

PROPOSAL FOR A NEW DRAFT GLOBAL TECHNICAL REGULATION CONCERNING
HAND CONTROLS, TELL-TALES AND INDICATORS PRESENT ON CATEGORY 1
AND 2 VEHICLES
(Revision 4)

Note: The text reproduced below was transmitted by the expert from Canada. It represents the proposed draft of the new global technical regulation. The text is based on the document TRANS/WP.29/GRSG/2000/8/Rev.3 and subsequent discussions and consultations.

Draft global technical regulation No. X

A STATEMENT OF TECHNICAL RATIONALE AND JUSTIFICATION

I. INTRODUCTION

This proposed global technical regulation (gtr) concerning hand controls, tell-tales and indicators establishes criteria for the accessibility, visibility and recognition of vehicle controls and indicators determined to be critical for safety by the GRSG working group. The objective of the proposal is to reduce the safety hazards caused by driver distraction. Specifically, the proposal is intended to reduce distractions resulting from an error in control selection or inconsistency in graphical representations of commands from one vehicle to another.

One of the main purposes of this proposal is to standardize and harmonize symbols identifying controls, tell-tales and indicators. It is expected that with standardization, symbol awareness and recognition would become straightforward for the travelling public. A clear advantage of symbols, or pictograms, over wording is that symbols overcome language barriers. Travellers must be able to operate cars safely, even if they cannot understand the language of the country they are visiting. Recognition that is independent of language is necessary in a global automotive market.

For example, the word *brake* is translated into French by the term *frein* and into German by the word *bremse*.

Depending on the cultural and geographical circumstances, the use of the word *brake*, *frein* or *bremse* by manufacturers or contracting parties (countries), to warn drivers of a brake shortcoming, could result in different interpretations of the same warning.

Furthermore, some contracting parties are jurisdictions where there is more than one official language. In many of those jurisdictions, vehicle safety information must be presented in all official languages. This could result in a requirement to provide a language selection function to drivers or a means to display wording in all official languages, which would be difficult on space-limited dash panels.

Symbols are an efficient way to communicate information to drivers. The consistent use of a selected symbol in all new motor vehicles would increase its recognition. Symbols have the

potential to reduce driver confusion and simplify vehicle design. The symbol approach is also likely to be beneficial to those whose vision is poor, as symbols are easier to read than equivalent text.

The symbols set chosen in this gtr is based on the ISO 2575 standard of the International Standards Organisation (ISO). This set of symbols was selected because it is currently used internationally and is accepted by most manufacturers and contracting parties.

II. PROCEDURAL BACKGROUND

During the 76th session of the GRSG in June 1999, Canada and the United States of America proposed the development of ECE regulations regarding hand controls, tell-tales and indicators. The scope of the proposed work included an addendum to the 1958 Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts Which Can Be Fitted and/or Be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of These Prescriptions as well as global technical regulations under the 1998 Agreement Concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts Which Can Be Fitted and/or Be Used on Wheeled Vehicles.

Work on the gtr was postponed until the 126th session of WP.29 in March 2002, at which AC.3 established the priorities for developing future global technical regulations and WP.29 adopted the Program of Work for the 1998 Agreement. This Program of Work included development of a gtr regarding uniform provisions for hand controls, tell-tales and indicators present on category 1 and 2 vehicles.

It has been agreed that there is a need to harmonize the way in which motor vehicle hand controls, tell-tales and indicators are installed and identified, and that the subject is of sufficient importance to warrant the development of a regulation.

III. DISCUSSION OF ISSUES ADRESSED BY THE GTR (SYMBOLS)

It has been argued that the meaning of some symbols is not immediately clear and that drivers would have to consult the owner's manual to discover their meaning. However, it is recognized that driving skills need to be learned. Safety symbol recognition should be part of that learning process. By standardizing symbols around the world, the GRSG working group will provide driving schools and evaluation organizations with a standard from which it will be possible to educate and test new drivers. The driving population would be informed of the meaning of new symbols as they are added. In fact, it is expected that the regulation itself could improve the communication of safety symbols to the driving public. Contracting parties have a responsibility to inform their populations of the set requirements.

The GRSG working group has successfully obtained agreement on most of the criteria for the location, illumination and position of the controls and display. One issue regarding the use of certain symbols remains. To address this issue, the regulation proposal calls for inclusion of a table that will identify 48 functions determined to be essential for safety. Each of these functions will be associated with a symbol. The current gtr defines 21 mandatory symbols based on the ISO standard. This was determined appropriate as all these symbols are already accepted by most contracting parties. The remaining 27 safety symbols will need to be selected

by the contracting parties. Contracting parties may prescribe the symbols or leave the choice of these 27 symbols to the motor vehicle manufacturers. As agreements are reached, amendments to the table will be introduced. Until complete agreement on all symbols is achieved, a symbol could mean a pictogram, a word or a group of words.

IV. EXISTING REGULATIONS, DIRECTIVES AND INTERNATIONAL VOLUNTARY STANDARDS

The GRSG followed the recommendations of paragraph 4 of TRANS/WP29/2002/882. In the absence of a UNECE regulation under the 1958 Agreement or a regulation in the compendium of candidate global technical regulations, the GRSG has considered the documents listed below:

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

The GRSG has also considered the draft UNECE regulation being developed for the 1958 Agreement as well as the known voluntary standards on the subject listed in the proposal, specifically:

- ISO 2575-2004/amd.1:2005 – Road vehicles: Symbols for control indicators and tell-tales; and
- ISO/FDIS 4040-2001 – Road vehicles: Location of hand controls, indicators and tell-tales in motor vehicles.

All known regulations and voluntary standards on the subject of the installation and identification of controls, tell-tales and indicators were considered during development of the draft UNECE regulation. The GRSG has decided to use the documents and standards listed above as the basis for development of the new global technical regulation.

V. REGULATORY IMPACT AND ECONOMIC EFFECTIVENESS

Although this proposal does not specify any measurable threat to vehicle safety, the GRSG has agreed that there is a need to harmonize motor vehicle controls, tell-tales and indicators.

Additionally, driver distraction is a significant contributor to incidents involving motor vehicles. Standardizing symbols and controls could reduce driver distraction, resulting in improved safety for all motorists.

Since all 21 symbols prescribed in the gtr are currently accepted by most of the contracting parties, the cost is minimal. The gtr would ensure better understanding of safety symbols by drivers around the world.

Defining the installation and identification of controls and displays is of sufficient importance to warrant this regulation. This proposed gtr is a first step. As other symbols are agreed upon,

Table 1 will be updated from time to time to prescribe more symbols and to further increase global harmonization.

B TEXT OF THE REGULATION

1. SCOPE AND PURPOSE

This global technical regulation specifies requirements for the location, identification, colour, and illumination of power driven vehicle hand controls, tell-tales and indicators. The purpose of this regulation is to ensure the accessibility, visibility, and recognition of vehicle controls, tell-tales, and indicators and to facilitate the proper selection of controls under daylight and night-time conditions. The regulation intention is also to reduce the safety hazards that would otherwise be caused by the diversion of the driver's attention from the driving task by mistakes in selecting controls.

2. APPLICATION

This global technical regulation applies to power-driven vehicles of categories 1 and 2 intended for use on the road, with or without bodywork and a maximum design speed exceeding 25 km/h. Contracting Parties may apply this regulation to other categories of vehicles.

3. DEFINITIONS

For the purpose of this regulation

- 3.1. “Adjacent”, with respect to a symbol identifying a control, tell-tale or indicator, means that the symbol is in close proximity to the control, telltale or indicator and no other control, tell-tale, indicator, identification symbol or source of illumination appears between an identification symbol and the control, tell-tale, or indicator which that symbol identifies.
- 3.2. “Common space” means an area on which more than one tell-tale, indicator, identification symbol, or other message may be displayed but not simultaneously.
- 3.3. “Control” means the hand-operated part of a device that enables the driver to change the state or functioning of a vehicle or vehicle’s subsystem.
- 3.4. “Device” means an element or an assembly of elements used to perform one or more functions.
- 3.5. “Indicator” means a device that shows the magnitude of the physical characteristics that the device is designed to sense.
- 3.6. “Multi-function control” means a control through which the driver may select, and affect the operation of, more than one vehicle function.
- 3.7. “Multi-task display” means a display area on which more than one message may be displayed simultaneously.

- 3.8. “Tell-tale” means an optical signal that, when illuminated, indicates the actuation of a device, a correct or improper functioning or condition, or a failure to function.
4. REQUIREMENTS
- A vehicle, if fitted with a control, tell-tale or indicator identified in Table 1, shall meet the prescribed requirements of this regulation respecting the location, identification, illumination, and colour of that control, tell-tale or indicator.
- 4.1. Location
- 4.1.1. The controls, listed in Table 1, shall be located so that they are operable by the driver under the conditions set out in paragraph 4.6.2.
- 4.1.2. The tell-tales and indicators listed in Table 1, and their identification symbols shall be located so that they are visible to a driver under the conditions set out in paragraphs 4.6.1. and 4.6.2., during daylight and nighttime driving. Tell-tales, indicators and their identification symbols need not be visible when not activated.
- 4.1.3. Except as provided in para. 4.1.4., the identification symbols for controls, tell-tales, and indicators shall be placed on or adjacent to the controls, tell-tales or indicators that they identify.
- 4.1.4. Paragraph 4.1.3. does not apply to multi-function controls, if:
- 4.1.4.1. the control is associated with a multi-task display, and
- 4.1.4.2. the associated multi-task display is visible to the driver under the conditions of paragraphs 4.6.1. and 4.6.2., and
- 4.1.4.3. identifies the control with which it is associated, either graphically or in words, and
- 4.1.4.4. all of the vehicle systems for which control is possible from the multi-function control are identified on a multi-task display. Sub-functions of those systems need not be shown on the top-most layer of the multi-task display, and
- 4.1.4.5. does not display telltales listed in Table 1. U.S. final rule
- 4.1.5. Controls for hazard warning lamps, passing and driving beam headlamps, direction indicators, windscreen demisting/defrosting/washing and for engine off must be always accessible to the driver as primary function of the corresponding control.
- 4.1.6. Despite paragraphs 4.1.1. to 4.1.4., the tell-tale for passenger air bag off must be located within the interior of the vehicle and forward of and above the design H-point of the driver's and the front passengers' seats in their forward most seating

positions. The tell-tale must be located so as to be visible to the driver and front passengers under daylight and night time driving conditions and must not be located on or adjacent to a surface that may be used for temporary or permanent storage if use of the storage space could obscure the tell-tale from either the driver's or right front passengers' view.

4.2. Identification

- 4.2.1. Each control, tell-tale and indicator that is listed in column 1 of Table 1, shall be identified by the symbol specified for it in column 2 of Table 1. No identification symbol is required for any horn (an audible warning signal) control that is activated by a lanyard.
- 4.2.2. If a symbol is used for identification of a control, tell-tale or indicator not listed in Table 1, it is recommended to use a symbol designated for the purpose in International Standard ISO 2575:2004/Amd.1:2005 *Road vehicles – Symbols for controls, indicators and tell-tales*. **As per discussion GRSG**
- 4.2.3. Supplementary symbols (for example words) may be used in conjunction with any symbol.
- 4.2.4. Each additional or supplementary symbol used by the manufacturer must not cause confusion with any symbol specified in this regulation.
- 4.2.5. If the control, indicator or tell-tale for the same function are combined, one symbol may be used to identify that combination.
- 4.2.6. Except as provided in paragraph 4.2.7., all identification symbols for the tell-tales, indicators and controls must be positioned so as to appear to the driver to be perceptually upright. For rotating controls that have an “off” position, this requirement applies to the control in the “off” position.
- 4.2.7. The identification symbols for the following need not be positioned so as to appear to the driver to be perceptually upright:
 - 4.2.7.1. a horn control,
 - 4.2.7.2. any control, tell-tale or indicator located on the steering wheel, when the steering wheel is positioned for the power driven vehicle to travel in other than a straight forward direction, and
 - 4.2.7.3. any rotating control that does not have an “off” position.
- 4.2.8. Identification symbols shall be provided for the control of each function of the automatic vehicle speed system (cruise control) and the heating and air conditioning systems.
- 4.2.9. When fitted, each control that regulates a system function over a continuous range shall have identification provided for the limits of the adjustment range.

- 4.2.10. If color coding is used to identify the limits of the adjustment range of a temperature function or temperature status, the hot limit or status must be identified by the color red and the cold limit or status by the color blue. If the limit of a function is shown by a display not adjacent to the control for that function, both the control and the display must be independently identified as to the function of the control, in compliance with 4.2.1., on or adjacent to the control and on or adjacent to the display.
- 4.3. Illumination
- 4.3.1. Timing of illumination
- 4.3.1.1. Except as provided in paragraph 4.3.1.3., wherever the word "Yes" is indicated in column 4 of Table 1, the corresponding identification symbol for a control listed in column 1 in 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, steering column, in the area of the windscreen header, or to those controls for a heating or air-conditioning system that does not direct air directly upon the windscreen.
- 4.3.1.2. Except as provided in paragraph 4.3.1.3., wherever the word "Yes" is indicated in column 4 of Table 1, the corresponding indicator and its identification symbol shall be illuminated whenever the vehicle's propulsion system and the headlamps are activated.
- 4.3.1.3. 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.
- 4.3.1.4. At the manufacturer's option, Any control, indicator and their respective identification symbols may be capable of being illuminated at any time. **In ECE and U.S. Final rule**
- 4.3.1.5. A tell-tale shall emit light when the malfunction or vehicle condition it is designed to indicate occurs. It shall not emit light at any other time, except during a bulb check.
- 4.3.2. Brightness of illumination regarding controls and indicators
- 4.3.2.1. Means shall be provided for illuminating the indicators and identification symbols for indicators and controls listed in Table 1, for which the word "Yes" is indicated in column 4 of Table 1, to make them visible to the driver under daylight and night time driving conditions.
- 4.3.2.2. The means of illumination required by paragraph 4.3.2.1.:
- 4.3.2.2.1. shall be adjustable to provide at least two levels of brightness, at the lower of which the indicators and identification symbols for controls and indicators are

barely discernible to the driver who has adapted to dark ambient roadway condition; and

4.3.2.2.2. may be operable manually or automatically; and

4.3.2.2.3. may have level of brightness at which those items and identification are not visible. **U.S. final rule**

4.3.3. Brightness of illumination regarding tell-tales

Means shall be provided for illuminating tell-tales and their identification symbols to make them visible to the driver under daylight and night time driving conditions.

4.4. Colour

4.4.1. Subject to subsection 4.5.1.6, the light of each tell-tale shall be of the colour specified in column 5 of Table 1.

4.4.2. The colour of indicators, tell-tales and the identification symbols for indicators and controls not listed in Table 1 shall be selected by the manufacturer in accordance with paragraphs 4.4.3 and 4.4.4. The colour selected must not mask or interfere with the identification of any tell-tale, control or indicator specified in Table 1.

4.4.3. Subject to section 4.2.10, colours must be selected in accordance with the following colour code: **OICA comment**

4.4.3.1. red: danger to persons or very serious damage to equipment is immediate or imminent;

4.4.3.2. yellow or amber: caution, outside normal operating limits, vehicle system malfunction, damage to vehicle likely, or other condition which may produce hazard in the longer term;

4.4.3.3. green: safe, normal operating condition (except if blue or yellow is required by Table 1.).

4.4.4. Each symbol used for the identification of a tell-tale, control or indicator shall be in a colour that stands out clearly against the background.











4.4.5. The filled-in part of any symbol may be replaced by its outline and the outline of any symbol may be filled in.





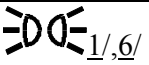
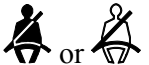


4.5. Common space for displaying multiple messages



4.5.1. Except as provided in 4.5.1.3., a common space may be used to show information from any source, subject to the following requirements:

- 4.5.1.1. The tell-tales and indicators displayed in the common space shall illuminate at the initiation of the condition they are designed to identify.
- 4.5.1.2. The tell-tale and indicators that are listed in table 1 and are shown in the common space must illuminate at the initiation of any underlying condition. U.S final rule
- 4.5.1.3. Except as provided in 4.5.1.4., when the 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 4.6.2.
- 4.5.1.4. The tell-tales for ~~any~~ the brake system malfunction, air bag malfunction, side air bag malfunction, passenger air bag off, headlamp driving beam, low tyre pressure, direction indicator and seat belt shall not be shown in the same common space. **OICA comment**
- 4.5.1.5. If condition of activation exists for the following tell-tales: brake system malfunction, air bag malfunction, side air bag malfunction, passenger air bag off, low tyre pressure, headlamp driving beam, direction indicator or seat belt, and they are displayed on a common space with other tell-tale, they must have priority over anything else in the common space.
- 4.5.1.6. Information displayed in the common space may be cancellable automatically or by the driver, except for the tell-tales of headlamp driving beam, passenger air bag off, low tyre pressure, a direction indicator and those for which the colour red is required by Table 1 shall not be cancellable if the condition exists for their activation.
- 4.5.1.7. The colour requirements regarding telltales for and telltales for engine oil pressure and parking brake do not apply when those telltales appear in a common space.
- 4.6. Conditions
- 4.6.1. The driver has adapted to the ambient light roadway conditions.
- 4.6.2. The driver, 50th percentile male, is restrained by the installed crash protection system, adjusted in accordance with the manufacturer's instructions. Per discussion last GRSG

Table 1. Symbols identifying controls, tell-tales and indicators

No.	Column 1	Column 2	Column 3	Column 4	Column 5
	ITEM	SYMBOL	FUNCTION	ILLUMINATION	COLOUR
1.	Master lighting switch Tell-tale may not act as the tell-tale for the position (side) lamps.	 1/	Control		
			Tell-tale 10/	Yes	Green
2.	Headlamp passing beams	14/	Control 6/		
			Tell-tale	Yes	Green
3.	Headlamp driving beams	 1/, 2/	Control		
			Tell-tale	Yes	Blue
4.	Headlamp cleaning device (with separate operating control)	14/	Control		
5.	Direction indicator	 1/ 3/	Control		
			Tell-tale	Yes	Green
6.	Hazard warning signal	 1/	Control	Yes	
			Tell-tale 4/	Yes	Red
7.	Front fog lamps	14/	Control		
			Tell-tale	Yes	Green
8.	Rear fog lamp	14/	Control		
			Tell-tale	Yes	Yellow
9.	Fuel level	 or 	Tell-tale	Yes	
			Indicator	Yes	
10.	Engine oil pressure	 5/	Tell-tale	Yes	Red
			Indicator	Yes	
11.	Engine coolant temperature	 5/	Tell-tale	Yes	Red
			Indicator	Yes	
12.	Electrical charging Condition		Tell-tale	Yes	Red
			Indicator	Yes	
13.	Windscreen wiping system (continuous)		Control	Yes	
14.	Power window lock	14/	Control		

No.	Column 1	Column 2	Column 3	Column 4	Column 5
	ITEM	SYMBOL	FUNCTION	ILLUMINATION	COLOUR
15.	Windscreen washing system		Control	Yes	
16.	Windscreen washing and wiping system		Control	Yes	
17.	Windscreen defrosting and defogging system		Control	Yes	
			Tell-tale	Yes	Yellow
18.	Rear window defrosting and defogging system		Control	Yes	
			Tell-tale	Yes	Yellow
19.	Position, side marker, and/or end-outline marker lamps		Control		
			Tell-tale 10/	Yes 6/	Green
20.	Parking lamps	14/	Control		
			Tell-tale	Yes	Green
21.	Seat belt	 or 	Tell-tale	Yes	Red
22.	Airbag malfunction	14/	Tell-tale	Yes	Red or yellow
23.	Side airbag malfunction	14/	Tell-tale	Yes	Red or yellow
24.	Passenger Airbag off	14/	Tell-tale	Yes	Yellow
25.	Brake system malfunction	7/, 14/	Tell-tale	Yes	see brake Regulation
26.	Antilock brake system malfunction	7/, 14/	Tell-tale	Yes	Yellow
27.	Regenerative brake system malfunction	7/, 14/	Tell-tale	Yes	Yellow
28.	Antilock brake system malfunction in tow vehicle	7/, 14/	Tell-tale	Yes	Yellow
29.	Antilock brake system trailer fault	7/, 14/	Tell-tale	Yes	Yellow
30.	Low brake air/fluid pressure	7/, 14/	Tell-tale	Yes	Red
31.	Low brake fluid condition	7/, 14/	Tell-tale	Yes	Red
32.	Parking brake applied	7/, 14/	Tell-tale	Yes	Red
33.	Speedometer	km/h and mph (upper or lower case) 11/ 12/	Indicator	Yes	
34.	Horn	 1/	Control		

No.	Column 1	Column 2	Column 3	Column 4	Column 5
	ITEM	SYMBOL	FUNCTION	ILLUMINATION	COLOUR
35.	Engine on-board diagnostics or engine malfunction	14/	Tell-tale	Yes	Yellow
36.	Diesel pre-heat	14/	Tell-tale	Yes	Yellow
37.	Choke (cold starting device)	14/	Control		
			Tell-tale	Yes	Yellow
38.	Air Conditioning System		Control	Yes	
39.	Automatic transmission control position (park) (reverse) (neutral) (drive)	P R N D , 8/	Indicator	Yes	
40.	Engine Start	9/, 14/	Control		
41.	Engine Stop	9/, 14/	Control	Yes	
42.	Brake lining wear-out condition	7/, 14/	Tell-tale	Yes	Yellow
43.	Heating system	14/	Control	Yes	
44.	Heating and/or air conditioning fan	 1/	Control	Yes	
45.	Headlamp levelling	14/	Control		
46.	Odometer	km , if kilometres are shown or miles , if miles are shown ^{14/}	Indicator	Yes	
47.	Tyre malfunction (e.g. low tyre pressure)	14/	Tell-tale	Yes	Yellow
48.	Automatic vehicle speed (cruise control)	14/	Control	Yes	

^{1/} Framed areas of the symbol may be solid.

^{2/} The number of parallel lines in the symbol may be 4 or 5.

^{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/ If a single tell-tale is used to indicate more than one brake system condition, the brake system malfunction symbol must be used.
- 8/ 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 shall be displayed top to bottom or left to right.
- 9/ Use when engine control is separate from the key locking system.
- 10/ Not required if instrument panel lights are lit automatically on activation of the master lighting switch.
- 11/ Digital speedometers that switch between kilometres per hour and miles per hour are allowed if the unit of measure is identified.
- 12/ The analogue speedometer scale intervals shall increase in a clockwise direction. Major graduations and numerals shall appear at 10 or 20 kilometre per hour intervals and corresponding minor graduations at 5 or 10 kilometre per hour intervals.
In vehicles manufactured for countries where imperial units are used, the speedometer shall be marked in mph (miles per hour). Major graduations and numerals shall appear at 10 mile per hour intervals and corresponding minor graduations at 5 mile per hour intervals.
- 13/ The required text identification must be displayed in lowercase letters.
- 14/ The choice of the symbol identifying the control, tell-tale or indicator is based on the determination by each contracting party. Contracting party may leave the choice of the symbol to the motor vehicle manufactures.

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