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Working Party on General Safety Provisions (GRSG)

**PROPOSAL FOR A NEW DRAFT GLOBAL TECHNICAL REGULATION CONCERNING
LOCATION AND IDENTIFICATION OF MOTORCYCLE CONTROLS, TELL-TALES AND
INDICATORS**

Transmitted by the expert from IMMA

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A. STATEMENT OF TECHNICAL RATIONALE AND JUSTIFICATION

I. INTRODUCTION

This proposed global technical regulation (gtr) location and identification of motorcycle controls, tell-tales and indicators determined to be critical for safety by GRSG Working Party. 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 motorcycles 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 motorcycle market.

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 of communicating information to drivers. The consistent use of a selected symbol in all new motorcycles 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 global technical regulation is based on the ISO 6727 standard of the International Organization for Standardization (ISO). This set of symbols was selected because it is currently used internationally and is accepted by most manufacturers and Contracting Parties. It is the intention for any new symbols to

II. PROCEDURAL BACKGROUND

During the XXX session of GRSG in 2002, IMMA proposed the development of ECE Regulations regarding controls, tell-tales and indicators.

It has been agreed that there is a need to harmonize the way in which motorcycle controls, tell-tales and indicators are installed and identified, and there is commonality in the world-wide use of the symbols, which justifies the development of a global technical 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 Party 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 global technical 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.

GRSG Working Party 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 global technical regulation proposal calls for inclusion of a table that will identify 32 functions determined to be essential for safety. Each of these functions will be associated with a symbol. The current global technical regulation defines some mandatory symbols based on the ISO standard. This was determined appropriate as all these symbols are already accepted by most Contracting Parties. The remaining safety symbols will need to be selected by the Contracting Parties on the basis of their applicability to motorcycles and their global recognisability to allow for harmonization of the symbols, tell-tales and indicators.. .)*

IV. EXISTING REGULATIONS, DIRECTIVES AND INTERNATIONAL VOLUNTARY STANDARDS

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 global technical regulation in the compendium of candidate global technical regulations, GRSG has considered the documents listed below:

- EC Directive 93/29/EEC – Identification of controls, tell-tales and indicators as amended by Commission Directive 93/91/EEC;
- FMVSS 123: Transportation; Part 571.101: Controls and displays; and
- Canada Motor Vehicle Safety Regulation No. 101 – Location and identification of controls and displays.
- Japan Article 10
- Japan Article 46
- ECE Regulation 60

GRSG has also considered the UNECE Regulation 60, developed in the framework of the 1958 Agreement as well as the known voluntary standards on the subject listed in the proposal, specifically:

- ISO 6727-1981
- ISO 9021-1988

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. 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 motorcycle safety, 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 motorcycles. Standardizing controls, tell-tales and indicators could reduce driver distraction, resulting in improved safety for all motorists.

Since all the symbols prescribed in the global technical regulation are currently accepted by most of the Contracting Parties, the cost is minimal. The global technical regulation would ensure better understanding of safety symbols by riders around the world.

Defining the installation and identification of controls and displays is of sufficient importance to warrant this global technical regulation. This proposed global technical regulation is a first step. As other controls, tell-tales and indicators get used and get recognition these would be added to the current list through revisions and addendums to the global technical regulation. 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 and identification of motorcycle controls, tell-tales and indicators. The purpose of this global technical regulation is to ensure the accessibility, visibility, and recognition of motorcycle controls, tell-tales, and indicators and to facilitate the proper selection of controls under daylight and night-time conditions. The global technical regulation intention is also to reduce the safety hazards that would otherwise be caused by the diversion of the rider's attention from the driving task by mistakes in selecting controls.

NOTE. Table 1 currently also includes items that can be listed as operational items and are out of the scope of this global technical requirement

2. APPLICATION

This global technical regulation applies to power-driven vehicles of category 3-3 two wheeled motorcycles >50cc and >50 km/h that is driven on the public highways. The application of this global technical regulation to other sub-categories in category 3 still needs to be investigated and reviewed.

3. DEFINITIONS

For the purpose of this global technical 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, tell-tale 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 motorcycle, if fitted with a control, tell-tale or indicator identified in Table 1, shall meet the prescribed requirements of this global technical 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 night-time driving. Tell-tales, indicators and their identification symbols need not be visible when not activated.

4.1.3. 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 except as provided in paragraph 4.1.4.

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 tell-tales listed in Table 1.

- 4.1.5. Controls for hazard warning lamps, passing and driving beam headlamps, direction indicators and for engine off must be always accessible to the driver as primary function of the corresponding control.
- 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.
- 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 6727:1981 Road vehicles - Motorcycles - Symbols for controls, indicators and tell-tales.
- 4.2.3. Some authorities may request the use of supplementary symbols (for example words) 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 global technical 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).
- 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.

4.3. Illumination

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.

4.3.1.5. 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

4.3.2.2.2. may be operable manually or automatically; and

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 paragraph 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 paragraph 4.2.10., colours must be selected in accordance with the following colour code:

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




- 4.4.3.2. 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 paragraph 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.
- 4.5.1.3. Except as provided in paragraph 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 the, headlamp driving beam, , and direction indicator shall not be shown in the same common space.
- 4.5.1.5. If condition of activation exists for the following tell-tales: headlamp driving beam and , direction indicator 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 and 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.

4.6. 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.


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


No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
1	Supplemental engine stop control	Off 	Control	Located on the right handlebar, represented by given words and/or symbols for "off " and "on" or "run" positions	-	
		On or Run 	Control		-	
2	Ignition Switch		Control	For a rotary control, the "on" position shall be clockwise from the "off" position.		The device that enables the engine to run, and may also allows operation of other electrical systems on a vehicle.
3	Electric Starter		Control		-	


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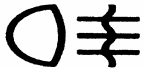
No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
4	Manual Choke		Control			
			Tell-Tale		Amber	
5	Neutral Indicator		Indicator			
			Tell-tale		Green	
6	Fuel Tank Shutoff Valve Manual	On  Off  Reserve or Res.  or Res 	Control			If so equipped, the switch may be represented by the words "On" "Off" and "Reserve" (or "Res" or "Res."), or by the given symbols"


No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
7	Fuel Tank Shutoff Valve Automatic	On  Off  Reserve or Res.  or Res	Control			Fuel shut-off control optional for systems in which the fuel flow is stopped when the engine is switched off. If equipped with a control, the symbols and control positions shall be the same as identified for Manual Fuel Shut-Off Control. No "Off" position is required.
8	Speedometer		Indicator	Must be within the direct field of view of the driver and shall be legible day or night.		



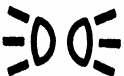



No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
9	Horn		Control	on the left handlebar for vehicles with foot operated gear selection operated independently of the clutch and on the right handlebar for vehicles with gear selection operated in conjunction with the clutch.		




No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
10	Headlamps Driving beam (Main beam)	Driving beam (Main beam) 	Control	on the left handlebar for vehicles with gear selection operated independently of a hand operated clutch, on right handlebar for vehicles with gear selection is operated in conjunction with the hand operated clutch		
			Tell-Tales		Blue	

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
11	Headlamps Passing Beam (Dipped Beam)	 Passing beam (Dipped beam)	Control	on the left handlebar for vehicles with gear selection operated independently of a hand operated clutch, on right handlebar for vehicles with gear selection is operated in conjunction with the hand operated clutch		
			Tell tales		Green	
12	Optical warning device		Control	If so equipped, the control for this device shall be located on the same handlebar as the vehicle Driving Beam/Passing Beam Switch.		

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
13	Fog lamps - front		Control	If one control is used for both, front fog lamp symbol is used.		
			Tell-tales		Green	
	Fog lamps - rear		Control	If one control is used for both, front fog lamp symbol is used.		
			Tell-tales		Amber	

No.	Column 1 ITEM	Column 2 SYMBOL	Column 3 FUNCTION	Column 4 LOCATION	Column 5 COLOUR	Column 6 Definition
14	Direction indicators		Control	Switch is to be located on the handlebar in clear view from the operator's seat and shall be marked clearly. The indicator lamp must be located within the clear view of the operator when the vehicle is in operation and may either flash to show that a turn signal is engaged or separate lamps may flash to show which side of the vehicle is being worked. If there are separate tell-tales, or controls, for the left and right direction indicators, the two arrows may also be used separately		The left and right arrows on switches or tell-tales may be separated.


No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
			Tell-Tales		Green	
15	Hazard warning light		Controls			Represented by either the direction indicator tell-tale(s) flashing simultaneously, or by a given triangle symbol.
			Tell-Tales		Green	
			Controls			
			Tell-Tales	Red		
16	Lighting Control (Position Lamp)		Controls			Can be combined with ignition control. Represented by the given symbols for position lamps, master lamp control and parking lamp but if all lamps are automatically lit when vehicle is in operation, no position or master lamp control symbol need appear. Clockwise operation if rotary control, position lights then headlights
			Tell-Tales		Green	
17	Lighting Control (Master lamp control)		Controls			
			Tell-Tales		Green	
18	Lighting Control (Parking Lamp)		Controls			
			Tell-Tales		Green	
19	Fuel Indicator		Indicator			If so equipped, the Tell-Tale shall be Amber in colour
			Tell-Tales		If so equipped	
20	Engine cooling		Indicator			

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
	temp		Tell-Tales	If so equipped	Red	
21	Battery charging		Indicator	(optional)		
			Tell-tale	If so equipped	Red	
22	Engine Oil		Indicator			
			Tell-Tales		Red	
23	Engine Speed Control		Control	Rotating handgrip on the right handlebar. Anticlockwise manipulation increases speed. The control shall be self-closing to idle in a clockwise direction after release of the hand unless a vehicle speed control device is activated.		

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
24	Front wheel brake		Control	Hand lever located on the right handlebar. However, in the case of vehicles equipped with a combined brake system, the front wheel brake may operate simultaneously with the rear wheel brake when the combined brake system is activated.		
25	Foot rear wheel brakes control		Control	On the right side of the frame.		Not allowed for L1 category vehicles with pedals usable for motive power. Scope limited to L3,
26	Hand rear wheel brake control		Control	On left handlebar.		Not allowed for vehicles with hand operated clutch
27	Parking brake		Control	Hand or foot control with no special requirements.		

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
28	Clutch		Control	If so equipped, a control on the left handlebar, forward.		Shall not prohibit the use of devices on the left side of the vehicle that combine operations of a clutch and gear selector.
29	Foot selector Manual Control		Control	If the vehicle is equipped with a manual clutch, and gear selection is performed independently from the clutch, the gear selector is on the left side of the frame		Moving the forward part of the foot lever or rocker arm shall progressively select the gears: upward movement of the forward part for shifting to a higher gear position and downward movement for shifting to a lower gear position. A separate, positive "neutral" position shall be provided in either the first or second position in the gear selection order (i.e: 1-N-2-3-4. or N-1-2-3-4.). For [PTW's less than 200cc] vehicles, transmissions with the following shift patterns may be fitted: <ul style="list-style-type: none"> - Rotary pattern (i.e: N-1-2-3-4-5-N-1.) . Reverse pattern, where moving the forward part of the foot lever or rocker arm shall progressively select the gears: upward movement of the forward part for shifting to a lower gear position and downward movement for shifting to a higher gear position

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
30	Hand Selector Manual Control		Control	If the vehicle is equipped with a manual clutch, and gear selection is operated independently from the clutch, the gear selector shall be a control located on the left handlebar.		If the operation of the control is through rotation of the handgrip, the anticlockwise rotation shall progressively select gears giving an increased forward speed and conversely for a reduced forward speed. A separate, positive "neutral" position shall be provided in either the first or second position in the gear selection order (i.e: 1-N-2-3-4... or N-1-2-3-4...).

No.	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	ITEM	SYMBOL	FUNCTION	LOCATION	COLOUR	Definition
31	Automatic or Semi-automatic Gear Selector Control		Control	If the vehicle is equipped with an automatic or semi-automatic transmission and/or gearbox, the control (if any) used to engage the transmission or select the gears shall be on the left side of the frame or on the left handlebar.		
32	Brake		Tell-Tales		Amber	Non ABS system, optional. ABS system: Required.