehicle attached while students are being transported.

12.11 School transportation small vehicles, with the capacity of 15 or fewer passengers (counting the driver), may tow trailers while students are being transported to the extent that trailering is a necessary component of a district sponsored program.

4204-R-13.00 Authorized Passengers

13.01 Only district personnel, students enrolled in a district, law enforcement officials or individuals that have received prior authorization from the school district or service provider may be passengers on any school transportation vehicle.

13.02 The number of passengers transported on any school transportation vehicle shall not exceed the maximum seating capacity of the vehicle. Small vehicle capacity shall not exceed the number of safety belts as designed by the vehicle manufacturer.

13.03 Passengers shall not be permitted to stand in any school transportation vehicle while the vehicle is in motion. This does not preclude authorized persons (such as school transportation paraprofessionals) from completing their duties as required.

13.04 School districts and service providers shall consider the size of the passengers when determining the number of passengers that can safely occupy a school transportation vehicle seat.

4204-R-14.00 Safety Restraints

14.01 A school transportation vehicle operator shall have the safety belt fastened, worn correctly and properly adjusted prior to the school transportation vehicle being placed in motion.

14.02 All passengers in a school transportation vehicle under 10,000 lbs. GVWR shall have their safety belts fastened, worn correctly and properly adjusted prior to the school transportation vehicle being placed in motion.

4204-R-15.00 Transportation of Miscellaneous Items

15.01 A school transportation vehicle operator shall make a reasonable and prudent determination that all carry-on items are properly handled in order to minimize the danger to all others.

15.02 All baggage, articles, equipment or medical supplies not held by individual passengers shall be secured in a manner which assures unrestricted access to

all exits by occupants, does not restrict the driver's ability to operate the bus and protects all occupants against injury resulting from falling or displacement of any baggage, article or equipment. Oxygen cylinders secured to a wheelchair shall be considered to be in compliance with this subsection, provided they do not impede access to any exit.

15.03 All chemicals and cleaning supplies carried on a school transportation vehicle must meet the following precautions:

15.03(a) Container is non-breakable.

15.03(b) Container is labeled with contents.

15.03(c) Pressurized aerosols are prohibited.

15.03(d) Container is secured in a bracket, or in a closed compartment in the driver's area or a compartment on the exterior of the bus.

15.03(e) Containers and quantities of products are kept to a reasonable size.

15.04 Interior-decorations shall not be located within the driver's area (which includes the space in front of the front barriers including the step-well, dash, walls and ceiling, the windshield, the entry door, the driver's side window, and all windows in front of the front barrier), the first two passenger windows on both sides of the vehicle and all windows on the rear of the vehicle. Other decorations within the passenger compartment shall not:

15.04(a) Cover any required lettering.

15.04(b) Impede the aisle or any emergency exit.

15.04(c) Hang from the walls and/or ceiling.

RESOURCES FOR THE TRIP

- Call ahead to the destination. Prepare a small notebook with phone numbers and the name of the person to contact upon arrival. Don't stop with just one phone number. Obtain the department's dispatcher number, the mechanic's number, and the number of the school that will be your destination.
- Request area maps and a suggested route to the destination from the sponsoring district. Plan more than one route in case of unexpected detours.
- Most major urban districts have computerized scheduling systems in place which might help generate a detailed map of the destination area.
- Obtain information regarding road closures.

- Create an "Over-the-Road" packet. Include the Emergency Service List from CDE.
- During winter months, carry a bag of salt, sand, or kitty litter to help provide traction in an emergency situation.
- Per school district procedures, consider having extra tools, hoses, belts, bolts, flashlights, etc. which could be used in case of a minor breakdown.
- Review school district procedures regarding securing the school transportation vehicle when unattended.
- Use stress-relieving techniques and take unscheduled rest breaks if needed. For instance, stop and secure the bus, get out and walk around outside. The back is particularly vulnerable to injury when driving or working around school buses. A number of factors include sitting for long periods of time, vibration of the vehicle, having to lean over seats to put up windows, and lifting and pushing heavy objects such as wheelchairs. All of these contribute to the driver's susceptibility to back injuries. A little care can go a long way towards keeping drivers on the job and out of pain.
- While driving, sit up straight in the seat with back and legs making a 90 degree angle. There should be a slight gap between the top, front portion of the seat bottom and the back of the leg. Change position or shift weight every 15 to 20 minutes. Lean forward to operate the door mechanism. Practicing these posture habits will help keep the back healthy and happy.

Build a Library of Resources

- Document knowledge and experience gained from each trip.
- Assemble maps, resources and a list of contacts.
- Create a checklist of helpful techniques used and things that were overlooked that should be included on the next trip.
- Document feedback regarding the vehicle driven, itinerary used, and passengers serviced.

COLORADO
Department of Education
School Finance and Operations Division

1 CCR 301.26 License Matrix

6/1/2016

Classification	Route	Route	Route	Multifunction	Multifunction	Multifunction Type A	Motor Coach	Small Vehicle (includes suburban, van, etc.)	Technicians/ Annual Inspectors	Technicians/ Annual Inspectors
Type of Vehicle including driver	16 or more Passenger GVWR **greater** than 26,001 pounds	16 or more passenger GVWR less than 26,001 pounds	15 or less Passenger GVWR **less** than 26,001 pounds	16 or more Passenger GVWR **greater** than 26,001 pounds	16 or more passenger GVWR less than 26,001 pounds	15 or less Passenger GVWR **less** than 26,001 pounds	16 or more Passenger GVWR **greater** than 26,001 pounds	15 or less Passenger GVWR less than 10,001 pounds	16 or more Passenger GVWR **greater** than 26,001 pounds	15 or less Passenger GVWR **less** than 26,001 pounds
Pre-Employment/ Random Drug Testing	Yes	Yes	Yes	Yes	Yes	District Policy	Yes	District Policy	Yes	District Policy
Required License	CDL	CDL	Valid Operator	CDL	CDL	Valid Operator	CDL	Valid Operator	CDL	Valid Operator
Required CDL Vehicle Class	B	C	N/A	B	C	N/A	B	N/A	B	N/A
Required License Endorsements	"P2" Passenger "S" School Bus	"P1" Passenger "S" School Bus	N/A	"P2" Passenger "S" School Bus	"P1" Passenger "S" School Bus	N/A	"P2" Passenger "S" School Bus	N/A	"P2" Passenger	N/A
Required Age	18	18	18	18	18	18	18	18	District Policy	District Policy
Required Medical Exam	USDOT DOT Physical)	USDOT DOT Physical	USDOT DOT Physical)	USDOT DOT Physical)	USDOT DOT Physical	CDE STU-17	USDOT DOT Physical)	CDE STU-17	USDOT DOT Physical)	District Policy
MVR Pre-employment and Annually	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	District Policy	District Policy
Required First Aid/CPR Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	District Policy	District Policy
Required Written Test	Multifunction/ Motor Coach/ Route School Bus	Multifunction/ Motor Coach/ Route School Bus	Multifunction Type A/ Route Small Vehicle	Multifunction/ Motor Coach/ Route School Bus	Multifunction/ Motor Coach/ Route School Bus	Multifunction Type A/ Route Small Vehicle	Multifunction/ Motor Coach/ Route School Bus	Multifunction Type A/ Route Small Vehicle	District Policy	District Policy

Classification	Route	Route	Route	Multifunction	Multifunction	Multifunction Type A	Motor Coach	Small Vehicle (includes suburban, van, etc.)	Technicians/ Annual Inspectors	Technicians/ Annual Inspectors
Type of Vehicle including driver	16 or more Passenger GVWR **greater** than 26,001 pounds	16 or more passenger GVWR less than 26,001 pounds	15 or less Passenger GVWR **less** than 26,001 pounds	16 or more Passenger GVWR **greater** than 26,001 pounds	16 or more passenger GVWR less than 26,001 pounds	15 or less Passenger GVWR **less** than 26,001 pounds	16 or more Passenger GVWR **greater** than 26,001 pounds	15 or less Passenger GVWR less than 10,001 pounds	16 or more Passenger GVWR **greater** than 26,001 pounds	15 or less Passenger GVWR **less** than 26,001 pounds
Required Mountain and Adverse Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	District Policy	District Policy
Required Confidentiality Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	District Policy	District Policy
Required Pre-Service Training	Yes School Bus Route Driver	Yes School Bus Route Driver	Yes Small Vehicle Route	Yes School Bus Driver	Yes School Bus Driver	Yes Small Vehicle	Yes School Bus Driver	Yes Small Vehicle	District Policy	District Policy
Annual In-Service Training	Yes Minimum 6 Hours	Yes Minimum 6 Hours	Yes Minimum 6 Hours	Yes Minimum 6 Hours	Yes Minimum 6 Hours	N/A	Yes Minimum 6 Hours	N/A	District Policy	District Policy
Required Driving Performance Evaluation	Yes Annually	Yes Annually	Yes Annually	Yes Annually	Yes Annually	Yes Initially	Yes Annually	Yes Initially	District Policy	District Policy
Required Random Drug Testing	Yes	Yes	Yes	Yes	Yes	District Policy	Yes	District Policy	District Policy	District Policy
Required Substance Abuse Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	District Policy	District Policy
Trailer Training if applicable	Not permitted	Not permitted	Not permitted	Not permitted	Not permitted	Not permitted	Not permitted	Yes	District Policy	District Policy

COLORADO
Department of Education
School Finance and Operations Division

DEPARTMENT OF EDUCATION
Colorado State Board of Education

COLORADO RULES FOR THE OPERATION, MAINTENANCE AND INSPECTION OF SCHOOL TRANSPORTATION VEHICLES

1 CCR 301-26

4204-R-1.00 Statement of Basis and Purpose

1.01 Colorado law provides for the State Board of Education to adopt and enforce regulations governing the safe operation of school buses used for the transportation of students pursuant to Sections 22-51-108 and 42-4-1904, C.R.S.

1.02 The purpose of these rules is to adopt and enforce regulations governing the reasonable and adequate standards of safety for the operation, maintenance and inspection of school transportation vehicles that promote the welfare of the students and afford reasonable protection to the public. These rules are designed to align with federal standards, reflect current industry practices, and incorporate recommendations from school district and service provider transportation professionals.

1.03 The Commissioner, or designee, may provide an exemption to the Rules for the Operation, Maintenance and Inspection of School Transportation Vehicles to the extent the Commissioner finds an exemption to be appropriate.

1.04 These rules shall become effective July 30, 2016 for all student transportation.

4204-R-2.00 Applicability of Rules

2.01 These rules and regulations apply to the operation, maintenance and inspection of all public school transportation vehicles (School Bus, Multifunction Bus, Motor Coach Bus and Small Vehicle as defined in 1 CCR 301-25-R-5.00) transporting students to and from school, from school to school, and/or to and from school related events in vehicles owned, leased or rented by the district or under agreement with the district.

2.02 These rules are not intended to include:

2.02(a) Private motor vehicles used exclusively to carry members of the owner's household; or

2.02(b) Transportation arrangements not authorized by the district including but not limited to; sharing of actual gasoline expense or participation in a car pool; or

2.02(c) The operations of vehicles in bona fide emergency situations consistent with policies of the local board of education; or

2.02(d) Student transportation under public transportation programs subject to the Code of Federal Regulations 49 CFR 390 to 399.

2.03 These rules shall not preclude a school district or service provider from establishing a more rigid standard or policy when deemed necessary by the local board of education or service provider.

4204-R-3.00 Non-Compliance

3.01 CDE will perform periodic School Transportation Advisory Reviews (STAR) of school districts and service providers to evaluate and assist with compliance of these rules.

3.01(a) CDE will provide school districts and service providers written notification of the STAR findings.

3.01(b) Upon receipt of the written notification of STAR findings, school districts or service providers shall respond in writing to outline corrective actions if necessary.

3.02 CDE shall revoke or suspend the certificate for a school transportation annual inspector, school transportation annual inspector hands-on tester or inspection site under the following circumstances:

3.02(a) A school transportation annual inspector, school transportation annual inspector hands-on tester or inspection site does not meet the requirements outlined in these rules.

3.02(b) School transportation annual inspections or hands-on tests have not been properly conducted.

4204-R-4.00 School District and Service Provider Employment Responsibilities

4.01 School districts and service providers shall outline job responsibilities and develop job qualification standards for each school transportation vehicle operator and school transportation paraprofessionals, consistent with federal and state regulations. A copy of these requirements shall be provided to each school transportation vehicle operator and paraprofessional upon employment.

4.02 School districts and service providers shall maintain separate files for each school transportation vehicle operator, school transportation paraprofessional, and school transportation annual inspector with written documentation evidencing all listed requirements indicated in Rule 5.00, Rule 6.00 and Rule 7.00, as applicable. Training documentation shall include the trainer name, date of the training, description of the training, duration of each topic covered and the signature of all attendees.

4.02(a) If a school transportation vehicle operator, school transportation paraprofessional, or school transportation annual inspector works for more than one school district, each district shall maintain a file with documentation in accordance with this rule.

4.03 School districts and service providers shall ensure all employees required to possess a commercial driver's license (CDL) shall be in a US DOT approved substance abuse testing program.

4.04 School districts and service providers shall not permit a school transportation vehicle operator to transport students, while the operator's ability or alertness is so impaired, through fatigue, illness or any other cause, as to make it unsafe for the operator to transport students.

4.05 School districts and service providers shall have written emergency procedures and/or contingency plans to be followed in the event of a traffic accident, vehicle breakdown, unexpected school closing, unforeseen route change or relocation of a student stop in an emergency.

4.06 School district and service providers shall ensure that documentation outlining transportation related services and requirements, including required use of Child Safety Restraint Systems and medical and behavioral information as it relates to student transportation, is available to applicable school transportation vehicle operators and paraprofessionals prior to providing transportation services.

4204-R-5.00 School Transportation Vehicle Operator Requirements

5.01 School transportation vehicle route operators (transporting students to and from school or from school to school) driving a School Bus with the capacity of 16 or greater passengers (counting the driver) and school transportation vehicle operators, other than route operators, driving vehicles with the capacity of 16 or greater passengers (counting the driver), including a School Bus, Multifunction Bus and Motor Coach Bus, shall meet or exceed the following requirements:

5.01(a) The operator shall possess a valid commercial driver's license (CDL) with the proper class and endorsements for size and type of vehicle(s) to be driven and the associated Medical Examination Report pursuant to 49 CFR 391.43.

5.01(b) The operator shall be a minimum of 18 years of age.

5.01(c) The district or service provider shall obtain a motor vehicle record of each operator prior to transporting students and annually thereafter.

5.01(d) The operator shall be given and/or have access to the CDE School Bus/Multifunction Bus/Motor Coach Bus Operator Guide prior to transporting students.

5.01(e) The operator shall receive a minimum of six hours of in-service training annually which may include required training in 1 CCR 301-26-R-5.00. A portion of this annual in-service requirement may occur during the school year.

5.01(f) The operator shall successfully pass a CDE School Bus/Multifunction Bus/Motor Coach Bus Operator written test for the current school year prior to transporting students and annually thereafter.

5.01(g) The operator shall successfully pass a driving performance test including a pre-trip inspection prior to transporting students and annually thereafter. This test shall be conducted in a vehicle, which is similar in type and size to the vehicle the applicant is assigned to operate. Districts have the option to re-test at their discretion.

5.01(h) The operator shall receive pre-service training on the type of vehicle(s) to be driven, the type of duties they may be required to perform and in student confidentiality requirements prior to transporting students.

5.01(i) The operator shall have written documentation evidencing that they have received first aid training, including cardiopulmonary resuscitation and universal precautions within 90 calendar days after initial employment. If the operator holds a current first aid, cardiopulmonary resuscitation certificate it will meet the requirements of this section. Operators shall receive first aid training and/or re-certification every two (2) years thereafter.

5.01(j) The operator shall receive training regarding the proper use and maintenance of Child Safety Restraint Systems (CSRS) and proper wheelchair securement, when the operator is engaged in transportation involving these systems and devices prior to transporting students.

5.02 School transportation vehicle route operators (transporting students to and from school or from school to school) driving vehicles with the capacity of 15 or fewer passengers (counting the driver), including Type A Multifunction Bus and Small Vehicle, shall meet or exceed the following requirements:

5.02(a) The operator shall possess a valid driver's license.

5.02(b) The operator shall be a minimum of 18 years of age.

5.02(c) The operator shall have a current physical examination (not to exceed two years) consistent with the requirements of 49 CFR 391.43.

5.02(d) The district or service provider shall obtain a motor vehicle record of each operator prior to transporting students and annually thereafter.

5.02(e) The operator shall be given and/or have access to the CDE Type A Multifunction Bus /Small Vehicle Route Driver Guide prior to transporting students.

5.02(f) The operator shall receive a minimum of six hours of in-service training annually which may include required training in 1 CCR 301-26-R-5.00. A portion of this annual in-service requirement may occur during the school year.

5.02(g) The operator shall successfully pass a CDE Type A Multifunction Bus/Small Vehicle Route Operator written test for the current school year prior to transporting students and annually thereafter.

5.02(h) The operator shall successfully pass a driving performance test including a pre-trip inspection prior to transporting students and annually thereafter. This test shall be conducted in a vehicle, which is similar in type and size to the vehicle the applicant is assigned to operate. Districts have the option to re-test at their discretion.

5.02(i) The operator shall receive pre-service training on the type of vehicle(s) to be driven, the type of duties they may be required to perform and in student confidentiality requirements prior to transporting students.

5.02(j) The operator shall have written documentation evidencing that they have received first aid training, including cardiopulmonary resuscitation and universal precautions within 90 calendar days after initial employment. If the operator holds a current first aid, cardiopulmonary resuscitation certificate it will meet the requirements of this section. Operators shall receive first aid training and/or re-certification every two (2) years thereafter.

5.02(k) The operator shall receive training regarding the proper use and maintenance of Child Safety Restraint Systems (CSRS) and proper wheelchair securement, when the operator is engaged in transportation involving these systems and devices prior to transporting students.

5.03 School transportation vehicle operators, other than route operators, driving vehicles with the capacity of 15 or fewer passengers (counting the driver), including Type A Multifunction Bus and Small Vehicle, shall meet or exceed the following requirements:

5.03(a) The operator shall possess a valid driver's license.

5.03(b) The operator shall be a minimum of 18 years of age.

5.03(c) The district or service provider shall obtain a motor vehicle record of each operator prior to transporting students and annually thereafter.

5.03(d) The operator shall be given and/or have access to the CDE Type A Multifunction Bus /Small Vehicle Operator Guide prior to transporting students.

5.03(e) The operator shall successfully pass a Type A CDE Multifunction Bus/Small Vehicle Operator written test for the current school year prior to transporting students and annually thereafter.

5.03(f) The operator shall annually complete the CDE Multifunction/Small Vehicle Operators Medical Information Form (STU-17). Any yes annotations shall require a doctor's release.

5.03(g)The operator shall receive pre-service training on the type of vehicle(s) to be driven, the type of duties they may be required to perform and in student confidentiality requirements prior to transporting students.

5.03(h) The operator shall be given and/or have access to first aid information, including cardiopulmonary resuscitation and universal precautions.

5.03(i) The operator shall successfully pass a driving performance test including a pre-trip inspection prior to transporting students. This test shall be conducted in a vehicle,

which is similar in type and size to the vehicle the applicant is assigned to operate. Districts have the option to re-test in subsequent years at their discretion.

5.03(j) Prior to driving a school transportation vehicle pursuant to 1 CCR 301-26-R-12.11, operators shall receive training on towing a trailer.

5.04 School transportation paraprofessional is a person assigned to assist a school transportation vehicle operator control behavior of students in the bus and/or ensure the safety of students getting on and off the school transportation vehicle.

5.04(a) The school transportation paraprofessional shall receive pre-service training for the type of duties they may be required to perform prior to assisting with transporting students.

5.05 School transportation vehicle operators and school transportation paraprofessionals are required to be able to perform all essential functions including emergency evacuations when transporting students as determined by the school district or service provider job qualification standards.

5.05(a) The employing school district or service provider has the authority to require at any time a medical evaluation of a school transportation vehicle operator or school transportation paraprofessional for any condition that could impair the employee's ability to operate a vehicle safely, assist student(s) as required by their position, and/or perform other required job duties, and may take appropriate action on the outcome of such evaluation.

5.05(b) School transportation vehicle operators and school transportation paraprofessionals that have medical conditions which result in temporary loss of performance abilities shall provide return to work documentation from their physician, and any other requirements per district policy to the employing school district/service provide prior to returning to their assigned duties.

4204-R-6.00 School Transportation Annual Inspector Requirements

6.01 School transportation annual inspector is a person qualified to perform annual inspections on a school transportation vehicle to confirm the vehicle complies with CDE regulations.

6.02 School transportation annual inspectors shall meet or exceed the following requirements:

6.02(a) The school transportation annual inspector shall be in possession of a valid driver's license with the proper class and endorsements for the size and type of vehicle(s) to be inspected.

6.02(b) The school transportation annual inspector shall provide a Brake Inspector Qualification Certificate meeting the requirements of 49 CFR 396.25 to the school district or service provider.

6.02(c) The school transportation annual inspector shall have at least two years verifiable experience in the maintenance of light, medium or heavy duty vehicles.

6.02(d) The school transportation annual inspector shall successfully pass the CDE initial hands-on performance test.

6.02(d)(1) A certified school transportation annual inspector hands-on tester must proctor the hands-on performance test.

6.02(e) The school transportation annual inspector shall successfully pass the CDE annual inspector qualification written test initially, and every three years thereafter pass the CDE annual inspector recertification written test.

6.02(e)(1) A representative of the district or service provider, other than a school transportation annual inspector candidate, shall grade the written test.

6.03 A school district or service provider with an Inspection Site Certificate shall submit a CDE Application for CDE Annual Inspector Qualification or Recertification Form (STU-20) to CDE verifying that the above requirements have been satisfied. CDE will issue an Annual Inspector Certificate.

6.04 If any of the above requirements become invalid, the annual inspector certificate is invalid until the requirement(s) is made valid.

6.05 If a school transportation annual inspector has an expired certificate, the certificate can be recertified as follows:

6.05(a) If the certificate has been expired less than six months, then the CDE Annual Inspector Recertification Written Test is required.

6.05(b) If the certificate has been expired between six and 12 months, then the CDE Annual Inspector Qualification Written Test is required.

6.05(c) If the certificate has been expired for more than one year, then both the CDE Annual Inspector Qualification Written Test and the CDE hands-on performance test are required.

4204-R-7.00 Annual Inspector Hands-On Tester

7.01 School transportation annual inspector hands-on tester is a person qualified to proctor hands-on tests to annual inspector candidates.

7.02 School transportation annual inspector hands-on testers shall meet or exceed the following requirements:

7.02(a) The school transportation annual inspector hands-on tester shall have maintained a CDE Annual Inspector certificate for a minimum of two years.

7.02(b) The school transportation annual inspector hands-on tester shall have satisfactorily completed a four hour CDE school transportation annual inspector hands-on tester training.

7.02 (c) The school transportation annual inspector hands-on testers shall have completed a four hour brake training in the last three years or have maintained an ASE School Bus or Medium/Heavy Duty Truck or Transit Bus Brake Certification.

7.02(d) The school transportation annual inspector hands-on tester candidate shall submit a CDE Application for Certification or Recertification of CDE Annual Inspector Hands-On Tester Form (STU-30) verifying that the above criteria have been satisfied. CDE will issue an Annual Inspector Hands-On Tester Certificate.

7.02(e) The school transportation annual inspector hands-on tester shall conduct at least two hands-on tests every three years or attend a CDE school transportation annual inspector hands-on recertification training to recertify as a school transportation annual inspector hands-on tester.

7.03 If any of the above requirements become invalid, the hands-on tester certificate is invalid until the requirement(s) is made valid.

4204-R-8.00 Pre-trip/Post-trip Vehicle Inspections

8.01 Each school transportation vehicle shall have a daily pre-trip and post-trip inspection performed and documented by the school transportation vehicle operator or a district or service provider authorized transportation employee. A daily pre-trip inspection shall be completed prior to a vehicle being placed in service. A daily post-trip inspection shall be completed at the end of daily operation of each vehicle.

8.02 The pre-trip and post-trip inspection requirements for school transportation vehicles, other than small vehicles, shall include at a minimum all items listed on the CDE School Transportation Vehicle (School Bus/Multifunction Bus/Motor Coach Bus) – Pre-Trip and Post Trip Requirements Form (STU-9).

8.03 The pre-trip and post-trip inspection requirements for school transportation small vehicles shall include at a minimum all items listed on the CDE School Transportation Vehicle (Small Vehicle) – Pre-Trip and Post Trip Requirements Form (STU-8).

8.04 School districts and service providers shall have a procedure in place to verify that students are not left on an unattended school transportation vehicle.

4204-R-9.00 Inspection Site Certification

9.01 A CDE Inspection Site Certificate is required at each facility/location where annual inspections for school transportation vehicles are performed.

9.02 The inspection site shall meet or exceed the following criteria to acquire and maintain an inspection site certificate.

9.02(a) The inspection site shall be large enough to accommodate the vehicle, equipment and tools necessary to perform the inspection.

9.02(b) The inspection site shall have a floor surface or pad adequate to safely support the maximum weight of the largest vehicle to be inspected.

9.02(c) The inspection site shall have adequate lighting and ventilation.

9.02(d) The inspection site or inspector shall, at the time of inspection, have the equipment and tools necessary to properly complete the annual inspection.

9.02(e) The inspection site or inspector shall have tools designed and calibrated to take accurate readings of appropriate measurements, such as brakes and tires.

9.03 The district or service provider shall submit a request for an inspection site certificate on the CDE Application for Inspecting Site Certification Form (STU-22) that the above criteria have been satisfied.

9.04 The district or service provider shall post the CDE Inspection Site Certificate at the inspection site.

4204-R-10.00 Annual Inspection

10.01 School districts and service providers shall ensure all school transportation vehicles and trailers pursuant to 1 CCR 301-26-R-12.11 have a CDE annual inspection conducted by a CDE certified annual inspector.

10.01(a) Recently purchased school transportation vehicles shall successfully pass a CDE annual inspection prior to transporting students.

10.02 Annual inspection results shall be documented on the CDE Affidavit of Annual Inspection for School Transportation Vehicles Form (STU-25).

10.02(a) A copy of the current Affidavit is maintained inside the vehicle and a copy is placed in the vehicle file.

10.03 All annual inspection criteria of school transportation vehicles must meet or exceed manufacturer's specifications. The annual inspection shall be documented and shall include at a minimum all fields listed on the CDE Annual Inspection and Preventive Maintenance Requirements Form (STU-26).

10.04 All annual inspection criteria of trailers must meet or exceed manufacturer's specifications and shall include at a minimum all fields listed on the CDE Trailer Annual Inspection and Preventive Maintenance Requirements Form (STU-27).

10.05 During the annual inspection, all four wheels shall be pulled for full inspection of the foundation brake system. The three exceptions are:

10.05(a) School transportation vehicles with less than 4,000 miles since the previous annual inspection shall have two wheels (one front and one rear) pulled different than those pulled for the previous inspection.

10.05(b) School transportation vehicles equipped with a retarder meeting the specifications outlined in 1 CCR 301-25-R-33.00, shall have two wheels (one front and one rear) pulled which are different than those pulled for the previous inspection.

10.05(c) Trailers pursuant to 1 CCR 301-26-R-12.11 shall have 50 percent of the wheels pulled different than those pulled for the previous inspection.

4204-R-11.00 Maintenance and Repair

11.01 School districts and service providers must ensure all school transportation vehicles are systematically inspected, maintained and repaired to ensure that school transportation vehicles are in safe and proper operating condition.

11.02 School districts and service providers shall have a system to document preventative maintenance, reported defects and repairs made to school transportation vehicles.

11.03 School districts and service providers shall maintain separate files for each school transportation vehicle with documentation of all annual inspections, all preventative maintenance and all reported damage, defects or deficiencies and the corresponding repair and maintenance performed.

11.04 Any identified damage, defect or deficiency of a school transportation vehicle must be reported to the school district or service provider which:

11.04(a) Could affect the safety of operation of the school transportation vehicle, or

11.04(b) Could result in a mechanical breakdown of the school transportation vehicle, or

11.04(c) Results in noncompliance with Colorado Minimum Standards Governing School Transportation Vehicles (1 CCR 301-25) and/or manufacturer's specifications.

11.05 Documentation for reported defects must include all of the following:

11.05(a) The name of the school district or service provider.

11.05(b) Date and time the report was submitted.

11.05(c) All damage, defects or deficiencies of the school transportation vehicle.

11.05(d) The name of the individual who prepared the report.

11.06 Following a reported damage, defect or deficiency of a school transportation vehicle, school districts and service providers or a representative agent must repair the reported damage, defects or deficiencies, or document that no repair is necessary, ensuring that the vehicle is in safe and proper operating condition prior to transporting students.

11.07 School districts and service providers shall not transport students in a school transportation vehicle which is not in safe and proper operating condition. A school transportation vehicle shall be designated as "out-of-service" by a school district or service provider, a school transportation annual inspector or the CDE School Transportation Unit.

11.07(a) Exemption - Any school transportation vehicle discovered to be in an unsafe condition while being operated on the highway, roadway or private road may be continued in operation only to the nearest place where repairs can safely be affected. Such operation shall be conducted only if it is less hazardous to the public than to permit the vehicle to remain on the highway, roadway or private road.

11.08 Following a school transportation vehicle being placed "out-of-service", a school district, service provider or a representative agent must make required repairs, ensuring that the vehicle is in safe and proper operating condition prior to transporting students. In the event of being placed "out-of-service" during an annual inspection, the school transportation vehicle must successfully pass a CDE annual inspection prior to transporting students.

11.09 The preventative maintenance inspection on air drum brake systems shall include, at a minimum, that the brake rod travel has been measured and documented. The applied pressure method shall be used.

11.09(a) The inspection-interval shall not exceed 4,000 miles for buses equipped with a manual slack adjuster air brake system.

11.09(b) The inspection-interval shall not exceed 6,000 miles for buses equipped with an automatic slack adjuster air brake system.

11.10 The preventive maintenance inspection interval on air disc brake systems shall not exceed 6,000 miles and shall include, at a minimum; inspection and documentation of:

11.10(a) Inspect the pad thickness by checking the mechanical wear indicators.

11.10(b) Inspect the visible part of the rotors for cracks, excessive wear, damage, etc.

11.10(c) Inspect running clearance. If the caliper has no movement or appears to move greater than the distances indicated by the manufacturer, then a full wheel removal inspection will be necessary.

11.11 The preventive maintenance inspection interval for hydraulic brake systems shall not exceed 6,000 miles and shall include, at a minimum, inspection and documentation of:

11.11(a) Proper parking brake operation.

11.11(b) Proper brake fluid level and clarity.

11.11(c) Adequate pedal reserve.

11.11(d) Proper hydraulic/vacuum assist operation.

11.11(e) Visual inspection for brake fluid leakage.

11.12 If brake adjustment or repair is needed, the work shall be completed by or supervised by a DOT or equivalent qualified brake inspector meeting the requirements of 49 CFR 396.25.

4204-R-12.00 Operation of a School Transportation Vehicle

12.01 A school transportation vehicle shall not be operated in a manner which is unsafe or likely to cause an accident or damage of the vehicle.

12.02 A school transportation vehicle shall not be placed in motion on a roadway, highway or private road with the passenger entry door/service door open.

12.03 A school transportation vehicle's headlights or daytime running headlights shall be activated while the vehicle is in operation.

12.04 A school transportation vehicle shall not be fueled while students are on board, except in instances when unloading the students would present a greater hazard or peril to their safety.

12.05 Use of tobacco products as defined in Section 18-13-121(5), C.R.S., use or possession of illegal controlled substances, use or possession of alcohol and use or possession of marijuana or cannabinoid product, except as otherwise allowed by law, aboard any school transportation vehicle shall be prohibited at all times**.**

12.06 A school transportation vehicle operator shall not consume food unless the vehicle is stopped at a safe location with the park/emergency brake set.

12.07 When a school transportation vehicle is equipped with a roof mounted strobe lamp, the use of the strobe lamp is permitted only when the vehicle presents a hazard to other motorists, such as loading or unloading students in inclement weather or to enhance visibility of the vehicle when barriers inhibit such visibility.

12.08 A school transportation vehicle operator may use the strobe, in addition to the four-way hazard lamps, to warn other motorists that the vehicle is not in motion or is being operated at a speed of twenty-five miles per hour or less.

12.09 The school transportation vehicle operator shall use extreme caution when backing. Before backing on a roadway, highway or private property, the horn or audible warning device shall be sounded and four-way hazard lamps actuated or there shall be a person outside the vehicle giving direction.

12.09(a) Backing a school transportation vehicle when students are outside of the vehicle at a student stop is prohibited.

12.10 School transportation vehicles including Type A, B, C and D School Bus, Multifunction Bus and Motor Coach Bus shall not be operated with a trailer or other vehicle attached while students are being transported.

12.11 School transportation small vehicles, with the capacity of 15 or fewer passengers (counting the driver), may tow trailers while students are being transported to the extent that trailering is a necessary component of a district sponsored program**.**

4204-R-13.00 Authorized Passengers

13.01 Only district personnel, students enrolled in a district, law enforcement officials or individuals that have received prior authorization from the school district or service provider may be passengers on any school transportation vehicle.

13.02 The number of passengers transported on any school transportation vehicle shall not exceed the maximum seating capacity of the vehicle. Small vehicle capacity shall not exceed the number of safety belts as designed by the vehicle manufacturer.

13.03 Passengers shall not be permitted to stand in any school transportation vehicle while the vehicle is in motion. This does not preclude authorized persons (such as school transportation paraprofessionals) from completing their duties as required.

13.04 School districts and service providers shall consider the size of the passengers when determining the number of passengers that can safely occupy a school transportation vehicle seat.

4204-R-14.00 Safety Restraints

14.01 A school transportation vehicle operator shall have the safety belt fastened, worn correctly and properly adjusted prior to the school transportation vehicle being placed in motion.

14.02 All passengers in a school transportation vehicle under 10,000 lbs. GVWR shall have their safety belts fastened, worn correctly and properly adjusted prior to the school transportation vehicle being placed in motion.

4204-R-15.00 Transportation of Miscellaneous Items

15.01 A school transportation vehicle operator shall make a reasonable and prudent determination that all carry-on items are properly handled in order to minimize the danger to all others.

15.02 All baggage, articles, equipment or medical supplies not held by individual passengers shall be secured in a manner which assures unrestricted access to all exits by occupants, does not restrict the driver's ability to operate the bus and protects all occupants against injury resulting from falling or displacement of any baggage, article or equipment. Oxygen cylinders secured to a wheelchair shall be considered to be in compliance with this subsection, provided they do not impede access to any exit.

15.03 All chemicals and cleaning supplies carried on a school transportation vehicle must meet the following precautions:

15.03(a) Container is non-breakable.

15.03(b) Container is labeled with contents.

15.03(c) Pressurized aerosols are prohibited.

15.03(d) Container is secured in a bracket, or in a closed compartment in the driver's area or a compartment on the exterior of the bus.

15.03(e) Containers and quantities of products are kept to a reasonable size.

15.04 Interior-decorations shall not be located within the driver's area (which includes the space in front of the front barriers including the step-well, dash, walls and ceiling, the windshield, the entry door, the driver's side window, and all windows in front of the front barrier), the first two passenger windows on both sides of the vehicle and all windows on the rear of the vehicle. Other decorations within the passenger compartment shall not:

15.04(a) Cover any required lettering.

15.04(b) Impede the aisle or any emergency exit.

15.04(c) Hang from the walls and/or ceiling.

4204-R-16.00 Maximum Driving Time for School Transportation Vehicle Operators

16.01 The school transportation vehicle operator, including small vehicle operators, shall not drive nor shall the school district or service provider permit or require an operator to drive:

16.01(a) In excess of 10 hours or after being on-duty 14 hours until completing 10 hours off-duty. This would include on-duty time for all employers. Ten hours off-duty may be consecutive or accumulated in two or more periods of off-duty time with one period having a minimum of 6 consecutive hours off-duty.

16.01(b) After being on-duty for more than 70 hours in any seven consecutive days.

16.02 The school district or service provider may comply with part 395 of the Federal Motor Carrier Safety Regulations (FMCSR) in place of this section.

16.03 Definitions:

16.03(a) Adverse driving conditions - In case of emergency, an operator may complete the trip without being in violation if such trip reasonably could have been completed absent the emergency.

16.03(b) Day - Means any 24-consecutive hour period beginning at the time designated by the

school district or service provider.

16.03(c) On-duty time - Includes all time worked for any and all employers, including all driving and non-driving duties.

16.03(d) Off-duty time - School transportation vehicle operators may consider waiting time at special events, meal stops and school related events as off-duty if the following criteria are met: (Compensated waiting time does not necessitate on-duty time.)

16.03(d)(1) The operator shall be relieved of all duty and responsibility for the care and custody of the vehicle, its accessories and students, and

16.03(d)(2) The operator shall be at liberty to pursue activities of his/her choice including leaving the premises on which the bus is located.

16.04 All school transportation vehicle operators shall document that they are in compliance with this section, hours of service.

16.04(a) An operator's daily log, or equivalent, shall be completed for the trip in the operator's own handwriting, when the trip requires a scheduled or unscheduled overnight stay away from the work reporting location.

4204-R-17.00 Route Planning – Student Loading and Discharge

17.01 School transportation small vehicles, Type A Multifunction Buses with 15 or fewer passenger capacity (counting the driver) and School Buses (Types A, B, C, and D) may be used to transport students to and from school. Multifunction Buses Type B, C and D and Motor Coach Buses shall not be used to transport students to and from school.

17.02 The location of student stops shall consider factors including:

17.02(a) Ages of the students.

17.02(b) Visibility.

17.02(c) Lateral clearance.

17.02(d) Student access.

17.02(e) Control of other motorists.

17.02(e)(1) Student stops for Type A Multifunction Buses with 15 or fewer passenger capacity (counting the driver) and school transportation small vehicles should be located off of the roadway whenever possible.

17.03 School transportation vehicle operators shall stop at least 10 feet away from students at each designated stop. The school transportation vehicle operator shall apply the parking brake and

shift the vehicle into neutral or park prior to opening the service door of a bus or passenger door(s) of a small vehicle.

17.04 The school transportation vehicle operator shall stop as far to the right of the roadway, highway or private road as possible before discharging or loading passengers, allowing sufficient area to the right and front of the vehicle but close enough to the right to prevent traffic from passing on the right so students may clear the vehicle safely while in sight of the operator.

17.04(a) Exception: The school transportation vehicle operator may block the lane of traffic when passengers being received or discharged are required to cross the roadway.

17.05 Student stops shall not be located on the side of any major thoroughfare whenever access to the destination of the passenger is possible by the use of a road or street which is adjacent to the major thoroughfare.

17.06 If students are required to cross a roadway, highway or private road on which a student stop is being performed, they are prohibited from crossing a roadway, highway or private road constructed or designed to permit three or more separate lanes of vehicular traffic in either direction or with a median separating multiple lanes of traffic. This does not include crossing the roadway, highway or private road with the assistance of a traffic controls signal or with the assistance of a crossing guard.

17.07 Four-way hazard lamps shall be used on private property such as parking lots.

17.08 Alternating flashing red warning signal lamps shall not be activated within 50 feet of an intersection if the intersection is controlled by a traffic control signal.

17.09 Routes shall be planned as to:

17.09(a) Eliminate, when practical, railroad crossings.

17.09(b) Have stops be a minimum of 200 feet apart since alternating flashing amber warning signal lamps must be activated a minimum of 200 feet in advance of the stop.

17.09(b)(1) Exception: Student stops located in areas where wildlife may create a high risk of threat to students' safety while they are waiting and/or walking to a student stop, may designate student stops less than 200 feet apart upon detailed written approval by the school district board of education and/or their designee. A copy of the written approval shall be kept in the school transportation office and route operators shall be given written notice of the exception and have it indicated on route sheets.

17.10 Pursuant to Section 42-4-1903(2), C.R.S., school transportation vehicle operators are not required to actuate the alternating flashing red warning signal lamps on a school bus when the student stop is at a location where the local traffic regulatory authority has by prior written designation declared such actuation unnecessary and when discharging or loading passengers who require the assistance of a lift device and no passenger is required to cross the roadway. Further, Type A Multifunction Buses with 15 or fewer passenger capacity (counting the driver)

and school transportation small vehicles do not have the functionality to control traffic. In these instances, the school transportation vehicle operator shall stop as far to the right off the roadway as possible to reduce obstruction to traffic, activate the four-way hazard warning lamps a minimum of 200 feet prior to the student stop, continue to display the four-way hazard warning lamps until the process of discharging or loading passengers has been completed, and deactivate the four-way hazard lamps before resuming motion. Students are prohibited from crossing any lanes of traffic to access the student stop or after disembarking.

17.11 School transportation vehicle operators shall not relocate a student stop without approval of the school district or service provider.

17.12 School transportation vehicle operators of School Buses, Multifunction Buses and Motor Coach Buses, whether transporting students or not, shall apply the following procedures during the process of approaching, stopping and crossing railroad tracks:

17.12(a) Activate the four-way hazard lamps not less than 200 feet from the railroad crossing to alert other motorists of the pending stop for the crossing.

17.12(b) Stop the bus within 50 feet but not less than 15 feet from the nearest rail.

17.12(c) When stopped, the bus should be as far to the right of the roadway as possible and should not form two lanes of traffic unless the highway is marked for four or more lanes of traffic.

17.12(d) Use a prearranged signal to alert students to the need for quiet aboard the bus when approaching railroad tracks. Turn off all noise making equipment (fans, heater, radio, etc.)

17.13 After quietness aboard the stopped bus has been achieved, bus operators shall open the service door and operator window. The bus operator shall listen and look in both directions along the track(s) for any approaching train(s) and for signals indicating the approach of a train.

17.13(a) If the tracks are clear, the bus operator shall close the service door and may then proceed in a gear low enough to permit crossing the tracks without having to manually shift gears. The bus operator shall cancel the four-way hazard lamps after the bus has cleared the tracks.

17.13(b) When two or more tracks are to be crossed, the bus operator shall not stop a second time unless the bus is completely clear of the first crossing and has at least 15 feet clearance in front and at least 15 feet clearance to the rear.

17.13(c) Before crossing the tracks, the bus operator shall verify that there is enough space after the tracks for the bus plus 15 feet if it is necessary to stop after crossing the tracks.

17.14 School transportation vehicle operators of School Buses, Multifunction Buses and Motor Coach Buses are not required to stop at crossings controlled by a red, amber, green traffic control signal when it is in the green position or when the crossing is controlled by a police officer or human flag person.

4204-R-18.00 Emergency Evacuation Drills

18.01 Emergency evacuation drills shall be conducted with students by all school transportation vehicle operators and school transportation paraprofessionals at least twice during each school year, following the procedures in the Colorado Department of Education School Bus/Multifunction Bus/Motor Coach Bus Operator Guide.

18.01(a) One drill shall be conducted in the fall and the second drill conducted in the spring.

18.01(b) Substitute and Multifunction operators of 16 or greater capacity (counting the driver) vehicles shall be trained how to conduct the emergency evacuation drills.

18.02 Students on school related events shall receive emergency evacuation instruction prior to departure.

18.03 School district and service providers shall maintain records documenting that the required evacuation drills were conducted and/or evacuation instruction was given.