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INLAND TRANSPORT COMMITTEE

Working Party on Road Traffic Safety
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agenda item 3 (a))

**REVISION OF THE CONSOLIDATED RESOLUTIONS ON ROAD TRAFFIC (R.E.1)
AND ON ROAD SIGNS AND SIGNALS (R.E.2)**

Safety of pedestrians

Transmitted by the small group

Introduction

1. At its thirty-fourth session, the Working Party considered a draft proposal for chapter six of the new structure proposed for the Consolidated Resolution on Road Traffic (R.E.1) on the safety of pedestrians. The Working Party thanked the small group (Hungary, Netherlands, FEVR, FIP, under the chairmanship of Netherlands) and the Swiss pedestrian organization Fussverkehr Schweiz for preparing the draft. It reviewed the draft and provided its comments on some specific items. In conclusion, it found that, while it was a good basis for further work, the draft was too long, and should also be redrafted to be consistent with the style of R.E.1. The Working Party therefore asked the small group to prepare a new draft document for consideration at its thirty-fifth session.

2. The Working Party decided that any further suggestions should be given in writing within three weeks to the secretariat which would forward them to the small group. Additional comments were received from the Russian Federation.

3. The small group felt that some of the chapters, e.g. 6.1 characteristics of pedestrians, did not contain specific recommendations and therefore did not fit into the current style of R.E.1. As was stated by the Chairman of WP.1 at the thirty-fourth session with reference to a draft recommendation concerning assistance to victims of road accidents, the full texts of such drafts should be collected in an annex or another document, to be decided by the Working Party.

4. In modifying the proposal, the small group tried to put itself in the position of WP.1 delegates, who in most cases have the interests of a broad range of road users to take into consideration. It is therefore proposed to exclude provisions which it is felt would not receive general support or which are seen solely from the perspective of the pedestrian, albeit a vulnerable road user.

5. In general, the recommendations should be confined to areas where road safety officials have competence and should not extend to land use and planning and the provision of public transport, for example.

6. Provisions regarding improvements to motor vehicle design should be brought to the attention of WP.29, the World Forum for Harmonization of Vehicle Regulations.

7. In the modified proposal, text to be excluded is contained in square brackets and new text appears in bold characters.

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6. SAFETY OF PEDESTRIANS

[Draft proposal (2) for a new section 6 in R.E.1

6.1. Main characteristics of pedestrians

Pedestrians are a special group of road users with their own characteristics and ways of movement. When doing work in the field of road safety, especially in the built-up areas, it is recommended to take into account the following main characteristics of pedestrians:

- (a) Pedestrians are a diverse group with a variety of abilities. They differ according to age, their experience of the traffic phenomenon (road sense in children), their mobility in traffic (persons with reduced mobility), their health condition and the type of trips they make.
- (b) Everyone can participate in traffic as a pedestrian and, with some exceptions, every human being is, at one time or another, a pedestrian. Because walking is an inherent mode of human transport, no one can be excluded from walking. Therefore, special requirements or tests are not feasible.
- (c) Pedestrians make up a substantial amount of traffic. Walking accounts for more than 25% of all journeys in European countries. In cities this proportion can reach 50% or more. Walking is also an essential part of most public transport journeys, and of some journeys mainly by car.
- (d) Pedestrians have no physical protection to reduce the consequences of accidents. The slightest contact with any vehicle or a fall on a damaged, slippery or uneven surface can lead to serious injuries. While posing little danger to other road users, pedestrians are themselves endangered by most other users.
- (e) Pedestrians are not always aware of their role as traffic participants. The reasons for this are: no special tasks have to be executed (as is the case when operating a vehicle); walking takes place only partly in the vicinity of motorised traffic and when walking, non-traffic tasks are possible or have to be performed (e.g. looking after children).
- (f) Pedestrians are flexible and their patterns of movement are varied. Pedestrians can spontaneously change their direction and speed. They are sensitive to detours and inclined to make short cuts. Furthermore they can gain access to areas usually unreachable by vehicles (elevated kerbs, stairs).
- (g) Pedestrians have to reckon with many outside influences and possible hazards, and traffic constitutes only one of them. Possible hazards include bad pavement, noise and

pollution, social threat, obstacles on the way, bad weather conditions and darkness, or a hostile built environment. The hazardous conditions are worsened when carrying heavy parcels, accompanying children, or pushing strollers.

6.2. Aim and objectives]

The aim of these recommendations is to reduce the dangers of the road for pedestrians with regards to both accidents with vehicles and [single] other accidents, such as stumbling or falling. [The aim shall be reached by the following objectives:

- (a) recognizing the right of pedestrians to reach their destinations without danger and without fear. Walking is an inherent way of moving for human beings and has, therefore, the character of a human right. No one shall have to limit his or her mobility on foot nor be dependent on assistance because of road dangers. Dangers of the road should whenever possible be eliminated at their source.
- (b) applying a comprehensive approach.] Because pedestrians as a diverse group have widely different capabilities and as individuals are especially vulnerable, the strategies for adapting pedestrian behaviour to [the] current road structures are limited. Therefore, legal provisions regarding infrastructure, vehicle standards and road user behaviour are necessary.
- [(c) creating conditions in traffic which prevent serious injuries and fatalities. While it is not possible to eliminate all accidents, it is possible to avoid serious consequences of accidents. Limited capabilities of or small errors by pedestrians and other road users shall not lead to serious or fatal injuries.

6.1 [6.3.] Facilities for pedestrians[; improvement of infrastructures (for figures see annex X)]

Facilities and infrastructure[s] should be designed to reduce the dangers of the road and foster in all traffic participants a safe and responsible behaviour. [Such infrastructures are tolerant of possible errors of road users (concept of the "forgiving roads").] The following provisions regarding pedestrians are recommended:

[(a) Land use and spatial planning

A town with facilities within walking distance is a major contribution to the safety of pedestrians. Creating a functionally well-designed and compact environment is, therefore, important, especially for the needs of children and elderly people.]

(b) Network of footpaths

In every town and city, a network of continuous walkways (including sidewalks etc.) should be established. They [se routes] should provide safe, direct [and attractive] links

between homes, shops, schools, [stops of] **access to** public transport and other vital services and facilities.

[(c) *Sidewalks and footpaths*]

Sidewalks and footpaths should be well-lit and well-maintained. Their width **should** [shall] be determined by their function (as schoolpaths or through shopping areas etc.). The pavement (**sidewalk**) should in general not be used for parking of vehicles. If this is not avoidable, sufficient space for the movement of pedestrians should be **left** [provided]. [Installments of] Signs and [or] other equipment **should** not obstruct the movement of pedestrians.

(d) *Pedestrian crossings*

Provision[s] for a sufficient number of [structurally sound] pedestrian crossings should be made. At unsignalled crossings, the speed of vehicular traffic should be adapted to enable [a] safe crossing for pedestrians. A central island, and/or other provisions together with good lighting, can help to make crossings safer, especially for children and elderly people. No obstacles such as street furniture or parked vehicles should block the sight of either pedestrians or drivers. [Pedestrian crossings should - if possible - be arranged according to the needs of pedestrians, which means that they lie in the direct path of the walkway network. In places where pedestrians' crossing needs are diverse, as e.g. in city centres, crossings with pedestrian priority should be stretched over the necessary area and signed accordingly.

(e) *Pedestrian crossings at traffic lights*

Pedestrian crossings at traffic lights should be signalled so that turning vehicles do not endanger pedestrians. Modern technology with automatic detection of pedestrians **may be used** [allows] to extend or reduce the vehicle red period as required to make safe crossings for slow pedestrians possible [("Puffing crossings")]. Intelligent technology [should] **may** also be used to minimize waiting times for pedestrians.

(f) *Pedestrian subways and footbridges*

In general the aim should be to provide safe crossings at street level where possible. [Because people find bridges and subways unsafe, difficult or too time consuming, they are tempted to risk dodging the traffic.] Where it is not possible to provide **street-level** crossings, it should be ensured that any footbridges and subways be properly maintained and accessible to all users, including those with reduced mobility.

(g) *Pedestrian areas*

Pedestrian areas are for the exclusive use of pedestrians. Commercial traffic may enter in some periods of the day. National legislation should give clear prescriptions on rules applying in such cases, clearly specifying their signing, the types of 'other traffic' permitted to enter and speeds allowed. Special care should be given to the access walkways leading to and from pedestrian areas.

(h) *Traffic calming areas*

Low speeds within [the] built-up areas are crucial for the safety of pedestrians. [Studies show that the lower the collision speed of a vehicle, the higher the survival rate of pedestrians.] Contributing to fewer road dangers for pedestrians are the establishment of:

- (i) 30 km/h and 40 km/h zones in residential, shopping and other **heavily used** [populous] areas, using road signs E, 9d and E, 10d.
- (ii) "residential areas", using road signs E, 17a and E, 17b.
- (iii) measures to reduce the speeds on main roads, especially near pedestrian crossings.

(i) *Infrastructure provisions for pedestrians on rural roads*

Footways in rural areas should be either established completely independent from the road or separated physically by an elevated kerb, grassband or a wide shoulder.

Pavement markings or narrow shoulders are often not sufficient to provide **adequate** [enough] safety.

[(j) *Pedestrian access to public transport*

All public transport journeys involve a walk. Pedestrians must have easy, safe and short, direct and convenient access to all public transport services. Stops and transfers should be linked to walking routes and provide safe and comfortable access.]

(k) *Direction and information signs for pedestrians*

[A] Good orientation based on direction and information signs can contribute to **greater** [more] safety for pedestrians. These signs may prevent pedestrians from getting lost or disoriented in traffic and enable them to give full attention to the traffic situation.

(l) *Provisions for other non-motorized road users [roller skaters and other moving aids]*

Facilities designed for improving the safety and convenience of cyclists and other non-motorized travellers should not compromise pedestrian safety [or convenience]. Where no separation of these road users is desirable or possible, road traffic should be designed in a way that it can safely accommodate bicycles, skaters etc.

(m) *Comfort provisions for the safety of pedestrians*

For their safety, pedestrians are dependent on comfort provisions such as even pavement surfaces, provision[s] of seating and shelter. This is especially true for the elderly and handicapped [people], and may prevent accidents caused by falling **or** stumbling [and weak spells].

(n) *Maintenance of pavements for pedestrians*

Pavements should be built and maintained to ensure evenness and skid-resistance. No obstacles should hinder the mobility of pedestrians[; good drainage system should be installed to prevent detours necessitated by accumulated water.] De-icing in the winter

is **important** [of special importance and should be particularly enforced by legal provisions].

[6.4. Improvement of motor vehicle design and equipment

Improvements in vehicle design can make a significant contribution to the reduction of road danger for pedestrians. With regard to motor vehicle design it is recommended to:

- (a) make all necessary improvements when vehicles, light or heavy, are being designed, so that the impact on pedestrians is minimized in the event of an accident; in particular, dangerous, unnecessary accessories such as "bull bars" should be banned. The design of heavy vehicles should be improved so drivers are better able to detect pedestrians in front, on the side and behind the vehicle. Optimal visibility in all vehicles involved should be ensured, for both drivers and pedestrians. Car windows should be designed with a view to ensuring that the pedestrian can, on any occasion, see the driver. Current designs make it difficult for pedestrians to detect the driver's intentions.
- (b) encourage the installation and voluntary use of accident data recorders ("black boxes") and other modern technological equipment in cars, since such devices have shown positive effects on the accident rate. They can also complement or replace measures on the road infrastructure.]

6.2 [6.5.] Campaigns to promote pedestrian safety [Behaviour of pedestrians and drivers]

It is recommended that [the] road users' awareness of the existing rules and of safe behaviour **regarding pedestrians** be raised. The following points - especially with regard to campaigns and driving courses - should be stressed:

- (a) Campaigns on pedestrian safety should not simply project an image of the pedestrian as a vulnerable road user, but [first and foremost an image of the pedestrian] as an actor in his or her own right.
- (b) Campaigns should inform all road users about the physical and psychological capabilities and limits of human beings in traffic [and] **thereby** [by that] helping to understand the behaviour of each road user group.
- (c) Driving courses and campaigns should encourage non-aggressive conduct towards pedestrians [and remind the drivers that they are mainly responsible for the safety of children, elderly and handicapped people. These attitudes towards pedestrians should be given substantial weight in driving examinations.

- (d) Driving courses, examinations and campaigns should continue to raise the drivers' awareness that low speeds in the built-up areas are a prerequisite to the safety of pedestrians. Drivers should, therefore, adapt their speed to the lowest level possible (defensive driving).
- (e) Campaigns aimed at pedestrians wearing bright clothes or retro-reflective devices at night should be targeted mostly at people who are walking along roads outside the built-up areas.]

6.3 [6.6.] The role of public authorities

Public authorities should take an active role to reduce road dangers for pedestrians by:

- (a) giving pedestrian safety an important role in their national road safety policies; ensuring, to this end, that measures concerning pedestrian safety are given due weight in their legislation, regulations and national programmes of action [, and that adequate resources are made available to carry out such action].
- (b) taking pedestrians into account, giving them the same importance as other means of transport when travel and traffic plans are being drawn up. When building new roads and other infrastructures, or changing existing provisions, a pedestrian implication study should be carried out to determine and to alleviate possible negative effects on the safety and mobility of pedestrians.
- (c) enlisting the participation of residents of the neighbourhoods involved, so that they may contribute via their suggestions [, from the town planning stage,] to the improvement of pedestrian safety.
- [(d) banning advertisements that describe or depict fast, aggressive or selfish driving.]

6.7. Research and statistics on pedestrian safety

In the field of pedestrian safety there is a [great] need to improve statistics and research **by, inter alia:** [The collection of data needed to assess the safety of pedestrians in road traffic should be done more effectively and more regularly in order to refine knowledge of the problem. The following action and research is needed and recommended:]

- (a) ensuring that pedestrian accidents are recorded **and** [in detail,] that the quality of the recording is optimized. [improved, and that adequate resources are made available to carry out such tasks. Of special importance is, that the subjective safety (how safe pedestrians feel) be included in all research and statistics concerning safety of pedestrians.]

- (b) **Research into the relationship between decreases in pedestrian accidents and induced reductions in pedestrian mobility (as in children being brought to school by car instead of walking, or old people not leaving their homes due to fear of increased vehicular traffic.**
- [(b) taking into account recent research findings suggesting that decreases in pedestrian accidents may in fact be due to an enforced reduction in pedestrian mobility. Further research should be conducted into this issue. For example, is the fear of danger from traffic causing older people to leave their homes less often, and is it causing children to be brought to school in cars instead of walking there?
- (c) considering single pedestrian accidents to be counted in accident statistics. Until now, only accidents involving a vehicle have been considered as traffic accidents thus leaving out the large proportion of traffic accidents of pedestrians. It seems inconsistent to count a single car slipping off the road or a bicycle rider falling because of an uneven or icy surface while not counting a pedestrian getting hurt in the same conditions (possibly even at the same place). Data on single pedestrian accidents should be collected and used to improve the safety of that road user group.
- (d) taking into account that according to experts, intelligent speed adaptation is the ITS application with the highest safety potential to reduce injury crashes in the whole road transport system.] further research [should , therefore, be undertaken] to determine the effects of the use of **information** [these] technologies - e.g. [of] in-car speed **control devices** [governors] and other telematic applications - on the safety of pedestrians[and other road users].

[Annex

Figures on facilities and infrastructure requirements e.g. dimensions of sidewalks, space to be left when cars park on sidewalk, recommended gradient etc.]
