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Road vehicles - Controls, tell-tales and indicators

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Road vehicles - Controls, tell-tales and indicators

1- Scope and field of the application

This standard specifies the technical requirements for the locations, color, illuminations, and identifications of road vehicle controls, tell-tales and indicators.

This standard applies to passenger cars, multipurpose passenger vehicles, trucks, and buses.

2- Complementary References

2.1 SASO GSO ISO 2575 "Road vehicles - Symbols for controls, indicators and tell-tales".

3- Terms and definitions

For the purposes of this standard, the following terms and definitions are applied:

3.1 Passenger car

A motor vehicle with motive power, designed for carrying 10 persons or less including the driver and their luggage, except a low-speed vehicle, multipurpose passenger vehicle, or trailer.

3.2 Multipurpose passenger vehicle

A motor vehicle with motive power, designed to carry 10 persons or less or goods equivalent by weight which is constructed either on a truck chassis or with special features for occasional off-road operation. Except a low-speed vehicle or trailer

3.3 Truck

A motor vehicle with motive power, designed primarily for the transportation of property, special purpose equipment, or towing a trailer except a trailer.

3.4 Bus

A motor vehicle with motive power, designed for carrying more than 10 persons, except a trailer.

3.5 Device

An element or an assembly of elements used to perform one or more functions.

3.6 Control

A 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.

3.7 Indicator

A device that shows the magnitude of the physical characteristics that the instrument is designed to sense.

3.8 Identifier

A symbol, word, or words used to identify a control, telltale, or indicator.

3.9 Tell-tale

An optical signal that, when alight, indicates the actuation or deactivation of a device, a correct or defective functioning or condition, or a failure to function.

3.10 Common space

An area on which more than one telltale, indicator, identifier, or another message may be displayed, but not simultaneously.

3.11 Adjacent

With respect to a control, telltale or indicator, and its identifier means:

- (a) The identifier is in close proximity to the control, telltale or indicator; and
- (b) No other control, telltale, indicator, identifier or source of illumination appears between the identifier and the telltale, indicator, or control that the identifier identifies.

3.12 Multi-function control

A control through which the driver may select, and affect the operation of, more than one vehicle function.

3.13 Multi-task display

A display on which more than one message can be shown simultaneously.

4- Conditions

4.1 The driver has adapted to the ambient light roadway conditions.

4.2 The driver is restrained by the seat belts and adjusted in accordance with the vehicle manufacturer's instructions.

5- Technical requirements

5.1 General

5.1.1 Each passenger car, multipurpose passenger vehicle, truck or bus shall be provided with a control, a tell-tale and an indicator listed in Table (1).

5.1.2 Each passenger car, multipurpose passenger vehicle, truck, or bus shall meet the prescribed requirements of this Standard for the location, identification, color, and illumination of such control, tell-tale or indicator.

5.2 Location

5.2.1 The controls shall be available in order for them to be operated by the driver according to the condition mentioned in item. 4.2.

5.2.2 The tell-tales and indicators and their identification shall be located so that they are clearly visible to the driver when operating during the day and night, according to the conditions mentioned in items 4.1 and 4.2.

5.2.3 The identifications of the controls, indicators and tell-tales shall be placed on or adjacent to the telltale, indicator or control that identifies it, with the exception of multi-function controls, so they are as close as possible.

5.2.4 A multi-function controls shall be provided with a multi-function display, as follows:

- a) Clearly visible to the driver according to the conditions described in clauses 4.1 and 4.2;
- b) Identifies the multi-function control with which it is associated graphically or using words;
- c) For multi-task displays with layers, identifies on the top-most layer each system for which control is possible from the associated multi-function control, and subfunctions of the available systems need not be shown on the top-most layer of the multi-task display;
- d) Identifies the controls of Table (1) with the identification specified in those tables, whenever those are the active functions of the multi-function control.

For lower levels of multi-task displays with layers, identification is permitted but not required for systems not otherwise regulated by this standard., and

e) The telltales are not displayed.

5.2.5 The turn signal control shall be on the left side of the steering wheel.

5.3 Identification

5.3.1 Each control, telltale and indicator shall be identified using the symbols, words or abbreviations mentioned in Table (1).

5.3.2 The symbols, words, or abbreviations of the control, telltale and indicator shall be in accordance with Table (1).

5.3.3 Any symbol, word, or abbreviation not listed in Table (1) may be used to identify a control, a telltale or an indicator, and shall be in accordance with Saudi Standard SASO GSO ISO 2575.

Note:

(1) To identify a control, a tell-tale or an indicator not listed in Table 1 or SASO GSO ISO 2575, the manufacturer may use a symbol of its own conception.

(2) Each additional or supplementary symbol used by the manufacturer shall not cause confusion with any symbol specified in this standard.

5.3.4 A single symbol, word, or abbreviation may be used to identify any combination of the control, indicator, and telltale for the same function.

5.3.5 All identifications of tell-tales, indicators and controls (including rotating control is in its "off" position) listed in Table (1) or SASO GSO ISO 2575 shall appear to the driver perceptually upright, except for the following:

a) A horn control;

b) Any control, telltale or indicator located on the steering wheel, when the steering wheel is positioned for the motor vehicle to travel in a direction other than straight forward; and

c) Any rotating control that does not have an "off" position.

5.3.6 Each control for an automatic vehicle speed system (cruise control) and each control for heating and air conditioning systems must have identification provided for each function of each such system.

5.3.7 Each control that regulates a system function over a continuous range must have identification provided for the limits of the adjustment range of that function.

5.3.8 If color coding is used to identify the limits of the adjustment range of a temperature function, the hot limit must be identified by the color red and the cold limit by the color blue.

5.3.9 The Low Tire Pressure Telltale (either the display identifying which tire has low pressure or the display which does not identify which tire has low pressure) shall be identified by the appropriate symbol designated in Table (1).

5.3.10 No identification is required for any horn (i.e., audible warning signal) that is activated by a lanyard or by the driver pressing on the center of the face plane of the steering wheel hub.

5.3.11 Automatic functions may be indicated with the symbol relevant for the corresponding item as referred to in Table (1) , with the supplementary letter(s) "A" or "AUTO" positioned on or adjacent to its outline.

5.4 Illumination

5.4.1 The identifications of controls for which the word “Yes” is specified in column (5) of Table (1) shall be capable of being illuminated whenever the headlamps are activated.

This requirement does not apply to a control located on the floor, floor console, steering wheel, steering column, or in the area of windshield header, or to a control for a heating and air-conditioning system that does not direct air upon the windshield.

5.4.2 The indicators and their identifications for which the word “Yes” is specified in column (5) of Table (1) shall be illuminated whenever the vehicle's propulsion system and headlamps are activated.

5.4.3 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

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

5.4.5 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.

5.5 Brightness of illumination

5.5.1 Means shall be provided for illuminating the indicators, identifications of indicators and controls listed in Table 1 to make them visible to the driver under daylight and nighttime driving conditions.

5.5.2 The means of providing the visibility required by 5.5.1:

- a) Shall be adjustable to provide at least two levels of brightness;
- b) At a level of brightness other than the highest level, the identification of controls and indicators must be barely discernible to the driver who has adapted to dark ambient roadway condition; and
- c) May be operable manually or automatically.

Note: If the level of brightness is adjusted by automatic means to a point where those items or their identification are not visible to the driver, means shall be provided to enable the driver to restore visibility.

5.5.3 Means shall be provided for illuminating telltales and their identification sufficiently to make them visible to the driver under daylight and nighttime driving conditions.

5.5.4 The means of providing the visibility required by 5.5.3:

- a) May be adjustable manually or automatically, except that the telltales and identification for brakes, high beams, turn signals, and safety belts may not be adjustable under any driving condition to a level that is invisible.

5.5.5 Brightness of interior lamps

Any source of illumination within the passenger compartment which is forward of a transverse vertical plane 110 mm rearward of the manikin “H” point with the driver's seat in its rearmost driving position, which is not used for the controls and displays regulated by this standard, which is not a telltale, and which is capable of being illuminated while the vehicle is in motion, shall have either:

- a) Light intensity which is manually or automatically adjustable to provide at least two levels of brightness;

- b) A single intensity that is barely discernible to a driver who has adapted to dark ambient roadway conditions; or
- c) A means of being turned off.

5.5.6 The item of 5.5.5 do not apply to buses that are normally operated with the passenger compartment illuminated.

5.6 Color

5.5.1 Light of each tell-tale listed in Table 1 shall be of the color shown in column 6 of this table.

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

Note: this requirement does not apply to an identifier for a horn control in the center of the face plane of the steering wheel hub.

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

5.5.4 Indicators and tell-tales and identifications of indicators and controls not listed in Table (1) may be of any color chosen by the manufacturer, however, such color shall not interfere with or mask the identification of any tell-tale, control, or indicator specified in Table 1, and color to be selected shall follow the guidelines specified in standard SASO GSO ISO 2575.

5.7 Common Space for Displaying Multiple messages

A common space may be used to show messages from any sources, subject to the following requirements:

5.7.1 The tell-tales and indicators that are listed in Table (1) and are shown in the common space must illuminate at the initiation of any underlying condition.

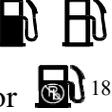
5.7.2 When the underlying conditions exist for actuation of two or more telltales, the messages must be either:

- a) Repeated automatically in sequence, or
- b) Indicated by visible means and capable of being selected for viewing by the driver under the conditions of 4.2

5.7.4 The telltales for any brake system malfunction required by Table (1) to be red, air bag malfunction, low tire pressure, electronic stability control malfunction, passenger air bag off, high beam, turn signal, and seat belt for front seating row shall not be shown in the same common space.

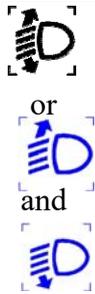
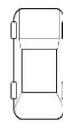
5.7.4 If tell-tale for the brake system malfunction, high beam, turn signal or seat belt for front seating row is displayed in a common space it shall displace any other symbol in such common space if the underlying condition exists for its activation.

5.7.5 The messages displayed in a common space may be cancelable automatically or by the driver, except telltales for high beams, turn signal, low tire pressure, and passenger air bag off, and telltales for which the color red is required in Table (1) shall not be cancelable while the underlying condition for their activation exists.

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Item	Symbol ²	Words & Abbreviations	Function	Illumination	Color
1.	Master lighting switch Tell-tale may not act as the tell-tale for the position (side) lamps	 1,18	Lights	Control	No	
				Tell-tale ¹²	Yes	Green
2.	Headlamp passing beams	 1, 6, 13,18		Control	No	
				Telltale	Yes	Green
3	Headlamp high beams	 1, 13, 18		Control	No	-
				Tell-tale	Yes	Blue
4.	Headlamp cleaning device (With separate operating control)			Control	No	
5.	Direction indicator	 1, 3		Control	No	
				Tell-tale	Yes	Green
6.	Hazard warning signal	 1	Harzard	Control	Yes	
				-----	Tell-tale ⁴	Yes
7.	Front fog lamps	 1		Control	No	
				Tell-tale	Yes	Green
8.	Rear fog lamp	 1		Control	No	
				Tell-tale	Yes	Yellow
9.	Fuel level	 18		Tell-tale	Yes	Yellow
				Indicator	Yes	
10.	Engine oil pressure	 5, 18		Tell-tale	Yes	Red
				Indicator	Yes	
11.	Engine coolant temperature	 5, 18		Tell-tale	Yes	Red
				Indicator	Yes	
12.	Electrical charging condition	 18		Tell-tale	Yes	Red
				Indicator	Yes	
13.	Windscreen wiping system (continuous)		Wiper or Wipe	Control	Yes	

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Item	Symbol ²	Words & Abbreviations	Function	Illumination	Color
14.	Power window lock	 or 		Control	No	
15.	Windscreen washing system		Washer Or Wash	Control	Yes	
16.	Windscreen washing and wiping system		Washer -Wiper Or Wash -Wipe	Control	Yes	
17.	Windscreen defrosting and defogging system (with separate operating control)		Defrost, Defog or Def.	Control	Yes	
				Tell-tale	Yes	Yellow
18.	Rear window defrosting and defogging system (with separate operating control)		Rear Defrost, Rear Defog Rear Def. or R-Def.	Control	Yes	
				Tell-tale	Yes	Yellow
19.	Position, side marker, and/or end-outline marker lamps	 1, 6,18	Marker Lamp or MK Lps	Control	No	
				Tell-tale ¹²	Yes ⁶	Green
20.	Parking lamps			Control	No	
				Tell-tale	Yes	Green
21.	Safety belt reminder	 or  18, 22	Fasten Belts	Tell-tale	Yes	Red 22
22.	Airbag malfunction	 ⁸		Tell-tale	Yes	Yellow and/or Red
23.	Side airbag malfunction	 ^{7, 8}		Tell-tale	Yes	Yellow and/or Red
24.	Passenger air bag off	 ²		Tell-tale	Yes	Yellow

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Item	Symbol ²	Words & Abbreviations	Function	Illumination	Color
25.	Brake system malfunction	 ⁸	Brake	Tell-tale	Yes	See Regulation Nos. 13-H and 13 as appropriate
26.	Antilock brake system malfunction	 ⁹	Antilock Anti-lock, or ABS	Tell-tale	Yes	Yellow
27.	Speedometer	km/h, if kilometres are shown ¹⁴	km/h	Indicator	Yes	
28.	Parking brake	 ⁹		Tell-tale	Yes	See Regulation Nos. 13-H and 13 as appropriate
29.	Horn		Horn	Control	No	
30.	Engine on-board diagnostics or engine malfunction			Tell-tale	Yes	Yellow
31.	Combustion pre-heat; engine start aid			Tell-tale	Yes	Yellow
32.	Choke (cold starting device)			Control	No	Yellow
33.	Air Conditioning System	 _{or A/C}		Control	Yes	
34.	Automatic transmission control position	P R N D ¹⁰	P R N D	Indicator	Yes	
35.	Engine start	 ^{11, 19}	Engine start	Control	No	

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Item	Symbol ²	Words & Abbreviations	Function	Illumination	Color
36.	Engine stop	 11, 19	Engine stop	Control	Yes	
37.	Brake lining wear-out condition	 9		Tell-tale	Yes	Yellow
38.	Heating system			Control	Yes	
39.	Heating and/or air conditioning fan	 1	Fan	Control	Yes	
40.	Headlamp levelling	 13		Control	No	
41.	Odometer	km, if kilometres are shown 15	km,/kilometres	Indicator	Yes	
42a	Low tyre pressure (including malfunction)	 16	Low tyre or TPMS	Tell-tale	Yes	Yellow
42b	Low tyre pressure (including malfunction) that identifies affected tyre	 16, 17	Low tyre or TPMS	Tell-tale	Yes	Yellow
43.	Electronic stability control	 or ESC 17	ESC	Tell-tale	Yes	Yellow

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Item	Symbol ²	Words & Abbreviations	Function	Illumination	Color
44.	Electronic stability control system "OFF"	 or ESC OFF 17, 20	ESC OFF	Control	Yes	
45.	Accident Emergency Call System (AECS)	 21		Control	Yes	
				Tell-tale		

Table (1) - Symbols, their illumination and colors

¹ Framed areas of the symbol may be solid.

² The symbols included in this Regulation are substantially identical to symbols described in ISO 2575:2004. Proportional dimensional characteristics specified in ISO 2575:2004 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 If a single tell-tale is used to indicate an airbag malfunction, the airbag malfunction symbol (22) shall be used.

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 shall 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.

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.

¹³ Symbols employing five lines instead of four (and vice versa) may also be used.

¹⁴ The required text identification can be displayed in uppercase and/or lowercase letters.

¹⁵ The required text identification shall be displayed in lowercase letters. If miles are shown, an abbreviation may be used.

¹⁶ Additionally, either of the low tyre pressure tell-tales may be used to indicate a tyre pressure monitoring system (TPMS) malfunction.

¹⁷ The vehicle outline shown is not intended to be restrictive, but is the recommended outline. Alternative vehicle outlines may be used in order to better represent the actual outline of a given vehicle.

¹⁸ Symbol may be shown in other colours than specified in column 5 in order to convey different meanings according to the general color coding as proposed in paragraph 5 of ISO 2575-2004.

¹⁹ The functions "start" and "stop" may be combined in one control. As an alternative to the prescribed symbol(s) it is allowed to use the text "START" and/or "STOP" or a combination of symbols and text. Text can be displayed in uppercase and/or lowercase letters.

²⁰ The supplementary letters "OFF" may be positioned on or adjacent to the outline of the symbol of item No. 43. The font of the letters "OFF" or "ESC OFF" is not intended to be restrictive (Note: the letters "OFF" and "ESC OFF" shall be kept in English and shall not be translated).

²¹ If the control is covered, the item identification shall be repeated on this cover unless this cover is transparent. "SOS" shall be kept as a symbol. The telephone symbol may be re-orientated.

²² A different symbol and colour may be used for seat row(s) other than the front row."

Bibliography

[1] ECE 121:2015 & ECE 121:2015/Amd3:2018 "Uniform provisions concerning the approval of vehicles with regard to the location and identification of hand controls, tell-tales and indicators".

[2] 49 Subtitle B-Chapter V-Part 571-Subpart B Section 101 (FMVSS 571.101) "Controls and displays".