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PROPOSAL TO DEVELOP A GLOBAL TECHNICAL REGULATION CONCERNING UNIFORM PROVISIONS FOR LOCATION AND IDENTIFICATION OF MOTOR VEHICLE HAND CONTROLS, TELL-TALES AND INDICATORS

Transmitted by the representative of Canada

Note: This document is submitted by Canada to WP.29 and the AC.3 for consideration. It contains proposal for a global technical regulation (GTR), regarding location and identification of motor vehicle hand controls, tell-tales and indicators, to be developed for the 1998 Agreement Concerning the Establishment of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts Which Can be Fitted and/or be Used on Wheeled Vehicles.

Objective of the proposal

Many vehicle collisions result from drivers' distraction. One identifiable source of such distraction is diversion of drivers' attention from the driving task by confusing information displayed in the drivers' field of vision and enigmatic identification of controls necessary for vehicle's operation.

Travellers that use rental cars at their destinations are faced with divers message systems on the vehicle dashboards and dissimilar identification of vehicle hand controls. The same applies to people purchasing new vehicles in countries allowing motor vehicles type-approved by, or certified in, different jurisdictions. The world-travellers and the new-vehicle-owners need time to learn their dashboard messages and identification of their vehicle controls. During this time these vehicle operators have to divide their attention between increasingly difficult task of driving and the task of identification of controls and comprehension of messages that the modern vehicles provide to their operators to "ease" their driving task.

There is a need to harmonize the way in which the motor vehicle controls, tell-tales and indicators are installed and identified.

The proposed global technical regulation would apply to all on-road motor vehicles except motorcycles. It would specify requirements for the location, identification, colour, and illumination of motor vehicle hand controls, tell-tales and indicators. It would be designed to ensure the visibility of tell-tales and indicators and to ensure the visibility and accessibility of vehicle controls to facilitate their selection under daylight and night-time conditions, in order to reduce the safety hazards caused by the diversion of the driver's attention from the driving task and by mistakes in selecting controls.

Description of the proposed regulation

The proposed global technical regulation, enclosed in annex 1 to this document, is based on existing regulations and directives listed below. It also reflects the proposed draft ECE Regulation, which is presently considered by GRSG. The final GRSG approval of the ECE draft Regulation concerning location and identification of controls, tell-tales and indicators is expected during the next GRSG session in April.

Existing regulations and directives

Though there are no regulations currently contained in the Compendium of Candidates, the following regulations were taken into account during development of the new global technical regulation regarding controls, tell-tales and indicators:

EC Directive 78/316/EEC – Identification of controls, tell-tales and indicators as amended by Commission Directive 93/91/EEC.

U.S. Code of Federal Regulations (CFR) Title 49: Transportation; Part 571.101: Controls and displays.

Canada Motor Vehicle Safety Regulation No. 101 – Location and identification of controls and displays.

International Voluntary Standards

ISO 2575-2001	"Road vehicles: Symbols for control indicators and tell-tales"
ISO/FDIS 4040-2001	"Road vehicles – Location of hand controls, indicators and tell-tales in motor vehicles"

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Annex 1

Draft global technical regulation No. XXX

UNIFORM PROVISIONS FOR LOCATION AND IDENTIFICATION OF MOTOR VEHICLE HAND CONTROLS, TELL-TALES AND INDICATORS

1. SCOPE

This Regulation applies to power-driven vehicles intended for use on the road, with or without bodywork and a maximum design speed exceeding 25 km/h. It does not apply to motorcycles, vehicles that run on rails and to agricultural and forestry tractors and machinery. It specifies requirements for the location, identification, colour, and illumination of motor vehicle hand controls, tell-tales and indicators. It is designed to ensure the accessibility and visibility of vehicle controls, tell-tales, and indicators and to facilitate their selection under daylight and night-time conditions, in order to reduce the safety hazards caused by the diversion of the driver's attention from the driving task and by mistakes in selecting controls.

2. DEFINITIONS

For the purpose of this Regulation

2.1. "Control" means that hand-operated part of a device that enables the driver to bring about a change in the state or functioning of a vehicle or vehicle's subsystem.

2.2. "Device" means an element or an assembly of elements used to perform one or more functions.

2.3. "Indicator" means a device that shows the magnitude of the physical characteristics that the instrument is designed to sense.

2.4. "Common space" means an area on which two or more information function (e.g. symbol) may be displayed but not simultaneously.

2.5. "Tell-tale" means an optical signal that, when alight, indicates the actuation of a device, a correct or defective functioning or condition, or a failure to function.

2.6. "Adjacent" means that no control, tell-tale, indicator, or other potential source of distraction appears between the identifying symbol and the tell-tale, indicator, or control which that symbol identifies.

3. [reserved]

4. [reserved]

5. SPECIFICATIONS

A vehicle fitted with a control, a tell-tale or an indicator, listed in table 1 or ISO 2575:2000 standard, shall meet the prescribed requirements of this regulation for the location, identification, colour, and illumination of such control, tell-tale or indicator.

5.1. Location

5.1.1. The controls to be used by a driver while driving the vehicle shall be located so that they are operable by this driver under the conditions of paragraph 5.6.2.

5.1.2. The tell-tales and indicators listed in table 1, shall be located so that they are visible and recognisable to a driver during night and day under the conditions of paragraphs 5.6.1. and 5.6.2. Tell-tales and indicators need not be visible or recognisable when not activated.

5.1.3. The identifications of tell-tales, indicators and controls shall be placed on or adjacent to the tell-tales, indicators and controls that they identify. Where this is not possible, the symbol and the control or tell-tale must be joined by a continuous line as short as possible.

5.1.4. Notwithstanding paragraphs 5.1.1., 5.1.2. and 5.1.3. the tell-tale for “passenger air bag off”, if fitted, must be located within the interior of the vehicle and forward of and above the design H-point of both the driver's and the front passenger(s)’ seat in their forwardmost seating positions. The tell-tale which alerts front seat occupants that the passenger side air bag is switched off must be visible to the driver and front passenger(s) under all driving conditions.

5.2. Identification

5.2.1. Where fitted, the controls, tell-tales and indicators, listed in column 1 of table 1, shall be identified by symbols designated for them in column 2 of table 1. This requirement does not apply to the horn (an audible warning signal) control, when it is activated by a narrow ring-type control or by a lanyard. Control, tell-tale or indicator not listed in table 1 shall be identified by symbol designated for the purpose in standard ISO 2575:2000 where one exists and where that symbol is suitable for the application concerned.

5.2.2. To identify a control, a tell-tale or an indicator not included in table 1 or ISO 2575:2000, the manufacturer may use a symbol of its own conception. Such symbol may include internationally recognised alphabetic or numeric indications. All symbols used shall follow the design principles laid down in paragraph 4. of ISO 2575:2000.

5.2.3. If necessary for clarity, supplementary symbols may be used in conjunction with any symbol specified in table 1 or ISO 2575:2000.

5.2.4. Each additional or supplementary symbol used by the manufacturer must not cause confusion with any symbol specified in this regulation.

5.2.5. Where a control, an indicator or a tell-tale for the same function are combined, one symbol may be used to identify such combination.

5.2.6. Except as provided in paragraph 5.2.9., all identifications of tell-tales, indicators and controls listed in table 1 or ISO 2575:2000 must appear to the driver perceptually upright.

In case of rotating control, this paragraph applies to it when such control is in its “off” position.

5.2.7. The identification of the following need not appear to the driver perceptually upright:

5.2.7.1. a horn control,

5.2.7.2. any control, tell-tale or indicator located on the steering wheel, when the steering wheel is positioned for the motor vehicle to travel in other than a straight forward direction, and

5.2.7.3. any rotating control that does not have an off position.

5.2.8. Each control for the automatic vehicle speed system (cruise control) and each control for heating and air conditioning system(s) shall have identification provided for each function of each such system.

5.2.9. When fitted each control that regulates a system function over a continuous range shall have identification provided for the limits of the adjustment range of any such function.
If colour coding is used to identify the limits of the adjustment range of a temperature function, the hot limit shall be identified by the colour red and the cold limit by the colour blue.
If the status or limit of a function is shown by an indicator separated from and not adjacent to the control for that function, both the control and the indicator must be independently identified in compliance with paragraph 5.1.3.

5.3. Illumination

5.3.1. The identifications of controls for which the word "Yes" is indicated in column 4 of table 1 shall be capable of being illuminated whenever the headlamps are activated. This does not apply to controls located on the floor, floor console, steering wheel, or steering column, or in the area of windscreen header, or to controls for a heating and air-conditioning system if the system does not direct air directly upon the windscreen.

5.3.2. The indicators and their identifications for which the word "Yes" is indicated in column 4 of table 1 shall be illuminated whenever the device which starts and/or stops the engine is in a position which makes it possible for the engine to operate and the headlamps are activated.

5.3.3. The indicators, their identifications and the identifications of controls need not be illuminated when the headlamps are being flashed or operated as daytime running lamps.

5.3.4. At the manufacturer's discretion any control, indicator or their identifications may be capable of being illuminated at any time.

5.3.5. A tell-tale shall not emit light except when identifying the malfunction or vehicle condition for whose indication it is designed or during a bulb check upon propulsion system activation.

5.3.6. Brightness of illumination of controls and indicators

5.3.6.1. Means shall be provided for making the indicators, identifications of indicators and identifications of controls, that are listed in table 1, visible and recognisable to the driver under all driving conditions.

5.3.6.2. The means for providing the required visibility

5.3.6.2.1. shall be adjustable to provide at least two levels of brightness, at the lower of which the identification of controls, indicators and the identification of indicators are barely discernible to the driver who has adapted to dark ambient roadway condition; and

5.3.6.2.2. may be operable manually or automatically.

5.3.7. Brightness of tell-tale illumination

Means shall be provided for making tell-tales and their identification visible and recognisable to the driver under all driving conditions.

5.3.8. Illumination of a control, indicator and tell-tale must not interfere with or mask the identification of any tell-tale, control or indicator specified in table 1.

5.4. Colour

5.4.1. Light of each tell-tale listed in table 1 shall be of the colour shown in column 5 of this table.

5.4.2. Indicators and tell-tales and identifications of indicators and controls not listed in table 1 may be of any colour chosen by the manufacturer, however, such colour must not interfere with or mask the identification of any tell-tale, control, or indicator specified in table 1. The colour to be selected shall follow the guidelines specified in paragraph 5 of ISO standard 2575:2000.

5.4.3. Each symbol used for identification of tell-tale, control or indicator shall stand out clearly against the background.

5.4.4. The dark part of any symbol may be replaced by its outline.

5.5. Common space for displaying multiple information

5.5.1. A common space may be used to show information from any source, subject to the following requirements:

5.5.1.1. The tell-tales and indicators in the common space shall provide relevant information at the initiation of any underlying condition.

5.5.1.2. When the underlying condition exists for actuation of two or more tell-tales, the information shall be either

(i) repeated automatically in sequence, or

(ii) indicated by visible means and capable of being selected for viewing by the driver under the conditions of paragraph 5.6.2.

5.5.1.3. The tell-tales for the brake system malfunction, headlamp driving beam, direction indicator and seat belt shall not be shown in the same common space.

5.5.1.4. If tell-tale for the brake system malfunction, headlamp driving beam, direction indicator or seat belt is displayed in a common space it must displace any other symbol in such common space if the underlying condition exists for its activation.

5.5.1.5. With the exception of tell-tales for the brake system malfunction, headlamp driving beam, direction indicator or seat belt, the information may be cancellable automatically or by the driver.

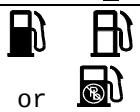
5.5.1.6. Unless prescribed in a specific Regulation, the colour requirements regarding tell-tales do not apply when tell-tales appear in a common space.

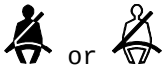
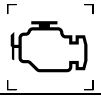
5.6. Conditions

5.6.1. The driver has adapted to the ambient light conditions.

5.6.2. The driver is restrained by the installed crash protection system, adjusted in accordance with the manufacturer's instructions, and is free to move within constraints of that system.

Table 1. Symbols, their illumination and colours.

No.	Column 1	Column 2	Column 3	Column 4	Column 5
	ITEM	SYMBOL 2/	FUNCTION	ILLUMINATION	COLOUR
1.	Master lighting switch Tell-tale may not act as the tell-tale for the position (side) lamps.	 1/	Control	No	-
			Tell-tale 12/	Yes 7/	Green
2.	Headlamp high beams	 1/	Control	No	-
			Tell-tale	Yes 7/	Blue
3.	Direction indicator	 1/,3/	Control	No	
			Tell-tale	Yes 7/	Green
4.	Hazard warning signal	 1/	Control	Yes	
			Tell-tale 4/	Yes 7/	Red
5.	Front fog lamps	 1/	Control	No	
			Tell-tale	Yes 7/	Green
6.	Rear fog lamp	 1/	Control	No	
			Tell-tale	Yes 7/	Yellow
7.	Fuel level	 or	Tell-tale	Yes 7/	Yellow
			Indicator	Yes	
8.	Engine oil pressure	 5/	Tell-tale	Yes 7/	Red
			Indicator	Yes	
9.	Engine coolant temperature	 5/	Tell-tale	Yes 7/	Red
			Indicator	Yes	
10.	Electrical charging Condition		Tell-tale	Yes 7/	Red
			Indicator	Yes	
11.	Windscreen wiping system (continuous)		Control	Yes	
12.	Power window lock		Control		

No.	Column 1 ITEM	Column 2 SYMBOL	Column 3 FUNCTION	Column 4 ILLUMINATION	Column 5 COLOUR
13.	Windscreen washing system		Control	Yes	
14.	Windscreen washing and wiping system		Control	Yes	
15.	Windscreen defrosting and defogging system		Control	Yes	
			Tell-tale	Yes 7/	Yellow
16.	Rear window defrosting and defogging system		Control	Yes	
			Tell-tale	Yes 7/	Yellow
17.	Position, side marker, and/or end-outline marker lamps	 1/, 6/	Control	No	
			Tell-tale 12/	Yes 6/ 7/	Green
18.	Seat belt	 or	Tell-tale	Yes 7/	Red
19.	Airbag malfunction	 8/	Tell-tale	Yes 7/	Red
20.	Side airbag malfunction	 8/	Tell-tale	Yes 7/	Red
21.	Passenger Airbag off	["ISO K.05"] 8/	Tell-tale	Yes 7/	Yellow
22.	Brake system malfunction	 8/	Tell-tale	Yes 7/	see brake Regulation
23.	Antilock brake system malfunction		Tell-tale	Yes 7/	Yellow
24.	Speedometer	km/h and/**or** MPH	Indicator	Yes	
25.	Parking brake applied	 9/	Tell-tale	Yes 7/	Red
26.	Horn		Control	No	
27.	Engine on-board diagnostics or engine malfunction		Tell-tale	Yes 7/	Yellow
28.	Air Conditioning System	 or A/C	Control	Yes	

No.	Column 1	Column 2	Column 3	Column 4	Column 5
	ITEM	SYMBOL	FUNCTION	ILLUMINATION	COLOUR
29.	Automatic transmission control position (park) (reverse) (neutral) (drive)	P R N D 10/	Indicator	Yes	
30.	Engine Stop	 11/	Control	Yes	
31.	Brake lining wear-out condition	 9/	Tell-tale	Yes 7/	Yellow
32.	Heating system		Control	Yes	
33.	Heating and/or air conditioning fan	 1/			
34.	Headlamp levelling		Control	No	
35.	Odometer	**km**, if kilometres are shown or **miles**, if miles are shown			
36.	Automatic vehicle speed control (cruise control)	["ISO J.08"]			

1/ Framed areas of the symbol may be solid.
2/ The symbols included in this Regulation are substantially identical to symbols described in ISO 2575:2000. Proportional dimensional characteristics specified in ISO 2575:2000 shall be maintained.
3/ The pair of arrows is a single symbol. When the controls or tell-tales for left and right turn operate independently, however, the two arrows may be considered separate symbols and be spaced accordingly.
4/ Not required when arrows of turn signal tell-tales that otherwise operate independently flash simultaneously as hazard warning tell-tale.
5/ Combination of the engine oil pressure symbol and the engine coolant temperature symbol in a single tell-tale is permitted.
6/ Separate identification not required if function is combined with master lighting switch.
7/ See paragraph 5.3.5.
8/ Contracting Parties which, at the date of coming into force of this Regulation, allowed or required the use of text for this function may, until [sixty months] after the date of coming into force of this Regulation, continue to allow or require the text in addition to the prescribed symbols for vehicles to be registered in their country.
9/ If a single tell-tale is used to indicate more than one brake system condition, the brake system malfunction symbol must be used.
10/ Letter "D" may be replaced or supplemented by other alphanumeric character(s) or symbol(s) chosen by the manufacturer to indicate additional selection modes. The indicators may be displayed top to bottom or left to right.
11/ Use when engine control is separate from the key locking system.
12/ Not required if instrument panel lights are lit automatically on activation of the master lighting switch.

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