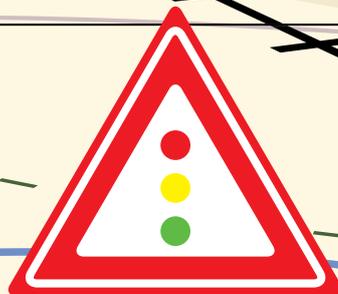
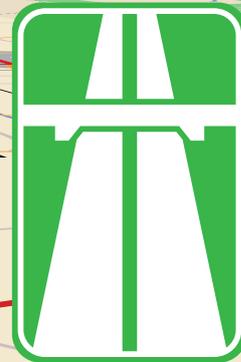


CONSOLIDATED RESOLUTION ON ROAD SIGNS AND SIGNALS



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UNITED NATIONS

New York and Geneva, 2010

NOTE

The present publication, which contains the revised text of the Consolidated Resolution on Road Signs and Signals (R.E.2), has been prepared for information and reference purposes.

It is not a legal document and is not intended to substitute the official text of the Resolution as approved by the Working Party on Road Traffic Safety (WP.1).

ECE/TRANS/212

INTRODUCTION

The concept of 'self-explanatory' roads encompasses many different elements of the design, layout and operation of the road network. However, this term serves well to illustrate the need to create an environment that can be easily understood and safely operated by all its users. Although the terminology itself has only recently been coined, the setting of standards for road signs and signals – one key element of this approach - has been part of the traditional work of the United Nations Economic Commission for Europe (UNECE) dating back to the Geneva Protocol of 1949.

The Road Safety Forum, i.e. the Working Party on Road Traffic Safety (WP.1) has been mandated by the United Nations General Assembly to review this fundamental area and to make provisions for road signs and signals that are in line with the requirements of ever growing motorization. The levels of motorisation are growing particularly fast in low and middle-income countries where motorized and non-motorized road users continue to share the roads in ways which often further deteriorate road traffic safety. On the other hand, the use of bicycles is on the rise in high income countries as inhabitants become more environmentally conscious. The interests of vulnerable road users must thus also be taken into account.

Revising this Resolution has been a detailed task, requiring great commitment to collaborative work, but the benefits are clear. The Working Party has created a comprehensive reference point, as well as a resource from which an essential and continuing programme of harmonisation can be built by governments who wish to improve the safety and efficiency of their road traffic systems.

ÉVA MOLNÁR

DIRECTOR, TRANSPORT DIVISION

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

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CONSOLIDATED RESOLUTION ON ROAD SIGNS AND SIGNALS (R.E.2)

THE WORKING PARTY ON ROAD TRAFFIC SAFETY

DESIRING to establish greater uniformity in Europe in the regulations relating to road signs and signals, in order to improve road safety and facilitate international road traffic,

BEARING IN MIND that for this effect the Convention on Road Signs and Signals of 8 November 1968 and the European Agreement supplementing the Convention of 1 May 1971, have played an important part in improving the situation,

NOTING nevertheless that the provisions of these two international instruments leave open the possibility of divergences between one country and another as regards some of the regulations in question,

RECOMMENDS Governments, in order to eliminate these divergences as far as possible, to incorporate into their domestic legislation regulations which conform to the recommendations reproduced below, and

FURTHER RECOMMENDS Governments, which are not yet in a position to ratify or accede to the above international instruments nevertheless to apply the provisions of those instruments forthwith to the fullest extent possible.

RECOMMENDATIONS

1. ROAD SIGNS

1.1 Movements by tramcars, trains on roads and trolleybuses

In cases where tramways, trains on roads or trolleybus routes follow the course of or intersect a road, and where the drivers of vehicles on such tracks or routes are not required to comply with a road sign appearing on the road, road users should, where necessary, be informed of this exemption by an additional panel affixed below the sign.

1.2 Pre-selection at intersections

Where, at the approach to an intersection at which the traffic is channelled, sign E, 4 of annex 1 to the Convention on Road Signs and Signals (1968) and also the road markings provided for in the Protocol on Road Markings additional to the European Agreement supplementing that Convention are considered insufficient, and it is deemed advisable to place signs above the carriageway, each of these signs should be placed over the lane intended for traffic proceeding in the direction which the sign indicates; such signs should be of the shape illustrated in figure 1 or figure 2 of annex 1 to this Consolidated Resolution and should be illuminated at night. The use of advanced direction signs is desirable whenever possible.

1.3 Confirmatory direction signs

The confirmatory direction signs should possess the following characteristics:

- (a) Shape of the sign - As the confirmatory sign falls within the category of informative signs, it is rectangular in shape.
- (b) Colour of the sign - The colours adopted are those used for place and route identification signs.
- (c) Dimensions of the sign - The dimensions depend on the amount of information to be given and on the dimensions adopted for place signs on the route in question. If, in addition to the name of the next main town, intermediate localities are also indicated, it is recommended that not more than two such localities should be mentioned, and that their names, and the distances at which they are situated, may be indicated in smaller letters and figures (preferably in the ratio of 2 to 3) than those relating to the main town.

1.4 Signing of «E» roads

- (a) The letter «E» and the numerals appearing on the road identification sign prescribed in Annex III to the European Agreement on Main International Traffic Arteries (AGR) should be of the same height.
- (b) Plates should be bordered with a white band.
- (c) When the above sign is used in conjunction with a sign indicating the national number of the road in question, the characters of the former sign should be at least as large as those of the latter sign.

1.5 Diversion («detour»)

Where a road is closed to all vehicles or to certain categories of vehicles and the vehicles so excluded are required to use a detour, use should be made of the «diversion» («detour») sign as defined below:

- (a) the «diversion» («detour») sign is a direction sign set up at the place where the road is to be left and at all intersections along the diversion until the diversion rejoins the road initially left;
- (b) the sign shall conform to the models reproduced in annex 2 to this Consolidated Resolution; its colour shall be yellow or orange and it may be in two sizes:
 - (i) the large model, bearing the name of the locality led to by the road from which traffic has been diverted, and the number of that road if need be; it shall be set up at the intersection at which the diversion begins;
 - (ii) the small model may bear no inscription and shall be set up at every intersection along the diversion;
- (c) in certain cases, where only a particular category of vehicles (e.g. heavy vehicles) is diverted, the «diversion» («detour») sign shall show the usual symbol for that category as given in annex 1 (C) to the Convention on Road Signs and Signals (1968); in such cases the sign need not include the name of the locality or the number of the roads;
- (d) if advance warning of the diversion is considered necessary, it may be given by means of a sign conforming to the model reproduced in annex 3 to this Consolidated Resolution. This sign shall bear, in accordance with annex 1 to the Convention on Road Signs and Signals (1968), either white or light-coloured symbols or inscriptions on a dark ground, or dark-coloured symbols or inscriptions on a white or light-coloured ground; however, the border of the prohibitory sign inscribed thereon shall be red.

1.6 Clearance of civil engineering works

Where the minimum clearance of temporary or permanent civil engineering works above the carriageway is less than 4.30 m, a suitable marking, including the «diversion» («detour») sign, should be prescribed; however, if the domestic legislation prescribes a maximum height of less than 4.30 m for vehicles and their loads, the above recommendation shall not apply unless the clearance of the aforesaid works above the carriageway is equal to or less than the said maximum height.

1.7 Signs for tourist attractions

Signs indicating tourist attractions, other than those included in the Convention on Road Signs and Signals, shall be designed and set up in accordance with the following principles:

- (a) signs for tourist attractions shall be installed only in places where they are undoubtedly useful. It should be ensured that their value is not impaired and that the attention of road users is not distracted by the presence of too many signs;
- (b) since road users shall concentrate primarily on traffic regulations and information designed to ensure safety or clarify touring, signs for tourist attractions shall never be installed in places where there are already a number of regulatory or informative signs of particular importance for traffic safety;
- (c) signs for tourist attractions should be set up only with reasonable proximity to the places or centres to be indicated;

- (d) the brown colour reserved for tourist attraction signs shall never be used for other road signs. It is recommended that countries using other colours for signs for tourist attractions replace them gradually by signs bearing light coloured symbols and/or inscriptions on a brown background or brown symbols and/or inscriptions on a light coloured background;
- (e) inscriptions used on signs for tourist attractions should, as far as possible and practicable, be replaced by symbols or pictograms, so as to make these signs more easily understood by foreign road users.

1.8 Tourism: direction signs

The three signs conforming to the models appearing in annex 3 to this Consolidated Resolution should be used, if it is deemed appropriate, to inform drivers of:

The symbols shall be of dark colour on a light background.

1.9 Tourist information point

If a sign is used to indicate the location of a tourist information point, the sign should conform to one of the two models shown in annex 4 to this Consolidated Resolution. The symbol appearing on either model of panel may be used in conjunction with a direction sign as in the examples G, 7 and G, 8 given in Annex 3 to the Convention on Road Signs and Signals (1968).

1.10 Combination of the signs E, 8a (end of a built-up area) and G, 10 (confirmation sign)

- (a) The confirmation sign G, 10 and the sign indicating the end of a built-up area E, 8a may be used on the same support, in which case the sign E, 8a shall be placed under the sign G, 10 either separately or combined on the panel.
- (b) The top half on the sign shall indicate the name of the next important locality and the name of the next locality, each of these names being followed by the indication of the distance.
- (c) The colours of the signs shall be in conformity with those prescribed in the 1968 Convention on Road Signs and Signals and the 1971 European Agreement supplementing this Convention.

1.11 The use and meaning of signs for vehicles carrying dangerous goods¹

- (a) Sign C, 3h "NO ENTRY FOR VEHICLES CARRYING DANGEROUS GOODS FOR WHICH SPECIAL SIGN PLATING IS PRESCRIBED" described in the 1968 Convention on Road Signs and Signals should be used without an additional panel to prohibit the entry of all vehicles defined in Article 1 (a) of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) carrying dangerous goods defined in Article 1 (b) of ADR for which orange-coloured plates according to section 5.3.2 of Annex A of ADR for marking of vehicles are required on the vehicles.

For prohibitions related to specific dangerous goods, prohibitions restricted to certain periods (e.g. peak hours) or those restricted to transit, the sign should be used with an additional panel specifying the prohibition.

¹ See the Annex of the document ECE/TRANS/WP.1/104.

In tunnels, as from 1 July 2007, and no later than 1 January 2010, prohibitions should be indicated by using this sign with an additional panel bearing a capital letter representing the category to which the tunnel is assigned according to 1.9.5.2.2 of Annex A of ADR, as follows:

- (i) Sign C, 3h with an additional panel bearing letter B: Tunnel category B*; No entry for vehicles carrying dangerous goods presenting a very large explosion risk according to 1.9.5.2 of Annex A of ADR and, for which the orange-coloured plate marking according to 5.3.2 of Annex A of ADR is required;
 - (ii) Sign C, 3h with an additional panel bearing letter C: Tunnel category C*; No entry for vehicles carrying dangerous goods presenting a very large or large explosion risk or a risk of large toxic release according to 1.9.5.2 of Annex A of ADR and for which the orange-coloured plate marking according to 5.3.2 of Annex A of ADR is required;
 - (iii) Sign C, 3h with an additional panel bearing letter D: Tunnel category D*; No entry for vehicles carrying dangerous goods presenting a very large or large explosion risk, or a risk of large toxic release or a large fire risk according to 1.9.5.2 of Annex A of ADR and, for which the orange-coloured plate marking according to 5.3.2 of Annex A of ADR is required;
 - (iv) Sign C, 3h with an additional panel: bearing letter E: Tunnel category E*; No entry for vehicles carrying any type of dangerous goods for which the orange-coloured plate marking according to 5.3.2 of Annex A of ADR is required, except those which are not subject to any tunnel restriction according to 1.9.5.2 of Annex A of ADR.
- (b) Sign C, 3m "NO ENTRY FOR VEHICLES CARRYING MORE THAN A CERTAIN QUANTITY OF EXPLOSIVES OR READILY INFLAMMABLE SUBSTANCES" described in the 1971 European Agreement supplementing the 1968 Convention on Road Signs and Signals should be used to prohibit the entry of vehicles defined in Article 1 (a) of ADR, carrying dangerous goods of Class 1, of Class 2 classified as flammable, of Class 3, except those of Packing Group III, of Class 4.1 classified as self-reactive, and of Class 5.2 of ADR, provided that orange-coloured plates on the vehicle according to 5.3.2 of Annex A of ADR are required for the carriage of the relevant goods.

As from 1 January 2010, this sign shall not be used for indicating prohibitions in tunnels.

- (c) Signs D, 10a, D, 10b and D, 10c "DIRECTIONS IN WHICH VEHICLES CARRYING DANGEROUS GOODS SHALL PROCEED" described in the 1968 Convention on Road Signs and Signals should be used without an additional panel to indicate a mandatory direction for all vehicles defined in Article 1 (a) of ADR carrying dangerous goods defined in Article 1 (b) of ADR for which orange-coloured plates according to section 5.3.2 of Annex A of ADR are required on the vehicle.

For mandatory directions related to specific dangerous goods, or during certain periods (e.g. peak hours), or for transit, the sign should be used with an additional panel specifying the obligation in the same manner as prohibitions are specified when sign C, 3h is used.

* For the purposes of restrictions the passage of vehicles carrying dangerous goods through road tunnel according to 1.9.5 of Annex A of ADR, tunnels should be classified in tunnel category A, B, C, D or E. No prohibition is applicable when the tunnel is classified in tunnel category A.

1.12 Additional panels indicating the applicability of road signs

In cases where the applicability of a road sign has to be indicated, road users shall be informed of this by means of additional panels placed below the signs concerned:

- (a) on the additional panels symbols of the existing road signs can be used with the same meaning;
- (b) the additional panel shown in figure 1 of annex 5 to this Consolidated Resolution indicates a passenger car;
- (c) the «Period of applicability» panels shown in figure 2 of annex 5 to this Consolidated Resolution indicate the time or the days of the week when the sign is applicable;
- (d) the «Method of parking» panels shown in figure 3 of annex 5 to this Consolidated Resolution indicate how cars must be parked;
- (e) the «Blind pedestrians» panel shown in figure 4 of annex 5 to this Consolidated Resolution indicates that the crossing in question is used by blind people.

1.13 Road sign to indicate fuelling stations selling Compressed Natural Gas (CNG) or Liquefied Petroleum Gas (LPG)

As the Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG) fuelling infrastructure continues to grow internationally and vehicles using one or the other fuel increasingly frequently cross borders, drivers in international traffic are experiencing difficulties in knowing where they can buy CNG or LPG because there is no recognizable, international standard for CNG or LPG fuelling station highway signs.

In order to facilitate the task of consumers, it is recommended that, when a pictogram is used to indicate that CNG or LPG can be obtained in a service station, the type of pictogram shown in annex 6 of this Resolution should be used.

The pictogram is composed of the existing service station symbol F, 4 in black, as defined in the Vienna Convention on Road Signs and Signals, with the same symbol in blue in the background, shifted diagonally to the right. It should be completed by the English acronyms CNG or LPG in black lettering to indicate the type of fuel available in the fuelling station. This sign may be completed if necessary by an additional panel indicating the corresponding acronym or name in use in the language of the country in question.

1.14 Signing of Eurovelo cycle routes

1.14.1 Context

The past 20 years have seen immense growth in both national and international cycling tourism, which has developed into an economically important branch of tourism. At the same time, all the experts consider that European cycling tourist traffic has a high growth potential and provides promising opportunities for the future.

A number of international, long distance cycle routes form a network called "EuroVelo". The network currently consists of 12 routes. The routes were defined by the European Cyclists' Federation (ECF) together with the national and regional authorities. The further development of this network will continue to be coordinated by the ECF.

² See document TRANS/WP.1/100.

However, the effective promotion of cycling tourism in Europe demands for signposting of the routes in a manner that can be understood by national and international users in order to serve the safe behaviour of the cyclist in traffic. For this purpose, the signposting of cycle routes has to be consistent and clearly recognizable.

The below recommendations therefore aim at defining the signs to be used on the EuroVelo routes.

1.14.2 Recommendations

In order to identify EuroVelo routes, it is recommended to use an easily recognizable EuroVelo route information panel. This route information panel is a signing element already widely used in a number of European countries to signpost cycle routes.

1.14.2.1 Route information panel

The basic version of the route information panel should contain three information elements, of which one is optional (see Annex XI a-A).

These different elements are as follows:

- (a) background (Council of Europe blue colour): displays a European aspect;
- (b) route number (white colour): essential for quick route identification ;
- (c) Council of Europe stars (yellow colour): displays a European aspect (optional).

This basic version can be complemented by the additional following elements:

- (d) route names;
- (e) name of Route network (for further information about the cycle network, i.e. "EuroVelo" within Europe).

1.14.2.2 Ways to incorporate the EuroVelo route information panel into the signposting

It is recommended to integrate the route information panel in the same manner as other route information panels and according to national or regional standards (see examples given in Annex XI b).

It is possible to combine the EuroVelo information with other route information, using the frame version (see Annex XI a-B). This version could be used as an interim solution on existing signposts where the space for an additional panel is missing.

The technical design information about the colours and style of lettering are given in the Annex XI a-C. These technical details support the consistent implementation of this recommendation.

Also for countries which have not foreseen route information panels in their cycle signing system, it is recommended to incorporate the proposed elements into their cycle signposting. However, it belongs to national, regional or local authorities to decide the best manner to proceed at the practical level. In particular, there is normally no need to change the country specific design of signposts (colour, shape, etc.) for the incorporation of this panel.

2. TRAFFIC LIGHT SIGNALS

2.1 Narrow sections of road

At narrow sections of road which approaching users cannot see through, traffic should be controlled by traffic lights where traffic density and a restricted carriageway width are such as to require special regulation.

2.2 Traffic light signals

Traffic light signals are to be used in accordance with the following principles:

- (a) Characteristics of the main lights:
 - (i) Number and arrangement: three lights arranged vertically or horizontally.
 - (ii) Shape and size of lenses:
 - the lenses shall be circular;
 - they shall have a diameter of at least 200 mm. This dimension should be increased when circumstances so required, for instance for lights installed above the carriageway.
 - (iii) Light signals intended exclusively for pedestrians shall show the following symbols:
 - a standing pedestrian for the red light;
 - a walking pedestrian for the green light;
 - these special lights can have a rectangular shape.
- (b) Complementary lights for which the provisions of paragraph (a) (ii) are applicable, may be used for:
 - (i) Repetition of main lights;
 - (ii) Separate traffic movements as described by one or more arrows when these movements are not controlled by arrows appearing on the main lights.
- (c) In determining the visibility distance for the light signals the following factors should be taken into account:
 - (i) The speed of traffic;
 - (ii) The presence of units intended to improve the visibility of the lights (visors, etc.);
 - (iii) This distance should be sufficient for compliance with the signal. If this condition is not fulfilled, sign A, 16 should be used.
- (d) Light supports and height of installation;
 - (i) The signals should be placed on special supports:
 - vertical posts: clearance below the lights: at least 2.10 m;
 - suspended above the carriageway: clearance below the lights: at least 4.50 m.
- (e) The duration of the green and red phases should be determined according to the density of traffic. The length for the amber only phase should be of three to five seconds.

2.3 Special light signals using matrix symbols

- (a) Research on special light signals using matrix symbols, for indicating speed limits, variations applying to the use of traffic lanes, or for dealing with other traffic problems should be encouraged.
- (b) Light signals using matrix symbols should be adapted as far as possible to the prescriptions of the 1968 Convention on Road Signs and Signals.
- (c) Experiments aimed at improving traffic control techniques should be carried out in view of possible amendment of the 1968 Convention on Road Signs and Signals, according to Article 3.1 (b).

2.4 Traffic lights showing arrows

- (a) At an intersection when the phase of the traffic light signals does not allow the simultaneous advance of the vehicles stopped in all the traffic lanes controlled by the lights, the light signals should include arrows.
- (b) Indications by traffic lights showing arrows shall correspond with the outlay of the separate traffic lanes provided for individual traffic movements.
- (c) An arrow pointing ahead should in general only be used in conjunction with lights incorporating other directional arrows for the other traffic movements.
- (d) Such an arrow shall be in a vertical position, or, when the local configuration of the intersection makes it necessary, a slightly off vertical position.
- (e) A lens shall only show one arrow, which however may be branched so that it points towards two directions.

3. SIGNING OF HUMPS

3.1 "30 km/h-zones" or similar low speed areas

In "30 km/h-zones" or similar areas, where humps are placed frequently at short distances to secure low speed, warning signs and road markings may not be needed at humps.

3.2 Warning of humps

Warning signs showing symbol A, 7b "Warning of a Hump Bridge" should preferably be used to give warning of humps. Warning signs showing symbol A, 7a may be used.

Additional panel H, 2 should be used to indicate the length of the road section with humps. An additional panel may also show the number of humps in the section.

The maximum speed may also be shown either by sign G, 17 "Advisory Speed" or sign C, 14 "Maximum speed limited to the figure indicated".

3.3 Road markings at humps

Indication of the exact position of humps should be given by at least two lines of white or yellow chequered squares marked across the entire carriageway where a hump starts (see figure 1 of annex 7 of this Resolution).

White or yellow triangles can be used as well (see figure 2, annex 7) as long as there is no possibility for misunderstanding the symbols, bearing in mind that triangles marked side by side are used to indicate points at which drivers must give way (see Convention on Road Signs and Signals, Annex 2, Chapter III C, paragraph 33 and 35). Short and longer white or yellow lines parallel to the direction of traffic may also be used to indicate the position of the hump (see figure 3, annex 7).

3.4 Vertical markings at humps

Where a hump could be covered by snow, bollards or similar devices should indicate the exact location of the hump. The bollards should be placed either at each corner of the hump or as a pair at the top of the hump.

The exact location of speed humps may also be marked by a special regulation sign, a square blue sign with a white triangle and the symbol A, 7b in black (see figure 4).

All vertical markings should be equipped with retro-reflective material and should be clearly visible on any approach by a vehicle to the hump.

4. ROADWORKS³

4.1 General requirements

- 4.1.1 Road signs, horizontal and vertical delineation devices, electrical lighting installations, traffic lights and protective barriers shall be made of high performance materials, capable of resisting the rough conditions of use in roadworks zones, and be easy to install and remove.
- 4.1.2 The safety of the persons working on roads as well as the road users passing through the works zone should be ensured by mobile barriers, fences or guardrails or any other suitable devices.
- 4.1.3 The wearing of safety garments described in Recommendation 4.2 of the Consolidated Resolution on Road Traffic should be obligatory in all roadworks zones when the roadworks zone is not completely separated from the traffic.
- 4.1.4 Vehicles used in roadworks zones should, when their presence on the road constitutes a danger or an inconvenience to other users, be equipped with special amber warning lights and preferably carry at the front and the rear red and white or yellow bands of a retroreflective material.
- 4.1.5 Slow moving vehicles, in particular those which by construction cannot exceed the speed of 40 km/h, should also be marked with additional rear markings as recommended in the Consolidated Resolution on Road Traffic.

4.2 Technical requirements

- 4.2.1 The photometric and colorimetric properties of all road signs, markings and additional markings of vehicles should comply with the provisions set out in publication 39-2 (TC-1.6) 1983 of the International Commission on Illumination (CIE), "Recommendations for Surface Colours for Visual Signalling".
- 4.2.2 The minimum retroreflective level for temporary signs should correspond to the class required for permanent signs for the road category in question or when conditions are similar. It is, however, recommended, in view of the additional danger to which the presence of road works gives rise, that use should be made of retroreflective materials in fluorescent colours for signs indicating particularly dangerous sections of road.
- 4.2.3 Damaged material, signs, markings and safety equipment should be replaced whenever necessary; to this effect, regular inspections should be carried out during the entire duration of the road works.

4.3 Advance warning signs

- 4.3.1 Advance warning that work is in progress on the section of road ahead shall be given by the sign A, 16 with the shape Aa according to the 1968 Convention on Road Signs and Signals and the European Agreement supplementing it.
- 4.3.2 This sign shall be placed at sufficient distance ahead of the roadworks, allowing drivers to adapt their driving early enough to the particular situation they will encounter.

³ See document TRANS/WP.1/85/Add.1

⁴ See document TRANS/SC.1/294/Rev.5

- 4.3.3 Any other additional signs, such as speed reduction indications (C, 14); narrow carriageway (A, 4) width, height, weight or axle load restrictions (C, 5 – 6 – 7 - 8); prohibition on overtaking (C, 13); indication of lane changes, etc. should be placed in such a way that drivers can clearly distinguish them from other road traffic.
- 4.3.4 Should several signs be used at the same time and should they have to be grouped on the same support, not more than three messages at a time should be shown.

4.4 On-site road signs

Use of only a certain number of significant road signs should be encouraged. The most frequently used signs are reproduced in annex 8 of to this Resolution.

4.5 Vertical on-site delineation

- 4.5.1 All delineation devices should show red and white or red and yellow retroreflective markings in such a way that they have the same aspect by day and by night.
- 4.5.2 Cones, vertical lane separators, barrels and barriers should also have these retroreflective bands in order to comply with the requirements in paragraph 4.5.1.
- 4.5.3 Electrically illuminated vertical delineators may be used whenever necessary in addition to the devices mentioned above.

4.6 Temporary horizontal markings

- 4.6.1 To the extent possible, where vertical delineation devices are used in roadworks zones, temporary horizontal markings should be used to provide continuous visual guidance to drivers under all conditions both by day and at night. The choice of use of horizontal markings should depend on the importance and duration of a roadwork zone.
- 4.6.2 Temporary horizontal markings shall be designed in such a way that road users can clearly distinguish them from any normal horizontal markings which may be left in place. Any normal horizontal markings which could cause confusion should be either erased or blacked out.
- 4.6.3 If temporary horizontal markings are used they shall be made of materials easily removable and visible by day and by night.

4.7 Diversion signing

- 4.7.1 If a part of a road is temporarily closed to traffic because of roadworks, signs as described in Recommendation 1.5 of this Resolution should be applied to indicate relevant diversions and detours.
- 4.7.2 For these signs, the materials used should have a yellow or orange retroreflective background in accordance with the Convention on Road Signs and Signals, Annex 1, Section G, Chapter I, paragraph 4.

4.8 End of restrictions

- 4.8.1 All temporary restrictions should always be cancelled at the end of a roadworks zone.

- 4.8.2 Should permanent restrictions to traffic remain applicable also after the end of roadworks, they should be repeated as soon as possible after the above-mentioned sign.

4.9 Traffic light signals

- 4.9.1 Traffic light signals used to regulate traffic flow at a roadworks zone should preferably be of the three-light type.
- 4.9.2 When possible, vehicle detectors should allow for traffic-operated regulation, especially in the case of large variations in the traffic flow.

4.10 Removal of unnecessary restrictions

- 4.10.1 All unnecessary restrictions, obstacles and barriers to traffic flow in roadworks zones should be removed when work is not in progress on weekends and public holidays and also at the time of peak traffic if some traffic lanes are closed because of the work.
- 4.10.2 Only the necessary warning signs and temporary horizontal markings and vertical delineation devices should be maintained under these conditions.

5. VARIABLE MESSAGE SIGNS

5.1. Context

The variable message signs (VMS) were officially introduced into the 1968 Vienna Convention on Road Signs and Signals by an amendment that entered into force on 30 November 1995. However, the related provision contained in article 8, paragraph 1 (bis), gave only some very general principles.

Taking into account the significant development of this type of signalization on the roads and in particular the motorways of the UNECE, the need for defining rules aiming to harmonize and unify the conditions of use of these signs appeared obvious. This is the objective of the recommendations that are presented below. Their goal is to define not only the rules for the use of VMS, but also the signs of the current Vienna Convention that can be used on the VMS, as well as the specific signs intended for the VMS for which there is no equivalent signal in the Convention and the European Agreement supplementing it.

5.2. 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..

5.3 Recommendations

5.3.1 Signs that can be used on VMS

The signs recommended for use on VMS as mentioned in below paragraphs 5.3.1.1 and 5.3.1.2 are reproduced in Annexes 9 and 10 of this Resolution.

5.3.1.1 Existing signs of the 1968 Convention on Road Signs and Signals

The signs of the Vienna Convention on Road Signs and Signals which can be used on VMS are the following:

Danger warning signs

- A, 4^a Carriageway narrows
- A, 4^b Carriageway narrows
- A, 5 Swing bridge (used to indicate that the bridge is lifted)
- A, 9 Slippery road
- A, 16 Road works
- A, 17^a Light signals
- A, 23 Two-way traffic
- A, 24 Traffic congestion on the section of the road ahead
- A, 31 Strong crosswind on the section of the road ahead
- A, 32 Other dangers

Prohibitory or Restrictive signs

- C, 1^a No entry
- C, 2 Closed to all vehicles in both directions
- C, 3^e No entry for goods vehicles
- C, 10 Driving of vehicles less than ... metres apart prohibited
- C, 13^{aa} Overtaking prohibited
- C, 13^{ba} Overtaking by goods vehicles prohibited
- C, 14 Speed limit
- C, 17^b End of speed limit

- C, 17^c End of prohibition of overtaking
- C, 17^d End of prohibition of overtaking for goods vehicles

Mandatory signs

- D, 1^a Direction to be followed
- D, 9 Snow chains compulsory

Special regulation signs

- E, 3^a One way

Direction, position or indication signs

- G, 1^a Advance direction sign
- G, 1^b Advance direction sign
- G, 1^c Advance direction sign
- G, 11^b Indication of the number and direction of traffic lanes
- G, 12^a Indication of the closure of a traffic lane
- G, 17 Advisory speed

Additional panels

- H, 1 Distance to the section of road or the zone to which the regulation applies
- H, 2 Length of the dangerous section of road or the zone to which the regulation applies
- H, 5^a Restriction to goods vehicles (semitrailers)
- H, 5^b Restriction to goods vehicles (lorries with trailers)

Note: As stated in article, 8, paragraph 1 bis, of the Vienna Convention on Road Signs and Signals, the prescribed dark-coloured signs or symbols used for VMS may appear in a light colour, light-coloured backgrounds then being replaced by dark backgrounds, but the red colour of the symbol of a sign and its border shall not be changed.

5.3.1.2 New signs to be used on VMS

Danger warning signs

In brackets, possible numbers to be attributed to these signs.

- (A, 33) Pedestrians walking along the road
- (A, 34) Road ahead is slippery - ice or snow
- (A, 35) Accident ahead
- (A, 36) Reduced visibility - fog, rain or snow

Special regulation signs

- (E, 19) Sign notifying a lane allocation
If there is no possibility to show the signals over the traffic lanes, the lane allocation can be shown in one sign. Any other combinations of crosses and arrows are allowed, even for roads with more than two lanes.

Note: This as an alternative to "lane signals" above each lane of a carriageway, proposed in the Vienna Convention as modified by the amendment entered into force on 30 November 1995.

- (E, 20) Sign notifying the temporary use of the hard shoulder.
Three different signs may be used in case of the temporary use of hard shoulder:

- E, 20^a Hard shoulder may be used,
 - E, 20^b End of the use of the hard shoulder
 - E, 20^c Hard shoulder may not be used
- (E, 21) High Occupancy Vehicle lane
Other designs are allowed depending on the occupancy requested per vehicle.

Direction, position or indication signs

- (G, 23) Sign notifying a recommended alternative route
- (G, 24) Sign notifying that the section of the road ahead is temporary closed and the next exit is compulsory
- (G, 25) Sign notifying that the next exit is closed
- (G, 26^a) Sign notifying that the exit after the next exit is closed
- (G, 26^b) Sign notifying that the next exit is closed (case of close exits)
- (G, 27) Sign notifying congestion
- (G, 28) Sign notifying road works
- (G, 29) Sign notifying snow/ice
- (G, 30) Sign notifying strong wind
- (G, 31) Sign notifying slippery road

5.3.2 Rules for message content and message structure for VMS

5.3.2.1 Traffic related VMS messages

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., the pictogram A, 24 representing "congestion" instead of general danger A, 32) is preferred, when they exist.
2. Make use of graphical elements as much as possible when using text (e.g., pictograms, symbols).
3. Use regulatory messages without any text, if possible.
4. Danger warning messages (using the red triangle) should only be used when the dangerous spot or stretch of road is nearby the VMS (for instance, no more than 2 km). When using words in danger warning messages, place the information about the nature of the danger first and then brief complementary advice can be given under.
5. When a VMS is used to inform about a situation at some distance (for instance, 2 km or more) or in the future (e.g. expected road works), additional information (e.g. distance, or respectively an indication of date and time) is necessary. The recommended structure of the message is the following: first give the information concerning the nature of the event on the first line, then distance and/or time indication on the second line. A third line can be used for additional information (e.g. advice, cause).
6. Avoid alternating messages.
7. Avoid redundancy, except for the purpose of making drivers familiar with new pictograms.
8. Use only well-known and international abbreviations (e.g., 'Km' for kilometre, 'Min' for minutes, etc.).
9. Minimize the number of words and symbols (e.g. maximum seven).

5.3.2.2 Non-traffic related VMS messages

10. A VMS should be blank when no traffic related messages have to be displayed. An exception could be the display of dots or the time to indicate that the VMS is working.
11. Commercial/advertising messages are not permitted.

ANNEXES

ANNEX I

PRE-SELECTION SIGNS AND SIGNALS AT INTERSECTIONS

(Paragraph 1.2)

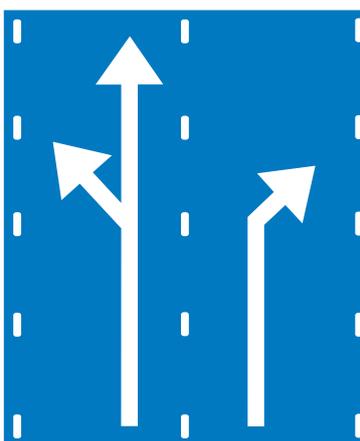
Figure 1¹



Figure 2²



Figure 3



¹ If the names of several localities appear on the sign for one lane, they shall be placed one above the other. The inclusion of the number of the road and the arrow is optional.

² A square plate, or a rectangular plate with its vertical sides longer than its horizontal sides, is placed above each lane; it bears an arrow which is either vertical (for straight-through traffic) or bent or curved depending on whether the direction indicated is at a right angle or not.

ANNEX II

DIVERSION –MODEL SIGNS

(Paragraph 1.5)

Appendix 1

“DIVERSION” (“DETOUR”) SIGN

1. Larger sized sign



2. Small sized sign

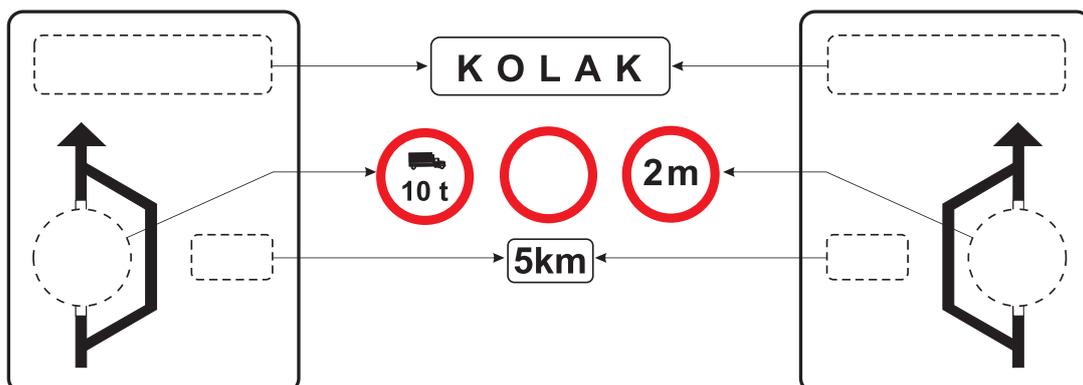


Yellow or orange



Appendix 2

“ADVANCE SIGN”



ANNEX III

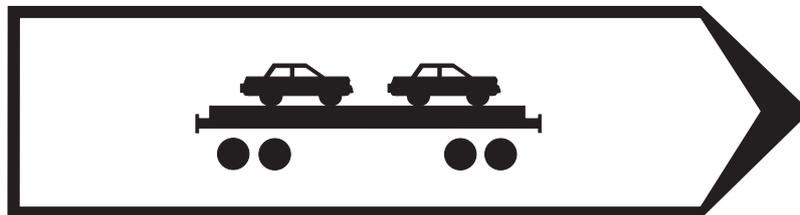
TOURISM (DIRECTION SIGNS) – MODEL SIGNS

(Paragraph 1.8)

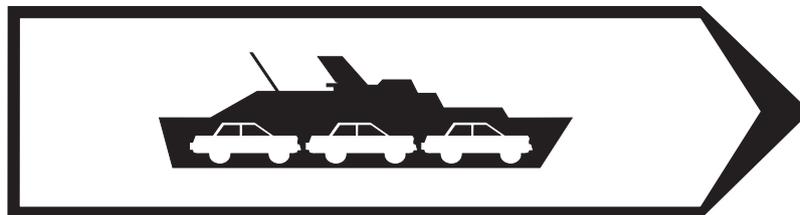
(i) Car-sleeper trains*



(ii) Trains*



(iii) Ferry*



* Inclusion of the name of the station or the part on the sign is optional.

ANNEX IV

TOURIST INFORMATION POINT – MODEL SIGNS

(Paragraph 1.9)

Model sign A



Model sign B

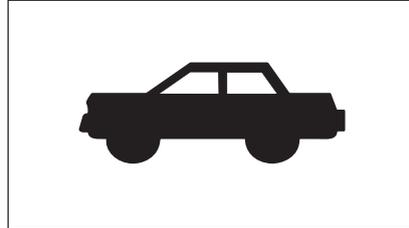


ANNEX V

ADDITIONAL PANELS INDICATING THE APPLICABILITY OF ROAD SIGNS

(Paragraph 1.12)

1. Type of vehicle



2. Period of applicability

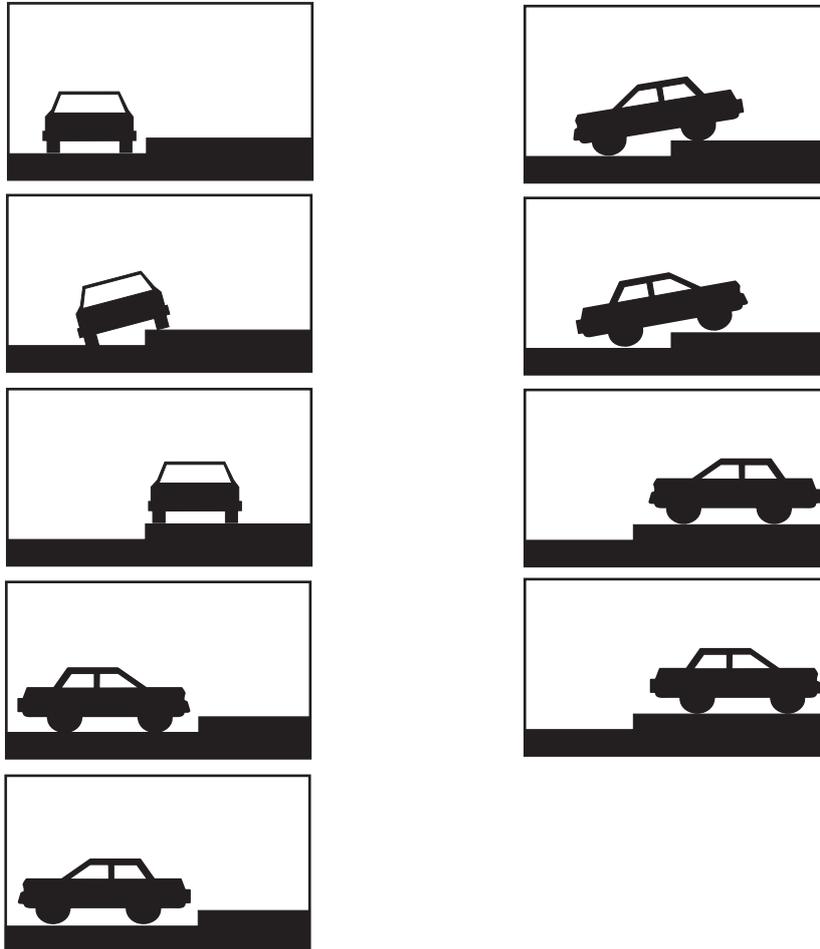
Monday -
Wednesday

Monday
8.30 - 9.30

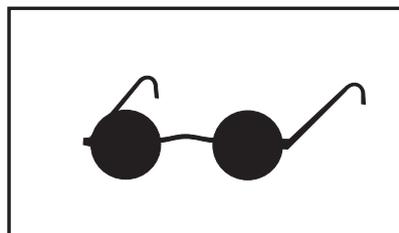
8.00 - 17.30

Maximum
30 min.

3. Method of parking



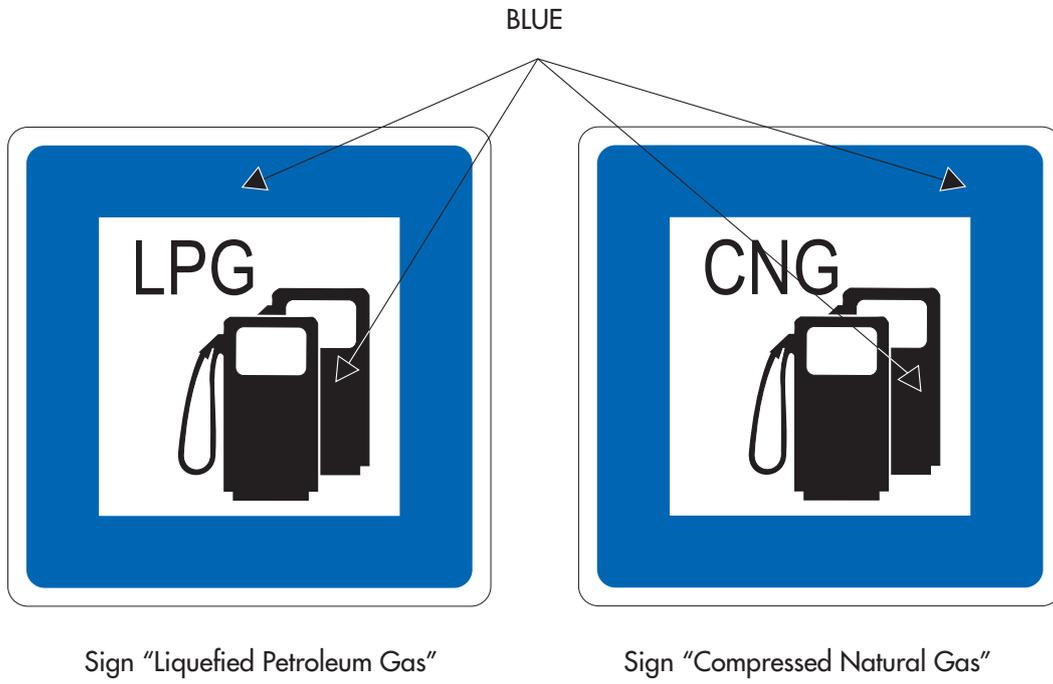
4. Blind pedestrians



ANNEX VI

ROAD SIGNS FOR FUELLING STATIONS SELLING COMPRESSED NATURAL GAS (CNG) OR LIQUEFIED PETROLEUM GAS (LPG)

(Paragraph 1.13)

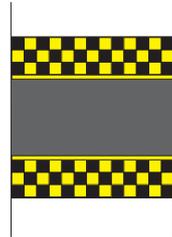


ANNEX VII

SIGNING OF HUMPS

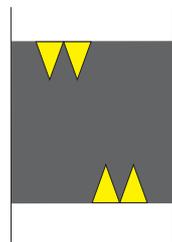
(Chapter 3)

Figure 1: Hump marked with chequered squares



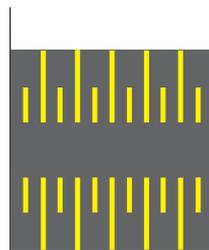
Yellow or white

Figure 2: Hump marked with triangles



Yellow or white

Figure 3: Hump marked with lines



Yellow or white

Figure 4: Exact location of the hump



Blue and black

ANNEX VIII

SIGNS FOR ROADWORKS

(Chapter IV)

1. Danger warning signs



A, 16



A, 4^a



A, 4^b



A, 7^a



A, 8



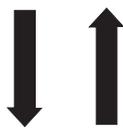
A, 9



A, 10^a



A, 17^a

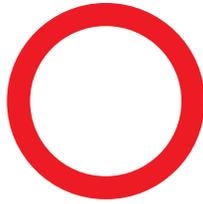


A, 23

2. Prohibitory or restrictive signs



C, 1^a



C, 2



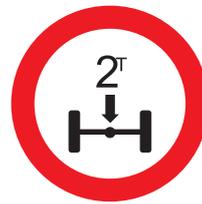
C, 5



C, 6



C, 7



C, 8

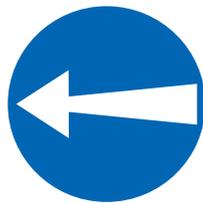


C, 13^{aa}



C, 14

3. Mandatory signs

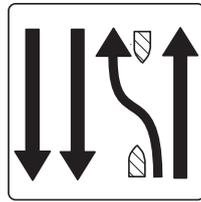


D, 1^a



D, 2

4. Indication signs

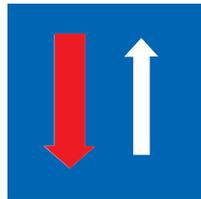


G, 11^c

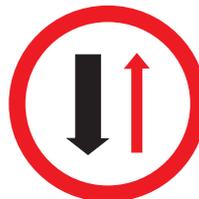


G, 12^a

5. Signs indicating priority on narrow sections of road



B, 6

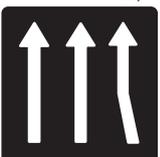


B, 5

ANNEXE IX

RECOMMENDED SIGNS OF THE VIENNA CONVENTION FOR USE ON VMS

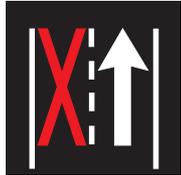
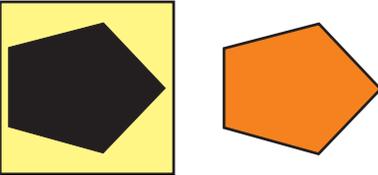
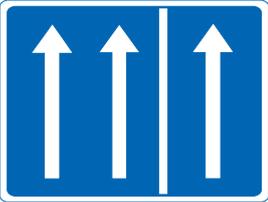
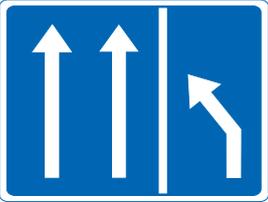
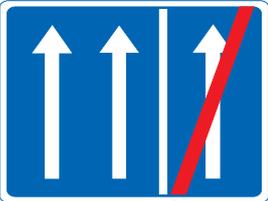
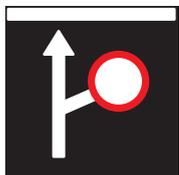
(Chapter V)

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, 1 ^a  C, 2  C, 3 ^e  C, 10  C, 13 ^{aa}  C, 13 ^{ba}  C, 14  C, 17 ^b  C, 17 ^c  C, 17 ^d	 A, 4 ^a  A, 4 ^b  A, 5  A, 9  A, 16  A, 17 ^a  A, 23  A, 24  A, 31  A, 32	 G, 1 ^a  G, 1 ^b  G, 1 ^c  G, 11 ^b  G, 12 ^a
<i>Mandatory</i>		
 D, 1 ^a  D, 9	<p>Special regulation signs</p>  E-3 ^a	 G, 17
		<p><i>Additional Panels</i></p>  H, 1  H, 2  H, 5 ^a  H, 5 ^b

ANNEX X

NEW SIGNS FOR USE ON VMS

(Chapter V)

Special regulation signs	Danger warning signs	Direction, position or indication signs and additional panels
 <p>(E, 19) (lane allocation)</p>	 <p>(A, 33) (pedestrians)</p>	 <p>(G, 23) (rerouting)</p>
	 <p>(A, 34) (slippery road-ice or snow)</p>	 <p>(G, 23) (rerouting)</p>
	 <p>(E, 20^a; E, 20^b; E, 20^c), (hard shoulder use)</p>	 <p>(G, 24) (road closed)</p>
 <p>(E, 21) (HOV lane)</p>	 <p>(A, 35) (accident)</p>	 <p>(G, 25) (next exit closed)</p>
 <p>(E, 36) (fog)</p>	 <p>(G, 26^a) (exit after next exit closed)</p>	 <p>(G, 26^b) (next exit closed – case of close exits)</p>

NEW SIGNS FOR USE ON VMS

(Chapter V)

Special regulation signs	Danger warning signs	Direction, position or indication signs and additional panels
		<div data-bbox="1038 445 1241 613" data-label="Image"> </div> <p data-bbox="999 622 1278 651">(G, 27) (reported congestion)</p> <div data-bbox="1038 710 1241 878" data-label="Image"> </div> <p data-bbox="999 889 1278 918">(G, 28) (reported road works)</p> <div data-bbox="1038 972 1241 1140" data-label="Image"> </div> <p data-bbox="1010 1151 1265 1180">(G, 29) (reported snow/ice)</p> <div data-bbox="1038 1234 1241 1402" data-label="Image"> </div> <p data-bbox="999 1413 1278 1442">(G, 30) (reported strong wind)</p> <div data-bbox="1038 1496 1241 1664" data-label="Image"> </div> <p data-bbox="991 1675 1286 1704">(G, 31) (reported slippery road)</p>

EUROVELO ROUTE INFORMATION PANEL

A. Basic version

Standard version with stars



Version without stars



Versions with route name



Versions with route name and network name



B. Frame version for combined usage

Standard version with stars



Version without stars



Versions with route name



Versions with route name and network name



C. Technical information

Background



Pantone: Reflex Blue

Cmyk: 100/80/0/0

RGB: 0/51/153

www: 003399

Stars



Pantone: Yellow

Cmyk: 0/0/100/0

RGB: 255/204/0

www: FFC C00

Lettering



Frutiger 87

ExtraBlackCn

ANNEX XI b

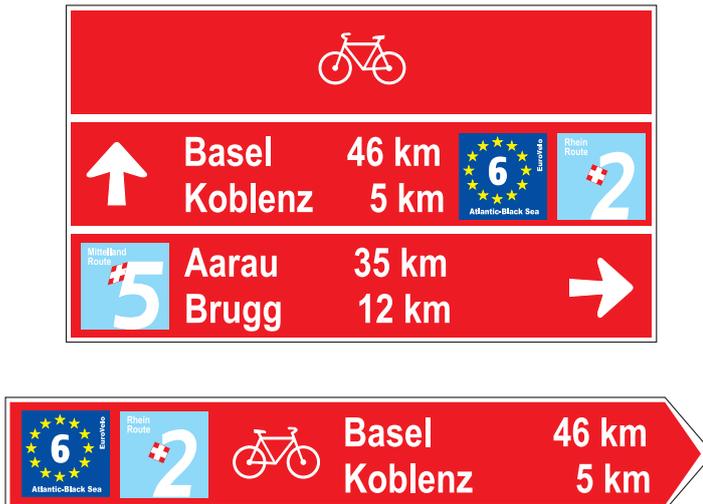
EXAMPLES FOR INCORPORATION OF THE EUROVELO ROUTE INFORMATION PANEL

The following examples illustrate the existing signposting of the EuroVelo Route 6 in France, Switzerland, Germany, Hungary and Serbia.

France



Switzerland



Germany



Hungary



Serbia



