

Title 204 WAC

EQUIPMENT, COMMISSION ON

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Chapter 204-08 WAC

PRACTICE AND PROCEDURE

WAC

204-08-010	Definition.
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WAC 204-08-010 Definition. "Commission" wherever used herein shall mean the state commission on equipment as established in RCW 46.37.005. [Statutory Authority: RCW 46.37.005. 78-08-078 (Order 7760), § 204-08-010, filed 7/27/78; Rule I, filed 3/21/60.]

(1980 Ed.)

WAC 204-08-020 Petitions for rule making amendment or repeal. (1) Any interested person may petition the commission requesting the promulgation, amendment, or repeal of any regulation.

(2) Where the petition requests the promulgation of a regulation, the requested or proposed regulation must be set out in full. The petition must also include all the reasons for the requested regulation together with briefs of any applicable law. Where the petition requests the amendment or repeal of a regulation presently in effect, the regulation or portion of the regulation in question must be set out as well as the suggested amendment form if any. The petition must include all reasons for the requested amendment or repeal of the regulation.

(3) All petitions shall be considered by the commission and it may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal, or modification of any regulation.

(4) The commission shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition. [Rule II, filed 3/21/60.]

WAC 204-08-030 Declaratory rulings. (1) As prescribed in RCW 34.04.080, any interested person may petition the commission for a declaratory ruling. The commission shall consider the petition and within a reasonable length of time shall:

- (a) issue a nonbinding declaratory ruling; or
- (b) notify the person that no declaratory ruling is to be issued; or
- (c) set a reasonable time and place for an oral hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

If a hearing as provided in subsection (c) is conducted, the commission shall within a reasonable time:

- (1) Issue a binding declaratory rule; or
- (2) Issue a nonbinding declaratory rule; or
- (3) Notify the person that no declaratory ruling is to be issued. [Statutory Authority: RCW 46.37.005. 78-08-078 (Order 7760), § 204-08-030, filed 7/27/78; Rule III, filed 3/21/60.]

WAC 204-08-040 Forms for declaratory rulings. Any interested person petitioning the commission for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

(1) At the top of the page shall appear the wording "Before the state commission on equipment." On the left side of the page following the foregoing the following

caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "Petition."

(2) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

(3) The original and two legible copies shall be filed with the agency. Petitions shall be on white paper 8 1/2" by 11" in size. [Rule IV, filed 3/21/60.]

WAC 204-08-050 For promulgation, amendment, or repeal of commission regulations. For interested person petitioning the commission requesting a promulgation, amendment, or repeal of any regulations shall generally adhere to the following form for such purpose.

(1) At the top of the page shall appear the wording "Before the state commission on equipment." On the left side of the page following the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment, or repeal) of regulation (or regulations)." Opposite the foregoing caption shall appear the word "Petition."

(2) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether the petitioner seeks the promulgation of new regulation or regulations, or amendment or repeal of existing regulation or regulations. The second paragraph, in the case of a proposed new regulation or regulations or amendment of an existing regulation, shall state the desired regulation in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing regulation such shall be stated and the proposed to be repealed shall either be set forth in full or shall be referred to by commission regulation number. The third paragraph shall set forth concisely the reason for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the regulation. Additional numbered paragraphs may be used to give full explanation of the petitioners reasons for the action sought.

(3) Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency.

(4) Petitions shall be on white paper 8 1/2" by 11" in size. [Rule V, filed 3/21/60.]

WAC 204-08-100 Procedure for obtaining approval of automotive equipment within the scope of RCW 46.37.005 and 46.37.320. (1) Standards for approval.

(a) The device must meet the current specifications for that device as outlined by the Society of Automotive Engineers in the Society of Automotive Engineers Handbook or as outlined by the American Standards Association.

(b) Where standards have not been set by either the Society of Automotive Engineers or the American Standards Association the standards shall be those standards set by the commission on equipment in a published commission on equipment regulation.

(2) Method for obtaining approval.

(a) To obtain approval the petitioner must provide for submission of any lighting device, or other safety equipment, component, or assembly to any recognized organization or agency such as, but not limited to, the Vehicle Equipment Safety Commission, American National Standards Institute, Society of Automotive Engineers, and the American Association of Motor Vehicle Administrators, as the agent of the state commission on equipment, and for the issuance of an approved certificate by that recognized organization or agency to the state commission on equipment.

(b) If any lighting device, or other safety equipment, component, or assembly cannot be submitted to the organization or agency named in the above paragraph (a), then the petitioner must submit to the state commission on equipment the following:

(i) a copy of a test report from a nationally recognized testing laboratory certifying that the device meets the current specifications for that device as prescribed by the commission in a published commission regulation.

(ii) a sample of the device as marketed when requested by the commission on equipment.

(iii) correspondence, test reports and samples are to be submitted to: Secretary, State Commission on Equipment, Washington State Patrol, General Administration Building AX-12, Olympia, Washington 98504.

(3) Forms and files of the state commission on equipment. Certificates of approval shall be on forms provided by the secretary of the state commission on equipment and the files of the state commission on equipment shall be kept by the secretary of the state commission on equipment in the offices of the Washington state patrol. [Statutory Authority: RCW 46.37.005. 78-08-078 (Order 7760), § 204-08-100, filed 7/27/78; Rule VI, filed 3/21/60.]

Chapter 204-12 WAC HYDRAULIC BRAKE FLUID

WAC

204-12-001	Promulgation.
204-12-010	Purpose.
204-12-020	Standards.
204-12-030	Marking of containers.
204-12-040	Filling or reuse of containers.
204-12-050	Approval procedure.
204-12-060	Effective date.

WAC 204-12-001 Promulgation. By authority of RCW 46.37.005 and RCW 46.37.365, the state commission on equipment hereby adopts the following regulation relating to hydraulic brake fluid. [Regulation 6401 (part), filed 12/16/63.]

WAC 204-12-010 Purpose. To insure that hydraulic brake fluid shall be distributed and serviced with due regard for safety of the occupants of the vehicle and the public. [Regulation 6401 (part), filed 12/16/63.]

WAC 204-12-020 Standards. The standards for approval of hydraulic brake fluid shall be the current standards of the Society of Automotive Engineers as outlined in the SAE Handbook. [Order 7304, § 204-12-020, filed 11/25/75; Regulation 6401 (part), filed 12/16/63.]

WAC 204-12-030 Marking of containers. Hydraulic brake fluid containers offered for sale shall bear on the label an indication that the hydraulic brake fluid contained meets the current specifications of the Society of Automotive Engineers. The container shall also designate which of the standards the fluid is compounded to comply with. [Order 7304, § 204-12-030, filed 11/25/75; Regulation 6401 (part), filed 12/16/63.]

WAC 204-12-040 Filling or reuse of containers. No container bearing the identification of the contents as required in WAC 204-12-030 shall be filled or reused with any hydraulic brake fluid other than that designated by the identification on the container. [Regulation 6401 (part), filed 12/16/63.]

WAC 204-12-050 Approval procedure. 5.1 Test Report. Submit to the Washington state commission on equipment a test report from a nationally recognized testing laboratory certifying that the hydraulic brake fluid meets the current specifications of the Society of Automotive Engineers for hydraulic brake fluid. [Order 7304, § 204-12-050, filed 11/25/75; Regulation 6401 (part), filed 12/16/63.]

WAC 204-12-060 Effective date. This regulation (WAC 204-12-010 through WAC 204-12-060) shall have an effective date of January 15, 1964 and thereafter all hydraulic brake fluid sold or offered for sale shall comply with the provisions of this regulation (WAC 204-12-010 through WAC 204-12-060) to be legal for sale and use in the state of Washington. [Regulation 6401 (part), filed 12/16/63.]

Chapter 204-16 WAC SEAT BELTS

WAC

204-16-001	Promulgation.
204-16-010	Previous regulation rescinded.
204-16-020	Purpose.
204-16-030	Standards.
204-16-040	Installation.
204-16-050	Approval procedure.

204-16-060 Effective date.

WAC 204-16-001 Promulgation. By authority of RCW 46.37.005 and 46.37.510 the state commission on equipment hereby adopts the following regulation relating to the design and installation of motor vehicle seat belt assemblies. [Regulation 6402 part, filed 12/16/63.]

WAC 204-16-010 Previous regulation rescinded. State commission on equipment Regulation #620 is hereby rescinded. [Regulation 6402 part, filed 12/16/63.]

WAC 204-16-020 Purpose. To insure that any seat belt or safety harness installed in a vehicle shall be designed and installed in such manner as to prevent or materially reduce movement of any person using the equipment in the event of collision or upset of the vehicles. [Regulation 6402 part, filed 12/16/63.]

WAC 204-16-030 Standards. The standards for approval of motor vehicle seat belt assemblies, restraining devices for children (eight months to six years) for use in motor vehicles and harness type restraint assemblies for use in motor vehicles shall be the current standards of the Society of Automotive Engineers as outlined in the SAE Handbook. [Order 7601, § 204-16-040, filed 2/24/76; Regulation 6402 part, filed 12/16/63.]

WAC 204-16-040 Installation. Motor vehicle seat belts must be installed in accordance with the current standards of the Society of Automotive Engineers as outlined in the SAE Handbook. [Order 7601, § 204-16-040, filed 2/24/76; Regulation 6402 part, filed 12/16/63.]

WAC 204-16-050 Approval procedure. 5.1 Test Report. Submit to the Washington state commission on equipment a test report from a nationally recognized testing laboratory certifying that the seat belt assembly, harness type restraint assembly or restraining device for children meets the current specification of the Society of Automotive Engineers.

5.2 Sample of Device. Submit to the Washington state commission on equipment a sample of the device as marketed.

5.3 Fee for Approval. There is no fee for approval. [Regulation 6402 part, filed 12/16/63.]

WAC 204-16-060 Effective date. This regulation (WAC 204-16-010 through WAC 204-16-060) shall have an effective date of January 15, 1964 and thereafter all motor vehicle seat belt assemblies, harness type restraint assemblies for use in motor vehicles and restraining devices for children (eight months to six years) for use in motor vehicle sold or offered for sale shall comply with the provisions of this regulation (WAC 204-16-010 through WAC 204-16-060) to be legal for sale and use in the state of Washington. [Regulation 6402 part, filed 12/16/63.]

Chapter 204-20 WAC

MOTORCYCLE HELMETS

WAC

204-20-010	Definitions.
204-20-020	Materials.
204-20-030	Required protection.
204-20-040	Test samples.
204-20-050	Test conditions.
204-20-060	Impact test.
204-20-070	Penetration test.
204-20-080	Retaining system test.
204-20-090	Test equipment.
204-20-100	Calibration of test equipment.
204-20-110	Reflector requirements.
204-20-120	Identification requirements.
204-20-130	Approval procedure.
204-20-140	Alteration of helmets.
204-20-150	Effective date.

WAC 204-20-010 Definitions. (1) Helmet – The term "helmet" as used herein is a piece of protective headgear designed to protect the upper part of the wearer's head from impacts.

(2) Reference Plane – The reference plane is a plane 2.36 inches (60 millimeters) above and parallel to a plane defined by the level of the external ear opening and the lower rim of the eye opening.

(3) Area of Protection – All area of the head above the reference plane. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-020 Materials. (1) All materials used in the helmet shall be of durable quality, and their physical properties shall not change appreciably under normal use for the expected life of the helmet. This requirement shall include exposure to sun, rain, temperature variations, dust, vibrations, contact with body tissues and fluids, and products normally used on the skin and hair.

(2) Materials used in the helmet shall not cause skin irritation or disease if they come into contact with the skin. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-030 Required protection. (1) The area of protection defined in WAC 204-20-010(3) shall be protected by the helmet so the transmitted acceleration is within the specifications of WAC 204-20-060, Impact Test.

(2) The area of protection shall be protected by the helmet to meet the requirements of WAC 204-20-070, Penetration Test.

(3) The helmet shall meet the requirements of WAC 204-20-080, Retaining System Test.

(4) The helmet shall be designed so that no part(s) will be inadvertently detached during normal use including impact conditions encountered in accidents. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-040 Test samples. (1) In order to be approved under this standard, helmets shall be tested in accordance with all procedures set forth herein. The tests shall be conducted on helmets as offered for sale.

(2) After a particular make and model has been approved, further quality control tests or tests to verify continuing satisfactory performance can be accomplished by conducting only the room temperature portion of the tests.

(3) Four helmets will be required for testing for approval.

(4) The reference plane shall be marked on the helmet prior to test, and all tests shall be conducted above the reference plane. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-050 Test conditions. (1) Ambient Temperature – Ambient temperature tests will be conducted on the first helmet in a room in which the ambient temperature is 78 ± 9 degrees Fahrenheit (25 ± 5 degrees Centigrade). The helmet shall be maintained in the ambient temperature for a period of not less than four hours.

(2) Low Temperature – The second helmet shall be tested under low temperature conditions after being cooled in a mechanically cooled apparatus to a temperature of 14 ± 5 degrees Fahrenheit (-10 ± 2 degrees Centigrade) for a period of between four and twenty-four hours.

(3) Water Immersion – The third helmet shall be tested after immersion in water at a temperature of 78 ± 9 degrees Fahrenheit (25 ± 5 degrees Centigrade) for a period of not less than four hours.

(4) High Temperature – The fourth helmet shall be tested after being heated in a suitable oven at a temperature of 122 ± 5 degrees Fahrenheit (50 ± 2 degrees Centigrade) for a period between four and twenty-four hours.

(5) Testing shall begin within five minutes after removal from the environments specified in subsections (2), (3), and (4) of this section, and shall be completed before the temperature and/or moisture content has changed appreciably from the specified conditions. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-060 Impact test. (1) Shock Absorption – Shock absorption shall be measured by imparted acceleration to an appropriately instrumented movable head form dropping in guided fall upon a fixed, rigid anvil.

(2) Maximum Allowable Acceleration Levels – The helmet shall be rejected: If any portion of the acceleration pulse exceeds 400 G's, or if the total time of acceleration above the 200 G level exceeds two milliseconds, or if the total time of acceleration above the 150 G level exceeds four milliseconds. The maximum allowable acceleration levels set forth in this section shall apply to ambient temperature impact [WAC 204-20-050(1)], low temperature impact [WAC 204-20-050(2)], water immersion impact [WAC 204-20-050(3)] and high temperature impact tests [WAC 204-20-050(4)].

(3) Each helmet shall be impacted in not less than four sites. The impact sites shall be above the reference plane and separated from each other by a distance equal

to one-fifth or more of the maximal circumference of the helmet.

(4) An equal number of impacts shall be applied on a flat impact surface at least five inches (12.6 centimeters) in diameter and a hemispherical impact anvil with a radius of 1.9 inches (4.8 centimeters). The flat and hemispherical impact surfaces shall be mounted on a rigid anvil weighing at least three hundred pounds (136 kilograms).

(5) The impacts shall be made with a head form fabricated from low resonance magnesium alloy (K-1A) and a light-weight supporting crosshead. The combined weight of the crosshead and head form shall be $11 \pm 0.2 - 0.0$ pounds ($5 \pm 0.091 - 0.0$ kilograms).

(6) The impact energy utilized shall be fifty foot-pounds (7.42 kilogram-meters) with the hemispherical anvil face (54 inches or 134 centimeter drop) and sixty-six foot-pounds (9.8 kilogram-meters) with the flat anvil face (72 inches or 183 centimeter drop). [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-070 Penetration test. (1) The complete helmet shall be placed on a rigid head form covered with an electrically-conducting material. Penetration tests shall be conducted by dropping a six pound, ten ounce (3 kilogram) penetration striker a distance of 39.37 inches (1 meter) measured from the outer surface of the helmet to the tip of the striker. The impact tip of the striker shall be a cone with an included angle of sixty degrees and an altitude of at least 1.5 inches (3.8 centimeters). The radius of the striking point shall be .0197 inches (0.5 millimeters) and its hardness 60 C Rockwell.

(2) The helmet shall be subjected to impact of the striker dropped (free fall) onto the outside surface of the helmet in a direction essentially perpendicular to the surface. The points of impact shall be one in each sixty degrees quadrant of the helmet at a radial distance 4.5 ± 0.5 inches (11.4 ± 1.3 centimeters) from the apex and also at the apex. Ten impacts in these quadrants shall be accomplished on the four sample helmets with at least one impact on each sample.

(3) The helmet shall be rejected if electrical contact is made between the impactor and the conducting surface of the head form during any of the ten impacts applied in subsection (2) of this section. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-080 Retaining system test. (1) The retention system of the helmet shall be tested by placing the helmet on a rigid head form. The chin strap or other chin restraining device shall be placed around a movable anvil approximating the size of the human jaw. The simulated jaw shall be located in approximately the correct relative position on the head form.

(2) The movable simulated jaw bone shall be moved downward with respect to the head form until a force of three hundred pounds (136 kilograms) is applied to the simulated jaw bone. The retention system and its attachments shall support this force without failure and

without greater than one inch (2.54 centimeters) increase in vertical distance from the top of the helmet to the bottom of the simulated jaw bone.

(3) If the extension between the simulated jaw and the top of the helmet is greater than one inch (2.54 centimeters) or if any part of the retention system fails, the helmet shall be rejected.

(4) The retention system shall be tested as specified herein at ambient temperature. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-090 Test equipment. The test equipment shall be identical or equivalent to that specified in Section 13 of United States of America Standards Institute Standard Z90.1-1966. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-100 Calibration of test equipment. (1) The equipment shall be calibrated in accordance with the procedure recommended by the manufacturer. It shall be allowed to warm up until equilibrium is reached prior to any testing.

(2) The instrumentation shall be recalibrated after each series of tests. Any change in the calibration before and after testing shall be cause for rejection of the test series.

(3) In addition to the manufacturer's component calibration specified in subsection (1) of this section, the entire system shall be checked before and after each series of tests for calibration by dropping the head form on a section of rigid foam plastic and comparing this calibration with previous calibrations on the same or identical foam plastic. This calibration must be within predetermined tolerance prior to and after testing. If it is out of tolerance, the test series shall be discarded.

(4) A permanent acceleration-time history record of each impact shall be made. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-110 Reflector requirements. Each protective helmet approved by the state commission on equipment shall have a reflectorized surface or have securely affixed thereto reflectorized material on both the left and right side of such helmet. Such reflectorization must cover an area of at least four square inches on each side of the helmet. If reflectorized material is attached to the helmet, it must be affixed with a suitable permanent, weatherproof and water-resistant adhesive substance. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-120 Identification requirements. Each helmet approved by the state commission on equipment shall be labeled on the outside of the helmet above the base of the rear of the helmet with letters or numbers at least one-fourth inch in height with the manufacturer's trade name and model name or number, which shall be the same name or number under which the helmet has been approved. The identification must be permanent, weatherproof and water-resistant. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-130 Approval procedure. (1) Test Report – Submit to the State Commission on Equipment (Washington State Patrol, General Administration Building, Olympia, Washington 98501) a test report from a nationally recognized testing laboratory certifying that the device meets the specifications set forth in this regulation [WAC 204-20-010 through 204-20-150] and stating the manufacturer's trade name and model name or number appearing on the device tested and being submitted for approval.

(2) Fee For Approval – There is no fee for approval. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-140 Alteration of helmets. Alteration of a helmet by or for a user shall invalidate its approval by the state commission on equipment and the label required by WAC 204-20-120, Identification Requirements, shall no longer be evidence of approval of such a helmet. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

WAC 204-20-150 Effective date. This regulation [WAC 204-20-010 through 204-20-150] shall have an effective date of July 1, 1967 and thereafter all protective helmets to be worn by motorcycle drivers and passengers shall comply with the provisions of this regulation [WAC 204-20-010 through 204-20-150] to be legal for sale and use in the state of Washington. [Regulation 6701 (part), filed 5/31/67, effective 7/1/67.]

Chapter 204-24 WAC TRACTION DEVICES

WAC

204-24-020	Standards for tire chains.
204-24-030	Standards for studded tires.
204-24-040	Other traction devices.
204-24-050	Use of tire chains or other traction devices.
204-24-060	Period of use.
204-24-070	Approval of tire chains or traction devices.

WAC 204-24-020 Standards for tire chains. Each tire chain shall have at least two side chains, to which are attached sufficient cross chains of hardened metal so that at least one cross chain is in contact with the road surface at all times. The terms "tire chain" and "side chains," when used in this regulation for vehicles with single drive wheels, shall include chain or steel cable with hardened steel traction projections securely fastened to the cross links. The steel cable used for this purpose shall be of a strength equivalent to the chain used in conventional metal tire chains. The Commission on Equipment can approve for use on the public highways of this state other "tire chain" devices, not manufactured of hardened steel, if the devices are equivalent to metal chains in performance. [Order 7607, § 204-24-020, filed 9/14/76; Order 6902, § 204-24-020, filed 12/19/73; Order 6902, § 204-24-020, filed 2/17/70.]

WAC 204-24-030 Standards for studded tires. Studded tires shall meet the following specifications:

(1) Studs shall be metal, tipped with tungsten carbide.

(2) Metal studs shall be inserted only in a new tire or a newly-recapped tire which has molded in the tread the "pin-holes" into which metal studs are to be inserted. Studs shall not be inserted in any new tire or newly-recapped tire after it has been driven on a vehicle.

(3) Metal studs may be installed only by the tire manufacturer, or by a tire dealer or tire jobber who shall install the metal studs in conformance with the manufacturer's specifications.

(4) When a tire is sold or offered for sale as a studded tire or when studs are installed in a new tire or a newly-recapped tire, there shall be a minimum of seventy metal studs evenly spaced around the tread of the tire.

(5) A tire shall contain a minimum of fifty-six metal studs at all times in order to qualify as a "studded tire" or as an approved traction device where traffic control signs marked "Chains" or "Other Approved Traction Devices are Required" are posted.

(6) Metal studs shall not be installed in any tire of a vehicle which has a gross vehicle weight of ten thousand (10,000) pounds or over.

(7) School buses and fire department equipment tires are exempt from Item (6) of this regulation. [Order 7607, § 204-24-030, filed 9/14/76; Order 6902, § 204-24-030, filed 2/17/70.]

WAC 204-24-040 Other traction devices. Tire studs or other similar devices affixed on or embedded in a new tire or newly-recapped tire may be approved by the Commission on Equipment as suitable traction devices. Special tires specifically designed to improve stopping, traction, and cornering abilities of the tire on ice or snow may be approved by the Commission on Equipment as an approved traction device. An approved traction device is a winter traction tire with a minimum of 4/32 of an inch tread depth measured in the center portion of the tire at three locations equally spaced around the circumference of the tire which, when compared with conventional rib type tires, has a relatively aggressive tread pattern and is designed primarily to provide additional starting, stopping, and driving traction on snow or ice. The tread has ribs, lugs, blocks, or buttons, is generally discontinuous, and variably spaced, and has the following marking and characteristics when inflated:

(1) A substantial portion of the lug, block, or rib edges in the tread design are at an angle greater than 30 degrees to the tire circumferential center line.

(2) On at least one side of the tread design, the shoulder lugs protrude at least 1/2-inch in a direction generally perpendicular to the direction of travel. [Order 7607, § 204-24-040, filed 9/14/76; Order 6902, § 204-24-040, filed 2/17/70.]

WAC 204-24-050 Use of tire chains or other traction devices. When traffic control signs marked "Chains or Other Approved Traction Devices Are Required" are posted by the Transportation Commission, it shall be

unlawful for any vehicle not to have tire chains or approved traction devices mounted on the drive wheels of a vehicle, except the use of special tires or approved traction devices other than tire chains by vehicles over 10,000 pounds gross vehicle weight shall not be permitted. These vehicles must use tire chains as set forth. On any vehicle [equipped with] dual tire drive wheels, individual metal chains of hardened metal may be used on the outside drive wheels, provided a minimum of four such chains equally spaced are used on each such wheel. All-wheel drive vehicles with a gross vehicle weight of 8,000 pounds or less, in gear, equipped with approved traction devices on all wheels, may be exempt from using chains when traffic control signs marked "Chains Required" are posted. *Provided:* That tire chains for at least one set of drive wheels are carried upon such vehicle. Where traffic control signs are posted marked "Chains Required", the use of special tires or approved traction devices may not be substituted for tire chains on single drive vehicles. The Washington State Transportation Commission or Washington State Patrol may prohibit any vehicle from entering a chain control area when it is determined that the vehicle will experience difficulty in safely traveling the area. [Statutory Authority: RCW 46.37.005 & 46.37.420. 78-02-091 (Order 7607A), § 204-24-050, filed 1/30/78; Order 7607, § 204-24-050, filed 9/14/76; Order 6902, § 204-24-050, filed 2/17/70.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 204-24-060 Period of use. Studded tires, regardless of the number of metal studs remaining in the tire, shall not be used between April 1 and November 1 of each year unless the State Highway Commission has determined additional periods in which they may be used. [Order 7607, § 204-24-060, filed 9/14/76; Order 6902, § 204-24-060, filed 2/17/70.]

WAC 204-24-070 Approval of tire chains or traction devices. Any tire chain, wheel chains, studded tires[,] or other traction devices meeting the standards in WAC 204-24-020, 204-24-030, and 204-24-040 shall be considered as an approved type chain, studded tire, or other traction device by the State Commission on Equipment. [Statutory Authority: RCW 46.37.005 & 46.37.420. 78-02-091 (Order 7607A), § 204-24-070, filed 1/30/78; Order 7607, § 204-24-070, filed 9/14/76.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

Chapter 204-28 WAC

SLOW MOVING VEHICLES EMBLEMS

WAC

204-28-020	Standards for emblems.
204-28-030	Mounting standards.
204-28-040	Use of emblem on other classes of vehicles.
204-28-050	Approval of emblems.

WAC 204-28-020 Standards for emblems. To comply with the provisions of RCW 46.37.160(6), Slow-Moving Vehicle Emblems shall be constructed in conformance with the Society of Automotive Engineers Standard for, "Slow-Moving Vehicle Identification Emblem", in effect at the time of manufacture of such emblems. All sections of the Society of Automotive Engineers Standard shall be applicable except for mounting instructions. Copies of the current standard shall be available from the State Commission on Equipment, Washington State Patrol, General Administration Building, Olympia, Washington 98501, or directly from the Society of Automotive Engineers, Inc., Two Pennsylvania Plaza, New York, New York 10001. [Order 6901, § 204-28-020, filed 2/17/70.]

WAC 204-28-030 Mounting standards. After January 1, 1970 every farm tractor, every self-propelled unit of farm equipment, every implement of husbandry designed for operation at speeds not in excess of twenty-five miles per hour and every combination of farm tractor and towed farm equipment or towed implement of husbandry normally operated at speeds not in excess of twenty-five miles per hour shall at all times be equipped with a Slow-Moving Vehicle Emblem mounted as follows:

(1) The emblem shall be mounted point up in plane perpendicular to the direction of travel of the vehicle so that the reflectorized side of the emblem is facing to the rear.

(2) The emblem shall be mounted, as nearly as is practicable, centrally at the rear of the vehicle in an unobscured location.

(3) The emblem shall be mounted not less than two feet nor more than six feet above the ground on which the vehicle stands measured from the lower edge of the emblem.

(4) The emblem may be permanently attached to the vehicle. Where portable brackets are used, they shall be so constructed that they will hold the emblem securely and in a position meeting the requirements of mounting instructions (1), (2) and (3).

(5) Where the towed unit is sufficiently large to obscure the Slow-Moving Vehicle Emblem on the farm tractor, the towed unit shall be equipped with a Slow-Moving Vehicle Emblem. In such cases, the towing vehicle need not display the emblem.

(6) Where the Slow-Moving Vehicle Emblem on the farm tractor unit is not obscured by the towed unit, then either or both may be equipped with the required emblem but it shall be sufficient if either has it.

(7) The emblem shall not replace any of the required lamps or other devices required in RCW 46.37.160 nor

shall the emblem be used as a clearance marker for wide equipment. [Order 6901, § 204-28-030, filed 2/17/70.]

WAC 204-28-040 Use of emblem on other classes of vehicles. Other classes of vehicles not covered by RCW 46.37.160 such as road construction vehicles and road maintenance vehicles which normally operate at a speed of twenty-five miles per hour or less may be equipped with Slow-Moving Vehicle Emblems meeting the standards of WAC 204-28-020 and mounted in accordance with WAC 204-28-030. Emblems so used shall not replace any of the lamps or other devices required by chapter 46.37 RCW. [Order 6901, § 204-28-040, filed 2/17/70.]

WAC 204-28-050 Approval of emblems. Slow-Moving Vehicle Emblems constructed to meet the standards in WAC 204-28-020 shall be considered as an approved type by the State Commission on Equipment. [Order 6901, § 204-28-050, filed 2/17/70.]

Chapter 204-32 WAC

REGULATIONS FOR PRIVATE CARRIER BUSES

WAC

204-32-010	Definitions.
204-32-020	Standards for signal lamps.
204-32-030	Standards for stop signal.
204-32-040	Mounting and activation of warning devices.
204-32-050	Identification signs.
204-32-060	Warning sign.
204-32-070	Color of turn signal and stop lamps.
204-32-080	Use of warning devices.
204-32-090	Stops at railroad crossings.
204-32-100	Inspection of buses.
204-32-110	Bus stops and routing.
204-32-120	Effective date.

WAC 204-32-010 Definitions. (1) "Private Carrier Bus" means every motor vehicle designed for the purpose of carrying passengers (having a seating capacity for eleven or more persons) used regularly to transport persons in furtherance of any organized agricultural, religious or charitable purpose. Such term does not include buses operated by common carriers under a franchise granted by any city or town or the Washington Public Utilities Commission.

(2) "Stop Signal" means a sign bearing the word "STOP" which is actuated by the driver of the bus.

(3) "Signal Lamps" means red lamps mounted on the vehicle to be used in conjunction with the "Stop Signal" when the bus is loading or unloading passengers under certain conditions.

(4) "Warning Sign" means a sign to be attached to the rear of the bus to inform following motorists of their duty to stop when the "Signal Lamps" are activated. [Order 7001, § 204-32-010, filed 6/10/70, effective 7/15/70.]

WAC 204-32-020 Standards for signal lamps. The signal lamps required on Private Carrier Buses shall be constructed in conformance with the Society of Automotive Engineers Standard for "School Bus Red Signal

Lamps", in effect at the time of manufacture of such lamps. All lamps used as signal lamps shall be of a type approved by the State Commission on Equipment. [Order 7001, § 204-32-020, filed 6/10/70, effective 7/15/70.]

WAC 204-32-030 Standards for stop signal. The Stop Signal required on Private Carrier Buses shall be 14 inches vertically and 18 inches horizontally and shall be treated with red reflective material. The word "STOP" shall be painted on the sign in white with letters which are a minimum of 8 inches in height and having a 3/4-inch stroke. Both sides of the sign shall be treated in the same manner and bear the same legend. [Order 7001, § 204-32-030, filed 6/10/70, effective 7/15/70.]

WAC 204-32-040 Mounting and activation of warning devices. (1) Stop Signal

(a) The stop signal shall be mounted on the left side of the bus just below the window line and adjacent to the driver of the bus.

(b) The stop signal shall be hinged at the front edge of the sign.

(c) The stop signal shall be manually controlled by the driver of the bus and shall be so constructed as to lock in an extended position perpendicular to the side of the bus and to also lock in the closed position parallel to the side of the bus.

(2) Signal Lamps

(a) The signal lamps shall be mounted on the front and rear of the bus, above the windows, as high and as widely spaced laterally as practicable but in no case shall the lateral spacing of these lamps be less than 40 inches.

(b) Signal lamps shall be mounted so that the vision of front signals to the front and rear signals to the rear shall be unobstructed by any part of the vehicle from 5 degrees above to 10 degrees below the horizontal and from 30 degrees to the right to 30 degrees to the left of the center line of the bus.

(c) The switch which activates the signal lamps shall be actuated by movement of the stop signal to the extended position.

(d) There shall be no switch between the signal lamps and the switch which activates these lamps when the stop signal is extended.

(e) There shall be a flashing red indicator lamp on the instrument panel of the vehicle which will indicate to the driver that the signal lamps are operating.

(f) The signal lamps shall operate through a flasher unit which will cause the front signal lamps to flash alternately and the rear signal lamps to flash alternately at a rate no slower than 60 nor faster than 120 times per minute. The "on" period of the flasher shall be long enough to permit the bulb filament to come up to a full brightness.

(g) Signal lamps shall be aimed 2 inches below level at 25 feet and straight ahead. An aiming tolerance of from 3 inches up to 7 inches down and 10 inches right or

left will be allowed. [Order 7001, § 204-32-040, filed 6/10/70, effective 7/15/70.]

WAC 204-32-050 Identification signs. Every private carrier bus shall bear on the front and rear thereof plainly visible signs containing the words "PRIVATE CARRIER BUS" in letters not less than 8 inches in height. The lettering shall be at least 3/4 inch stroke. These signs shall be located above the windshield on the front of the bus and above the rear windows on the rear of the bus. [Order 7001, § 204-32-050, filed 6/10/70, effective 7/15/70.]

WAC 204-32-060 Warning sign. Every private carrier bus shall be equipped with a sign on the rear of the bus which shall bear the words "UNLAWFUL TO PASS BUS WHEN RED LIGHTS FLASH". The sign shall be 16 inches vertically and 32 inches horizontally. The sign shall have a background of silver retroreflective sheeting. The lettering shall all be size 3 inch B. Line one shall have the letters "UNLAWFUL TO" in black. Line two shall have the letters "PASS BUS WHEN" in black. Line three shall have the letters "RED LIGHTS FLASH" in red. [Order 7001, § 204-32-060, filed 6/10/70, effective 7/15/70.]

WAC 204-32-070 Color of turn signal and stop lamps. To avoid confusion with signal lamps and the message on the warning sign, rear turn signal lamp and stop lamp lenses shall be amber in color. [Order 7001, § 204-32-070, filed 6/10/70, effective 7/15/70.]

WAC 204-32-080 Use of warning devices. The stop signal and signal lamps shall only be actuated by the driver of a private carrier bus whenever, but only whenever, such vehicle is stopped on the highway for the purpose of receiving or discharging passengers, except:

(1) When the passengers boarding or alighting do not have to cross a highway and the bus is stopped completely off the main traveled portion of the roadway; or

(2) When the bus is stopped at an intersection or place where traffic is controlled by a traffic officer or official control signal. [Order 7001, § 204-32-080, filed 6/10/70, effective 7/15/70.]

WAC 204-32-090 Stops at railroad crossings. (1) The driver of any private carrier bus, carrying any passenger, before crossing at grade any track or tracks of a railroad, shall stop such vehicle within fifty feet but no less than fifteen feet from the nearest rail of such railroad and while so stopped shall listen and look in both directions along such track for any approaching train, and for signals indicating the approach of a train and shall not proceed until he can do so safely.

(2) After stopping as required and upon proceeding when it is safe to do so the driver of any private carrier bus shall cross only in such gear of the vehicle that there will be no necessity for changing gears while traversing such crossing and the driver shall not shift gears while crossing the track or tracks.

(3) No stop need be made at any such crossing where a police officer or a traffic-control signal directs traffic to proceed. [Order 7001, § 204-32-090, filed 6/10/70, effective 7/15/70.]

WAC 204-32-100 Inspection of buses. The Chief of the Washington State Patrol may, from time to time, require that every private carrier bus be presented at some location which shall be designated by him for the purpose of inspection of the vehicle to determine if the vehicle is equipped as required by law and the provisions of this regulation. [Order 7001, § 204-32-100, filed 6/10/70, effective 7/15/70.]

WAC 204-32-110 Bus stops and routing. The Chief of the Washington State Patrol may delegate officers of the Washington State Patrol to work with private carrier bus operators and owners to establish routes and passenger loading and unloading locations which will provide the greatest safety for bus passengers and the motoring public. Bus stops and routes established by this means shall be adhered to by private carrier bus drivers. [Order 7001, § 204-32-110, filed 6/10/70, effective 7/15/70.]

WAC 204-32-120 Effective date. The effective date of this regulation shall be July 15, 1970. To allow sufficient time to properly equip vehicles which qualify as Private Carrier Buses, compliance with this regulation must be completed by January 1, 1971. Any Private Carrier Bus using the signal lamps, stop signal or warning sign prior to January 1, 1971, shall comply fully with the provisions of this regulation. [Order 7001, § 204-32-120, filed 6/10/70, effective 7/15/70.]

Chapter 204-36 WAC

AUTHORIZED EMERGENCY VEHICLE PERMITS

WAC

204-36-010	Promulgation.
204-36-020	Definitions.
204-36-030	Permit requirements.
204-36-040	Permit limitations.
204-36-050	Equipment required.
204-36-060	Procedure.
204-36-070	Revocation or suspension.

WAC 204-36-010 Promulgation. By authority of RCW [46.04.040], 46.37.005, and 46.37.194, the State Commission on Equipment hereby adopts the following regulations relating to the issuance of an authorized emergency vehicle permit. [Statutory Authority: RCW 46.37.005 and 46.37.194. 79-02-085 (Order 7501A), § 204-36-010, filed 2/7/79; Order 7301, § 204-36-010, filed 2/5/73.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 204-36-020 Definitions. (1) Operator or Driver. The term operator and the term driver, as used

herein, means every person who is in actual physical control of an authorized emergency vehicle.

(2) Operation. The term operation, as used herein, is the driving or moving by any operator or driver upon a public highway of any vehicle that is equipped or has attached thereon any equipment, the installation of which requires an authorized emergency vehicle permit, whether or not the emergency equipment is activated.

(3) Commission shall mean the State Commission on Equipment. [Statutory Authority: RCW 46.37.005 and 46.37.194. 79-02-085 (Order 7501A), § 204-36-020, filed 2/7/79; Order 7301, § 204-36-020, filed 2/5/73.]

WAC 204-36-030 Permit requirements. (1) Any person, firm, corporation or municipal corporation desiring to have a vehicle registered as an authorized emergency vehicle pursuant to RCW 46.37.194 shall apply for such classification to the State Commission on Equipment on forms provided by the Commission.

(2) The applicant shall furnish the following information to the Commission:

(a) A description of the specific geographic area in which the vehicle shall be used as an authorized emergency vehicle.

(b) A description of the specific purposes for which the vehicle shall be used as an authorized emergency vehicle.

(c) An explanation of the nature and scope of the duties, responsibilities and authority of the vehicle operator which necessitate the vehicle's registration as an authorized emergency vehicle.

(d) A description of the emergency equipment to be used if the permit is granted.

(e) A listing of the names, addresses, birthdates, operator's license numbers and other identifying data as may be prescribed on the application form by the Commission, of all persons who will use the vehicle as an authorized emergency vehicle, and a completed applicant fingerprint card.

(f) Certification by the chief law enforcement officer, or fire chief if the vehicle is to be used for firefighting purposes, of each jurisdiction in which the vehicle is to be used as an authorized emergency vehicle, that a need exists in such jurisdiction for the vehicle to be used as described in the application and that he knows of no reason why the application should be denied. The Commission on Equipment may issue emergency vehicle permits to vehicles which operate throughout the state, and such permit may be canceled upon receipt of complaint from any state law enforcement agency as prescribed in WAC 204-36-070. [Statutory Authority: RCW 46.37.005 and 46.37.194. 79-02-085 (Order 7501A), § 204-36-030, filed 2/7/79; Order 7501, § 204-36-030, filed 11/25/75; Order 7301, § 204-36-030, filed 2/5/73.]

WAC 204-36-040 Permit limitations. (1) A vehicle registered by the Commission shall not be used as an authorized emergency vehicle except as follows:

(a) Only by the operators named in the original or amended application.

(b) Only with the equipment described in the original or amended application.

(c) Only within the geographic area described in the original or amended application.

(d) Only for the purposes set forth in the original or amended application.

(2) If an authorized emergency vehicle is used for private purposes, or for purposes in an area or by an operator other than as set forth in the application, all emergency equipment which is exposed to public view shall be covered with an opaque hood, and shall not be operated during such period of time. [Order 7301, § 204-36-040, filed 2/5/73.]

WAC 204-36-050 Equipment required. (1) Every authorized emergency vehicle shall be equipped in conformance with RCW 46.37.190(1) with at least one lamp capable of displaying a red light visible from at least 500 feet in normal sunlight and a siren capable of giving an audible signal. The equipment shall be of a type and design approved by the State Commission on Equipment. The Commission shall furnish a list of approved equipment with the application forms.

(a) Such equipment shall not be installed prior to obtaining approval of the application by the Commission.

(b) Blue lamps shall not be installed. [Order 7301, § 204-36-050, filed 2/5/73.]

WAC 204-36-060 Procedure. If the Commission approves the application, it shall first issue a certificate of approval which shall be valid for thirty days, during which time the emergency equipment may be installed. After installation of the emergency equipment, the applicant shall bring the vehicle to a district or detachment office of the Washington State Patrol to be examined to determine if it is of an approved type. A Washington State Patrol officer shall certify the results of this examination on a form prescribed and provided by the Commission and the applicant shall file the form with the State Commission on Equipment, General Administration Building AX-12, Olympia, Washington 98504. Upon receipt of such certification, the Commission shall issue a permit, which shall expire one year from the date of issuance thereof.

(1) The certificate of approval and when issued, the permit, including all endorsements for change of conditions as provided in WAC 204-36-030, shall be carried in the authorized emergency vehicle at all times, and shall be displayed on request to any law enforcement officer. [Statutory Authority: RCW 46.37.005 and 46.37.194. 79-02-085 (Order 7501A), § 204-36-060, filed 2/7/79; Order 7301, § 204-36-060, filed 2/5/73.]

WAC 204-36-070 Revocation or suspension. (1) Violation of any of these regulations shall be grounds for suspension or revocation of the authorized emergency vehicle permit. Notice shall be furnished to the applicant at least 20 days prior to the effective date of such suspension or revocation. The notice shall describe the grounds for the order and shall furnish the applicant an opportunity to be heard within the 20-day period. The

notice may provide for immediate suspension of the permit prior to any hearing, or the Commission may suspend the permit following the hearing but prior to final determination, if in the commission's opinion it is necessary to do so in the interests of the public health, safety or welfare.

(2) The chief law enforcement officer, or fire chief if the vehicle is to be used for firefighting purposes, of each jurisdiction in which the vehicle is operated as an authorized emergency vehicle may revoke his certification of the vehicle by notifying the commission in writing of such revocation and his reasons therefor. Following notice to the applicant and an opportunity to be heard, the permit may be invalidated by the commission on equipment.

(3) Mailing by certified mail of any notice or correspondence by the commission to the last address of the applicant shown on his application shall be sufficient service of notice as required by these rules. [Statutory Authority: RCW 46.37.005 and 46.37.194. 79-02-085 (Order 7501A), § 204-36-070, filed 2/7/79; Order 7301, § 204-36-070, filed 2/5/73.]

Chapter 204-38 WAC FLASHING AMBER LAMPS

WAC

204-38-010	Promulgation.
204-38-020	Purpose.
204-38-030	Definitions.
204-38-040	Mounting of lamps.
204-38-050	Use of lamps.

WAC 204-38-010 Promulgation. By authority of RCW 46.37.005 and 46.37.280, the State Commission on Equipment hereby adopts the following regulation pertaining to the use of flashing amber lamps on motor vehicles. [Statutory Authority: RCW 46.37.280. 80-06-083 (Order 80-05-2), § 204-38-010, filed 5/28/80.]

WAC 204-38-020 Purpose. The purpose of this regulation is to ensure the safety and protection of the motoring public and those persons and equipment engaged in construction or maintenance upon, along, or adjacent to a public roadway. [Statutory Authority: RCW 46.37.280. 80-06-083 (Order 80-05-2), § 204-38-020, filed 5/28/80.]

WAC 204-38-030 Definitions. (1) "Flashing" lamps shall include those lamps which emit a beam of light which is broken intermittently and regularly by use of an electronic or electric switch, a rotating reflector, a rotating lamp, or a strobe lamp.

(2) "Other construction and maintenance vehicles" shall mean those vehicles owned or operated by a private company which is in the process of providing highway construction or maintenance services or is working in conjunction with any public utility.

(3) "Pilot cars" shall mean those vehicles which are used to provide escort for overlegal size loads upon the roadways of this state.

(4) "Public utilities vehicles" shall mean those vehicles used for construction, operations, and maintenance, and which are owned or operated by a public or private utility, including, but not limited to, companies providing water, electricity, natural gas, telephone, and television cable services, and railroads.

(5) "Tow trucks" shall mean those vehicle engaged in removing disabled or abandoned vehicles from the roadway and which are used primarily for that purpose. [Statutory Authority: RCW 46.37.280. 80-06-083 (Order 80-05-2), § 204-38-030, filed 5/28/80.]

WAC 204-38-040 Mounting of lamps. One or more flashing amber lamps may be mounted on public utilities vehicles, other construction and maintenance vehicles, pilot cars, and tow trucks. The lamp(s) shall be mounted and shall be of sufficient intensity so as to be clearly visible to approaching traffic for at least five hundred feet in normal sunlight.

The provisions of WAC 204-72-030 and 204-72-040 shall be adhered to as they relate to the mounting of warning lamps. [Statutory Authority: RCW 46.37.280. 80-06-083 (Order 80-05-2), § 204-38-040, filed 5/28/80.]

WAC 204-38-050 Use of lamps. Flashing amber lamps shall be used on the vehicles described in WAC 204-38-050 only when such vehicles are actually involved in construction, maintenance, or operations which require that warning be given to ensure the protection of the motoring public or the work crew. Warning lamps shall not be illuminated while traveling to or from the site of operations. For the purposes of tow truck operations, the site of operations shall be only that place where vehicles are attached to or detached from the tow truck. Lamps on pilot cars shall be illuminated only while the vehicle is actually providing escort service.

Nothing in this chapter shall relieve the operator of any vehicle from displaying any other light or warning device required by statute or regulation, and nothing herein shall permit any vehicle operator to disregard any traffic law. The lamps permitted by this chapter shall be of a type approved by the Commission on Equipment. [Statutory Authority: RCW 46.37.280. 80-06-083 (Order 80-05-2), § 204-38-050, filed 5/28/80.]

Chapter 204-40 WAC GREEN LIGHTS ON FIREMEN'S PRIVATE CARS

WAC

204-40-010	Promulgation.
204-40-020	Authorization.
204-40-030	Standard.
204-40-040	Limitations.

WAC 204-40-010 Promulgation. By authority of RCW 46.37.005 and 46.37.185, the State Commission on Equipment hereby adopts the following regulation pertaining to the use of green lamps on firemen's private cars. [Order 7302, § 204-40-010, filed 2/5/73.]

WAC 204-40-020 Authorization. Firemen, when approved by the Chief of their respective service, shall be authorized to use a green light on the front of their private cars when on emergency duty only. [Order 7302, § 204-40-020, filed 2/5/73.]

WAC 204-40-030 Standard. The green light shall be visible for a distance of two hundred feet under normal atmospheric conditions and shall be of a type and mounting approved by the Commission on Equipment.

(1) The maximum light projected in any one direction shall not exceed 300 candle power.

(2) Vertical mounting of the lamp shall be not less than 24 inches above the level surface upon which the vehicle stands, or may be placed on the forward portion of the top above the windshield.

(3) The lateral mounting of the lamp shall be anywhere from the center of the vehicle to the left side thereof. [Order 7302, § 204-40-030, filed 2/5/73.]

WAC 204-40-040 Limitations. The use of the green light shall only be for the purpose of identification and the operator of a vehicle so equipped shall not be entitled to any of the privileges provided in RCW 46.61.035 for the operators of authorized emergency vehicles. [Order 7302, § 204-40-040, filed 2/5/73.]

Chapter 204-44 WAC

STANDARDS FOR LOAD FASTENING DEVICES

WAC

204-44-010	Promulgation.
204-44-020	Load fastening devices.
204-44-02001	Diagrams I and II—Placement and number of wrappers.
204-44-030	Approval of load fastening devices.

WAC 204-44-010 Promulgation. Under authority of RCW 46.37.005 and 46.37.490, the State Commission on Equipment hereby adopts the following rules pertaining to the use of safety chains or other devices on vehicles to secure and protect the loads thereon. [Order 7303, § 204-44-010, filed 12/19/73.]

WAC 204-44-020 Load fastening devices. [(1)] Any motor truck, truck tractor, trailer, semi-trailer, or any combination thereof, transporting logs upon a public highway where binder devices are required, shall have the load thereon securely fastened and protected [as follows:]

(a) Placement and number of wrappers required on log trucks using stakes.

(i) In the hauling of one log loads, one wrapper chain or cable shall be required and it shall be secured to the rear bunk and the log shall be properly blocked or secured in a manner which will prevent it from rolling or shifting. An additional wrapper, secured to the front bunk, is optional.

(ii) In the hauling of two log loads, not less than two wrapper chains or cables shall be used to secure the

load. The logs shall be properly blocked to prevent them from rolling or shifting.

(iii) On loads consisting of three or four logs not over 44 feet in length, the load shall be secured by not less than two properly spaced wrapper chains or cables. Ends of short logs not secured by such wrappers shall be secured with extra wrappers. If any log is over 44 feet in length, the load shall be secured by not less than three properly spaced wrappers.

(iv) Loads consisting of five or more logs, when the logs are all 17 feet or less in length, shall be secured by not less than two properly spaced wrappers. Load consisting of five or more logs, when any log is over 17 feet in length, shall be secured by not less than three properly spaced wrappers.

(b) Placement and number of wrappers required on log trucks using chock blocks.

(i) In the hauling of one log load, one wrapper chain or cable shall be required and secured to the rear bunk and the log shall be properly blocked in a manner to prevent it from rolling or shifting.

(ii) One additional wrapper chain or cable shall be required on log trucks using chock blocks over and above the requirements in subdivisions (a)(iii) and (iv) of this section.

(c) Placement and number of wrappers required on crosswise loaded trucks, trailers, etc. In the case of short logs loaded crosswise, the following method of securing the load shall be used if the truck trailer is not provided with solid ends of a height sufficient to prevent any log in the load from rolling off: Not less than two chock blocks shall be used at each open end of the vehicle and the load shall be held with at least two wrapper chains or cables. The wrappers shall be firmly attached to the end of the truck or trailer. Rigid standards or stakes may be used in lieu of chock blocks but each such standard or stake shall be either rigidly connected to the bed of the truck or trailer or shall be placed in a tight fitting socket at least 12 inches in depth. Other means furnishing equivalent security may be acceptable.

(d) Wrapper placement. When two wrappers are required, they shall be applied within six feet of the front and rear bunks. When more than two wrappers are required, the front and back binder shall be applied within six feet of the front and rear bunks.

(e) Short logs. To properly secure short logs, binders shall be placed near the end, not less than 12 inches from the end of the log.

(f) Log on top or in outside saddle. No log loaded on top or in outside saddles of a load shall be transported unless secured by not less than two wrapper chains or cables, one of which shall be placed near each end of such log.

(g) Fasten in place. All wrappers and binders shall be fastened in place prior to tightening to prevent the displacement of logs on the top of the load.

(h) Surround load. All wrapper chains or cables, except in the case of one log loads, shall entirely surround the load. This does not apply to gut-wrappers.

(i) Gut-wrappers. Gut-wrappers, when used, shall be adjusted so as to be tightened by, but not carry the weight of the logs above them.

(j) Wrappers and binders to be placed before leaving immediate loading area. Wrappers and binders shall be placed and tightened around the completed load before the truck leaves the immediate loading area.

(k) Construction of wrappers and binders. Wrapper chains or cables, binders, fasteners, or attachments thereof, used for any purpose as required by these standards, shall have a minimum breaking strength of not less than 15,000 pounds and shall be rigged so that it can be safely released.

(l) Bundle straps or banding. For the purposes of this standard, applied bundle straps or banding are not acceptable as wrappers and binders.

(m) Loose ends secured. All loose ends of wrapper chains or cables shall be securely fastened so as to prevent their swinging free in a manner that will create a hazard.

(n) Trucks in Sorting Yards. Trucks and trailers used around sorting yards, etc., which travel at slow speeds, will not be required to use wrappers providing all logs are contained by and lie below the height of the stakes and there are no persons on the ground exposed to such traffic.

(o) Binder hook design. Binders for securing wrappers on logging trucks shall be fitted with hooks of proper size and design for the wrapper chain being used.

(p) Defective wrappers. Wrappers shall be removed from service when any of the following conditions exist:

(i) Excessively worn links on chains;

(ii) Deformed or stretched chain links;

(iii) Cracked chain links;

(iv) Frayed, stranded, knotted, or otherwise defective wire rope.

(q) Binder extensions. Pipe extension handles (swedes) for tightening or securing binders shall be limited to not longer than 36 inches. Care shall be taken that a sufficient amount of the pipe extends over the binder handle.

(r) Defective binders. Defective binders shall be immediately removed from service.

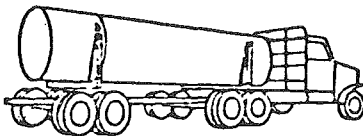
NOTE: See Figures I and II [codified as WAC 204-44-02001] for illustrations of placement and number of wrappers.

(2) Any motor truck, truck tractor, trailer, semi-trailer, or any combination thereof, transporting any load other than logs, upon a public highway where binder devices are required, shall have the load thereon securely fastened and protected by at least two load binders sufficiently strong to withstand all possible strains. The load securing devices shall have a breaking strength of at least 15,000 pounds. Exception: Binders used to secure baled hay and baled straw shall have a breaking strength of not less than 9,000 pounds. [Statutory Authority: RCW 46.37.005, 46.37.010, and 46.37.490. 78-10-100 (Order 7303B), § 204-44-020, filed 10/3/78; Order 7606, § 204-44-020, filed 2/24/76; Order 7303, § 204-44-020, filed 12/19/73.]

Reviser's Note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

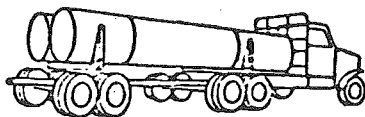
WAC 204-44-02001 Diagram I and II--Placement and number of wrappers.

ONE LOG LOAD



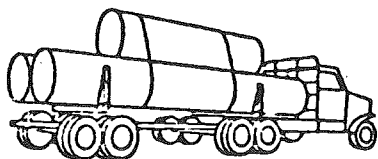
One wrapper required which shall be secured to the rear bunk. Log shall be blocked or secured in a manner to prevent it from rolling or shifting. A second wrapper secured to the front bunk is optional.

TWO LOG LOAD



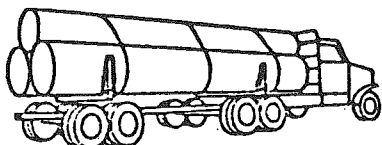
A minimum of two wrappers required. Logs shall be blocked to prevent them from rolling or shifting.

THREE OR FOUR LOG LOAD FORTY-FOUR FEET OR LESS



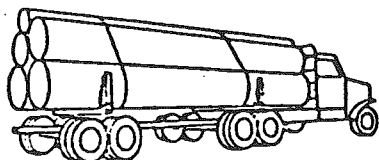
A minimum of two wrappers required.

THREE OR FOUR LOG LOADS MORE THAN FORTY-FOUR FEET



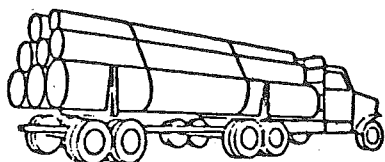
A minimum of three wrappers required.

FIVE OR SIX LOG LOAD
ALL LOGS SEVENTEEN FEET OR LESS



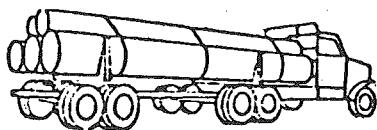
A minimum of two wrappers required.

SEVEN OR MORE LOG LOAD
ALL SEVENTEEN FEET OR LESS



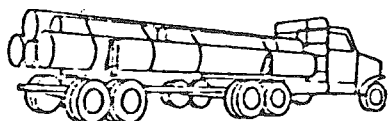
A minimum of two wrappers required.

FIVE OR MORE LOG LOAD
IF ANY LOGS ARE MORE THAN SEVENTEEN FEET



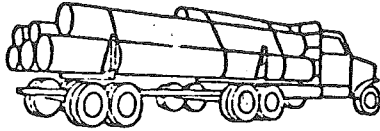
A minimum of three wrappers required.

OUTSIDE LOGS OR TOP LOGS



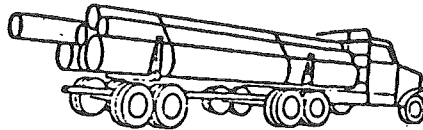
All outside or top logs shall be secured by a wrapper near but not within 12 inches of each end.

A WRAPPER SHALL BE NEAR EACH BUNK



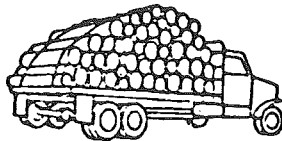
Each load shall be secured by having a wrapper within 6 feet of each bunk except on one log loads.

PROPER SUPPORT FOR LOGS



Not more than approximately one-third the weight of any log shall extend beyond the end of the logs or bunk supporting it.

SHORT LOGS LOADED CROSSWISE



A minimum of two wrappers are required and two chocks or stakes shall be used on the open end of the truck.

NOTE: All loads of logs on logging trucks equipped with chock blocks instead of stakes, shall have at least one additional wrapper over and above the requirements for trucks equipped with stakes, excepting on one and two log loads and trucks with short logs loaded crosswise.

[Statutory Authority: RCW 46.37.005, 46.37.010, and 46.37.490. 78-10-100 (Order 7303B), (codified as WAC 204-44-02001), filed 10/3/78.]

WAC 204-44-030 Approval of load fastening devices. The following binder devices are hereby approved by the State Commission on Equipment, provided that they meet a breaking strength of at least 15,000 pounds.

1. 3/8-inch high test steel chain.
2. 1/2-inch diameter steel cable.
3. Steel strapping not less than two inches by fifty one-thousands (.050) inches in dimension.

Any other load binder device, prior to use on public highways, shall be submitted to the State Commission on Equipment for approval. [Order 7303, § 204-44-030, filed 12/19/73.]

Chapter 204-48 WAC TIRES

WAC	
204-48-010	Promulgation.
204-48-020	Standards.
204-48-030	Inspection.
204-48-040	Spare tires.

WAC 204-48-010 Promulgation. By authority of RCW 46.37.005 and RCW 46.37.425, the state commission on equipment hereby adopts the following rules

and regulations pertaining to the requirements of safe operating conditions of tires. [Order 7502, § 204-48-010, filed 2/24/76.]

WAC 204-48-020 Standards. No person shall drive or move, or cause to be driven or moved, any vehicle, the tires of which have contact with the driving surface of the road, subject to registration in this state, upon the public highways of this state unless such vehicle is equipped with tires in safe operating condition. A tire shall be considered unsafe if:

(1) It has any ply or cord exposed either to the naked eye or when cuts or abrasions on the tire are probed.

(2) It has any bump, bulge or knot, affecting the tire structure.

(3) It has any break repaired with a boot.

(4) It has a tread depth of less than 2/32 of an inch measured in any two major tread grooves at three locations equally spaced around the circumference of the tire, or for those tires with tread wear indicators, a tire shall be considered unsafe if it is worn to the point that the tread wear indicators contact the road in any two major tread grooves at three locations equally spaced around the circumference of the tire.

(5) It has a legend which indicates the tire is not intended for use on public highways such as "not for highway use", or "for racing purposes only".

(6) It is in such condition as may be reasonably demonstrated to render it unsafe.

(7) Not matched in tire size, designation, construction, and profile to the other tire and/or tires on the same axle. [Order 7502, § 204-48-020, filed 11/18/77, effective 12/21/77; Order 7502, § 204-48-020, filed 2/24/76.]

WAC 204-48-030 Inspection. If there is a violation relating to items (1)-(7) inclusive of WAC 204-48-020, the condition or defect must be such that it can be detected by a visual inspection of tires mounted on vehicles, including visual comparison with simple measuring gauges. [Order 7502, § 204-48-030, filed 11/18/77, effective 12/21/77; Order 7502, § 204-48-030, filed 2/24/76.]

WAC 204-48-040 Spare tires. The provisions of WAC 204-48-020 and 030 do not apply to tires designed as substitutes for conventional spare tires that meet Federal Motor Vehicle Safety Standard No. 109 (New Pneumatic Tires). [Order 7502, § 204-48-040, filed 11/18/77, effective 12/21/77.]

Chapter 204-52 WAC MOTORCYCLISTS' EYE PROTECTION

WAC

204-52-010	Promulgation.
204-52-020	Definitions.
204-52-030	Eye protective devices.
204-52-040	Materials.
204-52-050	Lens strength—Testing procedures.
204-52-060	Flammability test—Plastics only.
204-52-070	Optical properties of eye protective devices.
204-52-080	Light transmitting ability of eye protective devices.
204-52-090	Cleansing.
204-52-100	Identification and labeling.

WAC 204-52-010 Promulgation. By authority of RCW 46.37.005 and 46.37.530(b), the state commission on equipment hereby adopts the following rules and regulations pertaining to the requirements of motorcyclists' eye protection. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-010, filed 2/7/79.]

WAC 204-52-020 Definitions. (1) Eye glasses — The term "eye glasses" shall include spectacles, sunglasses, or goggles having two separately mounted lenses, but shall exclude contact lenses.

(2) Goggles — The term "goggles" is an optical device worn before the eyes, the predominant function of which is to protect the eyes without obstructing peripheral vision. They provide protection from the front and sides and may or may not form a complete seal with the face.

(3) Face shield — The term "face shield" is an eye protector attached to a helmet or headband(s) and which covers the wearer's eyes and face at least to a point approximately to the tip of the nose and whose predominant function is protection of the eyes.

(4) Headband — The term "headband" is that part of the device consisting of a supporting band or other structure that either encircles the head or protective helmet, or can be attached thereto.

(5) Frame — The term "frame" is those parts of eye glasses or goggles containing the lens housings. The frame may be associated with padding. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-020, filed 2/7/79.]

WAC 204-52-030 Eye protective devices. (1) To be considered an eye protective device, or EPD, under this regulation, a device must be one of the following:

- (a) Goggles
- (b) Face shield
- (c) Eye glasses
- (i) Each lens shall have a convex frontal surface, or be an ophthalmic corrective lens.

- (ii) Each lens shall have a minimum area of three square inches or 19.356 square centimeters. The horizontal diameter (or side-to-side measurement) shall be no less than two inches or 50 millimeters. The vertical diameter (or top-to-bottom measurement) shall be no less than 1 1/2 inches or 38 millimeters. A diameter shall pass through a point on the lens that is intended to be directly in front of the pupil of the eye when the wearer is looking straight ahead.

(2) Optical correction of a person's vision, where required or desired, may be provided either:

(a) By an EPD that provides the proper optical correction, or

(b) By personal corrective lenses worn under an EPD that does not disturb the adjustment of those lenses. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-030, filed 2/7/79.]

WAC 204-52-040 Materials. (1) All parts of an EPD shall be free from sharp edges or projections that could cause harm or discomfort to the wearer.

(2) Material(s) utilized in any portion of an EPD shall be of durable quality; i.e.: Material characteristics shall not undergo appreciable alterations under the influence of aging or of the circumstances of use to which the device is normally subjected (exposure to sun, rain, cold, dust, vibrations, contact of the skin, effects of sweat, or of products applied to the hair or skin).

(3) A headband shall be capable of holding the EPD securely under normal operating conditions. It shall be capable of easy adjustment and replacement.

(4) Material(s) commonly known to cause skin irritation or disease shall not be used for those parts of the device which come into contact with the skin. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-040, filed 2/7/79.]

WAC 204-52-050 Lens strength—Testing procedures. (1) Helmet-mounted face shields shall be tested while attached to an appropriate medium-size helmet supplied by the manufacturer of the face shield, which shall be mounted on a standard head form. An EPD not

designed to be attached to a helmet shall be tested on a standard human head form. Each EPD shall be located in a position simulating its position in actual use.

(2) A steel projectile $3/8$ inches in diameter, weighing 1.56 ounces approximately $2\frac{1}{2}$ inches long with a conical point of 90 degrees included angle, the point having a spherical radius no greater than .020 inches and a hardness of $60(\pm 10)$ on the Rockwell "C" scale, shall be freely dropped from a height of 14 feet above the EPD. The projectile may be guided, but not restricted in its vertical fall by dropping it through a tube extending to within approximately 4 inches of the impact area. The impact area must be on the forward optical surface and within 1-inch diameter circle centered over the eye opening. The impact point shall be perpendicular to a plane tangent to the impact area.

(3) The EPD shall not allow penetration of the projectile through the EPD. Cracking or piercing of the EPD is permissible provided that the projectile does not pass through or remain lodged in the EPD lens, but is repulsed by the EPD, and that no particles of the EPD shall break loose from any eyeward surface of the EPD.

(4) Tests shall be performed at room temperature (65 degrees to 85 degrees F) under normal humidity conditions. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-050, filed 2/7/79.]

WAC 204-52-060 Flammability test—Plastics only.

(1) Where plastic materials are used in an EPD, such materials shall be noncombustible or slow burning. Such plastic items shall be exposed to a test to determine the flame-propagation rate. The specimen shall be ignited by holding one end of the specimen horizontally at the top of a luminous $3/4$ -inch Bunsen burner flame in a draft-free room. The rate of propagation of burning, after removing the flame from the specimen, determined by a stop watch, shall be one inch or less per 24 seconds. A faster rate of propagation shall be cause for rejection.

(2) Cellulose nitrate, or materials having flammability characteristics approximately those of cellulose nitrate, shall not be used. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-060, filed 2/7/79.]

WAC 204-52-070 Optical properties of eye protective devices. (1) Lenses of EPD's shall comply with the following requirements:

(a) Lenses shall be made of material suitable for ophthalmic use, and shall be free from striae, waves, bubbles, or any other defects which may impair their optical quality.

(b) The prismatic effect of a noncorrective lens shall not exceed $1/8$ diopter at any point with the specified minimum field of vision. In the case of eye glasses, each noncorrective lens shall comply with the limitation of prismatic effect.

(c) In any meridian, the refractive power of a noncorrective lens shall not exceed plus or minus $1/8$ diopter and the difference between the refractive powers in any two meridians shall not exceed $1/8$ diopter.

(d) The definition afforded by a noncorrective lens shall be such that a line pattern with lines separated not more than 24 seconds of angle shall be clearly distinguishable when viewed through the lens.

(e) The compliance of a lens with the prismatic effects, refractive power, and definition requirements of subparagraphs (a), (b), and (c) of this subsection shall be determined in accordance with those test methods described in Sections 6.3.4.1.1, 6.3.4.1.2, and 6.3.4.1.3 of the American National Standards Institute Standard Z87.1-1968, September 18, 1968, "Eye and Face Protection" and explained in Section 10.1 of the National Bureau of Standards Circular 533, May 20, 1953, "Method for Determining the Resolving Power of Photographic Lenses." In order to maintain consistency in the results of tests conducted by various organizations, the following test requirements must be met:

(i) An 8-power telescope with focusing arrangement to accommodate the refractive effects of both positive (converging) and negative (diverging) lenses placed between the telescope and test chart shall be used. The illuminated target and test chart shall be a central dot and a concentric circle one inch in diameter plus one of the high contrast ("black and white") NBS Resolution Test Charts, dated 1952, and printed on "Lens Resolution Chart to Accompany NBS Circular 533." The chart shall be perpendicularly aligned 35 feet from the objective lens of the telescope when the telescope is properly focused with no test, sample, or other lens between the objective lens and the chart. The center dot and the periphery of the concentric circle one inch in diameter shall be used when testing for prismatic effect. The test pattern marked "20" shall be used when testing for refractive power and when testing for definition. Standard lenses of plus or minus $1/8$ diopter shall be used when testing for refractive power.

(ii) Other standard methods of test or examination that are equivalent or superior, as regards to accuracy, quality, and consistency of results to the above (subparagraph (i)) specified National Bureau of Standards methods, may be used to determine compliance only when such methods are approved by the state official to whom such approving authority has been assigned, or delegated, through due process of applicable state law.

(2) Minimum horizontal field of vision. Except as provided in subparagraph (a) of this subsection, each EPD shall not obstruct a horizontal field of vision to at least 105 degrees to the right side of the plane that passes through the pupil of the right eye looking straight ahead, and at least 105 degrees to the left side of the plane that passes through the pupil of the left eye looking straight ahead, and are parallel to the midsagittal plane.

(a) The specified minimum horizontal field of vision shall be unobstructed except that the horizontal field provided by the spectacles or sunglasses may be obstructed by the frame in a sector no greater than $7\frac{1}{2}$ degrees in horizontal angular width and located between 50 degrees and 80 degrees of the pertinent sagittal plane passing through the eye pupil when looking straight ahead.

(b) When ascertaining the horizontal field of vision afforded by eyeglasses, the pupil of the eye shall be assumed to be located 17 mm behind the point on the rear surface of the lens where the horizontal and vertical diameters intersect. When ascertaining the horizontal field of vision of EPD's other than eyeglasses, the assumed location of the pupil of the eye relative to the structures of the EPD shall be that location which is most likely to occur when the EPD is attached and worn in accordance with its manufacturer's instructions.

(c) No portion of the minimum horizontal field of vision shall be obstructed by a temple piece, headband, helmet, helmet attaching device, or any other supporting or attaching device. [Statutory Authority: RCW 46.37-.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-070, filed 2/7/79.]

WAC 204-52-080 Light transmitting ability of eye protective devices. (1) A "clear" EPD shall transmit not less than eighty-five percent of the incident visible radiation. An EPD transmitting less than eighty-five percent of incident visible radiation shall be considered "tinted".

(a) A "tinted" EPD shall not impair the wearer's ability to discern color.

(b) A "tinted" EPD shall not be used at any time from a half hour after sunset to a half hour before sunrise and at any other time when due to insufficient light or unfavorable atmosphere conditions, persons and vehicles on the highway are not clearly discernible at a distance of 500 feet ahead.

(2) Luminous transmittance test. The standard source of radiant energy used in the measurement of luminous transmittance shall be a projection type lamp No. T-8 (or other high-powered, gas-filled tungsten filament incandescent lamp) operated at the color temperature (2854K) corresponding to CIE Source A. The luminous transmittance shall be determined by one of the following means:

(a) Photometrically by an observer having normal color vision, as determined by recognized color vision chart tests such as those employing pseudo-isochromatic plates.

(b) With a physical photometer consisting of a thermopile (or other radiometer) and luminosity solution having a special transmittance curve which coincides closely with the luminous efficiency curve of the average eye.

(c) By measuring the special transmittance and calculating the luminous transmittance through the use of published data on the spectral radiant energy of CIE Source A and the relative luminous efficiency of the average eye. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-080, filed 2/7/79.]

WAC 204-52-090 Cleansing. All EPD materials shall be such as to withstand, without visible deterioration, washing in ordinary household detergents and

warm water, and rinsing to remove visible traces of detergents. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-090, filed 2/7/79.]

WAC 204-52-100 Identification and labeling. Eye protective devices, manufactured to comply with the requirements of this regulation and approved by the Commission on Equipment, shall be identified and labeled as follows:

(1) The EPD shall be permanently marked in a manner not to interfere with the vision of the wearer.

(2) The manufacturer's or distributor's trade name and model name or number, which shall correspond with the name and number under which the device has been approved or certified.

(3) That the device meets the standard VESC-8. Where space is limited, V-8 may be used in lieu of VESC-8.

The information required under WAC 204-52-100(1), (2) and (3) plus the corporate or business name and address of either the actual manufacturer or the marketer assuming the responsibilities of the manufacturer shall be imprinted on the container in which the EPD is packed and on any instruction sheet(s) pertaining to the EPD.

The following statement shall appear in a prominent location on the container or label accompanying each tinted eye protective device: THIS TINTED EYE PROTECTIVE DEVICE IS FOR DAYTIME USE ONLY. [Statutory Authority: RCW 46.37.005 and 46.37.530. 79-02-084 (Order 7503A), § 204-52-100, filed 2/7/79.]

Chapter 204-56 WAC

SOUND MEASUREMENT PROCEDURES

WAC

204-56-010	Introduction.
204-56-020	On-highway sound level measurements.
204-56-030	Stationary vehicle sound level measurement.
204-56-040	Static test site for vehicle sound level measurement.
204-56-050	New motor vehicle noise limits procedure.

WAC 204-56-010 Introduction. (1) Authority. Statutory and administrative law governing authority for the guidance and direction contained in this procedure is authorized by RCW 70.107.070 and WAC 173-62-030.

(2) Noise Enforcement Program.

(a) Scope. The Commission on Equipment has established a sound measurement program to implement the laws and regulations applying to vehicle related noise. The program includes sound level measurements of vehicles on the highway, stationary, static site, and testing of new vehicles.

(b) Responsibilities. Law enforcement authorities are responsible for the operation of the on-highway noise measurement program within their areas of jurisdiction.

(c) Measurement Tolerance. Measurement tolerances shall not exceed two decibels for a given measurement.

(3) Instruments and Training.

(a) **Instruments.** The sound measurement instruments used by enforcement agencies must meet the requirements of the American National Standard S1.4-1971, Specification for Sound Level Meters. These instruments are high quality electronic devices which have been calibrated by the manufacturer within strict standards. Each sound level meter is supplied with a calibrator as a companion instrument. Use of this calibrator assures the operator that the sound level is consistently within the manufacturer's tolerances.

(b) **Calibration Check.** An external check shall be made before and after each period of use and at intervals not exceeding two hours when the instrument is used longer than a two-hour period.

(c) **Training of Personnel.** Each person selected to make sound level measurements for application of the vehicle noise levels shall have received training in the use of the equipment and measuring site selection. [Order 7604, § 204-56-010, filed 2/24/76.]

WAC 204-56-020 On-highway sound level measurements. (1) **Scope.** This chapter describes the procedure for selecting sites and setting up equipment for measurement of noise from vehicles on the highway.

(2) **Terminology.**

(a) **Standard Measuring Sites.** Standard measuring sites are those where the microphone can be placed 50 feet from the center of the vehicle path and where there are no sound-reflecting objects within a 100-foot radius of the microphone and a 100-foot radius of the microphone point. (See Figure 1.)

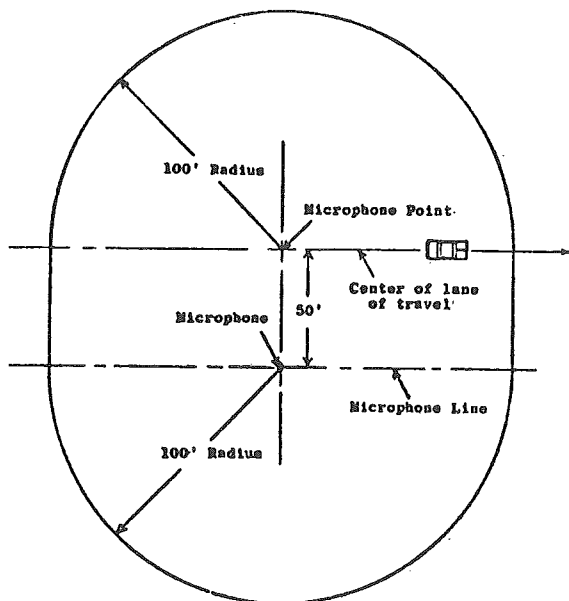


Figure 1.
Standard Measuring Site

(b) **Restricted Measuring Sites.** Restricted measuring sites are those where the distance from the center of the lane of travel to the microphone is other than 50 feet or where sound-reflecting surfaces are closer than 100 feet

from the microphone line or the center of the lane of travel. (See Figure 2.)

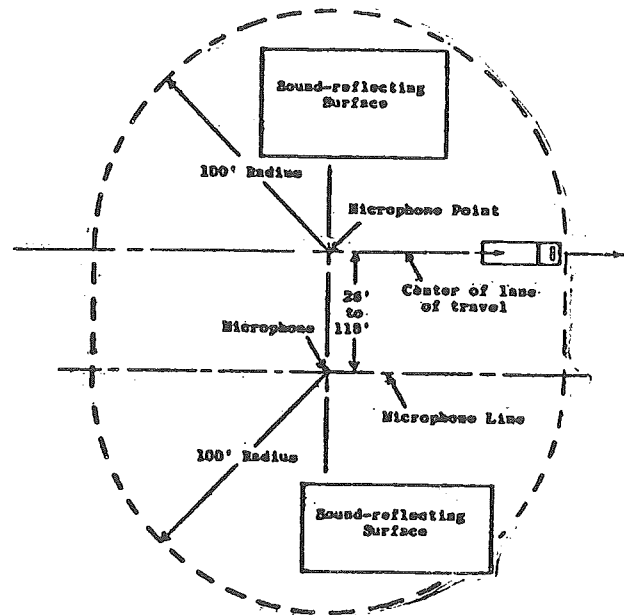


Figure 2.
Restricted Measuring Site

(c) **Microphone Line.** The microphone line is an unmarked reference line running parallel to the vehicle path (roadway) and passing through the microphone. (See Figures 1 and 2.)

(d) **Microphone Point.** The microphone point is the unmarked location on the center of the vehicle path that is the closest to the microphone. (See Figures 1 and 2.)

(e) **Sound Reflecting Surface.** A sound reflecting surface is any building, signboard, hillside or similar object within the area delineated by the standard measuring site that reflects sufficient sound to affect the sound level readings obtained from passing vehicles. Sound reflecting surfaces in this area make the site a restricted measuring site.

(ii) **Surfaces Not Requiring Correction.** The following surfaces and objects within the measuring area described in paragraph (a) do not require a correction factor.

((a)) Any object such as a telephone booth or tree trunk less than 8 feet measured in a direction parallel to the vehicle path, regardless of height. Such objects shall be either on the opposite side of the vehicle path from the microphone or more than 10 feet from a line passing through the microphone and microphone point. (See Figure 3.)

((b)) Any surface less than one foot in height, regardless of length, such as a curb or guard rail.

((c)) Any vertical surface, such as a billboard, with the lower edge more than 15 feet above the roadway.

((d)) Any uniformly smooth slanting surface with less than a 45-degree slope above horizontal.

((e)) Any slanting surface with a 45- to 90-degree slope above horizontal where the point at which the

slope begins to exceed 45 degrees is more than 15 feet above the roadway.

((f)) Chain-link fences or any vegetation such as trees, bushes, shrubs, hedges, and grass.

((ii)) Surfaces Requiring Correction. Sound level measurements may be made with appropriate corrections when sound reflecting surfaces are within the measuring site shown in Figure 2. Measurements may be made only when

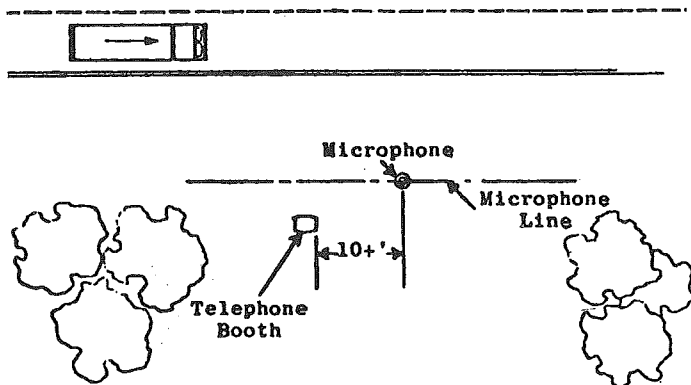


Figure 3.
Object Behind Microphone Line

the sound-reflecting surfaces are basically parallel to the lane of travel.

((a)) A basically parallel surface may have irregularities or projections of not more than two feet measured perpendicular to the lane of travel, with the distance to the microphone line or vehicle path measured from the closest point of the projection. (See Figure 4)

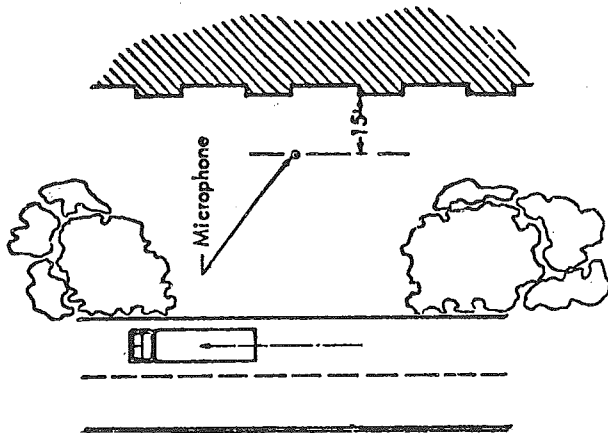


Figure 4
Basically Parallel Surfaces With Projections

((b)) Sound-reflecting surfaces not basically parallel to the lane of travel shall be 100 feet or more from the microphone and microphone point. This restriction does not apply to surfaces that are perpendicular to the lane

of travel and behind the parallel surface for which corrections are made, such as a fence or the side walls of a building. (See Figure 5)

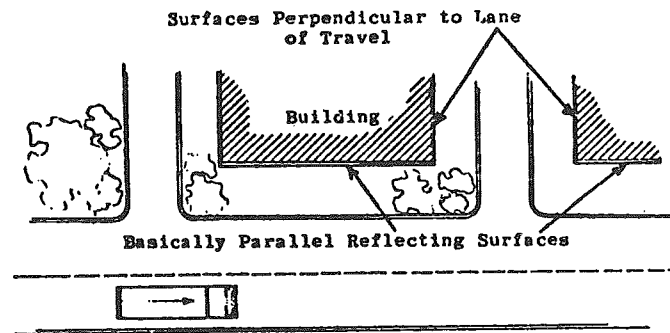


Figure 5.
Basically Parallel Surfaces With Perpendicular Surfaces

((iii)) Distance measurements from smooth embankments covered with vegetation, concrete, asphalt, dirt, or other relatively smooth cover shall be made from the point where the slope begins to exceed 45 degrees above horizontal. (See Figure 6) Measurements from non-smooth embankments shall be made from the point where the irregularities begin.

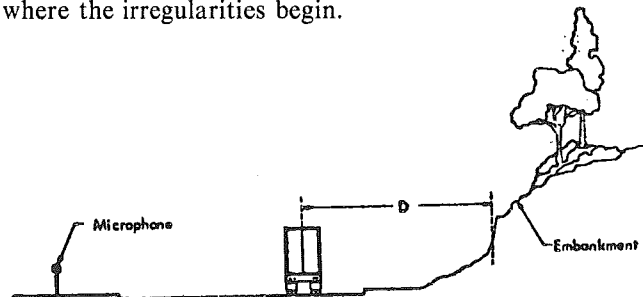


Figure 6.
Measurement of Distance to Embankment

((f)) Correction Factors for Sound-reflecting Surfaces. Correction factors to be applied to sound level meter readings when there are sound-reflecting surfaces within 100 feet of either the microphone or microphone point (See Figure 2) shall be determined as follows:

((i)) Reflecting Surfaces. Sites with sound-reflecting surfaces basically parallel to the vehicle path within the measuring area shown in Figure 2 may be used by measuring the distance shown in Figure 7 and applying the correction factor obtained from the nomogram in Figure 8.

((ii)) Taking Measurements. Measurement "D" is the shortest distance between the sound-reflecting surface and the centerline of the lane of travel. Measurement "L" is the shortest distance between the sound-reflecting surface and the microphone line which is a line parallel to the lane of travel passing through the microphone. (See Figure 7)

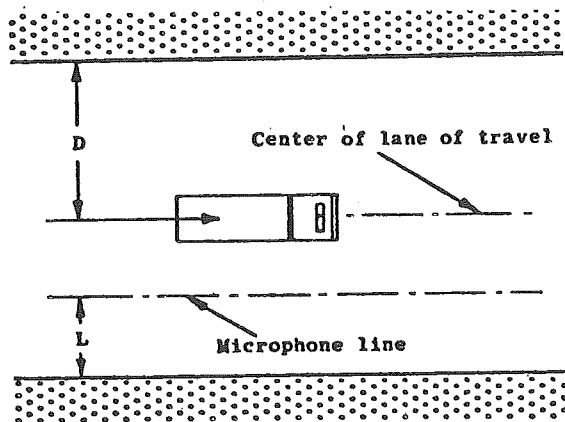


Figure 7.
Distances "D" and "L"

(iii) Determining Correction Factor. Locate the points on the left and right scales in Figure 8, corresponding to the distances "D" and "L" in Figure 7. Place a straight edge across the nomogram so that it connects the two points. The point where the straight edge intersects the center axis indicates the correction factor to be applied to the sound level meter reading.

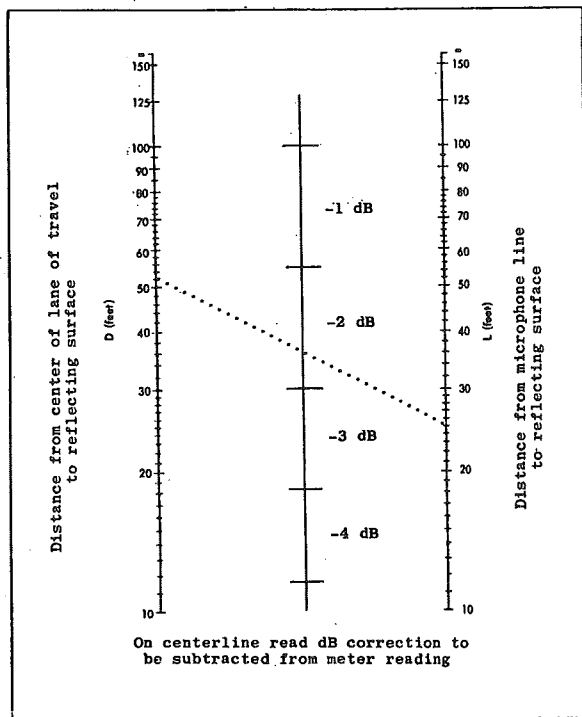


Figure 8.
Nomogram for Reflecting Surfaces

(3) Equipment Setup and Use.

(a) Microphone Location. The microphone shall be located at a suitable distance from the center of the lane of travel (microphone point) in an area which requires

the least correction factor to be applied to the measured sound levels from vehicles passing.

(b) Microphone Height. The microphone shall be placed on a tripod if an extension cable is used. If the cable is not used the sound level meter with the microphone attached may be hand held or placed on a tripod. The microphone shall be located at a height of not less than two feet nor more than six feet above the plane of the roadway surface and not less than 3 1/2 feet above the surface upon which the microphone stands. If the ground at the microphone location slopes down from the roadway, the microphone shall be raised so as to be at least two feet above the level of the roadway. If the ground at the microphone slopes up from the roadway, the microphone shall be placed no less than 3 1/2 feet above the ground and no more than six feet above the level of the roadway. (See Figure 9)

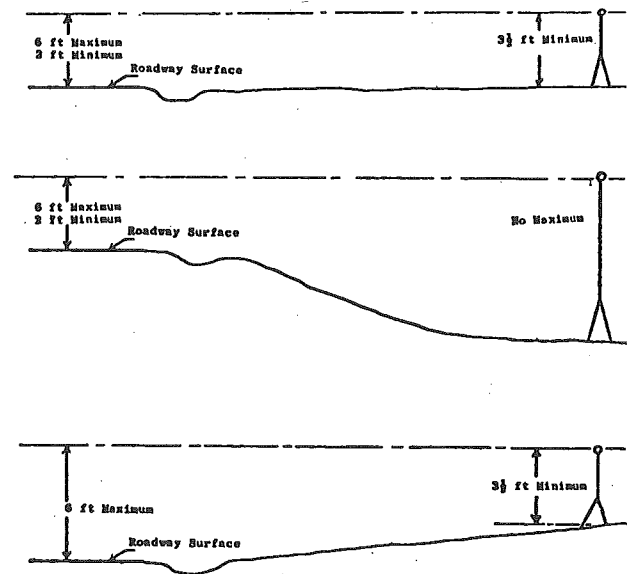


Figure 9.
Microphone Height

(c) Windscreens. Windscreens of open cell polyurethane foam furnished by the instrument manufacturer may be placed over the microphone after calibration and positioning. The windscreen reduces the effect of wind noise and protects the microphone diaphragm from dust or other airborne matter. The windscreen also reduces damage to the microphone in the event the tripod is pulled over or the microphone is dropped.

(4) Measurement Sites.

(a) Types of Sites. Two types of sites are established for measuring vehicles. They are a standard measuring site requiring a large clear open area and a restricted measuring site in which sound-reflecting objects are permitted. When selecting a measuring site, the area will be carefully measured to determine if a correction factor must be applied.

(i) Standard Measuring Sites. When making measurements of vehicle sound levels in standard measuring sites, the instrument readings shall be recorded with no correction factor applied.

(ii) **Restricted Measuring Sites.** When making measurements of vehicle sound levels in restricted measuring sites, the proper correction factors described in paragraphs (c) and (d) are to be applied to the recorded sound levels.

(b) **Selection of Sites.** Vehicle sound measuring sites shall be subject to the following restrictions:

(i) **Roadways.** Roadways selected for sound level measuring sites shall be dry, paved with relatively smooth concrete or asphalt.

(ii) **Tunnels and Overpasses.** Sound measurements shall not be made within 100 feet of a tunnel or overpass through which the roadway passes.

(iii) **Overhangs.** The microphone line and the center of the lane of travel shall not be within 50 feet of any overhang exceeding two feet, measured perpendicular to the lane of travel (eaves, awnings, balconies, etc.).

(iv) **Reflecting Surfaces Close to Microphone.** Sound-reflecting surfaces shall be no closer than 10 feet from the microphone line.

(v) **Reflecting Surfaces Close to Lane of Travel.** Sound-reflecting surfaces shall be no closer than 10 feet from the center of the lane of travel.

(vi) **Nonparallel Reflecting Surfaces.** Large reflecting surfaces that are not basically parallel to the lane of travel shall be 100 feet or more from the microphone or microphone point except as described in paragraph (e).

(c) **Correction for Measuring Distance.** The actual distance from the microphone to the microphone point in the restricted site may range from 26 to 118 feet when the factor obtained from Figure 10 is added or subtracted from the sound level meter readings. This factor will correct the reading to what it would be if the vehicle were measured at the standard distance of 50 feet.

Distance from microphone to center of lane of travel	Sound level correction factor, dB
26 - 29 feet	-7
29 - 32 feet	-6
32 - 35 feet	-5
35 - 39 feet	-3
39 - 43 feet	-2
43 - 48 feet	-1
48 - 58 feet	0
58 - 70 feet	+1
70 - 83 feet	+2
83 - 99 feet	+3
99 - 118 feet	+4

Figure 10.

Measuring Distance Correction Factors

(i) **Example:** If the distance between the microphone and the microphone point is 36 feet instead of 50 feet and a vehicle is measured at 90 dB(A), the recorded reading will be as follows:

90 dB(A)	Uncorrected reading
-3 dB	Correction factor
87 dB(A)	Corrected reading

(ii) **Measuring Distances of Less Than 35 Feet.** A break in the correction factors occurs at 35 feet where the point of measurement shifts from the center of the lane of travel to the side of the vehicle for the shorter distances. Since it is impractical to correct readings on the basis of vehicle width, all of the corrections shown in Figure 10 have been adjusted to distances measured from the center of the lane of travel. Factors shown for distances less than 35 feet will be correct for full-width trucks but may be slightly overcorrected for narrow vehicles such as motorcycles.

(d) **Corrections for Reflecting Surfaces.** The following paragraphs show examples of correction factors applied to sound level readings obtained from vehicles being measured.

(i) **Example With Two Reflecting Surfaces.** The dotted line in the nomogram, Figure 8, illustrates the use of the nomogram for determining the correction factor for a reflecting surface 52 feet from the center of the lane of travel (distance "D") and one 25 feet from the microphone line (distance "L"). These measurements plotted on the nomogram result in a correction factor of -2dB. With the microphone at a standard measuring distance of 50 feet and a vehicle measured at 90 dB(A), the corrected reading would be recorded as follows:

90 dB(A)	Uncorrected reading
-2 dB	Correction (from Figure 8)
88 dB(A)	Corrected reading

(ii) **Example With One Reflecting Surface.** If the sound-reflecting surface is 150 feet or further from the vehicle path and the distance from the reflecting surface to the microphone line is 52 feet, the correction factor would be -1 dB. With the microphone at the standard measuring distance of 50 feet, and a vehicle measured at 87 dB(A), the corrected reading would be recorded as follows:

87 dB(A)	Uncorrected reading
-1 dB	Correction (from Figure 8)
86 dB(A)	Corrected reading

(iii) **Combination of Reflecting Surfaces and Non-standard Measuring Distance.** If the distance between the microphone and microphone point is 74 feet instead of the standard distance of 50 feet and the sound-reflecting surfaces are the same distances as described in the example given in paragraph (2) above, two corrections are necessary.

90 dB(A)	Uncorrected reading
-2 dB	Correction for sound-reflecting surfaces
88 dB(A)	
+2 dB	Correction for measuring distance
90 dB(A)	Corrected reading

(e) Avoidance of Overcorrection. The correction factors established by regulation and explained in the preceding paragraphs have been selected so that a vehicle barely within the limits in a standard measurement site will not be in violation when measured under the same operating conditions in the worst of restricted sites. Therefore, it is desirable to select sites that do not require overcorrection.

(5) Sound Level Measuring Precaution.

(a) Identification. It is most important that the noise recorded is actually from the vehicle being measured. Care must be taken to ensure that noise from another vehicle does not add to that from the one being measured.

(b) Intensity. The sound level of the vehicle under scrutiny must rise at least 6 dB before and fall at least 6 dB after the maximum sound level occurs.

(c) Recording. The sound level recorded shall be the highest level obtained as the vehicle passes by, disregarding unrelated peaks due to extraneous ambient noises.

(6) Batteries for Sound Measuring Equipment.

(a) Equipment Storage. Batteries should be removed from sound measuring equipment when the voltage is low and when the equipment is stored for extended periods of time.

(b) Battery Types. Batteries used in sound measuring equipment should be of a high quality leak-proof corrosion resistant type.

SOUND MEASURING INSTRUMENT SETUP CHECK-OFF LIST	
SLM TYPE 1565-9004 SERIAL #	
CALIBRATOR TYPE 1562-9000 SERIAL #	
1. MICROPHONE POSITION	
• 50 FEET OR APPLY CORRECTION	
• 2 TO 6 FEET ABOVE ROADWAY	
• 3 FEET ABOVE LOCATION (MINIMUM)	
• 70° ANGLE FROM HORIZONTAL	
2. BATTERY CHECK	
• SLM IN BAT ZONE	
• CALIBRATOR LIGHT ON	
3. CALIBRATION ADJUSTMENT	
• A FAST	
• 90 DB(A)	
• 900 HZ	
4. CALIBRATOR CHECK	
125 HZ	DB(A)
250 HZ	DB(A)
500 HZ	DB(A)
1000 HZ	DB(A)
2000 HZ	DB(A)
5. AREA	
• DETERMINE IF CORRECTION IS NECESSARY	
• SURFACE DRY	
• BACKGROUND NOISE (DB(A))	

SOUND MEASURING INSTRUMENT SETUP CHECK-OFF LIST	
SLM TYPE 1565 SERIAL #	
CALIBRATOR TYPE 1567 SERIAL #	
1. MICROPHONE POSITION	
• 50 FEET OR APPLY CORRECTION	
• 2 TO 6 FEET ABOVE ROADWAY	
• 3 FEET ABOVE LOCATION (MINIMUM)	
• WITH METER IN FRONT OF YOU POINTED IN DIRECTION OF ONCOMING TRAFFIC AND PARALLEL TO ROADWAY	
2. BATTERY CHECK	
• SLM IN BAT ZONE	
• CALIBRATOR IN GREEN "OK" AREA	
3. CALIBRATION ADJUSTMENT	
• A FAST	
• 110 IN LEFT WINDOW	
• 114 DB(A)	
4. AREA	
• DETERMINE IF CORRECTION IS NECESSARY	
• SURFACE DRY	
• BACKGROUND NOISE (DB(A))	

Figure 11.

Instrument Setup and Check-Off List Forms

[Order 7604, § 204-56-020, filed 2/24/76.]

WAC 204-56-030 Stationary vehicle sound level measurement. Testing of trucks over 10,000# shall be done according to Federal Regulation. Title 49 chapter 325.51. [Order 7604, § 204-56-030, filed 2/24/76.]

WAC 204-56-040 Static test site for vehicle sound level measurement. (1) Scope. This chapter establishes

procedures for conducting tests to measure vehicle sound level output to determine compliance with the code.

(2) Test Area and Personnel.

(a) Test Area. The test area shall be a flat open space free of large upright sound-reflecting surfaces (such as parked vehicles, signboards, buildings, or hillsides) located within a 100-foot radius of the microphone and of the following unmarked points on the vehicle path as shown in Figure 1.

(i) The microphone point, which is the location on the vehicle path closest to the microphone.

(ii) A point 50 feet before the microphone point.

(iii) A point 50 feet beyond the microphone point.

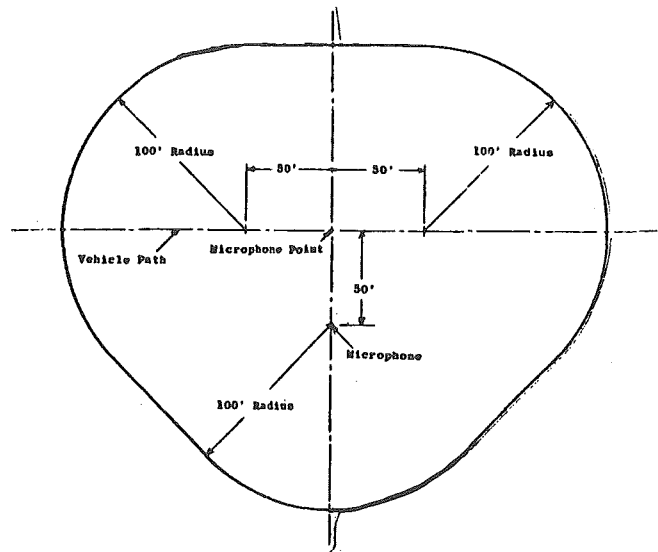


Figure 1.
Test Area Layout

(b) Ground Condition. The surface of the ground within at least the triangular area formed by the microphone location and points on the vehicle path 50 feet before and beyond the microphone point for all vehicles except snowmobiles shall be smooth asphalt or concrete free of snow, soil, or ashes. The ground surface in the above area for snowmobiles shall be covered with grassy turf up to 4 inches in height and free of water droplets.

(c) Roadway Surface. The surface of the vehicle path shall be dry, smooth asphalt or concrete pavement free of extraneous material, except that the pathway for snowmobiles shall be covered with grassy turf up to 4 inches in height.

(d) Wind. Sound measurements shall not be made when wind velocity at the test area exceeds 12 mph.

(e) Personnel Location. Care shall be taken to prevent interference with sound level measurements caused by personnel in the measuring area.

(i) Bystander Location. Bystanders shall remain at least 50 feet from the microphone and the vehicle being measured during sound level measurements.

(ii) Technician Location. The technician making direct readings from the precision sound level meter with the microphone attached shall stand with the instrument

between himself and the vehicle path with his body at least 20 inches from the instrument on a tripod. Occupation of this location is permitted only while making comparisons between the readings of the sound level meter and recorder during the pre-test vehicle warmup or in situations where the complete test is to be run without the use of the graphic level recorder.

(3) Equipment Setup and Precautions.

(a) Sound Measuring Equipment. Proper usage of all test instrumentation is essential to obtain valid measurements. Operating manuals or other literature furnished by the instrument manufacturer should be referred to for both recommended operation of the instrument and precautions to be observed.

(b) Microphone Location. Attach the microphone or sound level meter to the tripod, extending the tripod legs so that the microphone, when properly aimed, shall be a height of 4 feet \pm 1 inch above the plane of the roadway surface. Position the tripod so the microphone is at a distance of 50 \pm 1 foot from the center of the vehicle path. Connect extension cable between instruments. Secure the cable to the foot of the tripod leg nearest the recorder location. This will help prevent the tripod from being pulled over by an accidental tug on the cable.

(c) Power Supply. Position the vehicle providing the instrument power supply approximately 100 feet away from the microphone and test vehicle path.

(i) Inverter. Connect inverter to vehicle battery and operate the engine at fast idle.

(ii) Inverter Setting. Turn inverter on and set voltage regulator to "medium".

(d) Recorder Location. Set up the graphic level recorder in a convenient location near the power supply. Connect extension cable between sound level meter and recorder, and follow the instrument setup procedure applicable to the type of sound measuring equipment being used.

(e) Weather Measurement. Set up the anemometer on its stand near the power supply vehicle, place temperature and humidity gauges on the stand with the anemometer.

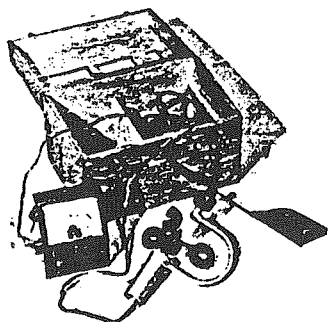


Figure 2.
Weather Measuring Equipment

(f) Data Recording. After all measuring equipment has been set up and before commencing the test series, record the following information:

(i) Test Form. Record data (type of test equipment, names of individuals conducting the test, and weather information) on the Vehicle Test Form. (See page for suggested form.)

(4) Vehicle Test Procedure.

(a) Vehicle Sound Level. The sound levels for motor vehicles shall be determined by tests performed according to procedures established for each particular class of vehicle.

(b) Definitions. For the purpose of these procedures, the following terms have the meanings indicated:

(i) First Gear. "First gear" means the highest numerical gear ratio of the transmission, commonly referred to as low gear.

(ii) Maximum RPM. "Maximum rpm" means the maximum governed engine speed, or if ungoverned, the rpm at maximum engine net horsepower as determined by the engine manufacturer in accordance with the procedures in SAE J245, April 1971, or any later edition of the SAE Handbook.

(iii) Microphone Point. "Microphone point" means the unmarked location on the center of the vehicle path that is closest to the microphone.

(iv) Vehicle Reference Point. "Vehicle reference point" means the location on the vehicle used to determine when the vehicle is at any of the points on the vehicle path. The primary vehicle reference point is the front of the vehicle. For vehicles with a gross vehicle rating of 10,000 lbs. or more where the distance from the front of the vehicle to the exhaust outlet exceeds 16 feet, the secondary vehicle reference point is the exhaust outlet.

(c) Operation. Motor vehicles shall be tested both with and without auxiliary equipment that may be in use while the vehicle is in operation on the highway. Auxiliary equipment includes, but is not limited to, cement mixers, refrigeration units, air conditioners, and garbage compactors. The following general procedures shall apply to all classes of vehicles:

(i) Preliminary Runs. Sufficient preliminary runs shall be made to enable the test driver to become familiar with the operation of the vehicle and to stabilize engine operation conditions.

(ii) Test Runs. At least four test runs shall be made for each side of the vehicle. When the exhaust outlet is more than 16 feet from the front of the vehicle, at least two runs shall be made for each side of the vehicle using both the primary and secondary reference points. At least two additional runs shall be made from the reference point that gives the highest readings.

(iii) Reported Noise Level. The reported sound level for each side of the vehicle shall be the average of the two highest readings on that side which are within two dB of each other. The sound level reported for the vehicle shall be the sound level of the loudest side.

(iv) Visual Readings. When sound level instruments have been turned on and calibrated, the graphic level recorder shall be put in operation. Visual readings shall be taken from the sound level meter during preliminary test runs and recorded. The readings from the sound level meter shall be compared with those of the recorder

and there shall be no more than + 0.5 db variation between the readings. When the variation is greater, the equipment shall be checked and recalibrated. If the variation still exists, the test shall be conducted using only direct readings from the sound level meter.

(d) Light Trucks, Truck Tractors, Buses and Passenger Cars. Trucks, truck tractors and buses with a manufacturer's gross vehicle weight rating of less than 10,000 lbs., and passenger cars, shall be tested as follows:

(i) Vehicle Path. The test area shall include a vehicle path of sufficient length for safe acceleration, deceleration, and stopping of the vehicle.

(ii) Test Area Layout. The following points and zones shown in Figure 3, where only one directional approach is illustrated for purposes of clarity, shall be established on the vehicle path so that measurements can be made on both sides of the vehicle:

((a)) Microphone point.

((b)) Acceleration point - a location 25 feet before the microphone point.

((c)) End point - a location 100 feet beyond the microphone point.

((d)) End zone - the last 75-foot distance between the microphone point and the end point.

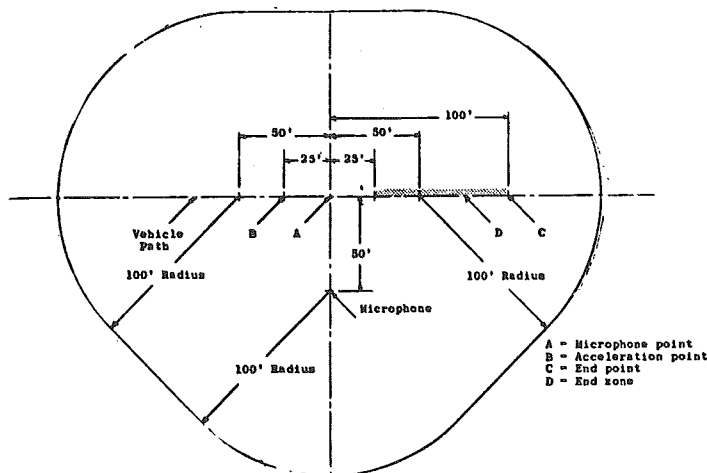


Figure 3.
Test Area Layout for Light Trucks, Buses, and Passenger Cars

(iii) Test Procedures. Vehicles shall be tested according to the following procedures:

((a)) Gear Selection. Motor vehicles equipped with three-speed transmissions and with automatic transmissions shall be operated in the first gear. Vehicles manufactured after January 1, 1975, with four or more speed transmissions shall be operated in first and second gear. Vehicles which reach maximum rpm at less than 30 mph or before reaching the end zone shall be operated in the next higher gear. Auxiliary step-up ratios (over-drive) shall not be engaged on vehicles so equipped.

((b)) Acceleration. The vehicle shall proceed along the vehicle path at a constant speed of 30 mph in the selected gear for at least 50 feet before reaching the acceleration point. When the vehicle reference point

reaches the acceleration point, the throttle shall be rapidly and fully opened. The throttle shall be held open until the vehicle reference point reaches the end point or until maximum rpm is reached within the end zone. At maximum rpm, the throttle shall be closed sufficiently to keep the engine just under maximum rpm until the end point, at which time the throttle shall be closed.

((c)) Deceleration. Tests during deceleration shall be conducted when deceleration noise appears excessive. The vehicle shall proceed along the vehicle path at maximum rpm in the same gear selected for the tests during acceleration. When the reference point on the vehicle reaches the acceleration point, the throttle shall be rapidly closed and the vehicle allowed to decelerate to less than 1/2 of the maximum rpm.

((d)) Engine Temperature. The engine temperature shall be within normal operating range throughout each test run. The engine shall be idled in neutral for at least one minute between runs.

(e) Heavy Trucks, Truck Tractors, and Buses. Vehicles with a manufacturer's gross vehicle weight rating of 10,000 lbs. or more shall be tested as follows:

(i) Vehicle Path. The test area shall include a vehicle path of sufficient length for safe acceleration, deceleration, and stopping of the vehicle.

(ii) Test Area Layout. The following points and zones shown in Figure 4, where only one directional approach is illustrated for purposes of clarity, shall be established on the vehicle path so that measurements can be made on both sides of the vehicle:

((a)) Microphone point.

((b)) Acceleration point - a location 50 feet before the microphone point.

((c)) End point - location 50 feet beyond the microphone point.

((d)) End zone - the last 40-foot distance between the microphone point and the end point.

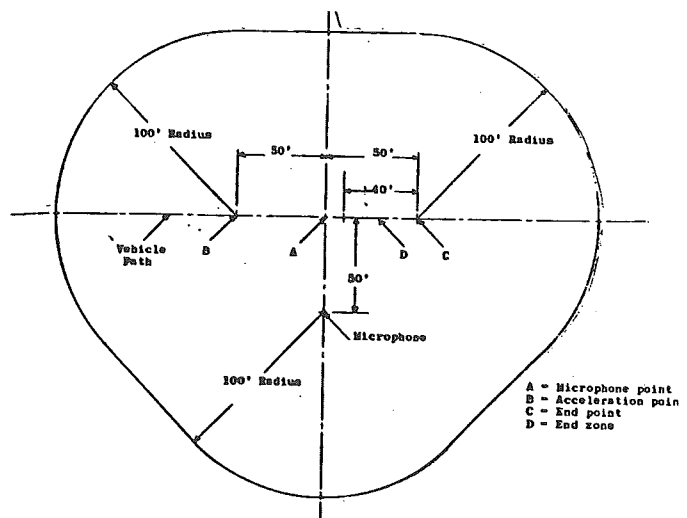


Figure 4.
Test Area Layout for Heavy Trucks and Buses

(iii) Test Procedures. Vehicles shall be tested according to the following procedures:

((a)) Gear Selection. A gear shall be selected which will result in the vehicle beginning at an approach rpm of no more than $\frac{2}{3}$ maximum rpm at the acceleration point and reaching maximum rpm within the end zone without exceeding 35 mph.

((1)) When maximum rpm is attained before reaching the end zone, the next higher gear [gear] shall be selected, up to the gear where maximum rpm produces over 35 mph.

((2)) When maximum rpm still occurs before reaching the end zone, the approach rpm shall be decreased in 100 rpm increments until maximum rpm is attained within the end zone.

((3)) When maximum rpm is not attained until beyond the end zone, the next lower gear shall be selected until maximum rpm is attained within the end zone.

((4)) When the lowest gear still results in reaching maximum rpm beyond the end zone, the approach rpm shall be increased in 100 rpm increments above $\frac{2}{3}$ maximum rpm until the maximum rpm is reached within the end zone.

(ii) Acceleration. The vehicle shall proceed along the vehicle path maintaining the approach engine rpm in the selected gear for at least 50 feet before reaching the acceleration point. When the reference point on the vehicle reaches the acceleration point, the throttle shall be rapidly and fully opened and held open until maximum rpm is attained within the end zone.

(iii) Deceleration. Tests during deceleration shall be conducted when deceleration noise appears excessive. The vehicle shall proceed along the vehicle path at maximum rpm in the same gear selected for the tests during acceleration. When the reference point on the vehicle reaches the microphone point, the throttle shall be rapidly closed and the vehicle allowed to decelerate to less than $\frac{1}{2}$ maximum rpm. Vehicles equipped with exhaust brakes shall also be tested with the brake full on immediately following closing of the throttle.

(f) Motorcycles. Motorcycles shall be tested as follows:

(i) Vehicle Path. The test area shall include a vehicle path of sufficient length for safe acceleration, deceleration, and stopping of the vehicle.

(ii) Test Area Layout. The following points and zones shown in Figure 5, where only one directional approach is illustrated for purposes of clarity, shall be established on the vehicle path so that measurements can be made on both sides of the vehicle:

((a)) Microphone point.

((b)) Acceleration point – a location 25 feet before the microphone point.

((c)) End point – a location 100 feet beyond the microphone point.

((d)) End zone – the last 75-foot distance between the microphone point and the end point.

(iii) Test procedures. Vehicles shall be tested according to the following procedures:

((a)) Gear Selection. Motorcycles shall be operated in second gear. Vehicles which reach maximum rpm at less

than 30 mph or before a point 25 feet beyond the microphone point shall be operated in the next higher gear.

((b)) Acceleration. The vehicle shall proceed along the vehicle path at a constant approach speed which corresponds either to an engine speed of 60 percent of maximum rpm or to 30 mph, whichever is lower. When the vehicle reference point reaches the acceleration point, the throttle shall be rapidly and fully opened and held open until the vehicle reference point reaches the end point, or until the maximum rpm is reached within the end zone, at which point the throttle shall be closed. Wheel slip shall be avoided. When this procedure results in a dangerous operating condition,

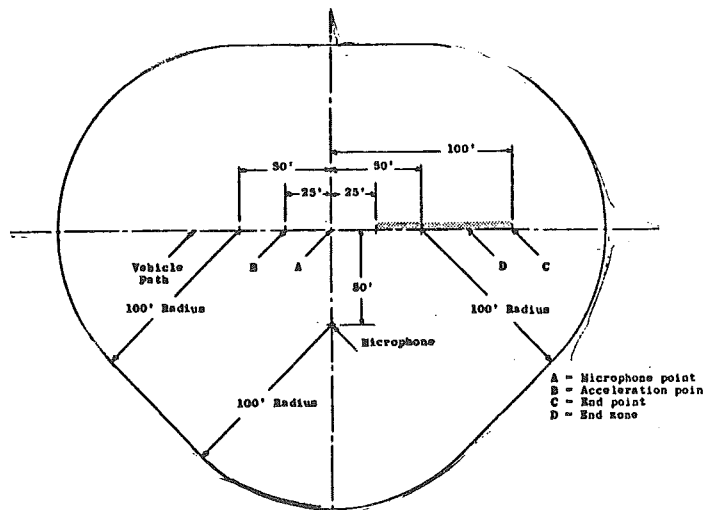


Figure 5.
Test Area Layout for Motorcycles

the next higher gear shall be selected for the test.

((c)) Deceleration. Tests during deceleration shall be conducted when deceleration noise appears excessive. The vehicle shall proceed along the vehicle path at maximum rpm in the same gear selected for the tests during acceleration. When the reference point on the vehicle reaches the acceleration point, the throttle shall be rapidly closed and the vehicle shall be allowed to decelerate to less than $\frac{1}{2}$ of maximum rpm.

(iv) Engine Temperature. The engine temperature shall be within normal operating range before each test run.

(v) Test Weight. For testing purposes, the combined weight of the driver and any test equipment he carries shall be not more than 175 nor less than 165 lbs. Weights shall be used to compensate for any difference between the actual driver/equipment load and the required 165-lb. minimum. [Order 7604, § 204-56-040, filed 2/24/76.]

WAC 204-56-050 New motor vehicle noise limits procedure. (1) Any motor vehicle with a Gross Vehicle Weight Rating (GVWR) or a Gross Combination Weight Rating (GCWR) of less than 10,000 pounds, manufactured after 1975, shall meet the new vehicle

noise level procedure as established by the Society of Automotive Engineers (SAE) J986A test procedure, or any later procedure adopted by SAE.

(a) The maximum noise level for the above classification for new motor vehicles is 80 dB(A).

(2) Any motor vehicle with a GVWR or GCWR of 10,000 pounds or more, manufactured after 1975 and prior to 1977, shall meet the new vehicle noise level procedure as established by the SAE J366B test procedure, or any later procedure adopted by SAE.

(a) The maximum noise level for the above classification for new motor vehicles is 86 dB(A).

(3) Any motorcycle manufactured after 1975 shall meet the motorcycle noise level procedure as established by the SAE J331A test procedure, or any later procedure adopted by SAE.

(a) The maximum noise level for the above classification for motorcycles is 83 dB(A).

(4) Applications for copies of the SAE documents should be addressed to the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018; or, the Society of Automotive Engineers, Inc., Two Pennsylvania Plaza, New York, New York 10001. [Order 7604, § 204-56-050, filed 2/24/76.]

Chapter 204-60 WAC

STANDARDS AND SPECIFICATIONS FOR ADDITIONAL LAMPS AND FLAGS FOR USE ON SNOW REMOVAL AND HIGHWAY MAINTENANCE EQUIPMENT

WAC

204-60-010	Promulgation.
204-60-020	Clearance lamps, side marker lamps and reflectors.
204-60-030	Standards for lights.

WAC 204-60-010 Promulgation. By authority vested in the State Commission on Equipment in RCW 46.37.005 and 46.37.300, the following standards and specifications applicable to head lamps, clearance lamps, identification and other lamps on snow-removal and highway maintenance equipment, in lieu of the lamps otherwise required on motor vehicles, are hereby adopted. [Order 7605, § 204-60-010, filed 2/24/76. Formerly Regulation 630 (part), Appendix to Title 204.]

WAC 204-60-020 Clearance lamps, side marker lamps and reflectors. Clearance lamps, side marker lamps and reflectors shall be installed and maintained in accordance with chapter 46.37 RCW on all equipment. [Order 7605, § 204-60-020, filed 2/24/76. Formerly Regulation 630 (part), Appendix to Title 204.]

WAC 204-60-030 Standards for lights. (1) Headlamps may be positioned sufficiently high to clear operating equipment. Auxiliary headlamps may be used if necessary.

(2) Additional operating lamps may be located on the top of the cab or at other locations to illuminate plowing, abrasive spreading or other equipment.

(3) Red lights on highway equipment: No flashing red warning signal except those required by RCW 46.37.150, shall be displayed or used on any highway equipment.

(4) Amber lamps on highway equipment: Amber colored lamps required on the following equipment shall comply with the specifications set forth in paragraph (6):

(a) Power shovels or other similar highway maintenance equipment shall be equipped with a flashing amber lamp and red flag on an extension designating the maximum danger limit created by the swing of the cab while operating along the traffic lane.

(b) A flashing amber lamp shall be used on all other equipment which creates a potential hazard to traffic in order to serve as a warning to the traveling public. This equipment includes those vehicles and trailers for construction, maintenance and operations.

(c) A flashing amber lamp shall be used on the knuckle of all manlift-type platform trucks with articulating boom, where the knuckle is capable of being rotated beyond the side of the truck.

(d) The minimum light intensity of the lamp filament shall not be less than twenty-one candle power.

(e) The lamp or lamps shall be mounted on the cab or other high point of the equipment so as to be visible at all times, at least from the front and rear of the vehicle, from a distance of five hundred feet in normal sunlight.

(6) The flashing amber lamp for use on highway construction, maintenance and operations equipment shall be illuminated only:

(a) When the equipment is actually involved in construction, maintenance and/or operations.

(b) When the equipment is traveling to or from the job site and is unable to maintain, either because of equipment limitations, or other reasons, at least one-half posted or prevailing speed. [Order 7605, § 204-60-030, filed 2/24/76. Formerly Regulation 630 (part), Appendix to Title 204.]

Chapter 204-62 WAC

DECELERATION WARNING LIGHT

WAC

204-62-010	Promulgation.
204-62-020	Definition.
204-62-030	Installation requirements.

WAC 204-62-010 Promulgation. By authority of RCW 46.37.005 and RCW 46.37.320, the State Commission on Equipment hereby adopts the following regulation pertaining to the installation and mounting of approved deceleration warning lights. [Order 7609, § 204-62-010, filed 10/4/76.]

WAC 204-62-020 Definition. A deceleration warning light, excluding stop lamps, is a device that indicates to a following driver the rate of deceleration of the vehicle ahead. [Order 7609, § 204-62-020, filed 10/4/76.]

WAC 204-62-030 Installation requirements. Deceleration warning lights shall be installed as follows:

(1) Only one such system may be mounted on a motor vehicle, trailer, semi-trailer, truck tractor, or pole trailer.

(2) Provision shall be made for rigid or shock-absorbing mounting. The axis of the light beam shall be parallel to the roadway and the longitudinal axis of the vehicle. The lamp shall be mounted on the centerline of the rear exterior of the vehicle or with the optical center of the lamp not more than 15 inches from the centerline.

(3) The deceleration warning light system shall be mounted as nearly as practicable at the same height as the existing stop lamps on the vehicle.

(4) Visibility of the deceleration lamps to the rear shall not be obstructed by any part of the vehicle or load thereon. [Order 7609, § 204-62-030, filed 10/4/76.]

Chapter 204-64 WAC QUARTZ HALOGEN HEADLAMPS

WAC

204-64-010	Purpose.
204-64-020	Definition.
204-64-040	Approval procedure.
204-64-060	Application for certificate of approval.
204-64-080	Installation, aiming, and adjustment.
204-64-100	Application of these regulations.

WAC 204-64-010 Purpose. By authority of RCW 46.37.005 and 46.37.320, the commission on equipment hereby adopts the following regulation pertaining to the approval, installation, adjustment, and aiming of quartz halogen headlamps. [Statutory Authority: RCW 46.37.005 and 46.37.320. 78-11-051 (Order 7740-C), § 204-64-010, filed 10/23/78.]

WAC 204-64-020 Definition. Quartz halogen headlamps are those that meet the standards established by the United Nations' agreement concerning the adoption of approval and reciprocal recognition of approval for motor vehicle equipment and parts agreed upon at Geneva on March 20, 1958, as amended and adopted by the Canadian Standards Association (CSA Standard D106.2). [Statutory Authority: RCW 46.37.005 and 46.37.320. 78-11-051 (Order 7740-C), § 204-64-020, filed 10/23/78.]

WAC 204-64-040 Approval procedure. The commission on equipment shall issue a certificate of approval to manufacturers of quartz halogen headlamps for sale of such lighting devices in this state when such manufacturer submits proper certification that such device conforms with Canadian Standards Association Standard D106.2. All applications shall include a copy of the CSA approval and shall be submitted to the commission on equipment for approval. The address is Secretary, Commission on Equipment, General Administration Building AX-12, Olympia, Washington 98504. [Statutory Authority: RCW 46.37.005 and 46.37.320. 78-11-051 (Order 7740-C), § 204-64-040, filed 10/23/78.]

WAC 204-64-060 Application for certificate of approval. The application for the certificate of approval for quartz halogen headlamps shall include the following information as shown in the sample:

Date: _____

Secretary
Commission on Equipment
General Administration Building AX-12
Olympia, Washington 98504

The attached CSA Approval, File No. _____ dated _____ certifies that the following headlamp complies with the United Nations Geneva Agreement in 1958 for "Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts" and Canadian Standards Association Standard No. D106.2, "Vehicle Headlight Conforming to ECE Regulations", in accordance with RCW 46.37.320.

Manufacturer: _____
U.S. Designation: _____
Canadian Designation: _____
Manufacturer's Designation: _____
ECE Approval Markings on Front Lens: _____

Sealed Beam Replacement Size: _____
Standard Vehicle Equipment on: _____
Manufacturer's Representative in the state of Washington: _____

Applicant: _____

[Statutory Authority: RCW 46.37.005 and 46.37.320. 78-11-051 (Order 7740-C), § 204-64-060, filed 10/23/78.]

WAC 204-64-080 Installation, aiming, and adjustment. Prior to approval for sale and use of quartz halogen headlamps, manufacturers shall submit for approval to the commission on equipment a copy of an instructional guide, pamphlet, brochure, or other written information which will be provided to the consumer by the manufacturer. The instructional guide shall describe in easily readable text, diagrams, or pictures the proper procedures for the installation, aiming, and adjustment of quartz halogen headlights. The manufacturer shall provide the approved instructional guide at no charge in each individual package of quartz halogen headlamps. Headlamps shall comply with the requirements of, limitations of, and shall be installed and maintained in accordance with chapter 46.37 RCW and chapter 204-72 WAC. [Statutory Authority: RCW 46.37.005 and 46.37.320. 81-01-009 (Order 80-12-01), § 204-64-080, filed 12/5/80. Statutory Authority: RCW 46.37.005 and 46.37.320. 78-11-051 (Order 7740-C), § 204-64-080, filed 10/23/78.]

WAC 204-64-100 Application of these regulations. These regulations are intended to apply only to Washington state headlamp standards. These regulations do not in any way affect the application of laws, regulations, or standards pertaining to headlight standards promulgated by any other state or by the federal government. [Statutory Authority: RCW 46.37.005 and 46.37.320. 78-11-051 (Order 7740-C), § 204-64-100, filed 10/23/78.]

Chapter 204-66 WAC TOWING BUSINESSES

WAC

204-66-010	Authority.
204-66-020	Purpose.
204-66-030	Definitions.
204-66-040	Application for letter of appointment.
204-66-050	Application form for letter of appointment.
204-66-060	Inspections.
204-66-070	Certification.
204-66-080	Processing of application.
204-66-090	Issuance of a letter of appointment.
204-66-100	Suspension or revocation of letter of appointment.
204-66-110	Letter does not grant vested right.
204-66-120	Procedure.
204-66-130	Appeal.
204-66-140	Towing procedure.
204-66-150	Tow zones.
204-66-160	Minimum standards for tow trucks.
204-66-170	Tow truck classifications.
204-66-180	Vehicle towing operator qualifications.
204-66-190	Penalties.
204-66-200	Effective date.

WAC 204-66-010 Authority. This chapter is promulgated pursuant to chapter 34.04 RCW, and chapter 167, Laws of 1977 ex. sess., which require that rules and regulations be made for the removal from the highway of disabled, abandoned, or damaged motor vehicles, or the removal of vehicles when the driver is intoxicated or otherwise incompetent. Such regulations are intended to apply only when the removal is done by a private tow company upon the request of an officer of the Washington State Patrol. [Order 7720, § 204-66-010, filed 10/14/77.]

WAC 204-66-020 Purpose. These rules are intended to implement the public policy expressed by the legislature and to carry out the statutory duty of the commission on equipment.

All towing operators providing service to the public through calls received from the Washington State Patrol shall conduct their operations in accordance with all applicable laws of the state of Washington and all applicable rules of this commission. [Order 7720, § 204-66-020, filed 10/14/77.]

WAC 204-66-030 Definitions. (1) Commission — means the state commission on equipment as defined in RCW 46.37.005.

(2) Person — means an individual, firm, partnership, corporation, company, association, or their lessees, trustees, or receivers.

(3) Highway — means the entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel.

(4) Towing operator — means every person who engages in the towing of vehicles and motor vehicles on a highway by means of equipment affixed to a specially constructed tow truck complying with the equipment specifications and standards promulgated by the commission.

(5) Tow truck — means a specially constructed and equipped motor vehicle for towing vehicles and not otherwise used in transporting goods for compensation.

(6) Patrol — means the Washington state patrol as defined in RCW 43.43.010.

(7) Place of business — means a building which the tow business occupies, either continuously or at regular times, where tow business books and records are kept and tow business is transacted in each assigned tow zone.

(8) District commander — means the local commanding officer of an area established by the Washington State Patrol.

(9) Tow zone — means that geographical area designated by the district commander for the removal of vehicles as defined in Title 46 RCW, and these regulations. [Order 7720, § 204-66-030, filed 10/14/77.]

WAC 204-66-040 Application for letter of appointment. (1) An application for a letter of appointment to provide towing service for the patrol shall be filed by the applicant with the secretary of the commission on equipment or with the patrol district commander on a form prescribed by the commission. In the case of a partnership, each partner shall apply on the form prescribed by the commission. In the case of a corporation, the commission may require that each of the present and any subsequent officers, managers, and stockholders holding ten percent or more of the total issued and outstanding stock of the applicant corporation, complete an application form.

(2) The application form will be assigned a docket number which shall be its permanent identification number for all matters relating to appointments granted or denied, and any other correspondence thereafter.

(3) The filing of an application for a letter of appointment to tow upon request of the patrol does not in itself authorize the towing operator to provide towing services pursuant to these regulations until a letter of appointment has been granted by the commission. The patrol shall not call a towing business unless a temporary or permanent letter has been issued in connection with such business by the commission. However, nothing herein shall prohibit the patrol from calling the towing business upon the specific request of the person responsible for the vehicle, or his agent. [Order 7720, § 204-66-040, filed 10/14/77.]

WAC 204-66-050 Application form for letter of appointment. The application for a letter of appointment

shall be made on the form prescribed by the commission. Upon request the secretary shall advise the applicant of the contents of these regulations and of the standards established for the issuance of a letter of appointment. [Order 7720, § 204-66-050, filed 10/14/77.]

WAC 204-66-060 Inspections. Upon receipt of an application for a letter of appointment, the secretary of the commission shall cause the patrol to conduct an inspection of the applicant's place of business, facilities, and equipment to determine if the applicant qualifies for the issuance of a letter of appointment pursuant to chapter 204-66 WAC. Verification must be shown to the inspector that the applicant's request for a letter of appointment complies with all applicable local laws and regulations as prescribed for the geographical area where the towing business will be established.

(1) Inspections will be conducted at least once a year.
 (2) Inspectors will be designated by the district commander.

(3) After a letter of appointment has been issued, the district commander will cause to be affixed to each qualified tow truck a decal indicating that a particular tow truck has been "approved" by the commission. A qualified tow truck shall be any tow truck which the commission has approved.

(a) The decal will be affixed to the windshield on the lower right corner.

(b) Upon a subsequent inspection of a tow truck which has previously been found qualified and to which a decal has been affixed, the inspector may remove the decal from the tow truck if it is no longer found to be qualified, subject to the following procedures:

(i) In the event of a safety related defect which would render the truck a safety hazard upon the public highway, the decal may be removed immediately by the inspector. Upon a protest by the operator that the defect does not represent a safety hazard, the decal may not be removed until such time as the defect is verified as a safety hazard by the inspector's supervisor.

(ii) In the event of missing or defective equipment which is not a safety hazard, but which was required for approval initially, the inspector shall advise the operator of the defect. If after ten days, the operator fails or refuses to repair the defect, the decal may be removed.

(iii) Upon repair of a defect which had previously caused removal of a decal, the inspector shall reinspect the equipment which had been defective. If the specified corrections have been satisfactorily completed, the inspector shall reapply the decal to the windshield. In the event that the inspector is not readily available to reinspect and reapply the decal, such other patrol officer as may be appointed by the inspector may reinspect and reapply the decal. The reinspection and reapplication shall be done as soon as possible after the operator advises that the defect has been repaired.

(c) Upon termination of a letter of appointment, the decal will immediately be removed.

(d) Upon sale or other transfer of the truck from the business, the operator shall so advise the secretary to the

commission and shall remove the decal prior to the sale or transfer of the vehicle.

(e) Upon the purchase or acquisition of any additional tow truck to be used pursuant to this chapter, the operator shall immediately notify the commission and request an inspection of the new unit by the patrol. [Statutory Authority: RCW 46.61.567. 80-10-006 (Order 80-07-01), § 204-66-060, filed 7/25/80. Statutory Authority: RCW 46.37.005. 80-02-093 (Order 7720K), § 204-66-060, filed 1/23/80. Statutory Authority: 1977 ex.s. c 167. 78-08-079 (Order 7720B), § 204-66-060, filed 7/27/78; Order 7720, § 204-66-060, filed 10/14/77.]

WAC 204-66-070 Certification. After inspection of the towing business facilities and equipment, the inspecting officer of the patrol will certify one of the following:

(1) The towing operation of the applicant fully conforms to the requirements and qualification standards established by the commission, or

(2) The towing operation of the applicant does not conform to the requirements and qualification standards of the commission. The patrol shall state the reasons for failure to qualify in a separate report which shall be attached to the application/inspection form.

(3) The towing operation of the applicant does not now conform to the requirements and qualification standards of the commission, but the applicant has pledged that if a temporary letter of appointment is issued, he/she will take the necessary steps to qualify for a permanent letter of appointment. The commission, in its discretion, may grant such temporary letter of appointment which shall expire at a time to be recommended by the district commander and adopted by the commission. The commission may extend such letter of temporary appointment when the commission, in its discretion, concludes the extension is warranted under the circumstances. If an applicant holding a temporary letter of appointment meets the qualifications required by this regulation prior to the expiration of his/her temporary appointment, he/she will so notify the secretary of the commission. The secretary will cause the patrol to reinspect the applicant's place of business facilities and equipment and certify to the secretary that the applicant has or has not met the qualifications. If the patrol certifies that the applicant is now qualified, the secretary, if necessary, will extend the applicant's temporary letter of appointment until the next regular meeting of the commission at which time a permanent letter of appointment will be granted. [Order 7720, § 204-66-070, filed 10/14/77.]

WAC 204-66-080 Processing of application. Every application for authorization to provide a towing service at the request of the patrol, following inspection and certification pursuant to this regulation, will be referred to the commission. If the commission finds that the requirements of this regulation have been or will be satisfied by the applicant and that the applicant is otherwise

qualified, or that standards have been waived, the commission shall issue an appropriate letter of appointment. If the commission shall find that the applicant does not or will not meet the requirements of this regulation or is not qualified regardless of waiver, then the commission shall deny such application and shall so notify the applicant of its decision, stating the reasons therefore in writing. If a letter of appointment is granted, the commission will notify the applicant in writing and notify the patrol directing them to use the services of the applicant in accordance with this regulation.

If the district commander of the Washington state patrol district concerned recommends denial of a business application for authorization to provide a towing service for the patrol, the secretary to the commission on equipment shall notify the applicant and the district commander that the applicant and the district commander, or his designee, have the right to appear before the commission on equipment when the application is to be considered to show cause why the application should or should not be approved. [Statutory Authority: 1977 ex.s. c 167. 78-10-016 (Order 7720C), § 204-66-080, filed 9/12/78; Order 7720, § 204-66-080, filed 10/14/77.]

WAC 204-66-090 Issuance of a letter of appointment. (1) No towing operator shall be called to perform a towing service at the request of the patrol unless such operator has a letter of appointment, as described herein, from the commission. No such letter of appointment will be issued by the commission unless the commission is satisfied that all qualifications set out in this regulation have either been met by the applicant, will be met by the applicant within a defined period, or that a waiver of one or more qualifications has been granted by the commission.

(2) A letter of appointment will be valid only in a single tow zone assigned by the commission. Applications for additional letters of appointment in other zones must be based on a complete and separate business location capable of independent operation within the additional zone.

(3) A tow operator or a district commander may petition the commission for a waiver of requirements. The commission may grant a waiver if it finds that the towing service available to the patrol is inadequate in that area to meet the needs of the public.

In the event a qualified tow business that meets all requirements and qualifications receives a letter of appointment in the same zone as the tow business that had been granted a waiver, the tow business currently operating under a waiver will have its letter of appointment rescinded by the commission and after notification will not be called for patrol initiated tows.

(4) Every letter of appointment shall be issued in the name of the applicant and the holder thereof shall not allow any other person to use the letter of appointment. In the event of incapacity, death, receivership, bankruptcy, or assignment for benefit of creditors of any appointee, then his guardian, executor, administrator, receiver, trustee in bankruptcy or assignee for benefit of

creditors may continue the business pursuant to the previously issued letter of appointment unless such appointment is sooner terminated by action of the commission.

(5) A copy of the current letter of appointment shall be posted at all times in the place of business of the applicant.

(6) The letter of appointment will only be valid for the place of business named on the application and will not apply to any other place of business.

(7) A letter of appointment shall be valid until superseded or revoked by the commission.

(8) Each separate place of business will have a letter of appointment.

(9) Before a letter of appointment can be issued by the commission, the applicant must have a tow truck meeting the minimum standards in WAC 204-66-160. [Order 7720, § 204-66-090, filed 10/14/77.]

WAC 204-66-100 Suspension or revocation of letter of appointment. Upon receiving evidence that any appointee has failed to comply to or no longer complies with any requirement or provision of these rules and regulations, the commission may deny, suspend, or revoke the letter of appointment. The commission may not deny, suspend, or revoke the letter of appointment unless the appointee has been given notice and an opportunity to be heard as prescribed in chapter 34.04 RCW.

District commanders shall maintain files of complaints received from any person, and shall submit copies of the complaint(s) to the commission. [Order 7720, § 204-66-100, filed 10/14/77.]

WAC 204-66-110 Letter does not grant vested right. The issuance of any letter of appointment by the commission shall not be construed as granting a vested right in any of the privileges so conferred. Misrepresentation of fact found to have been made by the applicant shall be sufficient cause for the denial, suspension, or revocation of such letter of appointment by the commission. [Order 7720, § 204-66-110, filed 10/14/77.]

WAC 204-66-120 Procedure. The provisions of chapter 1-08 WAC, shall govern the conduct of any hearing held pursuant to these regulations. The burden of proof in any hearing before the commission shall be on the applicant seeking a letter of appointment, or the person or agency seeking the suspension or revocation of a letter of appointment or other action by the commission. The commission, after having heard and considered all pertinent evidence, or after having considered a record of a hearing conducted by a hearing officer duly appointed by the commission, shall make written findings of facts based on the evidence and written conclusions based on its findings. Oral proceedings shall be recorded on tape and such tape shall become part of the hearing record. [Statutory Authority: RCW 46.37.005. 79-09-093 (Order 7720H), § 204-66-120, filed 8/31/79; Order 7720, § 204-66-120, filed 10/14/77.]

WAC 204-66-130 Appeal. Any person aggrieved by a decision of the commission denying, suspending, or revoking a letter of appointment may appeal such decision to the superior court of Thurston county under the provisions of chapter 34.04 RCW. [Order 7720, § 204-66-130, filed 10/14/77.]

WAC 204-66-140 Towing procedure. Officers of the patrol shall obtain towing services to remove damaged or disabled vehicles from the highway or to remove vehicles from the highway with the following limitations:

(1) If the vehicle does not constitute an obstruction to traffic and the owner/operator of the vehicle is present at the scene and appears competent to determine disposition of the vehicle, the owner/operator may, upon request, make his own arrangements for removal. This does not affect rotational positions.

(2) If the vehicle is to be removed from the scene, the owner/operator of the vehicle may make a specific request for a particular tow operator. The request will be honored by the officer of the patrol if the requested tow operator is reasonably available and the request is otherwise reasonable in view of the circumstances at the scene. This does not affect rotational positions.

(3) When the owner/operator of the vehicle makes no specific request, or when the owner/operator is incapacitated or is unavailable, the officer of the patrol shall, when practicable, obtain towing services by notifying the radio communications center and requesting tow service at that location.

(4) The commission shall specify that tow services obtained by the patrol will be on a contractual, rotational, or other basis in specific geographical areas in the state.

(5) The district commander shall submit to the commission for approval the type of tow service in each tow zone.

(6) For the purposes of rotational tow requests, an approved tow truck shall be used only in the single tow zone which has been assigned to the company or business enterprise operating such truck, except:

(a) in cases of specific requests covered by (2) above, and,

(b) when tow service is not reasonably available with a given zone and tow service must be obtained from another zone. [Statutory Authority: RCW 46.37.005. 79-11-107 (Order 7720J), § 204-66-140, filed 11/1/79; Order 7720, § 204-66-140, filed 10/14/77.]

WAC 204-66-150 Tow zones. Each district commander of the patrol shall outline geographical areas within his district to be designated as tow zones and approved by the commission. The geographical tow zones for each Washington state patrol district are on file with the secretary of the state commission on equipment, Washington State Patrol Headquarters, General Administration Building, Olympia, Washington. The boundaries established pursuant to this action may be modified by an appeal. Each district of the patrol shall be divided into tow zones to be determined on the basis

of a general comparison between the availability of towing service and the incidence of need for towing service in geographical areas within his district. They shall consider such factors as the frequency and severity of accidents and the frequency of DWI arrests in the respective areas throughout the district, the volume and pattern of traffic, the availability of tow services, and the accessibility of tow services to the respective areas of need within each district. Nothing herein shall prevent the commission from amending tow zones, from time to time, as required by changing traffic and accident patterns and other such factors affecting the adequacy of towing service available to the patrol. [Order 7720, § 204-66-150, filed 10/14/77.]

WAC 204-66-160 Minimum standards for tow trucks. (1) Except as provided in WAC 204-66-170, tow trucks used in response to requests from the patrol shall have a minimum manufacturer's gross vehicle weight rating of 10,000 pounds or its equivalent. Tow trucks shall be equipped with dual tires on the rear axle or duplex type tires, sometimes referred to as super single, with a load rating that is comparable to dual tire rating. Each tow truck shall also be equipped as follows:

(a) With all legal light, equipment, and licensing requirements for trucks and/or tow trucks and the operation thereof.

(b) Dual or single boom capacity of not less than six tons with dual winches to control a minimum of two service cables.

(c) A minimum of one hundred feet of 3/8 inch continuous length cable, or its equivalent, in safe working condition on each drum.

(i) Each cable shall be capable of being fully extended from and fully wound onto its drum.

(ii) Cables, or wire ropes, shall be free from the following defects or conditions:

(A) more than six randomly distributed broken wires in one rope lay, or more than three broken wires in one strand in one rope lay.

(B) evidence of any heat damage from any cause.

(C) core protrusion along the main length of the cable unless tension applied to the cable restores proper rope structure.

(D) end attachments that are cracked, deformed, worn or loosened.

(E) Where a wire rope is attached to a hook with clamps instead of being swaged, a minimum of three clamps shall be used. Clamps shall be spaced at least six rope diameters apart and attached with the base or saddle of the clamp against the longer or "live" end of the rope. The "U" bolt will be placed over the short or "dead" end of the rope.

(d) One revolving or intermittent red light with 360 degree visibility. Such red light will not be used when responding to a call, but only at the scene when necessary to warn approaching traffic of impending danger.

(e) A broom and shovel.

(f) A tow sling or other comparable device made of a material designed to protect vehicles/motorcycles while being towed.

(g) A 20 BC rating fire extinguisher(s) or equivalent.
 (h) A minimum of two snatch blocks or their equivalent in working condition.

(i) A portable dolly, or its equivalent, for hauling vehicles that are not towable.

(j) Two pinch bars or equivalent devices.

(k) A two-way radio having the ability to communicate with a base station.

(l) Portable lights for unit being towed including, but not limited to, taillights, stop lights, and directional signals.

(2) In addition to the preceding, the following is required:

(a) Tow truck interior will be reasonably clean.

(b) Tow truck drivers will clean accident/incident scenes of all glass and debris.

(c) All equipment used in conjunction with the tow truck must be commensurate with the manufacturer's basic boom rating.

(d) All tow trucks shall display the firm's name, address, and telephone number. Such information shall be painted on or permanently affixed to both sides of the vehicle in letters or numerals at least three inches high.

(e) When a tow truck is added to the business, or when the reinspection of a tow truck is necessary, the district commander will be contacted to ascertain where and when the inspection will be given. [Statutory Authority: RCW 46.61.567. 80-10-006 (Order 80-07-01), § 204-66-160, filed 7/25/80. Statutory Authority: 1977 ex.s. c 167. 79-05-109 (Order 7720E), § 204-66-160, filed 5/2/79; 78-08-079 (Order 7720B), § 204-66-160, filed 7/27/78; Order 7720, § 204-66-160, filed 10/14/77.]

WAC 204-66-170 Tow truck classifications. (1) Class "A": Tow trucks that are capable of towing and recovery operations for passenger cars, pickup trucks, small trailers, or equivalent vehicles. The minimum standards stated in WAC 204-66-160 shall apply to class "A" tow trucks.

(2) Class "B": Tow trucks that are capable of towing and recovery operations for medium size trucks, trailers, motor homes, or equivalent vehicles. Class "B" tow trucks shall have:

(a) A minimum manufacturer's gross vehicle weight rating of 16,000 pounds or its equivalent.

(b) Boom capacity of not less than ten tons.

(c) A minimum of one hundred and fifty feet of 7/16 inch continuous length cable, or its equivalent, on each drum in working condition and subject to the same limitations and requirements as stated in WAC 204-66-160 (c), (i) and (ii).

(d) The remaining minimum standards stated in WAC 204-66-160.

(3) Class "C": Tow trucks that are capable of towing and recovery operations for large trucks, road tractors, trailers, or equivalent vehicles. Class "C" tow trucks shall have:

(a) Tandem rear axle truck chassis.

(b) Boom capacity of not less than twenty tons.

(c) A minimum of one hundred and fifty feet of 9/16 inch continuous length cable, or its equivalent, on each drum in working condition and subject to the same limitations and requirements as stated in WAC 204-66-160 (c), (i) and (ii).

(d) Air brakes and an air system capable of supplying air to the towed unit.

(e) The remaining minimum standards stated in WAC 204-66-160; provided portable dollies shall not be required.

(4) Class "D": All other tow trucks that do not meet the classification requirements in WAC 204-66-160 and 204-66-170, and which are specially approved by the commission. Prior to special approval, the district commander concerned shall have stated in writing the need for, capabilities, size, and equipment of the tow truck. [Statutory Authority: RCW 46.61.567. 80-10-006 (Order 80-07-01), § 204-66-170, filed 7/25/80. Statutory Authority: 1977 ex.s. c 167. 78-08-079 (Order 7720B), § 204-66-170, filed 7/27/78; Order 7720, § 204-66-170, filed 10/14/77.]

WAC 204-66-180 Vehicle towing operator qualifications. In addition to WAC 204-66-160, tow truck operators appointed to perform towing services pursuant to this regulation shall observe the following practices and procedures:

(1) When called by the patrol, the tow truck operator will dispatch a tow truck within five minutes during normal business hours.

(2) Tow trucks dispatched at the request of the patrol after normal business hours, will be on the move within the assigned zone within ten minutes after receiving the call.

(3) The tow truck that is dispatched will arrive at the stated location within a reasonable time considering distance and traffic conditions.

(4) If for any reason a tow operator is unable to dispatch a tow truck within the stated time, the tow truck operator shall so advise the patrol. In the event the tow truck does not arrive at the scene within a reasonable time, the patrol will contact another tow business to perform the necessary services.

(5) A tow operator on rotation who is unable to dispatch within the time stated in WAC 204-66-180(1), (2), (3), and (4), will forfeit his turn and be placed at the bottom of the rotation list as if he had responded.

(6) Consistent refusal or failure of the appointee to respond to calls from the patrol for towing services may result in the suspension or revocation of the tow operator's letter of appointment.

(7) The tow operator will advise the patrol when he receives a private call for a tow and the circumstances indicate that the tow is for a vehicle which has been involved in an accident or other such incident on the public roadway. The tow operator also will advise the patrol of all traffic accidents on private property resulting in bodily injury or death when the operator has received a private call for a tow at such an accident.

(8) The tow operator will notify the patrol before moving any vehicle involved in an accident on a public

highway under the jurisdiction of the patrol as defined in the motor vehicle code, Title 46 RCW, or where it appears that the driver of the vehicle to be moved is under the influence of intoxicants or drugs, or is otherwise incapacitated.

(9) When the patrol is in charge of an accident scene or other such incident, a tow operator shall not respond to such scene unless his services have been specifically requested by the patrol or the driver/owner or his agent.

(10) The tow operator shall be available twenty-four hours a day for the purpose of receiving calls or arranging for the release of vehicles. Business hours will be posted conspicuously at the operator's place of business so they can be seen during business hours and non-business hours. A copy will also be sent to the secretary of the commission and patrol district commander of the district in which the tow operator does business. Changes of business hours will be sent to the secretary of the commission and district commander ten days before their effective date.

(11) The tow operator shall have a secure storage area for the vehicles stored by the operator at the request of the patrol. Such storage area shall comply with department of licensing requirements for registered disposers (WAC 308-61-110).

(12) Tow operators will notify the appropriate patrol office of the release of stored vehicles within five work days after the release of such vehicle. Notification to the patrol will be made in such a manner prescribed by the district commander of the area concerned.

(13) Tow operators will post current towing service rates in a conspicuous place at the company's place of business. A copy of the current rates will be sent to the secretary of the commission and patrol district commander of the district in which the tow operator has applied for a letter of appointment. Any change(s) in service rates will be forwarded to the district commander of the area and to the secretary of the commission ten days prior to the proposed change(s).

(14) If the commission receives written complaints from towing customers or the patrol concerning commission appointed tow businesses alleging "price gouging," "over-charging," charging for services not received, and other such pricing abuses and/or any improprieties, it will cause such allegations to be investigated by the patrol; and, if such abuses are established, the letter of appointment of any such business may result in the suspension, revocation, or denial of the letter of appointment by the commission.

(15) Tow operators will maintain, for one year, records on towed and released vehicles which were towed at the request of the patrol. This record will include but not be limited to:

(a) An itemized receipt of charges to the claimant of the vehicle.

(b) An inventory sheet or copy thereof made out by the trooper at the scene of the tow and signed by the tow truck driver.

Such records will be available for inspection by the patrol during normal business hours at the appointee's

place of business for which the letter of appointment has been issued.

(16) The tow truck driver will sign an inventory sheet made out by the trooper at the scene of the tow and receive a copy.

(17) Tow operators will obtain and maintain current registration as a disposer by the department of licensing pursuant to chapter 308-61 WAC and chapter 178, 1st extraordinary session, Laws of 1979.

(18) Each towing operator shall carry at least five thousand dollars of insurance to protect against vehicle damage from, including but not limited to, fire and theft incurred from the time a vehicle comes into his custody pursuant to this regulation, until he releases or otherwise disposes of it. Each towing operator shall also carry at least fifty thousand dollars of liability insurance for property or bodily injury. Insurance must be sufficient to compensate for any loss of or damage to property entrusted to the towing firm.

The commission shall be notified within ten days of any change which leaves the tow operator without the necessary minimum coverage. A copy of the insurance policy or certificate of coverage shall be filed with the secretary of the commission. The insurer shall notify the commission within five days if the policy is canceled.

(19) Tow operators shall perform towing tasks competently. The standard of competence shall be that quality of work which is accepted as efficient and effective within the towing industry.

(20) No tow operator or his employee or agent shall misappropriate, wrongfully convert to his own use or abuse any property entrusted to his care or storage as a result of performing towing services or for the benefit of a towing service customer. [Statutory Authority: RCW 46.37.005. 79-09-093 (Order 7720H), § 204-66-180, filed 8/31/79. Statutory Authority: RCW 46.61.562 through 46.61.567. 79-01-077 (Order 7720D), § 204-66-180, filed 1/2/79; 78-08-079 (Order 7720B), § 204-66-180, filed 7/27/78; Order 7720A, § 204-66-180, filed 11/18/77, effective 12/21/77; Order 7720, § 204-66-180, filed 10/14/77.]

WAC 204-66-190 Penalties. Any violation of these rules and regulations may result in the suspension, revocation, or denial of the letter of appointment by the commission. [Order 7720, § 204-66-190, filed 10/14/77.]

WAC 204-66-200 Effective date. These regulations shall become effective on November 15, 1977. Those towing operators who have been operating under emergency regulations for towing operators, chapter 204-64 WAC, are hereby authorized to continue towing for the Washington state patrol until February 15, 1978.

Authority to tow for the Washington state patrol after February 15, 1978, is contingent upon receipt of a letter of appointment as prescribed in these regulations. [Order 7720, § 204-66-200, filed 10/14/77.]

**Chapter 204-68 WAC
COMMISSION ON EQUIPMENT PUBLIC
RECORDS**

WAC

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204-68-050	Public records available.
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204-68-090	Copying.
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204-68-110	Review of denials of public records requests.
204-68-120	Protection of public records.
204-68-130	Request for information.
204-68-140	Adoption of form.

WAC 204-68-010 Purpose. The purpose of this chapter shall be to ensure compliance by the Washington state commission on equipment with the provisions of (Initiative 276) chapter 42.17 RCW, disclosure-campaign-finance-lobbying records; and in particular with subsections 25-32 [RCW 42.17.250 through 42.17.310, and 42.17.320] of that act, dealing with public records. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-010, filed 8/31/79.]

WAC 204-68-020 Definitions. (1) Public record – includes any writing containing information relating to the conduct of governmental or the performance of any governmental or proprietary function prepared, owned, used or retained by any state or local agency regardless of physical form or characteristics.

(2) Writing – means handwriting, typewriting, printing, photostating, photographing, and every other means of recording any form of communication or representation, including letter, words, pictures, sounds, symbols, or combinations thereof, and all papers, maps, magnetic or paper tapes, photographic films and prints, magnetic or punched cards, discs, drums, and other documents.

(3) Washington state commission on equipment – is the commission created by the legislature pursuant to RCW 46.37.005. The Washington state commission on equipment shall hereinafter be referred to as the commission. Where appropriate, the term commission also refers to the staff and employees of the Washington state commission on equipment. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-020, filed 8/31/79.]

WAC 204-68-030 Description of the Washington state commission on equipment. The commission consists of the director of the department of licensing, the chief of the Washington state patrol and the secretary to the department of transportation. The secretary to the Washington state commission on equipment is appointed by the chief of the Washington state patrol. The secretary to the commission on equipment is located in the General Administration Building, Olympia, Washington

98504. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-030, filed 8/31/79.]

WAC 204-68-040 Operations and procedures. The commission's powers and duties are described in RCW 46.37.005 and 46.37.010, and other applicable RCW chapters. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-040, filed 8/31/79.]

WAC 204-68-050 Public records available. All public records of the commission, as defined in WAC 205-68-020(1), are deemed to be available for public inspection and copying pursuant to these rules, except as otherwise provided by RCW 42.17.310, and WAC 446-10-100. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-050, filed 8/31/79.]

WAC 204-68-060 Public records officer. The commission's public records shall be in custody of the secretary to the commission. The public records officer shall be responsible for the following: The implementation of the commission's rules and regulations regarding release of public records, coordinating the staff of the commission in this regard, and generally ensuring compliance by the staff with the public records disclosure requirements of chapter 42.17 RCW. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-060, filed 8/31/79.]

WAC 204-68-070 Office hours. Public records shall be available for inspection and copying during the customary office hours of the commission. For the purpose of this chapter, the customary office hours shall be from 9 a.m. to noon, and from 1 p.m. to 4 p.m. Monday through Friday excluding legal holidays. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-070, filed 8/31/79.]

WAC 204-68-080 Requests for public records. In accordance with requirements of chapter 42.17 RCW, that agencies prevent unreasonable invasions of privacy, protect public records from damage or disorganization, and prevent excessive interference with essential functions of the agency, public records may be inspected or copied or copies of such records may be obtained by members of the public upon compliance with the following procedures:

(1) If, after access to the commission's files, a particular record is desired and that record is not an item routinely available as a matter of public service, a request shall be made in writing upon a form prescribed by the commission which shall be available at its office. The form shall be presented to the public records officer or to any member of the commission's staff if the public records officer is not available at the commission office during customary office hours. The request shall include the following information:

(a) The name and address of the person requesting the record;

(b) The time of day and calendar date on which the request was made; and

(c) The nature of the request.

(2) In all cases in which a member of the public is making a request, it shall be the obligation of the public records officer or staff member to whom the request is made to assist the member of the public in appropriately identifying the public record requested. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-080, filed 8/31/79.]

WAC 204-68-090 Copying. No fee shall be charged for the inspection of public records. The commission shall charge a fee of ten cents per page of copy for providing copies of public records and for use of the commission's copy equipment. This charge is the amount necessary to reimburse the commission for its actual costs incident to such copying. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-090, filed 8/31/79.]

WAC 204-68-100 Exemptions. (1) The commission reserves the right to determine that a public record requested in accordance with the procedures outlined in WAC 204-68-080 is exempt under the provisions of RCW 42.17.310.

(2) In addition, pursuant to RCW 42.17.260, the commission reserves the right to delete identifying details when it makes available or publishes any public record, in any cases when there is reason to believe that disclosure of such details would be an invasion of personal privacy protected by chapter 42.17 RCW. The public records officer will fully justify such deletion in writing.

(3) All denials of requests for public records must be accompanied by a written statement specifying the reason for the denial, including a statement of the specific exemption authorizing the withholding of the record and a brief explanation of how the exemption applies to the record withheld. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-100, filed 8/31/79.]

WAC 204-68-110 Review of denials of public records requests. (1) Any person who objects to the denial of a request for a public record may petition for prompt review of such decision by tendering a written request for review. The written request shall specifically refer to the written statement by the public records officer or other staff member which constituted or accompanied the denial.

(2) Immediately after receiving a written request for review of a decision denying a public record, the public records officer or other staff member denying the request shall refer it to the chairman of the commission. The chairman shall immediately consider the matter and either affirm or reverse such denial or call a special meeting of the commission as soon as legally possible to review the denial. In any case, the request shall be returned with a final decision within two business days following the original denial.

(3) Administrative remedies shall not be considered exhausted until the commission has returned the petition with a decision or until the close of the second business day following the denial of inspection, whichever comes first. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-110, filed 8/31/79.]

WAC 204-68-120 Protection of public records. Requests for public records shall be made to the Washington state commission on equipment, General Administration Building AX-12, Olympia, Washington 98504. Public records and a facility for their inspection and/or copying will be provided by the public records officer of the commission. Such records or documents shall not be removed from the place designated for their inspection and all records will be reviewed under the supervision of the public records officer or his designee. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-120, filed 8/31/79.]

WAC 204-68-130 Request for information. All communication with the commission, including but not limited to the submission of materials pertaining to its operations and/or the administration or enforcement of chapter 42.17 RCW, and these rules, requests for copies of the commission's decisions, and other matters, shall be addressed as follows: Secretary, Commission on Equipment, General Administration Building AX-12, Olympia, Washington 98504. [Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-130, filed 8/31/79.]

WAC 204-68-140 Adoption of form. The commission hereby adopts for use by all persons requesting inspection and/or copying, or copies of its records, the following form entitled, "Request for Public Record":

REQUEST FOR PUBLIC RECORD

Date ----- Time -----

Name -----

Address -----

Nature or Description of Record:

I certify that the information obtained through this request for public record will not be used for commercial purposes.

Signature

[Statutory Authority: RCW 46.37.005. 79-09-092 (Order 7201A), § 204-68-140, filed 8/31/79.]

Chapter 204-70 WAC
STANDARDS FOR VEHICLE CONNECTING
DEVICES AND TOWING METHODS

WAC

204-70-010	Promulgation.
204-70-020	Purpose.
204-70-030	Scope.
204-70-040	Definitions.
204-70-050	Light service devices and systems.
204-70-060	Hitches.
204-70-070	Safety chains and attaching means required.
204-70-080	Identification.
204-70-090	Identification, installation, maintenance, and compliance.
204-70-100	Certification and/or testing.
204-70-120	Effective date.
204-70-99001	Table 1.
204-70-99002	Figure 1—Typical coupler and ball test fixture arrangement.
204-70-99003	Table 2—Hitch test forces.
204-70-99004	Table 3.
204-70-99005	Figure 3—Typical double safety chain installation.

WAC 204-70-010 Promulgation. By authority of RCW 46.37.005 and 46.37.320, the State Commission on Equipment hereby adopt the following regulations pertaining to vehicle connecting devices and towing methods. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-010, filed 2/28/80.]

WAC 204-70-020 Purpose. The purpose of this regulation is to provide this state with a uniform minimum requirement for motor vehicle connecting devices and towing methods. It is designed to increase highway safety by reducing towing and hitch-related accidents. This regulation is not intended to cover the fifth wheel type of connecting device or towing method. Pintle hook type devices shall also be excluded from this chapter, except that the safety chain requirements shall apply. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-020, filed 2/28/80.]

WAC 204-70-030 Scope. (1) The scope of this regulation is directed to the regulation of trailer hitches and towing devices, towing methods, testing methods, certification requirements, installation, compliance and other requirements as herein defined in these regulations.

(2) After the effective date of this regulation, no primary connecting system used for drawing a trailer or semi-trailer having a gross vehicle weight of 10,000 pounds or less upon the public highways of this state shall be sold, offered for sale, or installed for service unless it is a type approved by the commission. The safety chain requirements of this chapter shall apply to all primary coupling systems designed for towing trailers and semi-trailers having a gross vehicle weight of 10,000 pounds or less regardless of the date of installation of such primary coupling system. Accordingly, the commission establishes this regulation relating to vehicle connecting arrangements used for drawing trailers by

mechanical power on the public highways. This regulation is not for those arrangements used for drawing another vehicle by means of a tow truck, semi-trailer with a fifth wheel type hitch, or wrecker unless coupled by ball and coupler. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-030, filed 2/28/80.]

WAC 204-70-040 Definitions. (1) The term "commission" as hereinafter referred to within this regulation shall mean the State Commission on Equipment.

(2) "Chain Attaching Means" means the bolt, hook, pin, hole, eye, clevis, bracket, bar, or any other device mounted on and used for anchoring or attaching safety chains to the towed or towing vehicle or hitch.

(3) "Coupling" means that part of the primary connecting system normally mounted on the trailer, such as a socket, by which the connection is actually made and including the supporting attachment to the trailer frame.

(4) "Family of Hitches" means a series of hitches produced by a single manufacturer which have similar traits and characteristics in common with each other. Each regulated manufacturer shall determine which hitches may be appropriately included in a particular family, subject to review by the commission. The necessary criteria which all hitches included within a family must exhibit are as follows:

- (a) similarity of design,
- (b) similar materials of construction,
- (c) similar means of attachment to the towing vehicle, and
- (d) similar strength and performance of characteristics.

(5) "Gross Vehicle Weight Rating (GVWR)" means the value specified by the vehicle manufacturer as the loaded weight of a single vehicle.

(6) "Hitch," defined for specific uses under (a) and (b) below, generally means that part of the primary connecting system normally mounted on the towing vehicle, including a ball-support platform and those components which are attached to the towing vehicle.

(a) "Weight Distributing Hitch" means a mechanical device that connects the trailer to the towing vehicle, and by means of a leverage applied on both trailer and car structures or axles, when properly adjusted, distributes the imposed vertical load at the hitch and coupling connection between the structures of axles of towing vehicle and trailer. The towing vehicle thus loaded tends to retain a level position with respect to the road.

(b) "Weight Carrying Hitch" means a mechanical and/or structural device that connects the trailer to the towing vehicle, and that does not employ features designed to redistribute the load imposed at the hitch and coupling connection. Weight carrying hitches may be designed for bolting or other attachment to the towing vehicle frame, unitized body, bumper structure, or to a combination of these or other points which meet the requirements of WAC 204-70-060(3) and Table 2.

(7) "Maximum Gross Trailer Weight (MGTW)" means the weight of the trailer plus the weight of all

cargo, consumables, and equipment loaded on the trailer when in an actual underway towing condition.

(8) "Maximum Vertical Load on Hitch (Tongue Weight)" means the vertical downward static force exerted on the hitch by the coupling at the point of connection of coupling and hitch, with weight distribution features or devices, if any, deactivated. Tongue weight is measured at the trailer coupling, with the trailer on a level surface (detached from the hitch), and with trailer consumables and cargo in maximum loaded conditions.

(9) "Primary Connecting System" means the combination of devices and their attaching structures that are normally utilized to maintain the connection between towing vehicle and trailer during towing operations. This includes, but is not limited to, the ball-and-socket type of connection or draft means. Note: This does not include a safety chain, which is part of a secondary system normally utilized only upon failure of the primary connection, nor does it include weight distributing or sway control features or devices whose function is accessory to the maintenance of the towing vehicle-trailer connection.

(10) "Safety Chains" means flexible tension members connected from the front portion of the towed vehicle to the rear portion of the towing vehicle for the purpose of retaining connection between towed and towing vehicle in the event of failure of the connection provided by the primary connecting system. The term "safety chains" includes not only chains, cable, or wire ropes, or equivalent flexible member meeting the strength requirements of Table 3 and approved by the commission, but also any splice, clamp, socket, snap, eye, ring, thimble, pin, or other fastening device or forming method which is part of the assembly of any such flexible tension member.

(11) "Responsible Manufacturer" shall mean that person who manufactures a hitch or hitch component either for resale or for sale where it is not actually installed by the manufacturer.

(12) "Responsible Installer" shall mean a person who installs a pre-manufactured hitch where no custom fabricating is done.

(13) "Custom Installer" shall mean that person who custom fabricates a hitch which is installed at the place of fabrication.

Nothing in this section is intended to preclude hitch installers from engaging in the activities covered in definitions (11), (12), and (13) above in any combination. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-040, filed 2/28/80.]

WAC 204-70-050 Light service devices and systems. These are for use with trailers not exceeding 10,000 pounds gross vehicle weight rating. This includes, but is not limited to, such types as the utility, boat, camping, travel and other trailers which are normally towed by the conventional passenger car, or similarly constructed vehicle or light-duty truck. This section is

intended basically for the ball-and-socket type of primary connecting system, but is not necessarily limited to this type alone.

(1) Trailer Classification

(a) Class 1—Trailers, with a gross weight (trailer weight including load) not exceeding 2,000 pounds.

(b) Class 2—Trailers, with a gross weight (trailer weight including load) over 2,000 pounds, but not exceeding 3,500 pounds.

(c) Class 3—Trailers, with a gross weight (trailer weight including load) over 3,500 pounds, but not exceeding 5,000 pounds.

(d) Class 4—Trailers, with a gross weight (trailer weight including load) over 5,000 pounds, but not exceeding 10,000 pounds.

(2) Couplings

(a) Coupling Classification. There shall be four major strength classifications, or designations of couplings. The designation shall be based on the maximum gross trailer weight (MGTW) the coupling is qualified to tow. The No. 1 couplings shall be used for towing Class 1 trailers; No. 2 couplings for Class 2 or smaller trailers; No. 3 couplings for Class 3 or smaller trailers; and No. 4 couplings for Class 4 or smaller trailers. This is not intended to limit the number or variety of couplings in a given class or designation.

(b) Coupling Ultimate Strength. Each coupling and hitch ball, when subjected to static bench tests in a rigid, nonyielding test fixture, shall withstand the test loads specified in WAC 204-70-99001 Table 1 without incurring failure. For purposes of this regulation, failure occurs at the point at which the coupling or ball will accept no additional test load.

(c) Coupling and Hitch Ball Test Procedure. A new coupling or ball shall be used for each mode of load application. Each type of test load is to be applied individually to one component at a time, utilizing a nonyielding test fixture similar in design to the typical test fixture illustrated in Figure 1. When testing a coupling, a hardened ball shall be used; when testing a ball, a hardened coupling shall be used.

(d) Attachment of Couplings. Each coupling is to be mounted to the trailer attaching member by bolting, welding or riveting in such manner that the towing loads are safely and adequately transferred to that member.

(e) Provisions for Safety.

(i) Each coupling, regardless of classification or designation, must be equipped with a manually operated mechanism so adapted as to prevent disengagement of the unit while in operation. In addition to this positive locking mechanism, the coupling shall be so designed that the trailer can be disconnected from the towing vehicle regardless of the angle of the trailer to the towing vehicle.

(ii) Each hitch ball shall be equipped and installed with a lock washer or equivalent device, and each replacement hitch ball shall be marketed with a lock washer or equivalent device with instructions as to

proper installation provided by the responsible manufacturer. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-050, filed 2/28/80.]

WAC 204-70-060 Hitches. (1) Hitch Rating. Hitches shall be rated by the maximum gross trailer weight (MGWT) and the maximum vertical load on hitch (tongue weight) each is qualified to tow.

(2) Hitch Strength Requirements. Each hitch, when subjected to a static bench test, shall conform to the minimum strength requirements contained in Table 2.

(3) Attachment of Hitch. Each hitch shall be attached to the structural member or members of the towing vehicle in such a manner that the tension, compression, and transverse thrust loads shown in Table 2 are transferred to the towing vehicle without residual distortion or failure of either the attachment or the vehicle structure which would affect the safe towing of trailers as defined in Table 2.

(4) Maximum Vertical Load on Hitch (Tongue Weight). The weight load carried by the hitch at its connection with the trailer coupling shall not, when on a level surface, exceed the maximum tongue weight load recommended by the manufacturer for the hitch. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-060, filed 2/28/80.]

WAC 204-70-070 Safety chains and attaching means required. (1) Strength Requirements. Each safety chain and each attaching means shall meet strength requirements as shown in WAC 204-70-99004, Table 3, and defined in WAC 204-70-040.

(2) Installation and Connections. The means of attachment of safety chains shall be located equally distant from and on opposite sides of the longitudinal centerline of the towing vehicle and of the trailer. Each means of attachment shall not be common with or utilize fasteners common with a ball or coupling. No welding operation shall be performed on a safety chain subsequent to its manufacture, including the direct welding of a safety chain link to the towed or towing vehicles. Safety chains shall be so connected that the slack for each length of chain between trailer and towing vehicle is the same and is not more than necessary to permit the proper turning of the vehicles. When passing forward to the towing vehicle, safety chains must be crossed in such a manner as to prevent the tongue from dropping to the ground and to maintain connection in the event of failure of the primary connecting system. See Figure 3. WAC 204-70-99005.

(a) Every towed vehicle shall be coupled to the towing vehicle by means of two safety chains, cables, or wire ropes in addition to the regular drawbar, tongue, or other connection. Safety chains, cables, or equivalent devices may be attached to permanently installed hitch components if the components meet the strength requirements of WAC 204-70-99004, Table 3.

(b) Safety chain connections shall not be made to the hitch ball or to a ball mount designed to be readily removable when not in use. [Statutory Authority: RCW

46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-070, filed 2/28/80.]

WAC 204-70-080 Identification. (1) Device and Component Marking. Each coupling and each hitch shall be legibly and permanently marked (so as to be visible to consumers and any regulatory authority viewing the coupling and hitch as installed on a vehicle) on at least one hitch component or related component marketed with the hitch, as shown below. When hitch components (except hitch balls and their hardware) are marketed separately, the following markings must also appear on at least one of the components in the package or marketing unit.

(a) Manufacturer's or distributor's name, initials, trademark, trade name, or code symbol. (Code symbol shall mean one assigned and approved by appropriate regulatory authority.)

(b) Model number, part number, or style; and, for couplings only, the class.

(c) Maximum Gross Trailer Weight (MGWT) to be drawn.

(d) Maximum vertical load on hitch (tongue weight) to be imposed on the ball or other points of connection.

(e) The symbol V-5. Note: Placement of the symbol V-5 on any coupling or any hitch indicates certification of compliance of the product on which the symbol is placed with all requirements contained in VESC Regulation V-5.

(2) Hitch Ball Marking. Each hitch ball sold for use in primary connecting system shall be permanently and legibly marked to show both the spherical diameter of the ball; e.g., 1-7/8", 2", etc., and the maximum gross trailer weight (MGWT) which it is designed to draw.

(3) Labelling. Each crate, box, or other container in which a coupling or hitch is packed shall be imprinted or labelled to display at least the same information required in WAC 204-70-080(1) for marking, except that the maximum gross trailer weight (MGWT) to be drawn must be shown for each coupling regardless of class. Further, the year, make, and model of each vehicle on which a hitch may be installed and meet the requirements of this regulation shall be shown but may be shown on an enclosed sheet, or sheets, separate from the imprintation, or labelling, or on hitch manufacturer's application tables which are kept available at the location where the device or system is sold, either for resale or for use. However, the provision contained in the preceding sentence shall not apply to hitches adaptable to a large number of vehicles and designated to be a universal type. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-080, filed 2/28/80.]

WAC 204-70-090 Identification, installation, maintenance, and compliance. (1) Marking and Labelling. Each vehicle connecting device, method, or system shall be marked and labelled as required by WAC 204-70-080 and 204-70-100(2). The marking and labelling shall show the responsible manufacturer (see (3) of this section.) A pressure sensitive label will be acceptable if

of a weather-resistant type which cannot be removed without destroying or defacing it.

(2) Installation and Maintenance.

(a) Manufacturer, Packager, Seller. The responsible manufacturer or seller of a vehicle primary connecting device or system shall provide with the device, or with devices making up or used in the system, clear and complete consumer instructions for use, maintenance and repair; and, where the device or system is not actually installed by the dealer, installation instructions, in accordance with the requirements of this regulation, and proper instruction of the purchaser, or owner, in use and care.

(b) Owner, Lessor, Lessee, Borrower. Each owner or lessor shall keep his connecting devices, and systems in good condition, maintained, repaired, and rebuilt in accordance with manufacturer's instructions and recommendations. Each owner or lessor who leases or lends a connecting device or system, shall properly instruct the lessee, or recipient, in the safe and proper use and care for the device(s), or system. Each lessee or borrower shall use and maintain the device, method or system in accordance with the instructions of the lessor or lender. For the purposes of this regulation any person who rents a trailer shall be considered to be a lessor.

(c) No person shall put into use or continue in use a device or system on which the marking required in WAC 204-70-090(1) has been removed, altered, obliterated, disfigured, or otherwise damaged so as to prevent identification of the device(s), method(s) or system(s).

(3) Compliance with Requirements. Each manufacturer shall be responsible for the performance ability of the device(s) or system which he manufactures for use by a prospective owner, lessee, or borrower. Where a manufacturer, packager, or seller assembles or packages (unites, collects, aggregates) for use by a prospective owner, lessee, or borrower a device or system from parts, subassemblies or assemblies made or assembled by others, such manufacturer, packager, or seller (person, firm, association or corporation) shall be deemed responsible for the performance of the device(s) or system which he assembles or packages. For the purpose of this section, each manufacturer, packager, or seller described in the preceding two sentences shall be known as the "responsible manufacturer." [Statutory Authority: RCW 46.37-.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-090, filed 2/28/80.]

WAC 204-70-100 Certification and/or testing. (1) Each responsible manufacturer shall certify to the commission or to an equipment approval program or other agency designated by the commission that each of his devices or systems, when installed in accordance with his published instructions (including instructions of manufacturers of weight distributing hitches for use by local installers who fabricate the undercar attachments means for such hitches), complies with and meets the requirements of this regulation. Such certification, shall be corroborated by submission of a properly executed Product

and Certification Test Report form containing test results and required certifications, accompanied by photographs of the test site and equipment and a concise description of the test methodology followed. This report shall be submitted on forms approved by the commission. To demonstrate compliance with this regulation, the necessary tests shall be conducted by or supervised by an approved certified laboratory or an approved certified testing organization, and the officer or employee of the approved certified testing organization who personally conducted or supervised the testing shall execute the appropriate certification statement contained in the Product and Certification Test Report.

(2) Registration. No vehicle connecting device or system shall be sold within the state of Washington unless the responsible manufacturer has registered his product with the commission, has furnished the commission one copy of instructions for installation (as applicable), use, maintenance and repair, and has stated the maximum towing capacity of his product in terms of the maximum gross trailer weight (MGTW) to be drawn, as measured in accordance with the provisions of WAC 204-70-050 and 204-70-060. There shall be imprinted on each copy of instructions provided with the device or otherwise furnished to the owner the following statement: "This product complies with Regulation V-5." The responsible manufacturer of light Service Class 1 connecting devices or systems for trailers not exceeding 2,000 pounds gross weight who produces not more than five (5) such devices or systems in one calendar year must produce a product which complies with all applicable requirements of this regulation, except the registration requirements of this subsection.

(3) In lieu of the registration required in WAC 204-70-100(2), vehicle connecting devices or systems shall be considered to be registered if they appear as an approved device in the American Association of Motor Vehicle Administrators' "Approved Vehicle Devices Handbook": *Provided, however*, That such testing conducted for the approval found the device to be in full conformance with VESC Regulation V-5.

(4) Custom Installer Conditional Exemption From Certification, Testing and Registration. Hitch installers are required to insure that hitches (as defined in section WAC 204-70-040(6)) manufactured and installed by them meet the requirements of this regulation, except that such hitches are conditionally exempt from the certification, testing and registration provisions of sections WAC 204-70-100(1), (2), and (3). To qualify for this exemption, hitches must be manufactured and installed by the same installer. Hitches so exempted may not be marked with the symbol V-5, but must meet all other identification provisions of section WAC 204-70-080, and, in addition, must be permanently marked or labelled with the legend, "Installer Manufactured," in a manner approved by the commission. The commission reserves the right, in its discretion, in the event of a failure or a suspected failure of a hitch, to require testing of a comparable hitch of the same family fabricated by the manufacturer of the suspected hitch to demonstrate compliance with the strength regulations of this chapter.

[Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-100, filed 2/28/80.]

[Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-120, filed 2/28/80.]

WAC 204-70-120 Effective date. This chapter shall become effective on April 1, 1980 for components manufactured on or after that date. The effective date for all components sold in the state of Washington, regardless of the date of manufacture, shall be April 1, 1981.

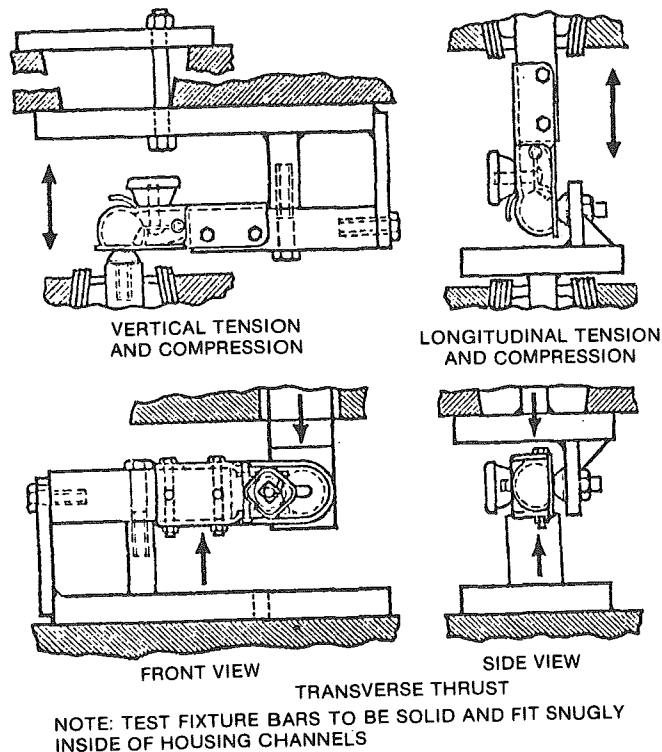
WAC 204-70-99001 Table 1.

**LIGHT SERVICE DEVICES
BREAKING STRENGTH FOR COUPLINGS AND BALLS**

Trailer Classifi- cation	Trailer Couplings Designation	Minimum Ball Diameter-Inches (where Ball-type hitch is used)	Minimum Breaking Point Requirements	Pounds
Class 1 (2,000 lbs. or less MGTW)	No. 1	1 7/8	Longitudinal tension: Longitudinal compression: Transverse thrust: Vertical tension: Vertical compres- sion:	6,000 6,000 2,000 2,500 2,500
Class 2 (2,001 thru 3,500 lbs. MGTW)	No. 2	2	Longitudinal tension: Longitudinal compression: Transverse thrust: Vertical tension: Vertical compres- sion:	10,500 10,500 3,000 4,500 4,500
Class 3 (3,501 thru 5,000 lbs. MGTW)	No. 3	2	Longitudinal tension: Longitudinal compression: Transverse thrust: Vertical tension: Vertical compres- sion:	15,000 15,000 4,000 7,000 7,000
Class 4 5,001 thru 10,000 lbs. MGTW)	No. 4	Ball & Bolt shall be of such size and strength as to conform to the minimum breaking strength require- ments of the mating coupling required for the specific load of Class 4 trailer	Longitudinal tension: Longitudinal compression: Transverse thrust: Vertical tension: Vertical compression:	MGTW x 3 MGTW x 3 MGTW x 1 MGTW x 1.3 MGTW x 1.4

[Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-99001, filed 2/28/80.]

WAC 204-70-99002 Figure 1—Typical coupler and ball test fixture arrangement.



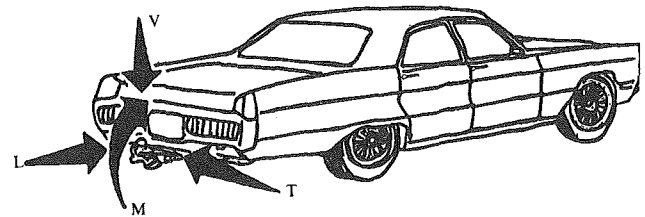
[Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-99002, filed 2/28/80.]

WAC 204-70-99003 Table 2—Hitch test forces. (1) Table 2.

STEP	WEIGHT CARRYING HITCH		WEIGHT DISTRIBUTING HITCH	
	Force	Direction	Force	Direction
a	$V=.47R+480$ $L=.47R+480$ $V=.15R$	Downward Compressive	$V=.045R+1650$ $M=51,000$	Downward See Figure 2
b	$L=.23R+1530$ $V=.15R$	Tensile Downward	$L=.067R+2070$ $V=.15R$	Tensile Downward
c	$L=.23R+1530$ $V=.15R$	Compressive Downward	$L=.067R+2070$ $V=.15R$	Compressive Downward
d	$T=.20R+500$	Leftward	$T=.20R+500$	Leftward
e	$T=.20R+500$	Rightward	$T=.20R+500$	Rightward
f	Not Applicable	Not Applicable	$M=93.2X+21000$ $V=.15R$	See Figure 2 Downward

V = Vertical Force (lbs.)
 L = Longitudinal Force (lbs.)
 T = Transverse Force (lbs.)
 M = Spring Bar Moment (inch-lbs.)
 R = Hitch Rating in terms of MGTW (lbs.) (Maximum Gross Trailer Weight)
 X = Hitch Rating for Maximum Vertical Load on Hitch (lbs.) (Tongue Weight)
 ** = Leveling Force Couple

(2) Figure 2



(3) Footnotes to Table 2 and Figure 2.

(a) When a hitch is to be tested:

(i) Assemble the hitch in its normal configuration as recommended by the hitch manufacturer.

(ii) Attach the hitch to a non-yielding restraining fixture. The hitch-to-vehicle attaching means must be the same as the normal hitch-to-car attaching means recommended by the hitch manufacturer.

(iii) The points of hitch-to-vehicle attachment must be located in the same positions as the hitch-to-car attachment point locations recommended by the hitch manufacturer.

(iv) Attach a ball to the ball support platform in the manner recommended by the hitch manufacturer.

(b) Hitch Test Force Applications. With the hitch attached to the test fixture as specified in footnote (a), apply the forces designated in Table 2, in any sequence, as follows:

(i) Apply the specified downward vertical force concurrently with the specified compressive longitudinal force or spring bar moment.

(ii) Apply the specified tensile longitudinal force concurrently with the specified downward vertical force.

(iii) Apply the specified compressive longitudinal force concurrently with the specified downward vertical.

(iv) Apply the specified leftward transverse force.

(v) Apply the specified rightward transverse force.

(vi) For hitches with weight distributing capability, apply the specified spring bar, or leveling moment, (leveling force couple) concurrently with the specified downward vertical force.

All forces in steps (i) through (iii) are to be applied along an axis which intersects the center of the ball. All forces are to be applied with an onset rate of not more than 150 pounds per second, and maintained at the maximum specified force level for at least five seconds.

(c) Each hitch, when tested as specified above, shall be capable of withstanding the forces applied in accordance with footnote (b) without causing permanent deformation of the ball platform, such that the final position of the ball axis shall not depart more than five degrees from its original, nominally vertical position. [Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-99003, filed 2/28/80.]

WAC 204-70-99004 Table 3.

(1) Table 3.

LIGHT SERVICE DEVICES—MINIMUM STRENGTHS OF SAFETY CHAINS AND ATTACHING MEANS*

Trailer Classification	Minimum Longitudinal Load, Tension, Pounds (See WAC 204-70-99005, Figure 3)	
	Each Safety Chain	Each of Two Chain Attaching Means
Class 1	2,000	2,000
Class 2	3,500	3,500
Class 3	5,000	5,000
Class 4**	MGTW	MGTW

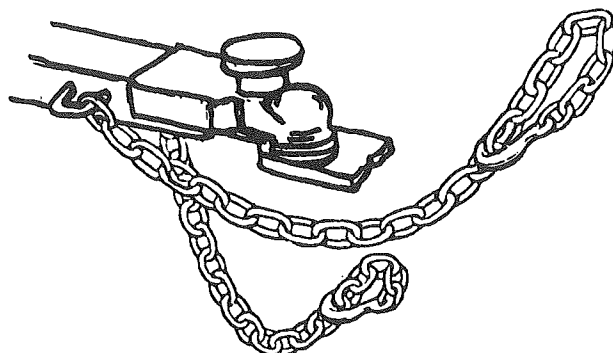
* Load shown shall be applied in the same manner as would prevail if the trailer were being towed by the safety chain in a straight ahead direction.

Safety chain and attaching points and hardware shall withstand load shown without breaking.

** MGTW means the Maximum Gross Trailer Weight, pounds, which is to be towed.

[Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-99004, filed 2/28/80.]

WAC 204-70-99005 Figure 3—Typical double safety chain installation.



[Statutory Authority: RCW 46.37.005 and 46.37.320. 80-03-069 (Order 80-02-2-70), § 204-70-99005, filed 2/28/80.]

Chapter 204-72 WAC STANDARDS FOR MOUNTING, ADJUSTING, AND AIMING OF LAMPS

WAC

204-72-010	Promulgation.
204-72-020	Purpose.
204-72-030	Mounting requirements, general.
204-72-040	Mounting requirements, specific.
204-72-050	Adjusting and aiming requirements, general.
204-72-060	Adjusting and aiming requirements, specific.

WAC 204-72-010 Promulgation. By authority of RCW 46.37.005, RCW 46.37.310, and RCW 46.37.320, the State Commission on Equipment hereby adopts the following rule pertaining to the mounting, adjusting, and aiming of lamps used upon motor vehicles. [Statutory Authority: RCW 46.37.005 and 46.37.320. 81-01-009 (Order 80-12-01), § 204-72-010, filed 12/5/80.]

WAC 204-72-020 Purpose. The purpose of this rule is to reduce the occurrence of motor vehicle accidents caused by insufficient or improper lighting. [Statutory Authority: RCW 46.37.005 and 46.37.320. 81-01-009 (Order 80-12-01), § 204-72-020, filed 12/5/80.]

WAC 204-72-030 Mounting requirements, general.
(1) Installation and Maintenance. Lighting equipment shall be securely mounted on a rigid part of the vehicle to prevent noticeable vibration of the beam and shall be maintained with the proper aim when the vehicle is stationary and in motion. No lighting device shall be mounted so any portion on the vehicle, load, or vehicle equipment interferes with the distribution of light or decreases its intensity within the photometric test angles unless an additional device is installed so the combination of the two meets these requirements. Mounting heights shall be measured from the center of the lamp or

reflector to the level surface upon which the vehicle stands when it is without load.

(2) Mounting of Aftermarket Devices. Aftermarket lamps, with orientation markings such as "top" shall be mounted in accordance with the markings. Sealed and semisealed optical units shall be installed with the lettering on the lens face right side up. Front and rear reflex reflectors shall be securely mounted on a rigid part of the vehicle with the plane of the lens perpendicular to the roadway and parallel to the rear axle. Side reflex reflectors shall be mounted with the lens face perpendicular to the roadway and parallel to the rear wheels.

(3) Mounting of Original Equipment Devices. Original equipment lamps and reflex reflectors designed for a particular make of vehicle and installed on another vehicle shall be mounted at the same angle as on the vehicle for which they were designed. They need not be mounted at the same height or lateral spacing as on the original vehicle but must comply with the appropriate height and location limitations in this chapter and chapter 46.37 RCW. [Statutory Authority: RCW 46.37.005 and 46.37.320. 81-01-009 (Order 80-12-01), § 204-72-030, filed 12/5/80.]

WAC 204-72-040 Mounting requirements, specific.

(1) Clearance, Sidemarker, and Identification Lamps.

(a) Clearance lamps, sidemarker lamps, and combination clearance and sidemarker lamps shall be mounted as specified in FMVSS 108, except for combination clearance and sidemarker lamps on pole trailers which shall be mounted as required by RCW 46.37.090(5)(c). On vehicles manufactured prior to May 1, 1980, clearance lamps need not be visible at the inboard angles, and clearance and sidemarker lamps need not comply with the mounting height requirements of FMVSS 108.

(b) Identification lamps shall be mounted as specified in FMVSS 108, except where the cab of a vehicle is not more than 42 inches wide at the front roof line a single identification lamp shall be deemed to comply with the requirements for front identification lamps.

(c) Specialized lamps. Specialized combination lamps designed to be mounted with the base at angles other than 0, 45, or 90 degrees from the longitudinal axis of the vehicle shall be installed in accordance with the manufacturer's instructions.

(2) Cornering Lamps. Cornering lamps shall be mounted on the front of the vehicle near the side or the side near the front and not lower than 12 inches nor higher than 30 inches.

(3) Deceleration Lamps. Deceleration lamps shall be mounted on the rear of the vehicle on or adjacent to the centerline of the vehicle at a height not lower than 20 inches and not higher than 72 inches.

(4) Fog Lamps. A fog lamp is a lighting device mounted to provide illumination forward of the vehicle under conditions of rain, snow, dust, or fog. Fog lamps shall be mounted at a height of not less than 12 inches nor more than 30 inches, and so the inner edge of the lens retaining ring is no closer than 4 inches to the optical center of the front turn signal lamp. The lamp may be used at the driver's discretion with either low or high

beam headlamps. Fog lamps shall not be used alone in lieu of headlamps.

(5) Headlamps. Headlamps shall be mounted as specified in FMVSS 108 and as follows:

(a) Spacing. Headlamp units installed after November 15, 1975, shall not be closer to the centerline of the vehicle than 12 inches measured from the center of the lens, except on motorcycles and motorized bicycles, and shall be spaced as far apart as practicable. In cases of customized headlamp installation, headlamps shall not be mounted closer together than at the time or original manufacture of the vehicle body.

(b) Height. Headlamps shall be mounted at a height of not less than 24 inches nor more than 54 inches.

(c) Covers. No grille, plastic or glass covers, or any other obstruction which distorts the color or the distribution of light or substantially decreases its intensity shall be in front of the headlamp lens, except for headlamp concealment devices meeting the requirements of FMVSS 112.

(6) Auxiliary Passing Lamps. A passing lamp is an auxiliary low beam lamp meeting the photometric requirements of SAE Standard J582a. Passing lamps shall be mounted not lower than 24 inches nor higher than 42 inches, and so the inner edge of the lens retaining ring is no closer than 4 inches to the optical center of the front turn signal lamp. The lamp may be used at the driver's discretion with either low or high beam headlamps. Passing lamps shall not be used alone in lieu of headlamps.

(7) Auxiliary Driving Lamps. A driving lamp is a lighting device mounted to provide illumination forward of the vehicle to supplement the upper beam of a standard headlamp system. Driving lamps shall be mounted on the front not lower than 16 inches nor higher than 42 inches. Driving lamps shall be wired so that the taillights are lighted whenever the driving lamps are lighted. If driving lamps are not wired to operate only with headlamp high beams, then a separate switch and indicator lamp shall be provided to operate the driving lamps. Driving lamps shall not be used alone in lieu of headlamps.

(8) Side Turn Signal Lamps. Side turn signal lamps shall be mounted on the side not lower than 20 inches nor higher than 72 inches. The lamps shall flash with the front and rear turn signal lamps on their respective sides of the vehicle. On vehicles equipped with sequential turn signal lamps, the side turn signal lamps shall flash with the front turn signal lamps. If the side turn signal lamps flash when the hazard warning switch is actuated, all such lamps shall flash with the rear turn signal lamps.

(9) Supplemental Signal Lamps. Supplemental stop or turn signal lamps shall be single-faced, shall be actuated in the same manner and at the same time as the required stoplamps or turn signal lamps, and shall not be used in lieu of such lamps. Supplemental turn signal lamps and supplemental combination stop-and-turn signal lamps shall be mounted in pairs facing the rear with one lamp near each side of the vehicle, at the same height and equally spaced from the vehicle centerline. Supplemental stoplamps shall be mounted in pairs as

specified above or with not more than two lamps on or adjacent to the centerline of the vehicle. Supplemental stop or turn signal lamps shall be mounted not lower than 35 inches nor higher than 55 inches. Standard stop or turn signal lamps not combined with tail lamps or reflex reflectors may be used respectively as supplemental lamps in which case they shall be mounted at any height not lower than 15 inches nor higher than 72 inches.

(10) Turn Signal Lamps. Turn signal lamps shall be mounted and operated as follows:

(a) Motor vehicles. Turn signal systems on motor vehicles shall consist of at least two single-faced or double-faced turn signal lamps on or near the front and at least two single-faced turn signal lamps on the rear. Double-faced turn lamps shall be mounted ahead of the center of the steering wheel or the center of the outside rearview mirror, whichever is rearmost. A truck-tractor or a truck chassis without body or load may be equipped with one double-faced turn signal lamp on each side in lieu of the four separate lamps otherwise required on a motor vehicle. Front and rear turn signal lamps on motorcycles shall be at least 9 inches apart, except that front turn signals on motorcycles manufactured after January 1, 1973, shall be at least 16 inches apart. Turn signal lamps on other vehicles shall be spaced as far apart as practical. The optical center of the front turn signal lamp shall be at least 4 inches from the inside diameter of the retaining ring of the lower beam headlamp unit, fog lamp unit, or passing lamp unit. Original equipment turn signals that emit two and one-half times the minimum candela requirements may be closer.

(b) Towed vehicles. The rearmost vehicle in a combination of vehicles shall be equipped with at least two single-faced turn signal lamps on the rear. The signal system on a combination of vehicles towed by a motor vehicle equipped with double-faced front turn signal lamps may be connected so only the double-faced turn signal lamps on the towing vehicle and the signal lamps on the rear of the rearmost vehicle are operative.

(c) Operation. Turn signal lamps visible to approaching or following drivers shall flash in unison, except that a turn signal consisting of two or more units mounted horizontally may flash in sequence from inboard to outboard. The lamps may be either extinguished simultaneously or lighted simultaneously. Turn signal lamps shall flash at a rate of 60 to 120 flashes per minute.

(11) Warning Lamps. Required front warning lamps other than school bus warning lamps shall be mounted so the entire projected area of the lens is visible from all eye heights of drivers of other vehicles at angles within 45 degrees left to 45 degrees right of the front of the vehicle. If the light within these required angles is blocked by the vehicle or any substantial object on it, an additional warning lamp shall be displayed within the obstructed angle. Warning lamps may be mounted at any height. [Statutory Authority: RCW 46.37.005 and 46.37.320. 81-01-009 (Order 80-12-01), § 204-72-040, filed 12/5/80.]

WAC 204-72-050 Adjusting and aiming requirements, general. (1) Scope. This section applies to the aim

of lighting equipment for which the aim is not specified in Chapter 46.37 RCW.

(2) General Lighting Equipment. Lighting equipment other than that specified in the following sections of this chapter shall be aimed so the center of the beam produced by the major filament is parallel to the road and projects directly to the front, side, or rear, depending on mounting location.

(3) Aimable Roadlighting Devices. Roadlighting devices with aiming adjustment features shall, when equipped with aiming pads and aimed mechanically, be set at 0-0 with a mechanical aimer meeting SAE J602c, December 1974. Roadlighting devices visually aimed, shall be aimed as specified in the following sections of this rule on a vertical aiming screen at a distance of 25 feet from the front of the lens surface or with an optical aimer meeting SAE J600a, March 1965, with the aiming line on the screen adjusted to the level of the surface upon which the vehicle stands or with an optical aimer designed to aim headlamps complying with Canadian Standards Association Regulation D106.2. The lamps shall be aimed with only the driver in the vehicle, except that lamps on vehicles which normally carry a load should be aimed with the vehicle so loaded. Enforcement agencies that inspect vehicles may establish aiming tolerances to allow for variations in inspection procedures and in vehicle loading. [Statutory Authority: RCW 46.37.005 and 46.37.320. 81-01-009 (Order 80-12-01), § 204-72-050, filed 12/5/80.]

WAC 204-72-060 Adjusting and aiming requirements, specific. (1) Cornering Lamps. Cornering lamps with means for adjusting the aim shall be aimed horizontally so the center of the high intensity portion of the beam is within 40 to 50 degrees from the longitudinal axis of the vehicle toward the front. The vertical aim shall be with the center of the high intensity zone 10 to 14 inches below the level of the lamp center. Cornering lamps without aiming mechanisms shall be mounted in a fixed position on the vehicle in accordance with the manufacturer's instructions.

(2) Driving Lamps. Driving lamps shall be aimed with the center of the high intensity zone on a vertical line straight ahead of the lamp center and at the level of the lamp center.

(3) Auxiliary Passing Lamps. Passing lamps shall be aimed with the top edge of the high intensity zone one inch above the level of the lamp center and with the left edge of the high intensity zone 5 inches to the left of a vertical line straight ahead of the lamp center.

(4) Fog Lamps. Fog lamps shall be aimed with the center of the high intensity zone on a vertical line straight ahead of the lamp center and with the top edge of the beam 4 inches below the level of the lamp center.

(5) Motorcycle Headlamps. Motorcycle headlamps shall be aimed on the upper beam as specified for Type 1 units in WAC 204-72-060(7) with the vehicle upright and the wheels facing straight ahead. As an alternative, motorcycle headlamps with a well-defined lower beam may be aimed on the lower beam as specified for Type 2

units in WAC 204-72-060(8) with the vehicle upright and the front wheel facing straight ahead.

(6) Motor-Driven Cycle Headlamps. Motor-driven cycle headlamps shall be aimed with the vehicle upright and the front wheels facing straight ahead in accordance with the following requirements:

(a) Multiple Beam Headlamps. Multiple beam headlamps shall be aimed as specified for motorcycle headlamps.

(b) Single Beam Headlamps. Single beam headlamps shall be aimed with the center of the high intensity zone on a vertical line straight ahead of the lamp center and with the top edge of the high intensity zone at the level of the lamp center.

(7) Headlamps, Type 1. Type 1 sealed beam headlamp units (including those with any suffix letters and numbers such as 1A and 1C1) shall be aimed with the center of the high intensity zone on a vertical line straight ahead of the lamp center and at the level of the lamp center.

(8) Headlamps, Type 2. Type 2 sealed beam headlamp units (including those with any suffix letter and numbers such as 2A1 and 2B) shall be aimed with the left edge of the high intensity zone on a vertical line straight ahead of the lamp center and with the top edge of the high intensity zone at the level of the lamp center.

(9) Quartz Halogen Non-Sealed Beam Headlamps. Headlamps meeting the requirements of the Canadian Standards Association shall be aimed as follows:

(a) High Beam. High Beams shall be aimed as specified for headlamps, Type 1 in subsection (7) above.

(b) Low Beam. Low beams shall be aimed so that the top edge of the low beam cut-off shall be three inches below the level of the lamp center, and the point at which the cut-off rises to the right shall be on a vertical line with the center of the lamp. [Statutory Authority: RCW 46.37.005 and 46.37.320. 81-01-009 (Order 80-12-01), § 204-72-060, filed 12/5/80.]

Chapter 204-74 WAC

STANDARDS FOR SCHOOL BUS WARNING LIGHTS

WAC

204-74-010	Promulgation.
204-74-020	Purpose.
204-74-030	Scope.
204-74-040	Standards for warning lamps.
204-74-050	Mounting of lamps.
204-74-060	Aiming of lamps.
204-74-070	Operation of lamps.
204-74-080	Effective date.

WAC 204-74-010 Promulgation. By the authority of RCW 46.37.005 and 46.37.290, the Commission on Equipment hereby adopts the following regulations relating to warning light systems on school buses. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-010, filed 7/25/80.]

WAC 204-74-020 Purpose. The purpose of this regulation is to require all publicly owned school buses within the state of Washington to be equipped with an eight light warning system which shall be used pursuant to the regulations set forth in chapter 392-145 WAC regarding the operating rules for school bus transportation. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-020, filed 7/25/80.]

WAC 204-74-030 Scope. (1) This regulation shall apply only to those school buses which are owned and operated by any school district and all school buses which are privately owned and operated under contract or otherwise with any school district in the state for the transportation of common school children.

(2) No privately owned school bus or private carrier bus shall be permitted to use this eight light warning system unless such use is in conformance with the rules and regulations set forth by the Superintendent of Public Instruction in chapter 392-145 WAC. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-030, filed 7/25/80.]

WAC 204-74-040 Standards for warning lamps. (1) All school bus red warning lamps shall be designed and constructed in conformance with SAE Standard J887a, "School Bus Red Signal Lamps" or that standard which is in effect for such lamps at the time of manufacture of such lamps.

(2) The amber colored lamps shall meet the standard for the red lamps except for the lens color and candle power requirements. Candle power of amber lamps shall be at least two and one-half times that specified for red lamps.

(3) All lamps shall be sealed beam type, the lenses of which shall be at least five and one-half inches in diameter.

(4) All lamps shall be of a type approved by the Commission on Equipment. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-040, filed 7/25/80.]

WAC 204-74-050 Mounting of lamps. (1) School bus warning lamps shall be mounted as high as practicable on the bus body and as near the outside edges of the body as curvature permits. Metal shielding shall be provided to protect the lamps from the elements, and the background upon which the lamps are mounted shall be painted black. Such background shall extend a minimum of three inches outward from the lamps.

(2) The warning system shall consist of a total of eight lamps, two amber and two red on the front, and two amber and two red on the rear. The amber lamps shall be mounted inboard of the red lamps. All lamps shall be mounted as specified in Federal Motor Vehicle Safety Standard 108 and SAE Standard J887a, and shall be clearly visible from a distance of at least five hundred feet in normal sunlight. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-050, filed 7/25/80.]

WAC 204-74-060 Aiming of lamps. School bus warning lamps shall be aimed to comply with the requirements set forth in Society of Automotive Engineers standard J887a, School Bus Red Signal Lamps, and Federal Motor Vehicle Safety Standard 108. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-060, filed 7/25/80.]

WAC 204-74-070 Operation of lamps. (1) Operation of the warning lamp system shall be in compliance with FMVSS 108. Activation of the warning lamp sequence shall begin only by means of a manually-operated switch. Such activation will cause the right and left amber lamps to flash alternately until the bus entrance door is opened or the stop arm is extended, at which time the amber lamps shall be automatically deactivated and the right and left red lamps shall be automatically activated. All lamps shall flash at a rate from sixty to one-hundred twenty times per minute and shall reach full brilliance during each cycle.

(2) Lamp controls shall consist of:

(a) the master or sequencing switch which shall be in plain view and mounted within easy reach of the driver, and which shall activate the system sequencing and deactivate the system at any time during the sequence.

(b) an override switch which shall automatically activate the red lamps whenever the stop arm is extended even though the master control switch is turned off, and which shall automatically deactivate the amber lamps if previously activated regardless of the then present normal state of sequencing or entrance door position. Such override switch shall be designed and installed so as to function with air, vacuum, electric, or manually operated stop arms. The stop arm shall be capable of being extended at any time, regardless of the position of the entrance door. The opening of the entrance door shall not cause the activation of the red lamps unless the master switch has been activated.

(c) a minimum of two pilot lamps, one amber and one red, each of which shall flash when the like colored warning lamps are in operation. Pilot lamps which show the operation of each individual lamp are permissible. All pilot lamps shall be located so as to be clearly visible to the driver.

(3) The warning lamp system shall be operated in accordance with the regulations set forth in chapter 392-145 WAC. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-070, filed 7/25/80.]

WAC 204-74-080 Effective date. (1) After September 1, 1980, all buses which are equipped with an eight light warning system shall use that system pursuant to the regulations set forth in chapter 392-145 WAC.

(2) All buses ordered, bid, or purchased from a manufacturer or dealer for the purposes of pupil transportation after September 1, 1980, shall be ordered with the eight light warning system as a part of the specifications. [Statutory Authority: RCW 46.37.290. 80-10-006 (Order 80-07-01), § 204-74-080, filed 7/25/80.]

Chapter 204-76 WAC STANDARDS FOR BRAKE SYSTEMS

WAC

204-76-010	Promulgation.
204-76-020	Scope.
204-76-030	Definitions.
204-76-040	Straight air brakes.
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204-76-060	Vacuum assisted hydraulic brakes.
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204-76-99001	Bolt type brake chamber data.
204-76-99002	Clamp type brake chamber data.
204-76-99003	Push rod force vs. travel.
204-76-99004	Relationship of push rod and slack adjuster angle to brake force.

WAC 204-76-010 Promulgation. By authority of RCW 46.37.005, the State Commission on Equipment hereby adopts the following rules relating to brake systems. [Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-010, filed 7/25/80.]

WAC 204-76-020 Scope. These rules shall apply only to brake systems on vehicles with a gross vehicle weight rating of 10,000 pounds or more. [Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-020, filed 7/25/80.]

WAC 204-76-030 Definitions. (1) "Air brake hose" means any flexible hose used as an integral part of a service or auxiliary (emergency stopping) air brake system, where flexibility in a connection is mandatory due to vehicle design and includes the service and emergency air hoses between vehicles in a combination of vehicles.

(2) "Air brake reservoir" means a storage container for compressed air.

(3) "Air compressor" means a device which compresses air used for actuation of the brakes and/or other components of the vehicle.

(4) "Air gauge" means a gauge usually mounted on the instrument panel which indicates the air pressure in the air reservoir tanks, brake application pressure, or other air system pressures.

(5) "Air governor" means a regulator which controls the supply of air pressure for the brake system, generally by controlling the air compressor cut-in and cut-out pressure within a preset range.

(6) "Air over hydraulic brake system" means a hydraulic type brake system actuated by an air-powered master cylinder.

(7) "Air pressure protection valve" means a unit through which air flow is prevented except when a pre-selected input pressure is exceeded.

(8) "Brake" means an energy conversion mechanism used to retard, stop, or hold a vehicle.

(9) "Brake assembly" means an assembly of brake parts, the components of which are determined according to the type or design of the brake system.

(10) "Brake cam" means a cam mounted on the camshaft and located between the ends of the brakeshoes. When rotated by the brake camshaft, the cam expands the brakeshoes against the brakedrum.

(11) "Brake camshaft" means the camshaft which is held to the vehicle axle housing or backing plate by bosses containing bronze or nylon bushings. Air pressure is converted into mechanical force by the brake chamber which is attached by a push rod to the slack adjuster. The slack adjuster multiplies the force by the lever principle and applies the force to the brakeshoes.

(12) "Brake chamber or actuator" means a unit in which a diaphragm converts pressure to mechanical force for actuation of the brakes.

(13) "Brake cylinder" means a unit in which a piston converts pressure to mechanical force for actuation of the brakes.

(14) "Brake master cylinder" means the primary unit for displacing hydraulic fluid under pressure in the brake system.

(15) "Brake pedal" means a foot-operated lever which, when actuated, causes the brake(s) to be applied.

(16) "Brakeshoe" means a rigid half-moon shaped device with friction material affixed to the outer surface. The brakeshoes are generally mounted on a backing plate and are located inside the brakedrum. When expanded by the brake mechanism, the brakeshoes press the brake lining against the brakedrum, which creates friction to stop the rotation of the wheels, which in turn stops the vehicle.

(17) "Brakeshoe anchor pin" means a pin which holds the brakeshoe in its proper place within the brakedrum and serves as a pivot for the brakeshoes. One end of each brakeshoe is generally connected to the backing plate or spider by anchor pins.

(18) "Brake system" means a combination of one or more brakes and the related means of operation and control.

(19) "Brake wheel cylinder" means a unit for converting hydraulic fluid pressure to mechanical force for actuation of a brake.

(20) "Diaphragm" means a rubber partition placed between the two halves of the brake chamber. When air pressure is introduced into the chamber on one side of the diaphragm, the pressure flexes the diaphragm and exerts force on the pushplate attached to the push rod. The pushplate is held up against the diaphragm by a light duty return spring.

(21) "Disc brake" means a brake in which the friction forces act on the faces of a disc.

(22) "Disc brake caliper assembly" means the nonrotational components of a disc brake, including its actuating mechanism for development of friction forces at the disc.

(23) "Disc (Rotor)" means the parallel-faced circular rotational member of a disc brake assembly acted upon by the friction material.

(24) "Drum" means the cylindrical rotational member of a drum brake assembly acted upon by the friction material.

(25) "Drum brake" means a brake in which the friction forces act on the cylindrical surfaces of the drum.

(26) "Foot valve" means a brake application and release valve located on the floor or firewall of the motor vehicle between the throttle and the clutch. It may be

either a treadle or a pedal and is operated by foot pressure applied by the driver to apply air pressure to the service brake system. The valve may be either attached to the treadle or may be remotely mounted under the floor and connected to the pedal by means of a rod. This valve generally applies air pressure to all braking axles on all vehicles in the combination.

(27) "Hydraulic brake system" means a brake system in which brake operation and control utilizes hydraulic brake fluid.

(28) "Pedal reserve" means the amount of total pedal travel left in reserve when the brake pedal is depressed to the "brake applied" position.

(29) "Push rod" means the sliding rod projecting from a brake chamber and connected to the slack adjuster by which the force of compressed air in the brake chamber is transmitted to the brakeshoes through connecting linkage during a brake application.

(30) "Safety valve" means a pressure release unit used to protect the air system against excessive pressure.

(31) "Service brake system" means the primary brake system used for retarding and stopping a vehicle.

(32) "Slack" means the sum of all clearances in the braking system and total system elasticity.

(33) "Slack adjuster" means a lever attached to the brake camshaft and connected to the brake chamber push rod. The slack adjuster provides a means of adjusting the brakes to compensate for brake lining wear.

(34) "Straight air brake system" means a mechanical type brake system actuated by air pressure in brake cylinders or brake chambers.

(35) "Supply air" means the air that is under pressure in the air supply system of a vehicle. It consists of those lines or tanks, except protected air tanks, which are under pressure when the system is fully charged and when all valves are in the normal position with the brakes unapplied.

(36) "Vacuum assisted hydraulic brake system" means a hydraulic type brake system which utilizes vacuum to assist the driver's effort to apply the brakes.

(37) "Vacuum brake reservoir" means a storage container for vacuum.

(38) "Wedge brake" means a wheel brake which uses air or hydraulic pressure to force wedges instead of cams between the brakeshoes to apply the shoes against the brakedrums. In air applied wedge brake systems, the brake actuator axis is parallel to the axle and pushes directly on the wedge in this direction instead of being mounted at right angles to push a slack adjuster and rotate a cam as in the conventional type of air brake system. [Statutory Authority: RCW 46.37.005, 80-10-006 (Order 80-07-01), § 204-76-030, filed 7/25/80.]

WAC 204-76-040 Straight air brakes. Straight air brake systems shall be subject to the following requirements and limitations:

(1) Supply system.

(a) The air compressor for a straight air brake system shall cut in at not less than 85 pounds per square inch and shall cut out at not more than 130 pounds per square inch.

(b) Air compressor buildup time shall not be more than two minutes to increase the air pressure from 60 pounds per square inch to 90 pounds per square inch. Engine speed shall not exceed 1500 RPM to meet this requirement.

(c) Air loss from the air system shall not exceed:

(i) 3 pounds per square inch per minute for a single vehicle.

(ii) 4 pounds per square inch per minute for a two vehicle combination.

(iii) 5 pounds per square inch per minute for a three or more vehicle combination. Air losses shall be measured by the air gauge in the vehicle.

(d) The air system shall contain no more than one quart of contaminants. Water and oil shall be considered contaminants.

(2) Brake assembly.

(a) Adjustment of all brakes shall comply with the manufacturer's recommended specifications as set forth in WAC 204-76-99001, 204-76-99002, 204-76-99003, and 204-76-99004.

(b) Brake system components shall meet all the requirements of RCW 46.37.360.

(i) Brake hoses and their attachments shall meet the requirements of RCW 46.37.360 and shall comply with Part 393.45 of Title 49 CFR.

(ii) Brake hose splices shall consist of only those unions specifically manufactured for that purpose and shall be properly installed.

(iii) Brakedrums shall not be cracked or broken to the extent that such crack or break appears on the outside of the drum. [Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-040, filed 7/25/80.]

WAC 204-76-050 Air over hydraulic brakes. Air over hydraulic brake systems shall be subject to the following requirements and limitations:

(1) Supply system.

(a) The air compressor for an air over hydraulic brake system shall cut in at not less than 85 pounds per square inch and shall cut out at not more than 105 pounds per square inch.

(b) Air compressor buildup time shall not be more than one minute to increase the air pressure from 60 pounds per square inch to 90 pounds per square inch. Engine speed shall not exceed 1500 RPM to meet this requirement.

(c) Air loss from the air system shall not exceed:

(i) 3 pounds per square inch per minute for a single vehicle.

(ii) 4 pounds per square inch per minute for a two vehicle combination.

(iii) 5 pounds per square inch per minute for a three or more vehicle combination. Air losses shall be measured by the air gauge in the vehicle.

(d) The air system shall contain no more than one quart of contaminants. Water and oil shall be considered contaminants.

(e) Hydraulic fluid shall be maintained in excess of 50 percent of the brake master cylinder capacity.

(2) Brake assembly.

(a) Adjustment of all brakes shall comply with the manufacturer's recommended specifications.

(b) Brake system components shall meet all the requirements of RCW 46.37.360, and brake drums shall not be cracked or broken to the extent that such crack or break appears on the outside of the drum. [Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-050, filed 7/25/80.]

WAC 204-76-060 Vacuum assisted hydraulic brakes. Vacuum assisted hydraulic brake systems shall be subject to the following requirements and limitations:

(1) Supply system.

(a) When equipped with a protected vacuum reservoir, there shall be no more than three inches drop in vacuum in one minute after turning off the engine.

(b) When not equipped with a protected vacuum reservoir, a slight drop of the brake pedal should be felt after starting the engine when moderate pressure is applied to the pedal. If a slight drop of the pedal does not occur, the vacuum system shall be deemed to be defective.

(c) Hydraulic fluid shall be maintained in excess of 50 percent of the brake master cylinder capacity.

(d) The hydraulic portion of the system shall pass the following test procedures.

(i) With the engine off, a hard brake pedal application shall be made.

(ii) Pedal pressure shall be reduced but not released.

(iii) Pedal pressure shall be gradually reapplied and pedal reserve shall be checked.

(iv) No pedal reserve drop should occur. Any such drop in pedal reserve shall cause the system to be deemed defective.

(2) Brake assembly.

(a) Adjustment of all brakes shall comply with the manufacturer's recommended specifications.

(b) Brake system components shall meet all the requirements of RCW 46.37.360, and brake drums shall not be cracked or broken to the extent that such crack or break appears on the outside of the drum. [Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-060, filed 7/25/80.]

WAC 204-76-070 Hydraulic brakes. Hydraulic brake systems shall be subject to the following requirements and limitations:

(1) Supply system.

(a) Hydraulic fluid shall be maintained in excess of 50 percent of the brake master cylinder capacity.

(b) The hydraulic system shall pass the following test procedures.

(i) With the engine off, a hard brake pedal application shall be made.

(ii) Pedal pressure shall be reduced but not released.

(iii) Pedal pressure shall be gradually reapplied and pedal reserve shall be checked.

(iv) No pedal reserve drop should occur. Any such drop in pedal reserve shall cause the system to be deemed defective.

(2) Brake assembly.

(a) Adjustment of all brakes shall comply with the manufacturer's recommended specifications.

(b) Brake system components shall meet all the requirements of RCW 46.37.360, and brake drums shall

not be cracked or broken to the extent that such crack or break appears on the outside of the drum. [Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-070, filed 7/25/80.]

WAC 204-76-99001 Bolt type brake chamber data.

BOLT TYPE BRAKE CHAMBER DATA (Dimensions in inches)					
Type	Effective Area (Square Inches)	* Outside Diameter	Maximum Stroke	Maximum Stroke With Brakes Adjusted	Maximum Stroke At Which Brakes Should Be Readjusted
A	12	6 15/16	1 3/4	Should be as short as possible without brakes dragging	1 3/8
B	24	9 3/16	2 1/4		1 3/4
C	16	8 1/16	2 1/4		1 3/4
D	6	5 1/4	1 5/8		1 1/4
E	9	6 3/16	1 3/4		1 3/8
F	36	11	3		2 1/4
**G	30	9 7/8	2 1/2		2

[Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-99001, filed 7/25/80.]

WAC 204-76-99002 Clamp type brake chamber data.

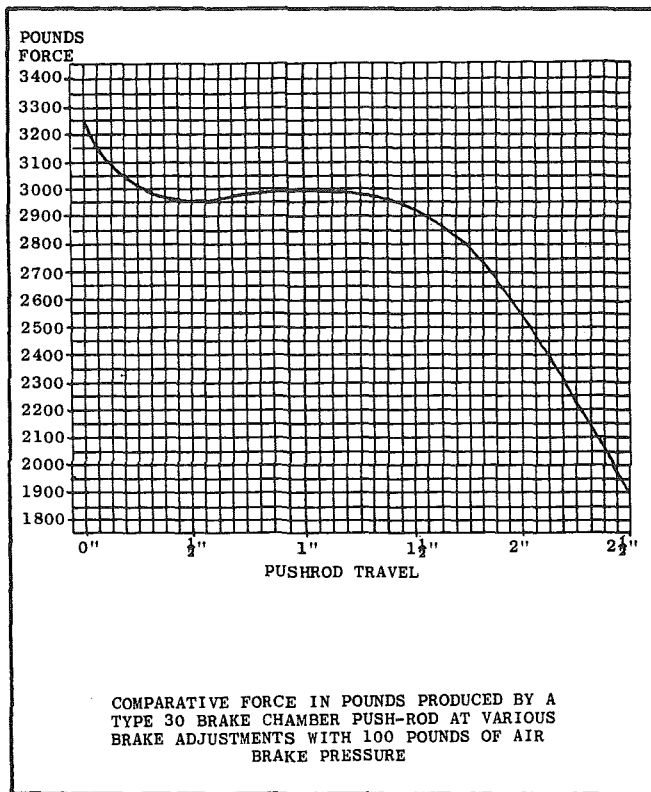
CLAMP TYPE BRAKE CHAMBER DATA (Dimensions in inches)					
Type	Effective Area (Square Inches)	* Outside Diameter	Maximum Stroke	Maximum Stroke With Brakes Adjusted	Maximum Stroke At Which Brakes Should Be Readjusted
6	6	4 1/2	1 5/8	Should be	1 1/4
9	9	5 1/4	1 3/4	as short as	1 3/8
12	12	5 11/16	1 3/4	possible	1 3/8
16	16	6 3/8	2 1/4	without	1 3/4
20	20	6 25/32	2 1/4	brakes	1 3/4
24	24	7 7/32	2 1/4	dragging	1 3/4
**30	30	8 3/32	2 1/2		2
36	36	9	3		2 1/4

*Dimensions listed do not include capscrew head projections for bolt clamp projections for clamp type brake chambers.

**Most common types.

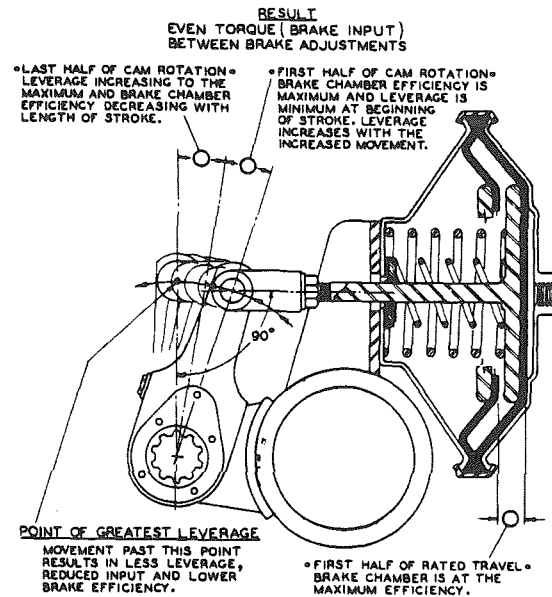
[Statutory Authority: RCW 46.37.005, 80-10-006 (Order 80-07-01), § 204-76-99002, filed 7/25/80.]

WAC 204-76-99003 Push rod force vs. travel.



[Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-99003, filed 7/25/80.]

WAC 204-76-99004 Relationship of push rod and slack adjuster angle to brake force.



[Statutory Authority: RCW 46.37.005. 80-10-006 (Order 80-07-01), § 204-76-99004, filed 7/25/80.]

Chapter 204-990 WAC

APPENDIX--SUBSTANTIVE REGULATIONS OF THE STATE COMMISSION ON EQUIPMENT

Reviser's note: In view of the possibility of substantial revision by the commission of some of the following regulations, they have not presently been assigned code numbers but are herewith temporarily compiled as an appendix to Title 204 WAC, now codified within chapter 204-990 WAC.

Regulation No.

620 Seat belts

General information—Sirens

Order "M" Vehicle Safety Inspection Manual

620 Seat belts
RESCINDED AND SUPERSEDED BY
REGULATION 6402, see chapter
204-16 WAC

11

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

- Reg. 310 Appendix to Title 204, Blue lamps on certain authorized motor vehicles. Repealed by Order 7602, filed 2/24/76. See chapter 204-40 WAC.
- Reg. 320 Amendments to section 11.06, entitled "Trailer hitches and drawbars", (Vehicle Inspection Manual—Reg. No. 18). Adopted April 15, 1948. Amendments 11.062, 11.063, 11.064, 11.065, 11.066, 11.067, 11.068, 11.069, 11.070, and 11.071. [Filed 3/21/60.] Repealed by 80-03-068 (Order 80-2-1-70), filed 2/28/80. Statutory Authority: RCW 46.37.005 and 46.37.320.

- Reg. 330 Appendix to Title 204, Safety chains or other load fastening devices on certain motor vehicles. [August 10, 1953, to be effective immediately. Prior: Regulation 4, adopted by State Commission on Equipment October 15, 1945.] Repealed by Order 7303, filed 12/19/73. See chapter 204-44 WAC.
- Reg. 510 Tire chains and their uses. Repealed by Order 6902, filed 2/17/70.
- Reg. 610 Appendix to Title 204, Standards and specifications for the installation of electrical and mechanical turn signals on certain vehicles in use on any public highway. Repealed by Order 7506, filed 11/26/75.
- Reg. 630 Appendix to Title 204, Lamps and flags on snow removal and highway maintenance equipment. Repealed by Order 7605, filed 2/24/76. See later promulgation chapter 204-60 WAC.
2. Rated Strength: The belt assembly, including webbing, buckle, and all attachment and adjustment fittings, shall have a minimum tensile strength under load applied in alignment with the anchored belt, of 1500 pounds for a belt intended for one occupant and of 3000 pounds for a belt intended for two occupants.
 3. The portions of the webbing and buckle which may come in contact with the occupant shall be at least 1-7/8 inches wide.
 4. The safety belt assembly shall be adjustable in length and shall include an easily operable quick-opening mechanism. If the assembly includes adjustment adapters, the adapters shall be positioned approximately halfway between the buckle and the end fittings. If a cam-type buckle is used, at least 10 inches of the free end of the webbing shall extend beyond the cam when the buckle is in the locked position.
 5. The ends of the webbing shall be protected against fraying.
 6. Metal parts shall be free from burrs and sharp edges.

STATE COMMISSION ON EQUIPMENT

REGULATION NO. 620

- I. By authority of RCW 46.36.010 [now codified as 46.37.005], the State Commission on Equipment hereby adopts the following regulations relating to the design and installation of Motor Vehicle Seat Belt Assemblies.

- A. Any seat belt or safety harness installed in a vehicle and large enough to accommodate an adult person shall be designed and installed in such manner as to prevent or materially reduce movement of any such person using the same in the event of collision or upset of the vehicle.
- B. No person shall sell, offer or keep for sale any safety belt, safety harness, or attachments thereto as referred to in subdivision (A) for use in a vehicle, unless of a type which has been approved by the State Commission on Equipment.

II. SAFETY BELT REGULATIONS

A. APPROVAL PROCEDURE

1. A letter from the manufacturer requesting approval of each model safety belt shall be submitted to:
State Commission on Equipment
General Administration Building
Olympia, Washington
2. A sample of each particular model of safety belt or safety harness complete with mounting hardware and manufacturer's installation instructions shall be submitted together with a Laboratory Test Report rendered by a nationally recognized testing agency certifying that the safety belt or safety harness is manufactured to conform to the Society of Automotive Engineers Recommended Practice for Motor Vehicle Seat Belt Assemblies.

B. MARKINGS

1. Each belt shall be provided with permanent marks of identification showing the manufacturer's name or trademark and the model number or type designation on each half of the assembly. The buckle shall be stamped or molded with either the buckle or the assembly manufacturer's markings. The required markings shall be in legible letters at least 1/16 inch in height on metal or rigid plastic parts and 3/16 inch on soft labels.

C. GENERAL DESIGN

1. Safety belt assemblies shall be designed with a separate belt loop or harness for the driver of the vehicle and either single or double occupancy loops for the passengers.

D. INSTALLATION INSTRUCTIONS

1. The belt anchorage, installed in a typical vehicle in accordance with the manufacturer's instructions, shall be capable of withstanding the belt tensions developed by the design loads specified in Section C2.
2. If belt assemblies are designed to be attached to a common anchorage, the common anchorage must be capable of withstanding the multiple belt pulls simultaneously applied.
3. The belts shall not be anchored to the seat of the vehicle unless the seat has been reinforced or originally constructed to withstand the full load of the seat and its passengers under a deceleration of 20 G's without breaking loose from the vehicle.
4. Floor anchors for the front seat shall be positioned with the seat in its rearmost limit of travel. In no case shall the portion of the belt running from the anchor to the seat be slanted past the vertical toward the rear of the vehicle unless the seat components are reinforced as specified in subsection D3.

Dated at Olympia, Washington, this 22nd day of May, 1956, and effective immediately.

STATE COMMISSION ON EQUIPMENT

/s/ Roy F. Carlson

ROY F. CARLSON,
Acting Chief
Washington State
Patrol, Chairman

/s/ W. A. Bugge

W. A. BUGGE, Director
State Department of
Highways

/s/ Della Urquhart

DELLA URQUHART,
Director
State Department of
Licenses

FILED
JUNE 6, 1956
EARL COE
SECRETARY OF STATE

Approved as to form:

/s/ Mitchell Doumit

Mitchell Doumit
Assistant Attorney General

STATE OF WASHINGTON
STATE COMMISSION ON EQUIPMENT
OLYMPIA, WASHINGTON

SUBJECT: SIRENS—GENERAL INFORMATION

1. GENERAL REQUIREMENTS.

It is necessary that a siren produce an adequate sound level in order to function as a satisfactory warning signal, when an emergency vehicle equipped with the siren is overtaking another vehicle or approaching an opposing vehicle. At legal speeds the noise level inside a vehicle is extremely high. A siren to be heard above this noise in other vehicles must produce a sound level which is considerably higher than has been generally realized.

2. CLASSIFICATION OF SIRENS.

Two classes of sirens are established as follows:

(1) Class I.

High performance siren approved for outside mounting or mounting behind a grille or under the hood of an emergency vehicle.

(2) Class II.

Medium performance siren approved for outside mounting only.

3. FROM A DISTANCE OF 100 FEET, MINIMUM OUTPUT SOUND LEVELS SHALL BE:

(a) Class I.

In the axis	_____	95 db.
At 45° from the axis	_____	90 db.
At 90° from the axis	_____	85 db.

(b) Class II.

In the axis	_____	85 db.
At 45° from the axis	_____	80 db.
At 90° from the axis	_____	80 db.

4. SIRENS IN USE PRIOR TO MARCH 18, 1955.

Any siren which was in use on an emergency vehicle prior to March 18, 1955 *may continue to be used by the present owner*. These sirens may not be resold for use on any other emergency vehicle unless such siren has been submitted for approval by the manufacturer and found to meet current specifications.

INTRODUCTION

To establish uniformity in the inspection of vehicles in the Vehicle Safety Inspection lanes in this state, and to provide an explanation of the inspection operation to the motor vehicle operators, garage owners, and inspectors, this manual has been adopted as the official guide relating to Vehicle Safety Inspection.

Compliance with Vehicle Safety Inspection requirements can, in no event, be considered as a substitute for the constant maintenance of all vehicle equipment and safety devices.

Authority for Vehicle Safety Inspection

Chapter 189, Session Laws of 1937, as Amended

"Sec. 6. There is hereby constituted a state commission of equipment which shall consist of the Director of Licenses, the Director of Highways, and the Chief of the Washington State Patrol.

"In addition to those powers and duties elsewhere granted by the provisions of this act, the State Commission on Equipment shall have the power and the duty to adopt, apply and enforce such reasonable rules and regulations (a) relating to proper types of vehicles or combinations thereof for hauling passengers, commodities, freight and supplies, (b) relating to vehicle equipment, and (c) relating to the enforcement of the provisions of this act with regard to vehicle equipment, as may be deemed necessary for the public welfare and safety in addition to but not inconsistent with the provisions of this act."

"Sec. 7. The Chief of Washington State Patrol is hereby empowered to constitute, erect, operate and maintain, throughout the State of Washington, stations for the inspection of vehicle equipment, and to set a date, at a reasonable time subsequent to the installation of such stations, when inspection of vehicles shall commence, and it shall be unlawful for any vehicle to be operated over the public highways of this state unless and until it has been approved periodically as to equipment. The Chief of Washington State Patrol shall establish periods of vehicle equipment inspection. In the event of any such inspection, the same shall be in charge of a responsible employee of the Chief of Washington State Patrol, who shall be duly authorized as a peace officer and who shall have authority to secure and withhold, with written notice to the Director of Licenses, the certificate of license registration and license plates of any vehicle found to be defective in equipment so as to be unsafe or unfit to be operated upon the highways of this state, and it shall be unlawful for any person to operate such vehicle unless and until the same has been placed in a condition satisfactory to subsequent equipment inspection; the peace officer in charge of such vehicle equipment inspection station shall grant to the operator of such defective vehicle the privilege to move such vehicle

to a place for repair under such restrictions as may be reasonably necessary.

"In the event any insignia, sticker or other marker should be adopted to be displayed upon vehicles in connection with the inspection of vehicle equipment, the same shall be displayed as required by the rules and regulations of the Chief of Washington State Patrol and it shall be a gross misdemeanor for any person to mutilate, destroy, remove or otherwise interfere with the display thereof.

"Any person who refuses to have his motor vehicle examined, or, after having had it examined, refuses to place a certificate of approval, or a certificate of condemnation, if issued, upon his windshield, or who fraudulently obtains a certificate of approval, or who refuses to place his motor vehicle in proper condition after having had the same examined, or who, in any manner, fails to conform to the provisions of this act, shall be guilty of a gross misdemeanor.

"Any person who performs false or improvised repairs, or repairs in any manner not in accordance with acceptable and customary repair practices, upon a motor vehicle, shall be guilty of a gross misdemeanor."

"Sec. 8. The Chief of Washington State Patrol is empowered to provide reasonable rules and regulations regarding times for the inspection of vehicle equipment, and all other matters with respect to the conduct of vehicle equipment inspection stations.

"In the event that any municipality or other political subdivision of this state has installed and placed in operation on the effective date of this act, any station for the inspection of vehicle equipment, the operation of such inspection station shall be in strict conformity with rules, regulations, procedure and standards of inspection prescribed by the Chief of Washington State Patrol. The operation of such municipally owned vehicle inspection station shall be under the direction and supervision of the Chief of Washington State Patrol and there shall be maintained and submitted as and when prescribed such records and reports as shall be required by the Chief of Washington State Patrol.

"The Chief of Washington State Patrol shall prepare and furnish such stickers, tags, record and report forms, stationery and other supplies as shall be deemed necessary. The Chief of Washington State Patrol is empowered to appoint and employ such assistants as he may consider necessary and to fix hours of employment and compensation."

"Sec. 9. The Chief of Washington State Patrol is empowered to acquire land for such vehicle equipment inspection stations by purchase, gift, or condemnation, with or without structures thereon. In the event land is acquired by condemnation the same shall be acquired in the manner provided by law for the acquisition of private property for public use. The Chief of Washington State Patrol is empowered to erect structures and to acquire and install such equipment and mechanical devices as shall from time to time be necessary or convenient for the inspection of vehicle equipment.

"In the event that the Chief of Washington State Patrol should deem it advisable to acquire any vehicle equipment inspection station which is owned and operated by any municipality or other political subdivision of this state at the time of the taking effect of this act, and funds being available therefor, the Chief of Washington State Patrol is empowered to acquire such vehicle equipment inspection station in the name of the State of Washington upon an agreed cost with such municipality or other political subdivision not in excess of the reasonable value thereof."

"Sec. 10. Vehicle equipment inspection shall be at such periodic intervals as shall be required by the Chief of Washington State Patrol and shall be without charge for such periodic inspection."

"Sec. 11. It shall be unlawful for any person employed by the Chief of Washington State Patrol or by any municipality or other political subdivision, in any vehicle equipment inspection station, to directly or indirectly, or in any manner whatsoever, order, direct, recommend or influence the correction of vehicle equipment defects by any person or persons whomsoever.

"It shall be unlawful for any person employed by the Chief of Washington State Patrol or by any municipality or other political subdivision, while in or about any vehicle equipment inspection station, to perform any repair or adjustment upon any vehicle or any equipment or appliance of any vehicle whatsoever.

"It shall be unlawful for any person to solicit in any manner the repair to any vehicle or the adjustment of any equipment or appliance of any vehicle, upon the property of any vehicle equipment inspection station or upon any public highway adjacent thereto.

"Any person violating any of the provisions of this section shall be guilty of a gross misdemeanor."

"Sec. 12. It shall be unlawful for any person to operate or move, or for any owner to cause or permit to be operated or moved upon any public highway, any vehicle or combination of vehicles, which is not at all times equipped in the manner required by this act, or the equipment of which is not in a proper condition and adjustment as required by this act.

"Any vehicle operating upon the public highways of this state and at any time found to be defective in equipment in such a manner that it may be considered unsafe shall be an unlawful vehicle and may be prevented from further operation until such equipment defect is corrected and any peace officer is empowered to impound such vehicle until the same has been placed in a condition satisfactory to vehicle inspection. The necessary cost of impounding any such unlawful vehicle and any cost for the storage and keeping thereof shall be paid by the owner thereof. The impounding of any such vehicle shall be in addition to any penalties for such unlawful operation.

"The provisions of this section shall not be construed to prevent the operation of any such defective vehicle to a place for correction of equipment defect in the manner directed by any peace officer or representative of the state commission on equipment."

"Sec. 13. In the event that any vehicle shall become damaged in such a manner that such vehicle shall have become unsafe for operation upon the public highways of this state, it shall be unlawful for the owner or operator thereof to cause such vehicle to be operated upon a public highway upon its return to service unless such owner or operator shall have presented such vehicle for inspection of equipment within twenty-four (24) hours after its return to service."

"Sec. 148. It shall be unlawful for the owner, or any other person, in employing or otherwise directing the operator of any vehicle to require or knowingly to permit the operation of such vehicle upon any public highway in any manner contrary to the law."

"Sec. 149. Every person who commits, attempts to commit, conspires to commit, or aids or abets in the commission of any act declared by this act to be a crime, whether individually or in connection with one or more other persons or as principal, agent, or accessory, shall be guilty of such offense, and every person who falsely, fraudulently, forcefully, or wilfully induces, causes, coerces, requires, permits or directs others to violate any provisions of this act is likewise guilty of such offense."

"Sec. 150. It shall be a misdemeanor for any person to violate any of the provisions of this act unless violation is by this act or other law of this state declared to be a felony or a gross misdemeanor."

"Unless another penalty is in this act provided, every person convicted of a misdemeanor for violation of any provisions of this act shall be punished accordingly."

INSPECTION DETAIL

GENERAL

Vehicle safety inspection is a safety service to be made available to every vehicle operator in the state.

Employees should ever be mindful that they are employed by motorists to provide a courteous, efficient service. The motorist should always be given every consideration possible in the way of explanation of the inspection details as they are performed. Each inspection detail is definitely a safety requirement, and while it is realized that each test cannot be fully explained, no opportunity should be overlooked to relate the value of the test to traffic safety necessity so that motorists may become thoroughly aware of its safety value.

All controversial subjects shall be referred to the officer-in-charge of the lane, and it will be his duty to make decisions consistent with the inspection requirements herein outlined. Any questions relating to policy or requirements not plainly outlined should be referred to the Headquarters Office so that uniform interpretation will prevail throughout the state.

All employees shall approach their particular assignment with an attitude of giving friendly, unofficial service. Failure to maintain this attitude will be sufficient cause for disciplinary action. All employees must maintain a neat and orderly appearance, and all equipment and grounds must be kept in the best condition

possible. Discussions with operators must be in a clear, concise, and definite language. The entire operation should move with military preciseness and thoroughness, ever keeping in mind that motorists are entitled to every courteous consideration.

Employees Shall at All Times Be Neat and Clean. Caps, trousers, shirts, and neck pieces shall be clean and pressed. Employees shall be clean-shaven and not in need of haircuts. Personal cleanliness must be observed at all times. Black shoes shall be worn and kept shined. Issue caps must be worn at all times, except in the summer time when sun helmets may be worn.

Employees Shall at All Times Be Polite, Pleasant and Courteous. This means to use "Yes sir," "No sir," "Please," and "Thank you" whenever and as often as necessary. Do not antagonize or argue with any operator whoever he may be. If you feel that you are about to become involved, direct him to the officer-in-charge. Keep smiling and pleasant when addressing the public because the public in most places reflects your personality.

Employees Shall at All Times Adhere to the Standards of Tolerance. If any vehicle does not come within the specified tolerance, **DO NOT PASS IT.** If there is any doubt, consult the officer-in-charge.

The Following Are Not Permitted While Working on the Lane: Drinking alcoholic beverage or odor of alcohol on breath, smoking, chewing (gum or tobacco), boisterous laughing or talking, eating, swearing, and general horseplay. Do not hang, ride, or lean on part of any vehicle.

Employees Shall at All Times Be Prompt in Attending to Their Duties. Vehicles shall not be left unattended while you are carrying on your own private affairs. When a vehicle comes to your station, you are to take care of it immediately providing you are not already engaged in the inspection of another vehicle.

There are to be no changes in the lunch hour without first being approved by the officer-in-charge. No inspector shall leave his position on the lane without being properly relieved.

No employee is to leave the building or lane for any reason without first stating his destination and with the approval of the officer-in-charge. This does not include going to the lavatory or authorized lunch periods.

Personal Matters To Be Taken Up with Your Superior. An employee having any personal or departmental business he wishes taken care of shall consult his lane foreman who will, in turn, take it up with the District Officer whose duty it shall be to inform Headquarters Office at Olympia of his request.

A member who is aggrieved at the treatment or orders of a superior officer, or a member wishing to call attention to any matter of departmental business or make suggestions for the improvement of the service shall communicate in writing through his superior officer to the Chief. After having applied to his superior officer, if

a member feels that justice has not been done him, he may apply directly to the Chief for an interview.

State Equipment Assigned to Employees. All inspectors will be held responsible for state property assigned to them, such as hat, raincoat, punch, etc. Misuse of property will be charged to the person.

DUTIES OF INSPECTORS

In outlining the operation, it may be that the particular duties as listed in this outline will be revised to make a more balanced operation. Some of the duties delegated to Station No. 1 may be given to Station No. 2, or the reverse condition might exist in order to balance the operation in the most efficient manner. The officer-in-charge will give particular attention to the arrangement of the work in order that greatest efficiency may be obtained in speed of operation. At each lane or station, copies of Motor Vehicle Laws, State Commission on Equipment regulations, approved equipment listings, and bulletins shall be kept in a suitable book binder indexed and arranged for ready reference. This book shall be kept up to date at all times.

Respective positions for inspection cards can best be determined by taking into consideration local operating conditions and shall be the responsibility of the district officer.

STATION NO. 1

The inspector at this station meets the operator and from him the first impression of the operation is gained. He is to inspect the tires on the vehicle to see that they are properly inflated. If the tires of the vehicle are unevenly inflated, the tests will not be as accurate as they should be.

He shall ask the operator for his operator's license and certificate of registration. If the operator does not have the certificate of registration or his operator's license, inspection of the vehicle shall not be refused but marked unsatisfactory on the inspection card for disposition by the officer-in-charge.

The information taken from the certificate of registration is entered upon the card. Both the certificate of registration and operator's license shall be returned to the operator. The inspector then examines the device to reduce wheel spray, the tail lamp, the stop lamp, the back-up lamp, the rear vision mirror, the windshield wiper, the windshield and windows, the horn, the muffler, the license plates and license plate lamp, and, in addition, on all commercial vehicles, the gross weight markings, clearance lamps, reflectors, signal devices and flares, flags, and fusees (except those operated entirely within municipalities). The gross weight marking shall correspond to that shown on the certificate of registration.

In testing the stop lamp, it is necessary that the operator be requested to step on the foot brake two or three times in order to see that the stop lamp is functioning properly. In making the tests, the operator of the vehicle will perform all of the operations unless he requests the inspector to do so.

STATION NO. 2

The inspector at this station shall line the vehicle up at the proper distance from the light testing machine, then ask the operator to take his vehicle out of gear, and shut off the motor. He then will inspect headlamps for aim, focus, and beam candlepower. All switches and wiring, spot lamps, adverse weather lamps, and all other auxiliary lamps shall be inspected.

Headlamps shall be checked to see that they are functioning properly on all switch positions. After this check, the operator shall be requested to place his headlamps on the high beam, and this beam is tested for proper aim and candlepower output. The inspector shall note the type of headlamp being inspected so that the proper test for aim will be used. Headlamps are a very important safety factor, and every motorist shall be fully informed as to the exact performance ability of his particular lights. Inspectors shall be fully conversant with the sight distance obtained from headlamp aim and candlepower so that operators can be told what can be accomplished and expected from their headlamps. Safe night driving speeds are directly related to candlepower and aim, and these limitations should be explained to the operator.

STATION NO. 3

The inspector at this station shall examine the steering wheel and the front system of the vehicle and also make the wheel alignment test. In making the wheel alignment test, the vehicle is driven slowly over the wheel alignment indicator. Be sure that each front wheel crosses each of the plates the full length so that any misalignment will be registered. If any misalignment is shown, in addition to punching the card in the proper place, it is well to explain to the operator that the excessive road friction registered means that this is scuffing away the tread of his tires and that he will pay much more than the cost of correction by having to buy new tires sooner than he would if the wheels were in alignment. It may be well to inquire of the vehicle operator as to whether or not he has noted any difficulty in his steering. If he has, an accurate wheel alignment job will not only permit him to pass inspection on the second time through but should correct the steering difficulty which has been experienced.

He shall then have the operator drive forward until his wheels are in the depression of the floor at the hoist, the car taken out of gear, and the motor stopped. In checking the looseness of the steering wheel, be sure the wheels are straight ahead. It is only necessary to reach in through the vehicle window and give the steering wheel a slight turn from side to side. Do not jerk or wrestle with it. The examination of the front end of the vehicle is then made, after raising the vehicle with the hoist or jack. Inspection shall be made for loose wheel bearings, knee action, kingpins, tie-rods, and defective tires. Many accidents may be prevented by calling the attention of the operator to the unsafe factors of the steering system. Tires shall be rejected only when worn so badly beyond the breaker strip that they are liable to

blow out or when a bad cut or some other condition exists that would indicate a hazardous condition.

He shall also examine the vehicle for wiring and any apparent defects called to the operator's attention. He shall instruct the operator how to drive on the brake tester.

In making this test, the inspector shall explain to the operator just what to do to properly bring the vehicle to a stop on the brake tester. If there are ANY occupants other than the operator in the vehicle, they shall be courteously requested to step out until the test is completed. Particular attentions shall be paid to babies and small children. If the operator has any hesitancy about making the test, the inspector shall courteously request permission to drive the vehicle onto the brake testing machine. He shall also determine if there are any loose objects or animals in or on the vehicle which may be damaged or injured by a sudden stop. If so, they shall be removed.

The vehicle should be driven onto the brake tester at a speed from five to eight miles per hour and the brakes applied smoothly and firmly.

STATION NO. 4

The inspector at this station shall conduct the brake tests. Adequate brakes mean the ability to stop within a required distance without danger of skidding or swerving to one side. The total braking effort is registered by the brake tester as well as the equalization of the brakes.

If a satisfactory test is not obtained in the first attempt or if the operator feels that the test has not been satisfactorily performed, it shall be made again. The results of the test should be shown and explained to the operator so that he will understand exactly what to expect in the performance of the brakes. If the brakes are not properly equalized, he should be told that such lack of equalization might cause difficulty in stopping safely when the brakes are applied on a slippery road. In this test, a differential of 30 per cent between the brake readings of the brakes on the same axle of the vehicle will be permitted. The total braking effort must be 40 per cent of the total weight of the vehicle, except in the case of vehicles with brakes on only two wheels which shall produce a total braking effort 30 per cent. The clearance of the foot pedal shall be checked and shall have a reserve of at least two (2) inches when fully depressed. The hand brake shall also be checked, and there should be a reserve before reaching its extreme limit.

STATION NO. 5

It is the duty of this inspector to remove all old stickers from the windshield and place the required sticker in the lower righthand corner of the windshield.

When a vehicle has been rejected or condemned, it is the responsibility of the inspector to fully inform the operator of the condition of his vehicle.

It shall also be the duty of this inspector to inform the operator of a rejected vehicle the time allowed before returning for reinspection and conditions of condemnation. The maximum time allotted shall be ten (10) days unless otherwise notified by Headquarters Office. When

an operator's vehicle has been approved, he is given the duplicate inspection card for his record. He shall be informed that he is welcome to come into the station at any time for a reinspection. If a vehicle is rejected and returns after the allotted time or ten days have expired, the car shall be given a complete reinspection. If the original defects have not been repaired, and the vehicle returns for a third inspection and is not approved, the vehicle may be impounded. Whether or not an arrest ticket is issued will depend upon circumstances and shall be the decision of the officer-in-charge. (This procedure is subject to change upon notification from Headquarters Office.)

STATION NO. 6

This station shall be occupied by the officer-in-charge. It is his duty to enforce policies established in this manual for Vehicle Safety Inspection.

The officer-in-charge is answerable to the district officer and shall make all reports to him. It is the duty of the officer-in-charge to issue arrest and warning tickets when circumstances require.

All adjustments on Vehicle Safety Inspection equipment shall be made under his supervision. In the event of any controversy arising in the Vehicle Safety Inspection lane, it shall be referred to the officer-in-charge.

The officer-in-charge shall render such assistance as is necessary to garages and adjusting stations.

It shall be the duty of the officer-in-charge to issue all impounded stickers.

IMPOUNDING OF VEHICLES

When it becomes necessary to impound a defective vehicle at the Vehicle Safety Inspection lane, the officer-in-charge or the district officer shall take possession of the certificate of registration (or auditor's receipt) and the vehicle license number plates and fill out Form T-22 in triplicate. The original copy shall be given to the vehicle operator as his receipt for certificate of registration (or auditor's receipt) and instructions for moving the vehicle from the Vehicle Safety Inspection lane to the place of impound. The duplicate copy shall be held at the Vehicle Safety Inspection lane for three days. If the vehicle has not been released at the end of the three-day period, the duplicate copy shall be forwarded to the Department of Licenses, Transportation Building, Olympia, Washington. The triplicate copy shall be held at the Vehicle Safety Inspection lane with the certificate of registration (or auditor's receipt) and vehicle license number plates attached.

When an impounded vehicle is released, fill out Form T-23 in duplicate and return certificate of registration (or auditor's receipt) and vehicle license number plates to the registered owner or his authorized agent. Forward the original of Form T-23 to the Department of Licenses. Attach duplicate Form T-23 to triplicate copy of Form T-22 and file at the district office.

In the event a vehicle is impounded and released in less than a three-day period, file triplicate copy of Form T-22 and duplicate copy of Form T-23 at the district office. Do not forward duplicate copy of Form T-22 or

original copy of Form T-23 to the Department of Licenses.

A certificate of registration and vehicle license number plates which have been secured and withheld due to defective vehicle equipment shall be returned to the owner or his authorized agent only after satisfactory repairs have been made to the equipment for which the vehicle was impounded.

INSPECTION OF DEALERS' USED VEHICLES

When a dealer sends a used vehicle to the Vehicle Safety Inspection lane for inspection, he shall have the motor number cleaned ready for checking. The inspection card shall include the motor number. Dealer inspection cards shall be filed under dealer's license number by motor number.

In case of rejection of a dealer's used vehicle, subsequent reinspections shall include a recheck of the motor number.

CARE OF VEHICLE SAFETY INSPECTION EQUIPMENT

The Vehicle Safety Inspection lane equipment is well constructed and will stand up under hard use; however, it will not stand abuse and must be kept clean, oiled, and adjusted at least once a week, or more often if operating conditions make it necessary. The district officer, officer-in-charge, and inspectors shall thoroughly familiarize themselves with the operation and maintenance of all the Vehicle Safety Inspection equipment. Each man will clean a station (or more if circumstances require) on the lane for one week and move toward the exit end of the lane when changing stations. When he changes from the last station, he will move back to the first station. In multiple lane locations the crews are to be rotated each week.

The headlight tester shall never be picked up by the screen, but shall be lifted by the column and base. The optoscope and column slides shall be sparingly lubricated with a very light oil. The horizontal screen slides shall be oiled at the end of each day to prevent rusting. The track shall be kept clean and in proper relationship with the surface upon which the vehicle stands for inspection. Headlight testers shall be calibrated for accuracy not less than twice each day, once in the morning and at noon before tests are started, or more often if necessary.

The wheel alignment indicator needs little attention except that foreign matter shall be kept from under the plates, the bearings lubricated, and the pointer on the dial shall stand at zero.

The jack or hydraulic lift shall be kept clean and sparingly lubricated. Oil in jack cylinders shall be kept at proper level at all times.

The brake tester shall be kept free of foreign matter under the plates. The plates shall be kept free of excessive backlash. The cam pins shall be kept clean and lubricated.

The brake tester shall be checked for accurate adjustment not less than twice each day, once in the morning and at noon before tests are started, and more often if

necessary. This check shall be made by driving a vehicle on the brake tester, putting the vehicle in low or reverse gear, speeding up the motor, and letting the clutch in. The slight jerk thus obtained should give an equal reading on the corresponding tubes. Repeat this operation on the two remaining brake tester plates.

Adjustment of brake tester shall be made as follows: Remove the cross plate, tower top, and all tower glass. Depress one of the plungers all the way down. Place a finger over the top of that tube to prevent the liquid from dropping. Place one foot on the trip lever and hold down. With your other hand, pull the plunger into a closed position. Have another man tighten the corresponding crossrod adjusting nut until the liquid stops dropping when you remove your finger from the top of the tube. Check quite often by lifting your finger momentarily from the top of the tube while tightening the adjusting nut to be sure you stop tightening the crossrod nut the instant the by-pass is closed. When the liquid stops falling in the tube with your finger removed, you know the by-pass is completely closed. Now back off the crossrod adjusting nut one full turn and one flat and tighten the lock nut. Adjust the remaining plates in the same way.

All adjustments to the brake machine tower are to be made by or under the supervision of the maintenance crew.

VEHICLE EQUIPMENT REQUIREMENTS

Note: All matter numbered or lettered—State laws and regulations adopted by the State Commission on Equipment.

All matter indented—Instructions for inspectors and explanations of the regulations.

1.00 WIRING, SWITCHES, AND GLOBES

1.01 General. All vehicles shall be inspected with regard to the condition of the wiring and electrical switches in so far as it affects safe and efficient operation.

Many vehicles will be found with improvised hook-ups that could not be used in an emergency.

1.02 Wiring. Every vehicle shall be wired in such a way that none of the wire is so located that it will be easily broken or shorted.

This includes wires dangling below the chassis of the vehicle, wrapped around the bumper, etc. It is not necessary that a detailed examination be undertaken, but the examination shall be of such character that the more apparent and dangerous defects can be noted.

If a vehicle is rejected for this reason, the rejection shall be charged against the equipment to which the wire leads, such as clearance lamps, tail lamps, or horn.

Approval shall not be granted to a vehicle with crossed wiring whereby there is not coordination

between the upper and lower beams from the headlamps.

1.03 Switches. All switches in any way connected with the horn or any lamp shall be in good working order and shall function properly.

The foot dimmer switch shall be in good working order with no dead point so that the pressure of the foot will immediately change the beam. If several applications of the foot are required to change the beam, if both beams are put in operation, or if neither beam is put in operation, the vehicle shall be rejected.

The conditions outlined above as basis for rejection are those that would prevent the safe and efficient operation of the vehicle. The law requires that every vehicle be equipped with a horn, but if the method of sounding the horn is such that considerable time has elapsed and the attention of the driver has been diverted from the situation at hand, the intention of the law has been circumvented and danger materially increased. A State Commission on Equipment regulation requires that there shall be a selection between the upper and lower beams of headlamps on all vehicles first sold and in operation on April 1, 1937. The conventional method of making such a selection is by means of a switch operated either by the foot or the hand. A switch that is not easily or efficiently operated may be the cause of a serious accident.

1.04 Globes. The use of a globe other than that for which the lamp was designed shall be rejected.

The use of such globes will often throw the light out of focus, and change the light pattern or the beam arrangement. Care shall be taken to see that such a lamp is not approved. Reference shall also be made to the regulations of the State Commission on Equipment to prevent the approval of globes of greater than the allowed candlepower. If the globe in any lamp is burned out, a good and sufficient cause for rejection exists. (See Section 2.15.)

Several of the early vehicle models were designed to use a two-filament low candlepower globe. Many owners have installed a 32-32 candlepower globe to obtain a greater output. If the socket and focusing mechanism are not properly adjusted, the beam will change in a lateral direction and will not depress as required by law. If this is encountered, the vehicle shall be rejected and the owner advised of the defective installation.

Globes are often encountered which are in a blackened or clouded condition or with a sagging filament. In either case, it is probable that only a short time will elapse until the globe burns out. A great deal of tact shall be used in such a circumstance. There is no authority to reject a vehicle for that reason alone if the intensity and beam aim are within the tolerance. The owner shall be advised of the condition of the globes and the desirability of

making an immediate change. He shall also be invited to make another trip through the lane after the globe has been replaced to be sure that the aim is correct.

2.00 VEHICLE LIGHTING

2.01 General. No more than a total of four (4) lamps, producing in excess of three hundred (300) apparent candlepower, shall be installed on the front of any motor vehicle for the purpose of road illumination. Every motor vehicle, other than a motorcycle, shall be equipped with no more, or less, than two (2) headlamps with one (1) on each side of the front of the motor vehicle.

A. Except as hereinafter provided, the headlamps, or combinations of headlamps and auxiliary driving lamps on motor vehicles shall be so arranged that the driver may select at will between distribution of light projected to different elevations, subject to the following requirements and limitations:

1. There shall be an uppermost distribution of light, or composite beam, so aimed and of such intensity as to reveal persons and vehicles at a distance of at least three hundred and fifty (350) feet ahead for all conditions of loading. The maximum intensity of this uppermost distribution of light or composite beam one degree of arc or more above the horizontal level of the lamps when the vehicle is not loaded shall not exceed eight thousand (8,000) apparent candlepower, and at no other point of the distribution of light or composite beam shall there be an intensity of more than seventy-five thousand (75,000) apparent candlepower.
2. There shall be a lowermost distribution of light, or composite beam, so aimed that:
 - a. When the vehicle is not loaded, none of the high intensity portion of the light which is directed to the left of the prolongation of the extreme left side of the vehicle shall at a distance of twenty-five (25) feet ahead, project higher than a level of eight (8) inches below the level of the center of the lamp from which it comes.
 - b. When the vehicle is not loaded, none of the high intensity portion of the light which is directed to the right of the prolongation of the extreme left side of the vehicle shall at a distance of twenty-five (25) feet ahead, project higher than a level of three (3) inches below the level of the center of the lamp from which it comes.
 - c. In no event shall any of the high intensity of such lowermost distribution of light or composite beam project higher than a level of forty-two (42) inches above the level on which the

vehicle stands at a distance of seventy-five (75) feet ahead.

3. Where one intermediate beam is provided, the beam on the left side of the road shall be in conformity with (2.a) of this section except when arranged in accordance with the practice specified in (5).
 4. All road-lighting beams shall be so aimed and of sufficient intensity to reveal a person or vehicle at a distance of at least one hundred (100) feet ahead.
 5. Every new motor vehicle registered in this state after January 1, 1948, which has multiple-beam road-lighting equipment shall be equipped with a beam indicator, which shall be lighted whenever the uppermost distribution of light from the headlamps is in use, and shall not otherwise be lighted. Said indicator shall be so designed and located that when lighted it will be readily visible without glare to the driver of the vehicle so equipped.
- B.
1. Whenever a motor vehicle is being operated on a roadway during such times as lighted lamps are required, the driver shall use a distribution of light, or composite beam directed high enough and of sufficient intensity to reveal persons and vehicles at a safe distance in advance of the vehicle, subject to the following requirements and limitations:
 2. Whenever the driver of a vehicle approaches an oncoming vehicle within five hundred (500) feet, such driver shall use a distribution of light or composite beam so aimed that the glaring rays are not projected into the eyes of the oncoming driver and in no case shall the high intensity portion which is projected to the left of the prolongation of the extreme left side of the vehicle be aimed higher than the center of the lamp from which it comes at a distance of twenty-five (25) feet ahead, and in no case higher than a level of forty-two (42) inches above the level upon which the vehicle stands at a distance of seventy-five (75) feet ahead.
- C. Headlamps arranged to provide a single distribution of light not supplemented by auxiliary driving lamps shall be permitted on motor vehicles manufactured and sold prior to one year after the effective date of this act in lieu of multiple-beam road-lighting equipment herein specified if the single distribution of light complies with the following requirements and limitations:
1. The headlamps shall be so aimed that when the vehicle is not loaded none of the high intensity portion of the light shall at a distance of twenty-five (25) feet ahead project higher than a level of five (5) inches below the level of the center of the lamp from which it comes, and in no case higher than

forty-two inches above the level on which the vehicle stands at a distance of seventy-five (75) feet ahead.

2. The intensity shall be sufficient to reveal persons and vehicles at a distance of at least two hundred (200) feet.

Never make the test of any headlamp or auxiliary lamp without having the operator take the vehicle out of gear and shut off the motor.

Vehicle lighting has been the subject of much confusion. One of the principal points of contention has been the number of lamps designed to illuminate the road ahead that could be legally allowed. The number of auxiliary lamps with which a motor vehicle may be equipped has been regulated by the State Commission on Equipment. In addition to the required headlamps, a motor vehicle may be equipped with two (2) auxiliary lamps which shall meet installation, wiring, and beam aim as herein-after outlined.

In addition, a motor vehicle may be equipped with one inner controlled spot lamp which shall not be used for driving purposes and/or while the vehicle is in motion except in case of necessity where all the other forward lamps required or permitted on a motor vehicle by law fail to operate. *Provided, however,* no motor vehicle shall be equipped with more than one spot lamp.

Provided, further, when auxiliary lamps are installed on a motor vehicle, such lamp or lamps shall be in proper working order at all times. All such lamps shall be securely fastened to the vehicle and shall be placed with the top in the designed position.

All lighting equipment or appliances with the exception of spot lamps and back-up lamps require the approval of the State Commission on Equipment before they may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

Candlepower rating of the several lamps required or permitted are as follows:

Headlamps	Min. 21 c.p. Max. 32 c.p.*
Sealed Beam Lamp	
Units	S.A.E. Specifications
Spot Lamps	Max. 50 c.p. or S.A.E. Specifications
Auxiliary Driving Lamps	Max. 32 c.p. or S.A.E. Specifications
Adverse Weather Lamps	Max. 32 c.p. or S.A.E. Specifications
Back-up Lamps	Max. 32 c.p. or S.A.E. Specifications
Cowl, Parking, Fender and Courtesy Lamps	3 c.p. to 6 c.p.
Clearance Lamps	3 c.p.
Signal Devices	Min. 3 c.p. Max. 21 c.p.
Tail Lamps	3 c.p.
Stop Lamps	Max. 21 c.p.

- (*) 50 c.p. globes shall be permitted if they replace those specifically mentioned as being interchangeable.

2.011 Headlamps and Required Lamps Behind Grills, Bumpers, Bumper Guards, or Any Auxiliary Equipment. Any auxiliary equipment mounted so as to interfere with or partially block the beam of light projected by any required lighting device or reflector is illegal.

2.02 HEADLAMPS

2.021 Legal Requirements. Every motor vehicle other than a motorcycle shall be equipped with no more or less than two headlamps, one on each side of the front of the motor vehicle, which headlamps shall comply with the requirements and limitations set forth below:

Every motorcycle shall be equipped with at least one and not more than two headlamps which shall comply with the requirements and limitations set forth below:

Every motor vehicle first sold after April 1, 1937, is required to have an arrangement of lamps whereby there may be a selection between two different elevations of projected light.

Purpose and Control of Headlamps. The purpose of the headlamp is to provide road illumination for night driving, and it is the basic light source. All other lamps are merely auxiliary to the headlamps. It is for this reason that so much attention must be given to their aim and intensity. A faulty headlamp may not provide sufficient road illumination, or it may blind the operator of an oncoming vehicle. In either case, the chances of becoming involved in an accident have materially increased.

The headlamp beam that is aimed too high interferes with oncoming traffic. A headlamp beam aimed too low or of low intensity will not give proper road illumination. A headlamp beam that is aimed too far to the right or left will not give proper road illumination. The lamp that is aimed too low fails to serve its designed purpose.

Vertical Aiming with Regard to Headlamp Height. The inspector will be confronted with many problems in connection with vertical aiming of headlamps. In the aiming specifications, a tolerance has been allowed. Within the tolerance there is opportunity for many varied conditions of road illumination. It is likewise true that the vertical height from the road surface at which the headlamp is located has a definite effect.

The inspector shall inform the operator of these facts and suggest a proper aiming for the best road illumination.

2.022 Lenses, Reflectors, Rims and Headlamp Brackets. The lens and reflectors shall be those for which the lamp was designed.

It is obvious that an improper lens will project an entirely different and often objectionable beam of light.

(See Section 2.023 for sealed beam adapter units.)

Lenses must be exactly in the vertical and horizontal designed position and shall not be so loose as to be easily moved.

In some headlamp systems, there is a difference between the right and left lenses, in which case each lens must be in the designated lamp.

No lens shall pass inspection if it is cracked, broken, or chipped in such a manner as to materially affect the beam pattern or allow moisture to enter.

Reflectors shall be rejected if they are discolored, corroded, twisted, bent, or loose so as to materially affect the beam pattern.

Headlamp rims shall be so constructed and maintained as to keep the lens firmly in place at all times.

The headlamp bracket shall hold the lamp firmly in place and not allow it to wander or unduly vibrate.

2.023 Sealed Beam Adapters. The sealed beam unit produces a symmetrical beam of light and shall conform to all requirements set forth governing the use of this type of lamp even though it replaces asymmetrical beam type equipment.

Any adapters shall be so constructed as to make adequate provision for adjusting, aiming, and replacing and shall hold the lamp firmly in the proper position.

The approval of the State Commission on Equipment is required before any adapters may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

With the advent of sealed beam type of head lighting units, vehicle owners desired to take advantage of this advance in vehicle lighting by installing these lamps on vehicles not so equipped.

There are many approved types of adapters on the market, and, occasionally, a homemade variety will be encountered. The homemade adapter shall not be discouraged by the inspector if it complies with the above provisions.

2.024 Moisture in the Headlamp. No headlamps shall pass inspection if there is sufficient moisture in the form of liquid or heavy mist to cause a distortion.

The presence of moisture either in liquid form or heavy mist will cause a distortion of the beam pattern and the emission of stray beams of light.

2.025 Visors. The use of metal headlamp visors attached at the top of the headlamp lenses or any other sharp object projecting forward in such a manner as to be injurious in case of collision shall not be permitted. Small devices for the purpose of indicating whether headlamps are burning are acceptable.

2.026 Attachments and Liquids. Any and all attachments for installation in complete headlamps and any and all liquids used to change the color of headlamp lenses of complete headlamps, is prohibited unless such device, attachment, or liquid has first been approved in writing by the State Commission on Equipment.

2.027 Focus. Focus inspection shall be made visually on a screen. Approval shall be given when the beam

from any headlamp is in focus and shall be refused when such lamp is **noticeably** out of focus.

Focus inspection is the most difficult part of the inspection of any lamp, and for this reason the inspector shall be certain that the lamp is out of focus before rejecting for this reason. Two lamps may have entirely different focal lengths, and both provide good road illumination. For the present, the causes of rejection that may be used at the ten-foot distance are listed as follows:

- (a) Lack of any definite hot spot.
- (b) Two hot spots.
- (c) The presence of stray beams of light outside the definite pattern.

2.028 Minimum Candlepower. The minimum candlepower of both headlamps shall be at least 10,000 candlepower and in no event shall the candlepower of any one headlamp be less than 4,000 candlepower. The minimum reading shall be taken with motor not running.

Test Distance. All of the values in these aiming specifications are based on a test distance of 25 feet. Equipment used by the Vehicle Safety Inspection Division is designed to operate at a distance of 10 feet and read as of 25 feet. The State of Washington has adopted center beam aiming.

2.029 Single Beam Headlamps

(a) **Definition.** A single beam headlamp is one which does not permit the operator to make a selection between two different elevations of projected light beam.

It is possessed of no meeting beam and must therefore be aimed to a lower vertical plane.

(b) **Vertical Aim.** The **top of the beam** shall be aimed five inches below lamp center level. The vertical tolerance shall be from plus two inches to minus two inches. The vertical aim of trucks shall be seven inches below lamp center level.

(c) **Lateral Aim.** The **center of the hot spot** shall be aimed straight ahead. The lateral tolerance shall be from four inches to the left to four inches to the right of straight ahead.

2.0210 Multiple Beam Headlamps, Symmetrical, Upper Beam

(a) **Definition.** A multiple beam headlamp is one which permits the operator to make a selection of two or more different elevations or distributions of projected light beam. A symmetrical beam is one whose pattern or projected light is symmetrical to its center.

(b) **Vertical Aim.** The **center of the hot spot** shall be aimed three inches below lamp center level. The vertical tolerance shall be from plus two inches to minus two inches. (See Section 2.0212 Trucks.)

(c) **Lateral Aim.** The **center of the hot spot** shall be aimed straight ahead. The lateral tolerance shall be from four inches to the left to four inches to the right of straight ahead.

2.0211 Multiple Beam Headlamps, Asymmetrical, Upper Beam

(a) **Definition.** An asymmetrical beam is one whose pattern of projected light is not symmetrical with reference to its center.

There are several types of asymmetrical headlamp systems in use. The Multibeam, Tribeam, and Supersafe are so designed that the right lamp only will project a depressed beam when the foot switch is operated for passing an oncoming vehicle. The Flexibeam and Solar Beam are so designed that the left lamp only will project a depressed beam when the foot switch is so operated for passing a vehicle. These lamps, when wired the same as a symmetrical lamp will carry the same setting as outlined for a symmetrical headlamp.

The headlamp which does not project a depressed beam shall be aimed in a different way to protect the driver of the oncoming vehicle from objectionable glare.

(b) **Vertical Aim.** The **center of the hot spot** shall be aimed three inches below lamp center level. The vertical tolerance shall be from plus two inches to minus two inches. (See Section 2.0212 Trucks.)

(c) **Lateral Aim.** The Multibeam, Supersafe, and Tribeam left headlamp shall be aimed so that the **center of the hot spot** is **twelve and one-half inches** to the right of straight ahead. A tolerance of four inches to the right or left shall be allowed on the Weaver testing equipment.

The right headlamp shall be aimed so that the hot spot is straight ahead. A tolerance of four inches to the right or left shall be allowed.

The Flexibeam and Solar Beam right headlamp shall be aimed so that the **center of the hot spot** is **twelve and one-half inches** to the right of straight ahead. A tolerance of four inches to the right or left shall be allowed on the Weaver testing equipment.

The left headlamp shall be aimed so that the hot spot is straight ahead. A tolerance of four inches to right or left shall be allowed.

At a distance of 25 feet on a screen, it will be found that the center of the hot spot will be 12 1/2 inches to the right of straight ahead. With a tolerance of four inches to the right or left, the center of the hot spot will be from 8 1/2 to 16 1/2 inches to the right of straight ahead.

2.0212 Vertical Aim of Truck Headlamps

A truck is a motor vehicle designed or used for the transportation of commodities, merchandise, produce, freight, or animals. When loaded, there is bound to be a deflection from the horizontal plane. The amount of deflection, in turn, is dependent upon the amount of load, its placement, and the flexibility of the springs. Since these factors are variable, good road illumination without glare is a problem, and the proper aiming must depend on the nature of the truck's most frequent use. The following specifications and suggestions are given to furnish the inspector a guide for an equitable determination.

The vertical aim of all trucks shall be two inches below that specified above with reference to type of headlamp equipment. The center of the hot spot shall be aimed five inches below lamp center level. The vertical tolerance shall be from plus two inches to minus two inches.

The lateral aim of all trucks shall be the same as specified above with reference to type of headlamp equipment.

The vertical aim of trucks transporting fixed loads shall carry passenger car settings.

All beams from buses, coupes, roadsters, and long wheelbase cars should preferably be aimed near the upper limit. All beams from trucks and short wheelbase five-passenger cars should preferably be aimed near the lower limit, with no load in vehicle other than driver in front seat. In case of trucks due allowance should be made for loading.

Buses shall carry the same setting as passenger vehicles.

2.0213 Headlamps on Motorcycles. Motorcycles are required to be equipped with at least one, but are not permitted to be equipped with more than two headlamps. The aiming specifications for motorcycles shall be the same as those for passenger vehicles.

2.0214 Reinspection of Headlamps. In the event that one headlamp passes inspection and the other is rejected, both headlamps shall be reinspected upon the return of the vehicle to the Vehicle Safety Inspection lane.

When one headlamp is satisfactory and the other unsatisfactory, the reading on both headlamps shall be punched on the inspection card. The headlamp which is satisfactory shall not be punched either satisfactory or unsatisfactory until it is reinspected after corrections have been made to the rejected lamp.

2.03 AUXILIARY LAMPS

2.031 General

Auxiliary lamps are designed to supplement the headlamps in providing reasonable safety when driving in fog, rain, or snow when a major reduction of speed is required.

Auxiliary lamps correctly aimed provide road illumination of the area directly in front of the vehicle not illuminated by the headlamps. Any higher aim, as specified below, results in too high illumination of water particles in the line of vision.

Installation and aiming specifications outlined below for auxiliary lamps shall apply to all motor vehicles.

2.032 Auxiliary Adverse Weather Lamps

(a) **Vertical Aim.** Auxiliary lamps shall be aimed so that at a distance of twenty-five (25) feet, the upper cut-off of the projected beam of light shall be no higher than four (4) inches below the lamp center level of the lamp being aimed.

When using headlamp testing equipment which is ten (10) feet ahead of the lamps being tested, the upper cut-off of the projected beam of light shall be no higher than

one and one-half (1 1/2) inches below the lamp center level of the lamp being aimed.

(b) **Lateral Aim.** Auxiliary lamps shall be aimed so that the center of the hot spot is not to the left of straight ahead.

(c) **Installation Height.** The center of an auxiliary lamp shall not be mounted less than twelve (12) inches nor more than forty-two (42) inches above the level surface upon which the vehicle stands, but in no event shall the center of such lamp be higher than a line drawn horizontally through the center of the headlamps of such vehicle.

(d) **Lenses, Reflectors, Rims, and Brackets.** The lens on any auxiliary lamp shall be that for which the lamp was designed. The lens shall be installed in the exact horizontal and vertical design position, and not easily moved or revolved. No lens shall pass inspection if it is cracked, broken, or chipped in such a manner as to materially affect the beam pattern or allow moisture to enter. Every auxiliary lamp shall be equipped with a lens.

Reflectors shall not be so discolored, corroded, twisted, bent, or loose as to materially affect the beam pattern or its direction.

Rims shall be so constructed and maintained as to keep the lens firmly in place at all times.

Brackets shall be so constructed and maintained as to keep the lamp firmly in place and not allow it to wander or unduly vibrate.

(e) **State Commission on Equipment Approval.** The approval of the State Commission on Equipment is required before auxiliary or adverse weather lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

2.033 Sealed Beam Driving and Passing Lamps

(a) **Installation and Wiring.** Sealed beam driving and passing lamps shall be wired and installed in accordance with this section before the aiming specifications outlined under Section 2.033(b) may be allowed. The driving lamp shall be so wired to the foot switch that it cannot be illuminated independently of the upper or driving beam of the headlamps. The passing lamp shall be wired to the dimmer switch so it can be illuminated only when the lower or meeting beam of the headlamps is projected.

(b) **When Installed and operated as in Section 2.033(a).** When sealed beam driving and passing lamps are installed and operated as outlined in Section 2.033(a), the driving lamp shall be aimed so that at a distance of 25 feet, the upper cut-off of the projected beam of light shall be no higher than lamp center level. The center of the hot spot shall not be to the left of straight ahead. The passing lamp is restricted to the aiming specifications outlined for auxiliary adverse weather lamps in Section 2.032(a), (b).

(c) **When Not Installed and Operated as in Section 2.033(a).** When sealed beam driving and passing lamps are not installed and operated as outlined in Section 2.033(a), both the driving lamp and the passing lamp shall be restricted to the aiming specifications outlined for auxiliary adverse weather lamps in Section 2.032(a), (b).

(d) **Installation Height.** The center of the sealed beam driving and passing lamps shall not be mounted less than 12 inches nor more than 42 inches above the level surface upon which the vehicle stands, but in no event shall the center of such lamps be higher than a line drawn horizontally through the center of the headlamps of such vehicle.

(e) **Rims and Brackets.** The rims of all sealed beam driving and passing lamps must be so constructed and maintained as to keep the optical unit firmly in place at all times and in the proper horizontal and vertical designed position.

(f) **State Commission on Equipment Approval.** The approval of the State Commission on Equipment is required before any driving and passing lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

2.034 Driving and Passing Lamps Other Than Sealed Beam

(a) **Installation.** Driving and passing lamps which are not of the sealed beam type shall meet installation specifications as outlined above for sealed beam driving and passing lamps.

(b) **Aiming Specifications.** Driving and passing lamps which are not of the sealed beam type shall meet aiming specifications as outlined above for sealed beam driving and passing lamps.

(c) **State Commission on Equipment Approval.** The approval of the State Commission on Equipment is required before any driving and passing lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

2.035 Spot Lamps

(a) **Definition.** A spot lamp is a lamp capable of projecting a round intense beam of light through a plain lens and displaying a small circular pattern on a vertical surface. Installation and aiming specifications outlined below for spot lamps shall apply to all motor vehicles, except authorized emergency vehicles.

(b) **Aiming Specifications.** Any motor vehicle may be equipped with not to exceed one spot lamp which when used for driving purposes shall be so aimed and used that no part of the high intensity portion of the beam will be directed to the left of the prolongation of the extreme left side of the vehicle, nor more than 100 feet ahead of the vehicle.

The fulfillment of the vertical aim specification by the Vehicle Safety Inspection lanes can best be attained by allowing the top of the round pattern of the projected beam to be not higher than a distance below level equal to one-fifth less than the center of the spot lamp globe at a distance of 25 feet.

When using headlamp testing equipment which is located ten (10) feet ahead of the lamps being tested, the **upper cut-off** of the projected beam of light will be found to be five (5) inches below lamp center level.

(c) **Spot Lamps Controlled from Driver's Compartment.** No spot lamp capable of being controlled from the driver's compartment shall be used for driving purposes and/or while the vehicle is in motion, except authorized emergency vehicles and vehicles operated by public utilities or governmental agencies wherein their services are connected with the inspection or maintenance of overhead land lines or similar overhead inspection and maintenance, or in case of necessity when all other forward lamps required or permitted on a motor vehicle fail to function.

Inner-controlled spot lamps may be used when the vehicle is standing for repair purposes, for reading house numbers, road signs, and the like.

(d) **Installation Height.** Spot lamps may be installed through the windshield post on either the right or left side and controlled from within the vehicle, or mounted on a rigid bracket on either side of the front of the vehicle.

In no event shall the spot lamp be mounted higher than sixty (60) inches or less than twenty-one (21) inches from the level surface upon which the vehicle stands to the center of the spot lamp globe for passenger cars, nor higher than seventy-two (72) inches nor less than twenty-one (21) inches from the lamp globe for all commercial vehicles or stages. It is provided further that no spot lamp, regardless of height from the level surface upon which the vehicle stands, shall be mounted through the roof of, or cab of, a motor vehicle, except authorized emergency vehicles and vehicles operated by public utilities or governmental agencies wherein their services are connected with the inspection or maintenance of overhead land lines or similar overhead inspection and maintenance, or unless special permit in writing shall be secured from the State Commission on Equipment.

When the center of the globe of the lamp is mounted higher than a line drawn horizontally along the uppermost edge of the door or doors, the lamp shall be considered mounted through the roof or cab of the vehicle.

(e) **State Commission on Equipment Approval.** The approval of the State Commission on Equipment is **not** required before spot lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

(f) **Lenses, Reflectors, Rims, and Brackets.** No plain lens shall be approved if it is cracked, broken, or chipped in such a manner as to allow moisture to enter. Every spot lamp shall be equipped with a lens which is firmly and properly installed.

Reflectors shall not be so discolored, corroded, twisted, bent or loose as to materially affect the beam pattern or its direction.

Rims shall be so constructed and maintained as to keep the lens firmly in place at all times.

Brackets shall be so constructed and maintained as to hold the lamp firmly in place and not allow the lamp to wander or unduly vibrate.

2.04 COWL, SIDE FENDER, OR PARKING LAMPS

2.041 General. Any vehicle may be equipped with not more than two such lamps which when lighted shall emit a white light without glare.

2.042 Lamp Requirements for Parking. Every parked vehicle shall be lighted at night by two white lamps, one on each side, showing forward without glare, and one red lamp showing to the rear, all of which shall be visible from a distance of at least 500 feet.

There is no specification as to which lamps may be used. It is therefore possible to use cowl lamps, sidelamps, fender lamps, parking lamps, or the depressed or dimmed beam from the headlamps for this purpose as long as the distance, color, and glare requirements are met. In making the inspection, the inspector shall check any such lamps as may be on the vehicle.

2.05 RED LAMPS OR DEVICES

2.051 General. Any lamp or device mounted on the front of a vehicle capable of displaying a red light forward or any lamp or device mounted anywhere on a vehicle capable of displaying a red light visible from directly in front thereof is illegal, unless the vehicle is classified as an authorized emergency vehicle, or vehicles operated by the Department of Highways which present a danger by the nature of their operation.

2.052 Authorized Emergency Vehicle, Definition. Any vehicle, as defined in chapter 188, Laws of 1937, of any fire department, police department, sheriff's office, coroner, prosecuting attorney, Washington State Patrol, ambulance service, public or private, or any other vehicle authorized in writing by the State Commission on Equipment.

2.053 Red Lamps on Wreckers. The use of red lamps is permissible on wreckers only when in the act of picking up other vehicles and in clearing the highway. These lamps, if used, shall be located upon the wrecker in such a manner as to be visible in both directions for the purpose of warning oncoming traffic of danger and congestion, and shall turn on with the same switch. These lamps do not classify a wrecker as an authorized emergency vehicle and their use while the wrecker is in motion is illegal. Additional white lamps (spot lamps, flood lamps, auxiliary lamps, etc.) other than those permitted or required by law are also permissible on wreckers for use only when in the act of picking up other vehicles or clearing the highway.

2.054 Red Lamps on Public Utility Vehicles. Any motor vehicle operated by a public utility company while engaged in performing an emergency service in a stationary position in a traffic lane upon a public highway, road, or alley, may be equipped with and display one plain red danger light on the front of the vehicle and two plain red danger lights on the rear of the vehicle, one on each side. Such lights shall not be the flashing type and shall be placed not lower than four (4) feet nor higher

than eight (8) feet from the surface upon which the vehicle stands and must be perceptible from a distance of not less than three hundred (300) feet from the front and rear of the vehicle. These red lamps shall not be turned on and display a red light while the vehicle is in motion upon the highway.

2.055 Red Lamps or Devices Showing Forward

Approval of a vehicle equipped with a red lamp or device showing forward shall not be withheld at the Vehicle Safety Inspection lane. If there is any question as to the right of the vehicle owner to equip his vehicle with a red lamp or device showing forward, disposition will be left to the officer-in-charge.

The employees of the Vehicle Safety Inspection lanes are not authorized to seize or confiscate illegal vehicle equipment.

2.06 CLEARANCE AND MARKER LAMPS

2.061 General. Within thirty (30) days after the effective date of this act, every motor vehicle, trailer and semi-trailer designed or used for the transportation of commodities, property or animals, or for the transportation of passengers, or otherwise a commercial vehicle, except for hire vehicles operated entirely within municipalities when their interiors are illuminated, shall display lighted lamps during hours of darkness as required in this section, except such lamps may be, but are not required to be, lighted when any such vehicle is upon a public highway which is sufficiently illuminated by street lamps to render any person or vehicle clearly discernible at a distance of five hundred (500) feet.

Every such vehicle having a width of eighty (80) inches or more shall in addition to other equipment required in this act be equipped as hereinafter stated.

2.062 Installation Requirements. Such clearance and side marker lamps shall be placed in such a position upon the permanent structure of the vehicle that they will effectively mark the maximum width of such vehicle at the highest point.

2.063 Color Requirement

Such front clearance and side marker lamps mounted on the front or side near the front of a vehicle shall display an amber color.

Such rear clearance and side marker lamps mounted on the rear or side near the rear of a vehicle shall display red color. Any such lamp shall not display a red light visible from a point within the prolongation of the extreme sides of the vehicle at a point 200 feet directly in front thereof.

Shielding to accomplish this requirement shall be obtained by placing a metal shield immediately forward of such lamp. Such shielding shall not be accomplished by painting or blacking out a portion of the lamp lens.

If desired, such lamps may display an amber light forward.

2.064 Truck-Tractor Identification Lamps. On every truck-tractor two amber clearance lamps, mounted one

on each side of the top of cab are required and may be installed on trucks which require clearance lamps. (See Washington State Patrol Vehicle Lighting Chart.)

2.065 Clearance and Side Marker Lamps on Logging Vehicles

Due to the nature of their construction and operation, the following alternative will be accepted for logging vehicles:

Clearance and side marker lamps shall be mounted on the first unit in such a way as to indicate the maximum width and display an amber light forward and to the side and red to the rear.

These lamps may be mounted on brackets either on front or rear of cab or on bulkhead back of the cab.

Clearance and side marker lamps shall be mounted on the pole trailer in such a way as to indicate the maximum width and display an amber light forward and red to the side and rear.

Such lamps may be of a detachable type if provisions have been made to secure them to either the logs or bunks and shall be carried on the vehicle at the time of inspection. These detachable lights shall include a stinger lamp for mounting on loads or reach which extend more than four feet beyond the rear axle.

2.07 IDENTIFICATION LAMPS

Identification lighting shall be permitted only on vehicles operated in the commercial transportation of persons and only when such identification lighting shall be in accordance with the requirements hereinafter stated:

- (1) No more than one identification lamp shall be allowed on a vehicle;
- (2) No lamp shall contain more than three globes;
- (3) No identification lamp shall be equipped with globes having in excess of three candlepower or which display or project a glaring or dazzling light;
- (4) No identification lamp shall be installed which displays an automatic flashing or intermittent light.
- (5) No identification lamp shall be installed which displays other than a white or yellow light forward.

Lights which are purely decorative and do not present a trade marking, or privileged business advertisement, do not constitute identification lamps, *Provided*, that this regulation shall not apply to termini signs installed on inter-urban and intra-urban buses and coaches.

2.071 Three-in-Line Identification Lamps. For three-in-line identification lamps on motor coaches and motor transports, see Washington State Patrol Vehicle Lighting Chart. Such identification lamps shall be mounted as near the top of the vehicle as practicable but shall not be mounted on the cab of the vehicle equipped with or required to be equipped with cab lamps.

2.072 State Commission on Equipment Approval. The approval of the State Commission on Equipment is required **only** for three-in-line identification lamps before they may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state. Approval is **not** required for any other type of identification lamp.

2.073 Blue Lights on Snow Removal Equipment. Motorized snow and ice removal equipment operated by State and County Highway Departments and City Street Departments are permitted to have installed as equipment a lamp projecting a flashing blue light mounted on top of the cab so as to be visible to persons approaching from the front or rear of the snow removal equipment.

Road maintenance equipment which is used for other purposes in addition to snow and ice removal and is equipped with blue lamps shall have such blue lamps removed or hooded at all times excepting when in actual use as snow and ice removal equipment.

2.08 REAR LAMPS

2.081 General. Every motor vehicle and every trailer and semi-trailer operated upon the public highways of this state shall exhibit on the rear thereof a continuous red light plainly visible to overtaking traffic within an angle including all reasonable positions of approach and from a distance of not less than five hundred feet to the rear thereof; provided, this shall not apply to the first vehicle of a combination while in combination. Rear lamps of any color other than red are illegal.

All rear lamps shall be rigidly attached to the vehicle.

The rear lens or lenses shall not be missing, broken, or discolored.

The clear window through which the white light is directed upon the license plate shall not be missing, discolored, broken, dirty, or loose.

The condition of all rear lamps and license plate lamps shall be such that no possibility presents itself whereby their failure in effectiveness may be considered imminent due to weather conditions, alterations of design or position, method of installation, or for any other reason.

Rear lamp rims, or other like devices, shall be so constructed and maintained as to hold the lens firmly in place at all times. Bent or broken rims which allow water to enter the rear lamp, stop lamp, or license plate lamp device shall be rejected.

2.082 New Vehicles Sold in This State after January 1, 1939. All new vehicles and vehicles owned by the Federal Government and first sold to the public in this state after January 1, 1939 shall be equipped with two rear lamps, one on each side.

Motorcycles shall not be required to have two rear lights.

2.083 Automatically Flashing Lamps or Intermittent Lamps. Flashing lights are prohibited on motor vehicles, except on an authorized emergency vehicle or school bus

or on any vehicle as a means for indicating a right or left turn.

2.084 Non-commercial Vehicles Sold in this State after April 1, 1937. All non-commercial vehicles first sold in this state on or after April 1, 1937 shall have a reflex lens in the left rear lamp or, in place thereof, an approved reflex reflector installed upon the left rear of the vehicle.

2.085 Commercial Vehicles operated in This State. All commercial vehicles operated in this state shall be equipped with two red reflex reflectors installed on the rear. State, city, and county panel patrol cars are not considered to be commercial vehicles.

2.086 State Commission on Equipment Approval. The approval of the State Commission on Equipment is required before any rear lamps or combinations of rear, stop, and signal lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

2.09 VEHICLE LICENSE NUMBER PLATE LAMPS

2.091 General. A white light illuminating the rear license number plate is required on all motor vehicles, trailers, and semi-trailers. The rear license number plate shall be illuminated so that it is clearly legible from a distance of fifty feet to the rear. This lamp may be separate or in conjunction with the rear or tail lamp provided that the same switch operating the headlamps also operates the rear license number plate lamp.

2.092 State Commission on Equipment Approval. The approval of the State Commission on Equipment is required before any license number plate lamps not in combination with tail and stop lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

2.10 STOP LAMPS

2.101 General. Every motor vehicle, trailer, and semi-trailer sold and operated in this state shall be equipped with at least one stop lamp on the rear thereof, which may, but need not be, incorporated with a tail lamp. A stop lamp shall emit a red or amber light and shall be actuated upon application of the service (foot) brake.

2.102 Poorly Located or Obstructed Stop Lamps. All stop lamps, when required, shall be so located upon the rear of the vehicle that, when lighted, they will be plainly visible from the rear and understandable in normal sunlight and during the hours of darkness from a distance of one hundred feet. It shall not project a glaring or dazzling light.

2.103 Stop Lamp Condition and Position. All stop lamps shall be so placed and maintained that there will be no possible failure in effectiveness due to weather conditions, or for any other reason, causing the red or amber signal to become invisible to overtaking traffic.

All stop lamps, separate or in conjunction with another lamp, shall be rigidly attached to the vehicle.

Stop lamp lenses shall not be broken, missing, discolored, dirty or loose.

Stop lamp rims shall be so constructed and maintained as to hold the lens firmly in place at all times. Bent or broken rims which allow moisture to enter the rear lamp, stop lamp, or license number plate lamp shall be rejected.

2.104 Automatically Flashing or Intermittent Stop Lamps. Intermittent or blinking lamps are not permitted for use in stop lamps.

2.105 Method of Inspection

Stop lamps when in combination with rear lamps, shall be inspected for their proper functioning at the same time such rear lamps are lighted, and there shall be a decided increase of light intensity upon illumination of the stop lamp before approval shall be granted. The stop lamp and rear lamp combined into a single two-filament globe is oftentimes installed upside down resulting in no noticeable increase in lamp intensity when stop lamp is illuminated. Even though some lamps are marked to designate the "top" or are designed in such a way that it is impossible to install them incorrectly, the wiring may be faulty, necessitating a change in wiring to obtain correct results.

Stop lamp and rear lamp globes, which are separated or not combined in one globe but are placed in the same lamp shell or housing assembly or use the same common ground, shall also be inspected while the rear lamp is lighted because the common ground is oftentimes sufficient to operate one lamp but not capable of carrying the load necessary to operate both globes, resulting in neither burning when the additional load of one or the other is added.

2.106 State Commission on Equipment Approval. The approval of the State Commission on Equipment is required before any stop lamps used separately or in conjunction with other rear lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

The large-type stop lamp has been approved for use on trucks, buses, and authorized emergency vehicles only.

2.11 BACK-UP LAMPS

2.111 General. Any motor vehicle may be equipped with a back-up lamp either separately or in combination with another lamp, except that no such lamp shall be lighted unless necessary for vision while operating such vehicle in a reverse direction and the use of such back-up lamp will not interfere with or inconvenience other vehicle operators upon the public highways.

A loading lamp shall not be classified as a back-up lamp.

2.112 Color. Back-up lamps shall be equipped with a crystal or clear lens.

2.113 Beam. The beam projected from a back-up lamp may be either a spot or a widely diffused beam.

2.114 Aiming Specifications. The aim shall be such that no part of the main beam will project outside of the prolongation of either side of the vehicle nor for a distance to the rear in excess of twenty-five feet.

2.115 Installation Height. No back-up lamp shall be installed on the rear of any vehicle at a height of more than 12 inches above the rear bumper of such vehicle.

2.116 State Commission on Equipment Approval. The approval of the State Commission on Equipment is not required before back-up lamps may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

2.12 BEAM INDICATOR LAMP

2.121 General. Vehicles originally equipped with a beam indicator lamp designating the uppermost beam of the headlamps shall at all times be maintained in proper operation. All vehicles originally equipped or later equipped with sealed beam headlamps shall also be equipped with a beam indicator lamp which shall be lighted whenever the uppermost beam of light is lighted.

Reject the headlamps of any vehicle equipped with sealed beam headlamps and not equipped with a beam indicator light or any vehicle equipped with a beam indicator light which does not perform properly its intended purpose, such as failure to operate, operation but indication of wrong beam, or indicator light hidden from the vehicle operator's view by accessories, etc.

2.122 Beam Indicator Lamps on Motor Vehicles Registered in This State After January 1, 1948. Every new motor vehicle registered in this state after January 1, 1948 which has multiple-beam road-lighting equipment shall be equipped with a beam indicator which shall be lighted whenever the uppermost distribution of light from the headlamps is in use, and shall not otherwise be lighted. Said indicator shall be so designed and located that when lighted it will be readily visible without glare to the driver of the vehicle so equipped.

2.13 Neon Tubing Displays on Vehicles. The outlining of vehicles with neon tubing for advertising purposes or any other purpose is illegal.

2.14 Running Board Courtesy Lamp. Any motor vehicle may be equipped with not more than one running board courtesy lamp on each side thereof, which shall emit a white light without glare.

Clearance lights when used for this purpose are legal if the color of the light is white without glare.

2.15 Vehicle Lamp Condition. All lamps not required by law installed upon any vehicle shall be in working order, or shall be removed.

3.00 SIGNALS AND REFLECTORS

3.01 HORNS OR WARNING DEVICES

3.011 General. Every motor vehicle shall be equipped with a horn or such warning device capable at all times of emitting a sound audible for a distance of not less than two hundred feet.

If the vehicle is equipped with an air or vacuum horn, it shall also have another horn meeting regulation requirements.

3.012 Condition of Horn or Signal Device

The safe operation of any motor vehicle depends upon a prompt and audible signal being given to warn other motorists or pedestrians of approaching danger. Some motor-driven horns or signals and some vibrating types because of faulty motors or improper adjustments are slow in emitting an audible sound; therefore, any horn or signal which is decidedly slow in this respect shall not be approved.

3.013 Sirens, Gongs, or Whistles. Only authorized emergency vehicles are permitted to be equipped with a siren, gong, or whistle.

Approval of a vehicle equipped with a siren, gong, or whistle shall not be withheld at the Vehicle Safety Inspection lane. If there is any question as to the right of the vehicle owner to equip his vehicle with such a device, disposition will be left to the officer-in-charge.

3.02 MECHANICAL AND ELECTRIC TURNING SIGNALS

3.021 General. All vehicles whose body or load extends or protrudes twenty-four (24) inches or more to the left of the steering post of the said vehicle shall be equipped with mechanical or electrical signal devices capable of displaying such signals. The body or load shall be considered as including everything with the exception of fenders, running boards, and wheels.

When permitted or required, all mechanical and electrical signal devices shall be in proper working order. Electric signal devices shall be equipped with a "tell tale" light giving a clear and unmistakable indication to the operator that the signaling system is functioning properly.

3.022 Mechanical Arm Turning Signals

(a) **Definition.** A mechanical arm turning signal is any device attached to the left side of a motor vehicle and controlled by the operator which is capable of producing signals indicating an intention to turn right, left, or stop substantially in the manner prescribed by the law for arm signals.

(b) **Installation Requirements.** The mechanical arm turning signal, when required, shall be installed at a reasonable height plainly visible throughout the hours of daylight and darkness to oncoming and overtaking traffic.

(c) **Controls.** All control levers, handles, chains, ratchets, switches, etc., shall be in good working order,

conveniently located, and easily controlled by the operator. The controls shall be capable of immediately and positively placing the mechanical arm signal in the required position for making the intended maneuver.

(d) **Color and Illumination.** After January 1, 1948, all mechanical arm turning signals are required to be self-illuminated and shall display only a yellow light to both the front and rear. Self-illuminated electric lamps shall not produce a glaring or dazzling light.

(e) **State Commission on Equipment Approval.** The approval of the State Commission on Equipment is required before any mechanical arm signal may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

3.023 Electric Lamp Turning Signals

(a) **Definition.** Electric lamp turning signals are lamps installed on the front and rear of a motor vehicle which indicate either by means of illuminated arrows, automatically flashing or intermittent lights, the intention of the operator to turn either to the right or to the left.

(b) **Installation Requirements.** Lamps shall be installed on the front of the vehicle and also on the rear with the exception of house trailers, where they are required only on the rear. The lamps shall be installed at a reasonable height, and equipped with "tell tale" light giving a clear indication to the operator that the signal is functioning normally. The light from turning signal lamp shall be plainly visible from a distance of one hundred feet throughout the hours of daylight and darkness to oncoming and overtaking traffic. The operation shall be independent of the stop lamp.

(c) **Controls.** All control levers, handles, and switches shall be in good working order, conveniently located, and easily controlled by the operator and shall be capable of immediately and positively indicating the intended maneuver.

(d) **Color and Illumination.** The light projected from the lamp shall be red or amber to the rear and white or amber to the front but shall not produce a glaring or dazzling light.

(e) **State Commission on Equipment Approval.** The approval of the State Commission on Equipment is required before any electric lamp turning signal may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

3.03 OIL-BURNING FLARES, REFLECTORIZED FLARES, ELECTRIC SIGNALS, FUSEES, AND FLAGS

3.031 General

1. No person shall operate any motor truck, passenger bus, or truck-tractor upon any highway outside the corporate limits of municipalities at any time unless there shall be carried in such vehicle the following equipment except as provided in subparagraph 2:

- A. At least three flares or three red electric lanterns each of which shall be capable of being seen and distinguished at a distance of five hundred (500) feet under normal atmospheric conditions at nighttime.

Each flare (liquid-burning pot torch) shall be capable of burning for not less than twelve hours in five miles per hour wind velocity and capable of burning in any air velocity from zero to forty miles per hour. Every such flare shall be substantially constructed so as to withstand reasonable shocks without leaking. Every such flare shall be in the vehicle in a metal rack or box. Every such red electric lantern shall be capable of operating continuously for not less than twelve hours and shall be substantially constructed so as to withstand reasonable shock without breakage.

- B. At least three red-burning fusees unless red electric lanterns are carried.

Every fusee shall be made in accordance with specifications of the Bureau of Explosives, New York, and so marked and shall be capable of burning at least fifteen minutes.

- C. At least two red cloth flags, not less than twelve inches square, with standards to support same.

2. No person shall operate at the time and under the conditions stated in section 33, paragraph A. (1), any motor vehicle used in transportation of inflammable liquids in bulk, or transporting compressed inflammable gases unless there shall be carried in such vehicle red electric lanterns meeting the requirements above stated, and there shall not be carried in any said vehicle any flares, fusees, or signal produced by a flame.

3. In the alternative, it shall be deemed a compliance with this section in the event the person operating any motor vehicle described in this section shall carry in such vehicle three portable reflector units on standards of a type approved by the State Commission on Equipment. No portable reflector unit shall be approved unless it is so designed and constructed that it will reflect red light clearly visible for a distance of at least three hundred (300) feet under normal atmospheric conditions at nighttime when directly in front of lawful upper beams of headlamps.

When liquid-burning flares are used, the vehicle shall also be equipped with three red-burning fusees and two flags.

When electric flares are used, the vehicle shall also be equipped with two flags. The three fusees shall not be required.

When portable reflector units are used, neither flags or fusees shall be required.

Flares or electric signals not conforming to Sections 3.031, 3.032, and this section and electric flares without batteries, with weak or rundown batteries, or oil flares without wicks or oil shall be considered inadequate to meet the requirements of Section 3.031 and shall be rejected.

3.032 State Commission on Equipment Approval. The approval of the State Commission on Equipment is required before any flare, oil, electric, or reflectorized

type, when required, may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

3.033 Electric or Reflectorized Flares Required. Electric or reflectorized flares are required on all vehicles transporting inflammables or explosives.

3.04 REFLECTORS

3.041 State Commission on Equipment Approval. The approval of the State Commission on Equipment is required before any reflex reflector may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

3.042 Installation Height. Reflectors shall be mounted at a height not less than twenty-four (24) inches and not higher than sixty (60) inches above the ground on which the vehicle stands, except that if the highest part of the permanent structure of the vehicle is less than twenty-four (24) inches the reflector at such point shall be mounted as high as that part of the permanent structure will permit.

3.043 Rear Reflectors

(a) **Non-commercial Vehicles.** All non-commercial vehicles first sold in this state on or after April 1, 1937, shall be equipped with a red reflex lens in the left rear lamp, or be equipped with an approved red reflex reflector installed upon the left rear of the vehicle. Non-commercial vehicles first sold in this state prior to April 1, 1937, are not required to be equipped with either a reflex lens in the rear lamp or a reflex reflector, but in case they are used, they must be of an approved type.

(b) **Commercial Vehicles.** All commercial vehicles operated in this state are required to be equipped with two red reflex reflectors, one on each side, in addition to the rear lamps, upon the rear of the vehicle. State, city, and county panel patrol vehicles are not considered to be commercial vehicles.

3.044 Side Marker Reflectors

(a) **All Vehicles 80 Inches or More in Over-all Width.** Every vehicle having an over-all width of 80 inches or over shall be equipped with four side marker reflectors upon the body; two on each side, one of which shall be located near the front and bottom displaying an amber reflection and one of which shall be located near the rear and bottom displaying a red reflection.

(b) **Truck-Tractors in Combination.** Truck-tractors, while operating in combination, shall not be required to have side marker reflectors.

3.045 Side Marker Reflectors on Logging Vehicles

Due to the nature of their construction and operation, the following alternative will be accepted for logging vehicles:

(a) Red side marker reflectors shall be mounted on the first unit under the bunk of each side.

(b) Amber side marker reflectors shall be mounted on the second unit near the front of the reach on each side.

Red side marker reflectors shall be mounted on the second unit under the bunk on each side or on each side of the reach near the rear.

(c) Stinger reflectors shall not be required on the extreme end of the reach showing to the rear.

3.046 Reflex Reflectors Obstructed. Reflex reflectors when required shall be installed upon the rear or side, as the case may be, in a manner to be plainly visible at all times to overtaking or crossing traffic from all distances up to and including five hundred feet in the required direction.

Exterior vehicle equipment or loads totally or partially obstructing the reflex reflector from view shall be cause for rejection of the reflector.

3.047 Damaged or Broken Reflex Reflectors. All damaged or broken reflex reflectors shall be replaced.

3.048 Configured Glass or Plastic Reflectors. Reflectors of configured glass or plastic shall be installed with word "top" in that position.

4.00 STEERING

4.01 General. The front system or any part of the steering of any vehicle shall be in a safe operating condition. The front wheels, when lifted from the floor, shall be easily rotated when brakes are in off position.

The front system or any part of the steering of any vehicle shall be in a safe operating condition if such vehicle is to be passed by the Vehicle Safety Inspection inspectors. Front wheels shall be free of excessive brake drag. Brake drag shall be written in on the card under "brakes" and punched unsatisfactory and no brake check will be given. Never make this test without having the operator take the vehicle out of gear and shut off the motor.

4.02 Vertical Tolerance. The vertical play shall not exceed one-fourth inch when measured at the side of the tire. This applies to a conventional type front axle. Front wheels when mounted with either type of knee action shall not have more than 5/16 inch vertical play when measured at the side of the tire. All trucks and buses equipped with 20-inch or larger tires shall be allowed 5/16 inch play.

4.03 Wheel Bearing. Wheel bearings shall be of such adjustment as specified by the manufacturer.

Generally speaking, wheels equipped with roller bearings shall have very little, if any, looseness while the tapered type roller bearing operates safely with more clearance than that of the ball bearing type. A rejection for looseness of wheel bearings shall be handled with the greatest of care and tact in order that the vehicle operator or owner is not left with the impression that replacement is necessary when actually correction can be made by adjustment. At all times, inspectors shall avoid committing themselves with statements concerning methods of repair or replacement of parts because

oftentimes the apparent defect may be merely supplementary and thus the proper repair discouraged.

4.04 Looseness of the Steering System (General). Unnecessary looseness of the following shall be cause for rejection:

1. Steering gear housing where connected to the frame.
 2. Excessive wear or looseness of cross shaft in the steering gear housing.
 3. Any looseness in the connection of the pitman arm to the cross shaft.
 4. Unnecessary looseness of drag link or tie-rod ends.
 5. Any looseness of the spring assembly where connected to the axle which may affect the safe operation of the vehicle.
 6. Any looseness of the steering knuckles.
 7. Exceptionally loose or broken spring shackles or broken springs.
 8. Any unnecessary looseness of the radius rod or wishbone.
 9. Excessive wear or looseness in the bearing points of the linkage or cantilever arms of spring type "knee action" front systems.
- This inspection shall be made by placing the jack or hoist under the spring of the "knee action" assembly. The hydraulic type of "knee action" shall be raised by placing the jack under the frame of the vehicle or under the "knee action" assembly, and any looseness in the bearing points of this type can be determined by locking the wheels with the brakes and attempting to roll the wheel with the hands.
10. Unnecessary looseness or broken steering column support brackets.

4.05 Safety Devices Required. All parts of the steering system shall be securely fastened with lock-nuts, cotter keys, or safety wire wherever and as intended.

4.06 Wheel and Rim Condition. Loose, missing, or defective bolts, nuts, lugs, or wheel spokes shall be replaced or repaired before approval. Broken or defective wheel or rim flanges shall be repaired or replaced before approval.

4.07 Steering Assembly, Unobstructed Movement. All moving parts of the steering assembly shall have unobstructed movement. Such parts shall not rub or operate closely enough to any other part of the vehicle to present the possibility of becoming locked or caught while making a turn.

4.08 Steering Wheel Slack or Play. Up to and including 18-inch steering wheels, play or slack shall not exceed three inches when measured at the outer rim of the steering wheel. Steering wheel play or slack shall not exceed four inches when measured at the outer rim of the steering wheel when the diameter is over 18 inches.

All such inspections of the steering wheel shall be made with the front wheels approximately straight

ahead as some vehicles are designed to be of lower gear ratio in the position of a short turn which would indicate an exaggerated amount of slack or play if inspected in this position.

4.09 Binding or Hard-Turning Steering Wheel. Steering wheels having a definite tendency to bind or to make steering difficult shall be rejected.

More often this tendency is encountered after a first rejection for too much play in the steering wheel after an attempt has been made to decrease this play by adjusting the gears too tightly. In front end accidents where steering assemblies are subjected to severe blows, the worm gear or roller followers, if used, oftentimes become chipped or broken causing spots or points in the turning radius where binding or sticking takes place.

4.10 WHEEL ALIGNMENT

4.101 Wheel Alignment Tolerance. The misalignment or side slip of the front wheels of any vehicle shall not exceed thirty feet per mile of toe-in or twenty feet per mile toe-out.

4.102 Importance of Correct Wheel Alignment

An incorrectly aligned front system causes excessive tire wear, hard steering, diving, wander, shimmy, and fatigue of the operator. In addition to creating a hazardous condition in which the operator of the vehicle is forced to operate, the constant strain upon the wheel assembly may cause a mechanical failure.

4.103 Method of Wheel Alignment Inspection

At the present time, it is not practical to inspect for castor and camber of front systems in the Vehicle Safety Inspection lanes; however, if the inspector has reason to believe the castor or camber is incorrect, the operator shall be so informed because the average operator believes that alignment of the front wheels is all that can be faulty in this assembly. If this misguided thought on the part of the operator is not corrected, the resulting tendency will be a hindrance to such repair rather than the encouragement of repair.

When side-slip is within the tolerance allowable but is not zero, the operator shall be invited to return for reinspection of the alignment after correction has been made.

Causes of misalignment can be classified under two types: first, due to looseness of the pertinent parts controlling the alignment; any such parts may be loose showing wheel alignment correct at one time and not at another; therefore, any time that looseness of these parts affecting alignment is cause for rejection, the alignment shall be rechecked upon the vehicle's return and rejected if changed to the extent that it is not within the tolerance allowable even though approval may have been granted upon any previous inspection. The second type is caused by incorrect adjustment and damaged or bent parts which affect the alignment of the wheels. Whenever

this is evident, it shall be pointed out to the operator for correction before the alignment of the wheels is attempted. From a standpoint of more efficient service to the vehicle operator, the alignment and brakes shall be rechecked after brake relines, bushing replacements, or any other repair or adjustment which necessitates the removal or change of any parts pertinent to the alignment of the front or rear wheels.

4.104 Reinspection of Brakes after Repairs. After a vehicle has been rejected for steering, the inspector may require a recheck of the brakes.

5.00 BRAKE SYSTEM

5.01 BRAKING EFFORT

5.011 Four-Wheel Brakes. All vehicles equipped with brakes on more than two wheels shall be capable of producing a braking effort on the Vehicle Safety Inspection lane equipment equal to at least forty per cent of the total weight of the vehicle when making an emergency stop.

5.012 Two-Wheel Brakes. All vehicles equipped with brakes on only two wheels shall be capable of producing a braking effort on the Vehicle Safety Inspection lane equipment equal to at least thirty per cent of the total weight of the vehicle.

Vehicles manufactured prior to January 1, 1938, and originally equipped with four-wheel brakes may have the brakes on one axle disconnected provided the disconnection is on the front axle.

5.013 Difference Allowable. The difference in braking effort of the two wheels upon any one axle shall not exceed thirty per cent.

The braking effort of either the front or rear wheels shall not exceed 75 per cent of the total braking effort on vehicles weighing less than 5,000 pounds. On vehicles weighing 5,000 pounds or more the braking effort shall not exceed 60 per cent.

5.02 Brake Inspection Refused. The reasons for refusal of the brake inspection are as follows:

(a) Brake inspection shall be refused when brake rods have been bent or kinked for the purpose of taking up or shortening them or for any other similar attempt of evading the proper repair of the brakes and their controls.

(b) Any vehicle equipped with chains shall not be allowed upon the brake tester.

(c) Brake inspection shall be refused where the undercarriage, steering, or any other part is in such a condition that the failure or breakage of these parts due to an emergency stop is probable and which might result in damage to the vehicle or other vehicles in the inspection lane.

(d) Brake inspection shall be refused when there are passengers, animals, or loose objects in or on the vehicle.

5.03 Brake Requirements. Every motor vehicle, other than motorcycles, when operated upon a public highway,

shall be equipped with brakes, on at least two wheels of the same axle.

Every motorcycle and bicycle, when operated upon the highways of this state, shall be equipped with at least one friction brake, which may be operated by hand or foot.

Every new motor vehicle, trailer, and semi-trailer, sold in this state after January 1, 1938, and operated upon the public highways of this state shall be equipped with brakes upon all wheels of at least two axles.

Trailers and semi-trailers of less than 2,000 lbs. gross weight including load need not be equipped with brakes.

The brakes on trailers and semi-trailers where required shall be so designed as to be applied by the driver of the towing motor vehicle from its cab.

5.04 BRAKES, MECHANICAL REAR AND HYDRAULIC FRONT

A few early model cars were manufactured with mechanically operated rear brakes and front brakes which were operated by the oil from the transmission. The front brakes of this type are slow in operating and it is impossible to obtain a brake reading from them on the Vehicle Safety Inspection lane equipment; however, rear brakes shall be checked on this equipment, and road test will give fair indication as to the front brakes' effectiveness and evenness provided the rear brakes were found to be satisfactory.

5.05 VEHICLES OPERATED BY INSPECTORS

No inspector shall operate a vehicle on the Vehicle Safety Inspection lane unless requested by the operator or granted permission by the operator to do so.

5.06 METHOD OF BRAKE TESTING

Vehicle operators shall not be allowed to drive very slowly upon the brake tester and instantly apply the brakes. Unevenly adjusted brakes are very apt to produce a satisfactory reading on the brake tester by this method. This is due primarily to the fact that most brakes are designed to be self-energized by the forward rotation of the wheel. It is then easily seen that an immediate stop from a slow speed does not allow this factor to come into play and a true picture of the brake condition is not obtained.

It is also important not to allow skidding of the tires when testing the brakes. This may result in a rejection for unequalization of the brakes when actually they should have passed inspection. The brake tester in this case is measuring the coefficient of friction of each tire which skids and this may vary in each tire enough to exceed the thirty per cent tolerance.

If at any time the inspector has reason to believe that the brakes of any vehicle will not perform properly on a slow, soft pedal stop in addition to the sudden hard pedal stop, he shall require the vehicle

operator to perform both such stops showing adequate and even brakes in the sudden stop and even brakes in the slow stop as is required, before approval shall be granted.

Inspectors shall use extreme care and thought when calling the operator's attention to the defects of his vehicle in order not to give any wrong impression such as saying "one brake is too weak to pass." This leads the operator to believe that one brake is all that needs attention when actually all brakes should be adjusted.

5.07 Pedal Clearance. There shall be at least two inches reserve when the brake pedal is fully depressed.

5.071 "Pumping Up" Pedal

At no time shall the operator be allowed to pump up the foot pedal in a hydraulic brake system so that after several applications of the foot, the pedal travel is less than when depressed only once. This condition shall be cause for rejection.

5.072 Soft or Spongy Pedal

A soft or spongy pedal accompanied by a varied unequalization of the brakes shall be cause for rejection.

5.08 HAND BRAKE

5.081 Required. Every motor vehicle shall be equipped with two separate means of applying the brakes upon at least two wheels of the same axle capable of holding the motor vehicle or combination of vehicles when fully loaded upon a plus or minus grade of five per cent.

5.082 Ratchet, Catch, and Lock. The hand brake lever catch, lock, and ratchet shall at all times function properly and the designed means of holding the ratchet engaged shall be maintained in good working order.

5.083 Release. The hand brake lever from a fully applied position shall be such that its release is accomplished with comparative ease.

5.084 Method of Inspection

It is necessary and desirable to actually try the stopping or holding ability of the brake to determine its true condition, because instances have been found where the travel of the hand brake has been stopped by frozen rods or cables and by blocking or wiring under the floorboards, which indicates sufficient reserve travel but means nothing as to the efficiency of the brake itself. With the motor running, the hand brake shall be applied and the vehicle put in second gear, slowly engage the clutch, and see if it slows the motor. Trucks shall be checked by the same procedure using third gear.

5.085 Vehicles Manufactured Without a Hand Brake

A few early model vehicles were manufactured without a hand brake but were provided with a means of holding or locking the service brake when the vehicle was stopped or parked. Most generally this is found to be accomplished by means of a ratchet upon the foot brake pedal. This type, it is

agreed, does not fulfill to the letter the law requiring a separate means of brake application. However, it is not the intent of the law to restrict the operation of such vehicles operating previous to this enactment. Therefore, if the ratchet or other such arrangement of this type of brake is capable of performing the duties for which it was intended, it shall be passed at the Vehicle Safety Inspection lane.

6.00 EXHAUST SYSTEMS

6.01 MUFFLER

6.011 Required. Every motor vehicle shall be equipped with a muffler in good working order, void of open seams, perforations, or leaking connections, and in constant operation which effectively prevents leaking of gas fumes and excessive or unusual noise.

6.012 Requirements. Every muffler upon any motor vehicle shall be free of open seams, perforations, or leaking connections, except small holes for the purpose of draining water or condensation which may collect in the muffler shall be permitted; provided, that these drainage holes have not enlarged due to rust or for any other reason to a diameter greater than one-fourth inch; and further provided, that there shall be not more than two such drainage holes in any one muffler.

Mufflers installed with drainage holes not in their proper position, which is the lowermost part of the muffler, do not drain or perform their intended purposes but also direct what fumes they release to underparts of the vehicle allowing gas to enter occupants' compartments. These conditions when found shall be cause for rejection.

6.013 Repair of. The repair of mufflers or exhaust systems shall be made by welding.

6.02 TAIL PIPE

6.021 Required. Every passenger motor vehicle shall be equipped with a tail pipe or similar device in good working order which will effectively carry all gas fumes discharged from the muffler a sufficient distance to or beyond the rear of such vehicle so as to prevent and possibility of those fumes entering the occupants' compartments of the vehicle; provided, this shall not apply to older model vehicles which were designed with the muffler to the rear a sufficient distance. Trucks or nonpassenger carrying vehicles are not required to be equipped with a tail pipe.

6.022 Requirements. Every tail pipe upon any passenger motor vehicle shall be free of open seams, perforations, leaking connections, bends, or dents which are restrictive to the normal exhaust. Tail pipe ends which have been pinched or squeezed together restricting the exhaust shall not be permitted.

The outlet ends of tail pipes often become rusted and deteriorated. This deterioration shall be allowed in passenger vehicles provided it does not affect more than eight inches of the rearmost part of

the tail pipe. The cutting or shortening of any tail pipe to a length less than its original design shall be cause for rejection.

6.023 Cut-Outs and By-Passes. The use of cut-out, by-pass, or other similar muffler elimination device is unlawful and shall be rejected by the Vehicle Safety Inspection inspectors when found in any motor vehicle exhaust system.

Removal of such devices oftentimes leaves exhaust pipes with large holes which necessitates extensive welding or patching or even replacement of the exhaust pipe itself; therefore, it shall be permissible for the vehicle owner or operator to leave installed such device provided it is placed in a closed position to make impossible its operation and its leaking of exhaust fumes.

6.03 Exhaust Pipes, Manifolds, Connections, and Gaskets. Exhaust pipes shall be free of open seams, holes, or leaking connections; and shall not be bent or squeezed together at any point in a manner restricting the normal exhaust flow.

Manifolds shall not be broken, cracked, or in a leaky condition.

Exhaust port and manifold gaskets shall be in a gas-tight condition.

Connections between manifold and exhaust pipe, exhaust pipe and muffler, and muffler and tail pipe shall be free of any gas leaks.

7.00 GLASS CONDITION

7.01 WINDSHIELDS AND WINDOWS

7.011 Windshield Required. Every motor vehicle originally equipped with a windshield at the time of first sale shall be so equipped if such vehicle is to be operated upon the public highways of this state. Vehicles used where overhead clearance is restricted to the extent that it is advantageous to remove the windshield and other portions of the vehicle, such as those used by farmers in orchards or used under any other similar conditions, shall be permitted to operate without a windshield while engaged in this type of work. Vehicles operating under conditions requiring the removal of the windshield or other portions thereof shall be subject to the approval of the Vehicle Safety Inspection district officer.

7.012 Required Glass Condition

(a) **Windshields and Windows.** Windshields and glass in the operator's compartment shall be in such condition as to provide the operator of the vehicle unobstructed vision in all directions. The left window next to the operator shall be capable of being opened for the purpose of giving proper hand signals.

(b) **Broken Glass.** Parts or fragments of broken windows, partitions, or any other glass in or on a motor vehicle shall not be permitted to remain if such may, in case of jar or accident, or for any other reason, be considered detrimental to the personal safety of the vehicle's occupants.

(c) **Non-transparent Material Replacing Glass.** The replacement of any glass in part or in whole with non-transparent material shall not be permitted in windshield or side windows in operator's compartment.

(d) **Stickers, Signs, Posters, Cards, or Curtains on Glass.** It shall be unlawful for any person to operate any motor vehicle upon the public highways of this state with any sign, poster, card, sticker, or other nontransparent material upon the windshield or rear or side windows of such motor vehicle other than a certificate or sticker required by law or rules or regulation of proper and lawful authority, in which case the same shall be placed in the lower right-hand corner of the windshield only. Rear window stationary venetian blinds are not considered to obstruct vision and are permitted.

(e) **Safety Glass Required.** Any vehicle manufactured or assembled on or after January 1, 1938 shall be equipped with safety glass wherever glass is used in partitions, doors, windows, and windshields. After January 1, 1938, all replacements in vehicles required to be equipped with safety glass shall be made with safety glass.

Every inspector shall encourage the use of safety glass wherever possible and especially in those vehicles where replacement is necessary and which are not required by law to be equipped with safety glass. Every vehicle operator should be aware of the benefits and protection offered him and his passengers through the use of safety glass.

(f) **Safety Glass Identification.** Safety glass where required shall be identified by the manufacturer's mark or trade name.

(g) **State Commission on Equipment Approval.** The approval of the State Commission on Equipment is required before any safety glass may be legally used or offered for sale for use upon any vehicle operated on the public highways of this state.

7.013 Inspection of Vehicle Glass. The following regulations are established for the inspection of vehicle glass:

No. 1 windshield	—driver's side
No. 2 windshield	—passenger's side
No. 3 ventilator glass	—driver's compartment
No. 4 front door glass	
No. 5 rear door glass	
No. 6 rear side glass	—two-door sedan
No. 7 rear quarter glass	—four-door sedan
No. 8 rear side glass	—coupe
No. 9 rear glass	

Reject if:

No. 1:

- (a) Arc of windshield wiper is not clear of star cracks, stone bruises, cracks, discolorations, and blemishes.
- (b) Any star cracks, stone bruises, cracks, discolorations and blemishes are more than three inches from bottom; two inches from

top; one inch on the left; and one inch on the right.

- (c) Any star cracks, stone bruises, or blemishes are one inch or more in size outside area described in (a) and (b).

No. 2:

- (a) Arc of windshield wiper has combined star cracks, stone bruises, cracks and/or blemishes of one-half inch or more in size; or any defect which interferes with the windshield wiper.
- (b) Same as 1 (b).
- (c) Same as 1 (c).

No. 3:

- (a) More than two inches discoloration on bottom or one inch on front and top.
- (b) Any crack which has sharp edges.

No. 4:

- (a) More than two inches discoloration from top or rear and/or five inches from bottom.
- (b) Any crack which has sharp edges.

Nos. 5 and 6:

- (a) Any crack which has sharp edges.

No. 7:

- (a) Any crack which has sharp edges.

No. 8:

- (a) Any crack which has sharp edges.

No. 9:

- (a) Any discoloration more than two inches around outside edges unless outside rear view mirror is installed.
- (b) Any crack which has sharp edges.

8.00 WINDSHIELD WIPERS

8.01 Required. Every new motor vehicle first sold or delivered after January 1, 1938, shall be equipped with at least two windshield wipers or similar devices capable of cleaning over two separate or combined areas of not less than one hundred and twenty square inches each. Motor vehicles first sold or delivered prior to January 1, 1938, shall be equipped with at least one windshield wiper or similar device capable of cleaning an area of at least one hundred and twenty square inches upon the side of the windshield directly ahead of the vehicle operator.

8.02 Operation Requirements. Windshield wipers may be operated automatically or by hand. All windshield wipers when required shall be in good working order and shall not pass inspection if the wiper is slow or hesitant in its operation or does not perform its work properly, nor shall any wiper pass inspection whose blade is not in good condition or does not rest firmly upon the surface of the windshield.

8.03 Controls. All switches or valves controlling windshield wipers shall be conveniently accessible to the operator.

If changes have to be made in these controls resulting in awkward manipulation of same or inefficient operation of the wiper, approval shall not be granted.

8.04 Follow-Type Wipers

If the vehicle's original equipment does not include or is not required to include two wipers but an extra wiper of the follower type has been installed operated from the action of the wiper on the operator's side, and because of this additional working load required of the original wiper, its action is stopped or slowed to a point of unsatisfactory operation, the follower may be removed if the operator so desires; however, the operator shall be encouraged to repair the cause of the original wiper's inability to operate both wipers rather than to lessen the load of the first and deprive himself of that increased visibility. The follower-type of wiper when properly operating from and with the driving wiper shall be considered adequate to meet the requirements described under Section 8.01.

9.00 LICENSES

9.01 VEHICLE LICENSE NUMBER PLATES

9.011 Required. Every motor vehicle is required to display conspicuously two license number plates, one each upon the front and rear of such vehicle in a manner which allows them to be plainly seen and read at all times.

Motorcycles, Trailers, Semi-Trailers, and Motor-Bicycles. One license number plate is required upon the rear of all motorcycles, motor-bicycles, trailers, and semi-trailers.

9.012 Installation Height. The license number plates shall be installed at a height not less than twelve inches nor more than forty-eight inches above the surface upon which the vehicle stands. Provided, in cases where motor vehicles are constructed with permanent necessary equipment or body construction so that it is impossible to attach the rear vehicle license plate in a horizontal position at a distance of not less than one (1) foot nor more than four (4) feet from the ground so it can be plainly seen and read at all times, it may be placed as follows:

In no case shall the vehicle license plate be placed lower than one (1) foot from the ground. The vehicle license number plate shall be placed in a horizontal position at the lowest point above the normal maximum height of four (4) feet above the ground so it can be plainly seen and read at all times.

When measuring installation height of license number plates, the minimum shall be taken from the bottom and the maximum from the top of such plate.

9.013 Rear License Number Plate Lamp Required. Provision for the illumination of the rear license number plate is required on all vehicles. The light provided for

this purpose may be separate or in combination with the rear or tail lamp and shall be so designed as to illuminate the rear plate with a white light whose source is not visible to approaching traffic. When this light is separate from the rear lamp, it shall be made to turn on and off with the switch operating the headlamps. The license number plate when illuminated shall be plainly visible from a distance of at least fifty feet.

9.014 Legibility of License Number Plates. License number plates shall be installed right side up in a horizontal position, kept clean, and shall not be obscured by bumpers, bumper guards, or other exterior vehicle equipment.

Upon some vehicles it has been found to be impractical to locate the front plate in a position visible from all front angles; therefore, if in such cases the plate is visible from the operator's position of an oncoming vehicle, it shall be considered satisfactory. The visibility of license number plates is important in the enforcement of all safety regulations.

9.015 Painting, Repairing, and Changing of License Number Plates. The alteration or repainting of license number plates is illegal.

Any such altered or disfigured license number plates shall not be rejected when encountered in the Vehicle Safety Inspection lanes. If both license number plates are altered or disfigured, an application by the owner for a new set of plates is required. If only one license number plate is altered or disfigured, an application for a duplicate plate is required.

9.016 Transparent Material Covering License Number Plates. Transparent material covering license number plates shall be kept in a condition to allow the license number plate to be clearly legible at all times.

9.017 Inspection of

Approval shall not be withheld for vehicles not meeting the requirements of Sections 9.011, 9.012, 9.013, 9.014, 9.015, and 9.016. Enforcement of these sections shall be the responsibility of the officer-in-charge.

9.02 OPERATOR'S LICENSE

9.021 Required. The operator of any vehicle presented at the Vehicle Safety Inspection lane shall be an authorized motor vehicle operator. To meet this requirement, the operator must fall within one of the following categories:

(a) A Washington resident holding a Washington license or holding a non-resident license which is deemed valid and current under reciprocity rulings issued by the Department of Licenses;

(b) A non-resident over sixteen years of age holding a non-resident license;

(c) An unlicensed non-resident, over sixteen years of age, whose home state or country does not require licensing of vehicle operators, who has a vehicle license number plate for the current calendar year in the state or country of which he is a resident, but such non-resident must obtain a Washington license if he drives any car other than the one having the vehicle license number plate of his home state or country or if he drives his car with non-resident plates more than sixty days in any one calendar year in this state.

For failure to fulfill this requirement, the vehicle shall not be rejected, but the officer-in-charge of the lane shall immediately and without exception hold the vehicle at the end of the lane until satisfactory disposition is made by the officer-in-charge.

If he has no valid operator's license, he shall be issued an arrest ticket.

9.022 Resident Defined. Anyone who has been in the state for ninety days, who maintains a home here, or anyone who votes in Washington and claims this as his home state is a resident.

9.023 Military Personnel. Expiration date of operator's licenses for persons in the armed forces of the United States.

A motor vehicle operator's license issued to any person serving in the armed forces of the United States, if valid and in force and effect at the time such person entered such service, shall continue in full force and effect so long as such service continues unless the same is sooner suspended, cancelled, or revoked for cause as provided by law and for not to exceed ninety (90) days following the date on which the holder of such operator's license is honorably separated from service in the armed forces of the United States.

A military operator's license is valid only when operating an official motor vehicle.

9.03 CERTIFICATE OF REGISTRATION

9.031 Required. A certificate of registration properly endorsed by the registered owner shall be carried at all times upon the vehicle which it describes. The operation of any vehicle upon the public highways of this state without this certificate of registration is illegal. For the period of time between application for vehicle license and the receipt of the certificate of registration, the receipt of application issued by the county auditor or other authority is considered sufficient to comply with the above requirements. City, county, state, and government-owned licensed vehicles shall not be required to carry a certificate of registration.

Inspection shall not be refused the operator of any vehicle not complying with the above requirements. The vehicle shall be held at the end of the lane until satisfactory disposition has been made by the officer-in-charge.

10.00 AUTHORIZED EMERGENCY EQUIPMENT**10.01 AUTHORIZED EMERGENCY VEHICLE**

10.011 Definition. Any vehicle, as defined in section 1, chapter 188, Laws of 1937, of any fire department, police department, sheriff's office, coroner, prosecuting attorney, Washington State Patrol, ambulance service, public or private, or any other vehicle authorized in writing by the State Commission on Equipment.

Every vehicle requiring written authorization by the State Commission on Equipment shall at all times carry upon the vehicle the copy of such authorization which will be signed by the Chairman of the State Commission on Equipment and will be in force to the end of the calendar year and/or the expiration of his term of office.

10.012 Special Equipment and Privileges Permitted

Any authorized emergency vehicle, due to its type and purpose of operation, is permitted special equipment and privileges as herein described:

- (a) Sirens, gongs, and whistles.
- (b) Panel patrol vehicles used and described as authorized emergency vehicles are not considered to be trucks or commercial vehicles and therefore do not require the use of a rear reflector in addition to the reflex lens in the rear lamp.
- (c) The vertical aiming limits required of headlamps and the vertical and lateral limits required of auxiliary lamps and adverse weather lamps shall apply to authorized emergency vehicles.

11.00 MISCELLANEOUS EQUIPMENT**11.01 GROSS WEIGHT MARKINGS**

11.011 Required. Every vehicle licensed as a truck except city, county, state, and government-licensed vehicles shall have plainly inscribed upon each side of such vehicle a gross weight sign indicating the licensed gross weight of the vehicle.

The sum of the vehicle's empty weight and its licensed load as shown on the certificate of registration shall correspond to the gross weight signs upon the vehicle.

11.012 Size and Color. The letters and figures making up the gross weight sign shall not be less than two inches in height, shall be of a contrasting and washable color, and shall be plainly legible and understandable.

11.013 On Passenger Vehicles. Passenger vehicles licensed as trucks (sometimes so licensed to take advantage of loading zones in larger cities) shall conform to the gross weight marking requirements of Section 11.011.

Passenger vehicles licensed as trucks shall have the name of the owner painted on both sides. These vehicles shall not be required to have additional red reflex reflectors.

11.014 Violation Of

Approval shall not be withheld for vehicles not meeting the requirements of Sections 11.011, 11.012, and 11.013. Enforcement of these sections shall be left to the officer-in-charge.

11.02 REAR VIEW MIRRORS

11.021 Required. Every motor vehicle shall be equipped with an adequate mirror enabling the operator of such vehicle to have at all times a clear unobstructed view to the rear thereof and for a distance of at least two hundred feet. Provided, in any instance where it is necessary to extend a rear vision mirror beyond the extreme left or right of the body the same may be done despite the fact that this results in a width in excess of eight (8) feet, but no rear vision mirror shall extend more than five (5) inches beyond the extreme limits of the body.

11.03 TIRES

11.031 Required. Every vehicle when operated upon the public highways of this state shall be equipped with tires in such condition as to not endanger or be likely to endanger persons or property.

11.032 Inspection Of. Tires shall be checked by visual examination, and any one of the following defects shall be cause for rejection:

(a) When the wear on any one or more tires at any part is excessive as indicated in items 1, 2, and 3 following:

- (1) Passenger cars (including motorcycles) when the first outer body ply of cords is exposed.
- (2) Buses when the first outer body ply of cords is exposed on the tread.
- (3) Commercial vehicles (including trailers) when cords of outer body ply of tire having not more than 4 body plies are exposed. For heavier tires, when worn through one-half of the number of plies in excess of four (4) as indicated in the following table:

<i>Ply Exposed Counting From Inside</i>	<i>No. of Plies Worn Through</i>	<i>Original No. Body Plies</i>
Fifth	1	6
Sixth	2	8
Seventh	3	10
Eighth	4	12
Ninth	5	14
Tenth	6	16

(b) Bulges when temporary repairs are made by the use of blowout patches or boots. Repairs must be permanent.

(c) When there are tread cuts or snags in excess of one inch in any direction as measured on the outside of the tire and deep enough to expose the body cords, or when side-wall scuff, cuts, or snags have damaged the body cords.

Smooth tires are not a cause for rejection; however, their disadvantages shall be pointed out to the vehicle operator encouraging their replacement.

11.033 Spare Tires. A spare tire shall not be rejected for its condition; however, it shall be securely fastened upon the vehicle in a manner that in traffic it will not become unfastened and fall or roll endangering persons or property. Vehicles are not required to be equipped with spare tires.

11.04 FENDERS, RUNNING BOARDS, AND BUMPERS

11.041 General. No vehicle shall be allowed to operate upon the public highways of this state with fenders or running boards which have become damaged and/or for any other reason present sharp protruding portions of such parts. Bumpers whose horizontal bar has been removed or broken off, leaving sharp protruding brackets or other attachments shall not be permitted nor shall any bumper whose horizontal bar is not centered be permitted on any vehicle.

11.042 Fenders Required. Every vehicle shall be equipped with a device adequate to effectively reduce the wheel spray or splash of water from the roadway to the rear.

11.05 DOOR LATCHES AND HANDLES

11.051 Requirements. Door latches or handles shall be rejected for any one of the following conditions:

- (a) Latch devices on any body doors which permit the door to accidentally swing open.
- (b) Inside front door controls which do not operate or are missing.
- (c) Window crank on operator's side which does not work to allow proper hand signals to be made unless the vehicle is equipped with approved signal device.

11.06 TRAILER HITCHES AND DRAW BARS

11.061 Requirements. Every hitch installed on the rear of a motor vehicle for the purpose of towing a trailer shall be connected directly to the chassis.

The vehicle hitch or coupling and the trailer tow-bar shall be of such design, material, and strength as to prevent any possibility of the two vehicles becoming separated in normal operation.

11.062 In Addition, Safety Chains or Cables Required. In addition to requirements of Section 11.061, every trailer shall be coupled with safety chains or cables to the motor vehicle by which it is towed.

These devices together with their means of attachment shall be adequate to prevent the separation of the towed and towing vehicles in the event of a failure of the tow-bar.

Such safety chains or cables shall be crossed between the towed and towing vehicles unless of a type approved by the State Commission on Equipment.

NOTE: Exception of Single Wheel Trailers.

(a) **Single Wheel Trailers Safety Chains or Cables.** Single wheel trailers shall not be required to be equipped with safety chains or cables.

(b) **Single Wheel Trailer Hitches.** Single wheel trailer hitches shall not be required to be connected directly to the chassis of the towing vehicle.

The hitch bolts or pins shall be securely fastened with lock-nuts, cotter keys, or safety wire when such type of trailer is towed behind a motor vehicle.

12.00 VEHICLE REINSPECTION

12.01 Rejection of Vehicle Previously Approved. Any vehicle which has been repaired or adjusted and presented at the Vehicle Safety Inspection lane for reinspection after being approved as to equipment shall be rejected if the equipment concerned is not within the tolerance allowable.