



EXPEDITED RULE MAKING

CR-105 (June 2004)
(Implements RCW 34.05.353)
EXPEDITED RULE MAKING ONLY

Agency: Washington State Patrol

Title of rule and other identifying information: (Describe Subject) [Lighting Requirements](#)

NOTICE

THIS RULE IS BEING PROPOSED UNDER AN EXPEDITED RULE-MAKING PROCESS THAT WILL ELIMINATE THE NEED FOR THE AGENCY TO HOLD PUBLIC HEARINGS, PREPARE A SMALL BUSINESS ECONOMIC IMPACT STATEMENT, OR PROVIDE RESPONSES TO THE CRITERIA FOR A SIGNIFICANT LEGISLATIVE RULE. IF YOU OBJECT TO THIS USE OF THE EXPEDITED RULE-MAKING PROCESS, YOU MUST EXPRESS YOUR OBJECTIONS IN WRITING AND THEY MUST BE SENT TO

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AND RECEIVED BY (Date) August 3, 2015

Purpose of the proposal and its anticipated effects, including any changes in existing rules: Changes to chapter 204-21 WAC include format clean up to change the word "shall" to "will" or "must," providing clean up to existing language, renumbering WAC 204-21-160, and updating RCW and WAC references to ensure that they are current.

Reasons supporting proposal: Updates are to coincide with recommended practice for rule writing as well as to provide clean up to the entire chapter.

Statutory authority for adoption: 46.37.005 and 46.37.320

Statute being implemented:

Is rule necessary because of a:

Federal Law?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Federal Court Decision?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
State Court Decision?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

If yes, CITATION:

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5-27-15

NAME (TYPE OR PRINT)

John R. Batiste

SIGNATURE

TITLE

Chief

Name of proponent: (person or organization)

- Private
- Public
- Governmental

Name of agency personnel responsible for:

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Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters:

AMENDATORY SECTION (Amending WSR 08-19-104, filed 9/17/08, effective 10/18/08)

WAC 204-21-160 Slow-moving vehicle emblems. (1) 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))~~ must at all times be equipped with a slow-moving vehicle emblem.

(2) 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 requirements of this section.

(3) In order to comply with the provisions of RCW 46.37.160(6), slow-moving vehicle emblems:

(a) Must be constructed in conformance with SAE Standard J943.

(b) Must 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.

(c) Must be mounted, as nearly as is practicable, centrally at the rear of the vehicle in an unobscured location.

(d) Must 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.

(e) May be permanently attached to the vehicle. Where portable brackets are used, they must be so constructed that they will hold the emblem securely and in a position meeting the requirements of all other mounting instructions under this section.

(f) Must be placed on the towed unit if the towed unit is sufficiently large to obscure the slow-moving vehicle emblem on the farm tractor, the towed unit must be equipped with a slow-moving vehicle emblem. In such cases, the towing vehicle need not display the emblem. 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.

~~((f))~~ (g) Must not replace any of the required lamps or other devices required in chapter 46.37 RCW.

~~((g))~~ (h) Must not be used as a clearance marker for wide equipment.

AMENDATORY SECTION (Amending WSR 08-19-104, filed 9/17/08, effective 10/18/08)

WAC 204-21-170 Additional lighting for snow removal, highway maintenance and refuse haulers. (1) Additional headlamps may be positioned sufficiently high enough to clear operating equipment provided they are aimed at an angle to avoid blinding oncoming traffic while on their routes, involved in construction, maintenance, and/or operations. Except, refuse haulers must:

(a) Use regular mounted headlamps when transporting refuse to the dump site. Auxiliary headlamps may be used if necessary.

(b) Use the alternate lights when the refuse haulers' collections container is in a position to obscure the headlamps, and will not exceed twenty miles per hour.

(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) No flashing red warning signal except those required by RCW 46.37.150 (~~shall~~) will be displayed or used on any highway equipment.

(4) Amber colored lamps must:

(a) 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, unless otherwise prescribed below.

(b) Have a minimum light intensity of the lamp filament not be less than twenty-one candle power.

(c) Be used on the following vehicles:

(i) Power shovels or other similar highway maintenance equipment. The amber lamp and a red flag are to indicate an extension which designates the maximum danger limit created by the swing of the cab while operating along the traffic lane.

(ii) Other highway equipment which creates a potential hazard to traffic including those vehicles and trailers for construction, maintenance, and operations.

(iii) Knuckle of all man lift-type platform trucks with articulating boom, where the knuckle is capable of being rotated beyond the side of the truck.

(d) Only be illuminated:

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

(ii) 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.

AMENDATORY SECTION (Amending WSR 08-19-104, filed 9/17/08, effective 10/18/08)

WAC 204-21-180 Deceleration alert lamp system. (1) Deceleration warning lights must:

(a) Be installed as follows:

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

(ii) Provision must be made for rigid or shock-absorbing mounting.

(iii) The axis of the light beam must be parallel to the roadway and the longitudinal axis of the vehicle.

(iv) The lamp must be mounted on the centerline of the rear exterior of the vehicle or with the optical center of the lamp not more than fifteen inches from the centerline.

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

(vi) Visibility of the deceleration lamps to the rear must not be obstructed by any part of the vehicle or load thereon.

(b) Meet Type I or Type II requirements and test methods for a deceleration alert system.

(i) Type I - the system must:

(A) Be mounted on the rear of the vehicle as close as possible to the vertical centerline of the vehicle.

(B) Be mounted at a height of not more than seventy-two inches nor less than fifteen inches.

(C) Have a center-to-center (optical axis) distance between two adjacent compartments (~~((should not exceed))~~) not exceeding six inches.

(D) Have three compartments. The center compartment emits a green light and is energized when the vehicle operator has the accelerator depressed. The two outer compartments emit an amber light and are energized when the operator releases the accelerator and prior to applying pressure to the foot brake pedal. When the amber lights are energized, the green light is deenergized. When pressure is applied to the foot brake pedal, the amber lights are deenergized and the vehicle's stop lamps operate in the normal manner. SAE Standard J578d is adopted for color chromaticity boundaries.

(E) Meet the requirements under the following sections of SAE J575g: Section B, samples for test; Section C, lamp bulbs; Section D, laboratory facilities; Section E, vibration test; Section F, moisture test; Section G, dust test; Section H, corrosion test; and Section J, photometry. If plastic material is used in optical parts it must comply with the requirements set forth in SAE J576c.

(F) Measure the beam candle power with the H-V axis taken as parallel to the longitudinal axis of the vehicle. The candle power measurements for the center green compartment must be made with the incandescent filament of the lamp at least ten feet from the photometric screen.

Beam candle power measurements of the two amber compartments (~~((shall))~~) must be made by either of the following methods:

(I) The two compartments may be photometered together provided that a line from the optical axis (filament centers) of each compartment to the center of the photometer sensing device does not make an angle of more than 0.6° with the photometer (H-V) axis.

(II) Each compartment may be photometered separately by aligning its axis with the photometer and adding the value at each test point.

Table 1 lists the design candle power requirements for the two outer amber lights, and Table 2 lists the design candle power requirements for the center green light.

Table 1			Table 2		
Minimum Design Candle power Requirements for Amber Light			Minimum Design Candle power Requirements for Green Light		
Test	Points	Candle power	Test	Points	Candle power
10 up and 10 down	10L	25	10 up and 10 down	10L	1
	V	65		V	1.5
5 up and 5 down	10R	25	5 up and 5 down	10R	1
	20L	25		20L	1
	10L	65		10L	2
	5L	85		5L	4
5 down	V	125	5 down	V	4
	5R	85		5R	4
	10R	65		10R	2
	20R	25		20R	1
	20L	25		20L	2
	10L	75		10L	3
	5L	125		5L	5

Table 1 Minimum Design Candle power Requirements for Amber Light			Table 2 Minimum Design Candle power Requirements for Green Light		
Test	Points	Candle power	Test	Points	Candle power
	H-V	175		H-V	5
	5R	125		5R	5
	10R	75		10R	3
	20R	25		20R	2
	Maximum	450		Maximum	45

(ii) Type II - The system must:

(A) Operate so as to indicate a component of deceleration of the vehicle on which it is installed by varying the flashing rate of a yellow lamp when the service brakes are applied.

(B) Incorporate an automatic means for reducing the intensity of the lamp during darkness. The system must cause the voltage to the deceleration lamps to decrease to $5.0 \text{ V} \pm 10\%$ at 0 g deceleration during darkness. The specified voltage must be reached when the illumination on the sensor is not more than 5 lm/sq. ft. , nor less than 0.5 lm/sq. ft.

(C) Have an output voltage, duty cycle, and flash rate of the control unit as a temperature of $24^\circ \pm 5.5^\circ\text{C}$ ($75^\circ \pm 10^\circ\text{F}$), when 12.8 V dc is applied to the input terminal, as shown in Table I when the control sensor is placed on a tilt table and slightly vibrated as the table is slowly rotated through the angles representing the specified vehicle deceleration rates.

TABLE I

Test Requirements for Deceleration Lamps				
Deceleration (g)	Output (V)	Peak Relative Brightness	Flash Rate (Hz)	On Time (%)
0.0	7.0	1.0	1.0	50
0.1	—	1.0	1.5	48
0.2	—	1.0	2.3	46
0.3	—	1.2	3.4	44
0.4	—	1.4	5.0	42
0.5	—	1.7	7.6	40

(D) Have a deceleration at which the unit switches from a lower to a higher flash rate that is within $\pm 0.05 \text{ g}$ of the rate specified in Table I. If the unit operates at more steps than the required minimum, the additional values for each column (~~shall~~) must lie on the smooth curve connecting the indicated values within the specified tolerances. The values specified in Table II apply to ramp-type inertial sensors for which the downward angles correspond to the deceleration and a tolerance of 3.0° applies to the tilt angle.

TABLE II

Test Requirements for Deceleration Sensors			
Deceleration (g)	DEGREES		
	Forward Tilt Angle	Dip Correction	Corrected Tilt Angle
0.0	0.0	0.0	0.0
0.1	5.7	0.8	6.5
0.2	11.3	1.6	12.9
0.3	16.7	2.4	19.1
0.4	21.8	3.2	25.0
0.5	26.6	4.0	30.6

(E) Have the rms of the output voltage during the on portion of the flash cycle at the 1 Hz flash rate within $\pm 5\%$ of the specified value, measured at the lamp bulbs with daytime illumination on the automatic darkness sensor.

(F) Have a relative brightness of the lamp or bulbs at the decelerations within $\pm 25\%$ of the specified values after the fifth flash with the brightness of the lamp or its bulbs taken as 1.0 when measured with the rms output voltage specified for 0 g deceleration.

(G) Have a flash rate within $\pm 15\%$ of the specified value. The percent on time must be within $\pm 10\%$ of the specified value.

(H) Have linear dip corrections varying from 4° at 0.5 g or more deceleration to 0° at 0 g on passenger vehicles and pickup trucks that have substantial front end dip upon braking.

(I) Comply with the following mechanical tests in SAE Standard J575g (tests for motor vehicle lighting devices and components): Corrosion, dust, moisture, vibration, and warpage (at a flashing rate of 1 Hz when a plastic lens or housing is used).

(J) Meet the following control system requirements at both 11 V and 15 V:

(I) Low temperature test. The control system must be placed in its normal operating position in a circulating air cabinet at $-32^\circ \pm 3^\circ\text{C}$ ($-25^\circ \pm 5^\circ\text{F}$) for 2 hours. At the end of that period and while still at that temperature, the unit must meet the requirements in Table I at 0 g and 0.3 g.

(II) High temperature test. The control system must be placed in its normal operating position in a circulating air cabinet at $74^\circ 0^\circ$, -2.8°C ($165^\circ 0^\circ$, -5°F) for 2 hours. At the end of that period and while at that temperature, the unit must meet the requirements in Table I at 0 g and 0.3 g.

(K) Operate the control system continuously at a supply voltage of 12.8 V dc for 200 hours with no failure (except bulb replacement), after which it must meet the requirements in Table I at 0 g and 0.3 g.

(L) Meet the photometric requirements in Table III after the sample has been mechanically tested in the order shown in (b)(ii)(J) of this subsection for the luminous intensity of a deceleration lamp with the bulbs operated at mean spherical candela.

TABLE III

Photometric Requirements for Deceleration Signal Lamps					
Test Point Coordinates		Max		Cd	
Vertical	Horizontal	Amber	Red	Amber	Red
10U	10L	70	35	25	12.5
	V	200	100	60	30
	10R	70	35	25	12.5
5U	20L	40	20	15	7.5
	10L	200	100	60	30
	5L	600	300	200	100
	V	800	400	350	175
	5R	600	300	200	100
	10R	200	100	60	30
	20R	40	20	15	7.5
H	20L	40	20	15	7.5
	10L	200	100	60	30
	5L	800	400	350	175
	V	1,300	650	600	300
	5R	800	400	350	175
	10R	200	100	60	30

Photometric Requirements for Deceleration Signal Lamps

Test Point Coordinates		Max		Cd		Min	
Vertical	Horizontal	Amber	Red	Amber	Red	Amber	Red
	20R	40	20	15	7.5		
	20L	40	20	15	7.5		
	10L	200	200	60	30		
	5L	600	300	200	100		
5D	V	800	400	350	175		
	5R	600	300	200	100		
	10R	200	100	60	30		
	20R	40	20	15	7.5		
	10L	70	35	25	12.5		
10D	V	200	100	60	30		
	10R	70	35	25	12.5		

AMENDATORY SECTION (Amending WSR 08-19-104, filed 9/17/08, effective 10/18/08)

WAC 204-21-200 Private carrier bus lamps. (1) All signal lamps on private carrier buses must be constructed in conformance with the SAE Standard for "school bus red signal lamps," in effect at the time of manufacture of such lamps, and must:

(a) 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~~) will the lateral spacing of these lamps be less than forty inches.

(b) Be mounted so that the vision of front, signals to the front and rear signals to the rear (~~are not unobstructed~~), is not obstructed by any part of the vehicle from 5° above to 10° below the horizontal and from 30° to the right to 30° to the left of the centerline of the bus.

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

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

(e) 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) 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 sixty nor faster than one hundred twenty times per minute. The "on" period of the flasher must be long enough to permit the bulb filament to come up to a full brightness.

(g) Signal lamps must be aimed two inches below level at twenty-five feet and straight ahead. An aiming tolerance of from three inches up to seven inches down and ten inches right or left will be allowed.

(h) Only be actuated by the driver of a private carrier bus whenever such vehicle is stopped on the highway for the purpose of receiving or discharging passengers, except:

(i) 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

(ii) When the bus is stopped at an intersection or place where traffic is controlled by a traffic officer or official control signal.

((EXCEPTION: Buses that do not stop upon the roadway to load or discharge passengers are exempt from the requirements of this section.))

(2) Rear turn signal lamp and stop lamp lenses must be amber in color to avoid confusion with signal lamps and the message on the warning sign.

AMENDATORY SECTION (Amending WSR 08-19-104, filed 9/17/08, effective 10/18/08)

WAC 204-21-220 Trailer tongue lamps. A lamp must be used on the tongue of any trailer where the distance between the front of the trailer body and the rear of the body of the towing vehicle is fifteen feet or greater, and where the top of the tongue is less than twenty-four inches above the ground at any point between the front of the body of the trailer and the rear of the body of the towing vehicle. This lamp must:

(1) Be amber in color and be in operation whenever the combination of vehicles is in motion, and must be visible to each side of the combination.

(2) Have a minimum diameter of two and one-half inches.

(3) Have a steady burn or may be flashing provided that the flashing lamp only flashes by means of an electronic or electric flasher. Strobe lamps and rotating type lamps are not permitted.

(4) Be mounted as nearly as practicable in the center of the distance between the vehicle bodies. Lamps mounted on extendable tongues will necessarily vary in distance between the bodies in relation to the amount of extension used; however, in no case (~~shall~~) will the lamp be over five feet from the center of the distance between vehicle bodies nor more than fifteen feet from either of the vehicle bodies.

(5) Be mounted at a minimum height of twenty-one inches above the roadway, and maximum height of forty-eight inches above the roadway.

AMENDATORY SECTION (Amending WSR 08-19-104, filed 9/17/08, effective 10/18/08)

WAC 204-21-230 Lighting equipment prohibited. (1) The addition of a lamp, reflective device or other motor vehicle equipment must not impair the effectiveness of lighting equipment required by 49 C.F.R. Part 571.108 or chapter 46.37 RCW.

(a) If a vehicle is in motion on a public roadway, the vehicle must not:

(i) Display aftermarket neon lighting devices.

(ii) Combine any type of letter, number, sign, symbol or combination thereof with an eye level brake light meeting the standards of 49 C.F.R. Part 571.108 (FMVSS 108). No function other than red reflex reflectors (~~shall~~) will be combined in eye level brake lights.

(iii) Have a lighted or electrically/mechanically powered sign or message board enabling change or movement of any displayed message to be displayed or affixed to the vehicle. Except:

(A) Vehicles that are used in conjunction with officially sanctioned or sponsored motor vehicle traffic control or movement may display lighted or electrically powered signs to assist in the efficient control of traffic movement on public roadways. The signs must be designed, worded, and located to limit misinterpretation and confusion by the motoring public.

(B) Electric signs may be unitized to identify taxicabs and the destinations of mass transportation vehicles. These signs must not contain any commercial or personal message and must be designed, worded, and located so that it is clearly differentiated from other required motor vehicle lights.

(b) If a vehicle is not in motion and parked on private property, the vehicle may use aftermarket lighting except as outlined under RCW (~~(47.36.180)~~) 46.37.180.

(c) This section is not intended to prohibit a scrolling sign provided that the scrolling sign must:

(i) Be powered by an external source or in a manner which does not cause the required equipment on the vehicle to be out of compliance with 49 C.F.R. Part 571, chapter 46.37 RCW or Title 204 WAC.

(ii) Not be lit.

(iii) Not have continual motion.

(2) Pursuant to Title 49 C.F.R. Part 571.108, the addition of an aftermarket style ornament or other feature such as tinted plastic glass covers, a grille or (~~alotted~~) slotted covers must not be placed in front of the headlamp lens, or in front of any other lighting devices installed on motor vehicles which impair the effectiveness of lighting equipment required under 49 C.F.R. Part 571.108 (FMVSS 108) or chapter 46.37 RCW. Except:

(a) Clear aftermarket headlamp covers.

(b) Headlamp wipers may be used in front of the lens provided that the headlamp system is designed to conform to all applicable photometric requirements in 49 C.F.R. Part 571.108 (FMVSS 108) with the wiper stopped in any position in front of the lens.

(c) A bike rack may be installed on the front of a municipal transit vehicle (as defined under RCW 46.04.355) provided that even with the bike rack installed, loaded or unloaded with bicycles, the headlight system still conforms with all applicable photometric requirements in 49 C.F.R. Part 571.108 (FMVSS 108).

(3) Red emergency lights are prohibited on any vehicle other than an authorized emergency vehicle, a law enforcement vehicle, an emergency tow truck as defined in WAC (~~(204-88-030-(1), (2), and (5))~~) 204-21-020(8), school buses, and private carrier buses.

(4) Blue lights are prohibited on any vehicle other than a law enforcement vehicle as defined in WAC (~~(204-21-010)~~) 204-21-020.

(5) Flashing white lights are prohibited on any vehicle other than authorized emergency vehicles, law enforcement vehicles, school buses, and emergency tow trucks as defined in WAC (~~(204-88-030-(1), (2), and (5))~~) 204-21-020.