



**Economic and Social  
Council**

Distr.  
GENERAL

ECE/TRANS/WP.1/2005/6/Rev.2  
6 January 2006

Original: ENGLISH

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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

Working Party on Road Traffic Safety

(Forty-eighth session, 20-22 March 2006,  
agenda item 5 (o))

**REVISION OF THE CONSOLIDATED RESOLUTION R.E.2**

**Variable message signs<sup>1</sup>**

Revised document prepared by the small group

The following revised proposal regarding variable message signs has been prepared by the small group made up of France, Germany, Netherlands and Spain under the chairmanship of Spain. It incorporates comments received from members of WP.1 following the 47<sup>th</sup> session.

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<sup>1</sup> The previous version of this document was issued with the symbol TRANS/WP.1/2005/6/Rev.1.

## Variable message signs

It is proposed to add the following text to the Consolidated Resolution on Road Signs and Signals (R.E.2). It is left up to the secretariat of WP.1 to suggest where these texts could be placed in R.E.2. In the opinion of the small group, the addition of these texts makes the current paragraph 2.3 of R.E.2 no longer relevant.

The small group considers the inclusion of these items as a good short-term solution. When these items later become part of the Convention on Road Signs and Signals, the small group recommends that “lane control signals” are introduced as a separate item, so that they are no longer treated as a special sort of traffic light signal. This is because lane control systems nowadays often also use speed limits (or advised speed) as a positive indication that a particular lane may be used, which leads to a strange mix of road signs and traffic lane signals.

Furthermore, it is recommended to add some rules to define the priority between speed restrictions shown on fixed signs and speed restrictions shown on variable message signs.

It is recommended that:

- a. speed limits shown on variable message signs (with the “electronic” version of sign C-14) have priority over speed limits shown on fixed signs, and
- b. the “electronic” version of sign C-17a should be used to end speed limits shown on variable message signs; from then on the latest limit shown on a fixed C-14 sign (if any) is “valid” again.

Notes:

1. The road owner, traffic administrator or road operator, should ensure that no conflicting speed limits are shown if more than one VMS system is used on the same stretch of road;
2. The road owner should also ensure that speed limits shown on VMS are never higher limits than those shown on fixed signs on the same stretch of road.
3. The “electronic” C-17a also serves as an “end of restrictions” indication for red crosses used on variable message signs.

### 1. Definition

A variable message sign (VMS) is a sign for the purpose of displaying one of a number of messages that may be changed or switched on or off as required<sup>i</sup> (note: all footnotes appear at the end of the document).

### 2. Colour inversion

As stated in article, 8, paragraph 1 bis, of the Vienna Convention on Road Signs and Signals, the dark coloured symbols may appear in a light colour, light coloured backgrounds then being replaced by dark backgrounds.

### 3. List of recommended Vienna Convention signs for use on VMS

It is recommended to use only the following signs on VMS. Note that VMS are only switched on when needed. In the case of regulatory signs this means that the restriction is not always present. In the case of warning signs this means that VMS are only used when the danger is imminent. In the case of informative signs this means that VMS are only used temporarily when particular information is worth knowing.

Prohibitory, restrictive or mandatory signs	Danger warning signs	Direction, position or indication signs and additional panels
<i>Prohibitory or restrictive</i>		<i>Direction, position or indication</i>
C-1a	A-4a;  A-4b	G-1a
C-2	A-5	G-1b
C-3e	A-9	G-1c
C-10	A-16	G-11b
C-13aa	A-17a	G-12
C-13ba	A-23	G-17
C-14	A-24	<i>Additional panels</i>
C-17a	A-31	H-1
C-17b	A-32	H-2
C-17c		H-5a
C-17d		
<i>Mandatory</i>		
D-1a		
D-9		

It is recommended to extend the meaning of the “cyclists entering or crossing” danger warning sign (A-14) to “cyclists entering, crossing or using the road”.

### 4. New signs for use on VMS

[Chapter III, article 23, to be added to paragraph 11: “If there is no possibility to show the signals over the traffic lanes, the lane allocation can be shown in one sign.” (See proposal I-1).]

Special regulation signs	Danger warning signs	Direction, position or indication signs and additional panels
E-17 (lane allocation)	A-33 (pedestrians)	<i>Direction, position or indication</i>
E-18a, E-18b, E-18c, (hard shoulder use)	A-34 (slippery road -ice or snow)	G-23 (rerouting)
	A-35 (accident)	G-25 (road closed)
	A-36 (fog)	G-26 (exit closed)
	A-37 (ghost driver)	G-27 (HOV lane)
		<i>Additional panels</i>
		H-10 (snow machine)

[Some definitions for the new signs and corresponding examples follow:]

## Regulatory signs

### Mandatory

I-1. Regulation of lane allocation [as an alternative to “lane signals” above each lane of a carriageway, proposed in the amendment of the Vienna Convention that entered into force on 30 November 1995.]

Example for only left lane open 

Any other combinations of crosses and arrows are allowed, even for roads with more than two lanes.

### Danger warning signs

A-33. Pedestrians on the road 

A-34. Danger of slippery road because of ice or snow 

Another possibility is the combination of A-9 with the additional panel H-9 

A-35. Obstruction due to accident  <sup>xii</sup>

A-36. Reduced visibility due to fog, rain or snow (see below)  <sup>xiii</sup>

A-37. Driver coming the wrong way (so called “ghost driver”)  <sup>xiv</sup> with possible addition of supporting text in the national language.

### Informative signs

*Tactical (i.e. VMS messages affecting the same road section)*

G-24a-c. Temporary hard shoulder availability or unavailability

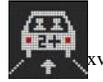
- G-24a: Use hard shoulder 
- G-24b: Stop using hard shoulder 
- G-24c: Clearing of hard shoulder 

G-25. Road closed ahead -next exit compulsory 

G-26. Next exit closed – proceed



G-27. High occupancy vehicle (HOV) lane available



H-10. Snow-removing machine operating ahead



*Strategic (i.e. VMS messages affecting other roads)*

G-23. Recommended alternative route (rerouting)



## 5. Relation between road situations and road sign classes for VMS

*From danger warning to informative*

In order to differentiate as much as possible danger warning signs, only these should use the red triangle and should be placed on the spot or nearby the VMS (< 2 km). In order to announce a dangerous situation at some distance (> 2 km) beyond the VMS, informative signs have to be used. In many cases the same symbols can be used but in a square, without the red triangle. To make clear the difference between acute danger warning and information on expected danger at some distance ahead, additional information (e.g. distance) is necessary.

*From additional panels to informative*

Some of the symbols used in additional panels can also be used as informative messages (adapting size to the new dimensions).

## 6. Message content and structure for VMS use

Distinguish between traffic and non-traffic VMS messages.

*Traffic VMS message*

1. When using VMS with pictograms the main information is given by the pictogram. The use of specific pictograms instead of generic ones (e.g., a pictogram representing “congestion” instead of general danger A-31) is preferred, when they exist.
2. Make use of symbols as much as possible in the text part.
3. Avoid alternating messages.
4. Avoid redundancy, except for the purpose of making drivers familiar with new pictograms.

5. Use only well-known and international abbreviations (e.g., 'KM' for kilometre, 'MIN' for minutes, etc.).
6. Minimize the number of words and symbols (e.g. maximum 7).
7. Regulatory messages preferably have to be shown without any text.
8. If words are used in danger warning messages, place the information about the nature of the danger on the first line. Leave the second line blank (when you have three lines) and give brief complementary advice on the bottom line if necessary.
9. If words are used for messages about distant dangerous events (> 2 km), give first the information concerning the nature of the event on the first line, then distance and/or length on the second line, and if useful, complementary information (e.g. advice, cause) on the third line.
10. In case of strategic rerouting in front of network decision points, it can be useful to divide direction-related traffic information from route recommendation. Then, two separate or alternate panels - one with length, reason for the route change and location, the other with diverted destination and route recommendation - are possible.

*Non-traffic VMS messages*

Non-traffic messages can be divided into neutral messages, general safety messages and other messages.

11. Usually – in case of no necessary traffic message- message boards should be blank.
12. Neutral messages (e.g. dots, time, temperature) are meant to indicate that the VMS is working, but there is no specific traffic message "on"; if considered necessary, it should be very short, and displayed in a way that it will not be confused with any real traffic indication (e.g., locating it at random on the text side).
13. General safety messages (road safety advice) are generally not recommended, as they could incite drivers not to pay attention to real traffic messages. When used, they should be clearly connected to a temporary general safety campaign. In any case, pictograms should not be used with non-traffic messages
14. Other messages, e.g. commercial/advertising are excluded.

## Endnotes

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- <sup>i</sup> Definition used by CENTRICO.
- <sup>ii</sup> Spanish design (based on traffic lights -crosses and arrows); already implemented.
- <sup>iii</sup> G-24 a, b, c: German design; pictogram already implemented in Germany and the Netherlands.
- <sup>iv</sup> Sign already implemented in some national road codes (e.g., Dutch, Spanish).
- <sup>v</sup> Project COST 30 BIS (1985).
- <sup>vi</sup> Project COST 30 BIS (1985).
- <sup>vii</sup> Project TROPIC (1998).
- <sup>viii</sup> Project TROPIC –British design (1998).
- <sup>ix</sup> Italian design (after VMS WHITE BOOK, 1991), also adopted by France.
- <sup>x</sup> French design.
- <sup>xi</sup> Italian design - supplementary plaque for snow clearing machine.
- <sup>xii</sup> Project COST30 BIS (1985). Other possibilities have been tested (namely, the TROPIC Project pictogram ) but the proposed seems at the moment the most technically feasible one.
- <sup>xiii</sup> The TROPIC Project tested this alternative, which was found to be the best for bad visibility in general.
- <sup>xiv</sup> For the moment, there is not a better design. The recommendation is using text beside or below the pictogram (“oncoming vehicle, drive carefully”).
- <sup>xv</sup> This HOV lane pictogram indicates the special lane is open for vehicles with two “2 or more” passengers; the use of the lane can be made more restrictive just by indicating on the sign (e.g., 3 +, 4+... passengers per vehicle or BUS).
- <sup>xvi</sup> The black and yellow arrow was designed within the SERTI Project. This shape has been chosen in order to avoid confusion between this diversion indication and arrow shapes used in direction signing and route recommendations on VMS. This sign is intended to be used in three directions: left, right and upward. Note the similarity of both the SERTI sign and the COST 30 BIS arrow (currently used in Germany) approaching both function and design in a more harmonious way.

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