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Accompanying document to the

Proposal for a

**DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on the retrofitting of mirrors to heavy goods vehicles registered in the Community**

Summary of the Impact Assessment

{COM(2006)570}

1. PROBLEM DEFINITION AND OBJECTIVE

A significant number of accidents are caused by drivers of larger vehicles who are not aware that other road users are very close to or beside their own vehicle. These accidents are often related to a change of direction at crossings, junctions or roundabouts, when drivers fail to detect other road users in the so-called blind spots, which exist in the area immediately around their vehicles.

It is estimated that every year, over 400 people lose their life in the European Union in this type of accident. Most of the victims of such accidents are pedestrians or two-wheelers, a particularly vulnerable category of road users.

The European legislator has been attentive to this problem. In 2003, the European Parliament and the Council adopted Directive 2003/97/EC on devices for indirect vision¹. According to this directive, in 2006 new vehicle types and respectively in 2007 new vehicles can only be granted approval by the Member States' authorities if they are equipped with a set of mirrors and other systems of indirect vision fulfilling certain requirements in order to reduce their blind spots. Directive 2003/97/EC was recently amended to require the fitting of wide angle and close proximity mirrors to vehicles above 3.5 tonnes instead of the previous 7.5 tonnes.²

Given the life-time of heavy goods vehicles (HGV), the effect of the new legislation is quite limited for a long period of time. The EU-25 HGV fleet (>3.5 tonnes) comprises almost 5 Mio vehicles. There are slightly over 300,000 new heavy goods vehicle registrations per year within the EU. This means that the HGV fleet will be completely exchanged in about 16 years from 2007 onwards, i.e. in 2023.

The objective of this Directive is to improve the field of indirect vision of existing HGVs and subsequently help saving lives on Europe's roads. Since improving the field of indirect vision of existing HGVs involves technical modifications in an already approved and legally authorised system, particular attention is given to the technical feasibility and the economic efficiency of a retrofitting exercise.

2. COSTS AND BENEFITS OF POLICY OPTIONS

In 2004, the Commission services conducted a cost-benefit study³ on the retrofitting of HGV, light goods vehicles (LGV) and coaches/busses with mirrors/cameras improving their field of indirect vision.

¹ OJ L 25, 29/01/2004, p. 1.

² OJ L 75, 22/03/2005 p. 33. Commission Directive 2005/27/EC of 29 March 2005 amending, for the purposes of its adaptation to technical progress, Directive 2003/97/EC of the European Parliament and of the Council, concerning the approximation of the laws of the Member States relating to the type-approval of devices for indirect vision and of vehicles equipped with these devices.

³ Jacobs 2004.

Scenario: for EU25, time period: 2006-2020/benefit-cost ratio	Side view			Front-view		
	HGV	LGV	Bus	HGV	LGV	Bus
Base case	4.1	0.4	0.4	0.6	0.1	0.2
Cameras rather than mirrors	0.6	0.1	0.1			
Increased Mirror Costs + (50%)	2.7	0.2	0.3			
Constant fatality rates	5.5	0.5	0.6			
10% increase in fatality saving (under reporting)	5.3	0.4	0.6			
Urban only areas	2.3	0.2	0.3			

The values in the above matrix are the benefit-cost ratios for each of the cases on the basis of the following statistical data, estimations and assumptions:

Vehicle Fleet in the EU-25 in 2003	HGV	LGV	Bus
Number of vehicles [1 Mio.]	4.7	22.5	0.7

The costs for retrofitting a side-view and front-view mirrors are estimated at 150 € each, for a camera system the estimate is 1,000 €.

Estimated number of fatalities saved between from 2006 to 2020 in accidents per vehicle category and area (side or front)	HGV	LGV	Bus
Side-view	1,313	626	27
Front-view	200	137	14

Retrofitting LGV or buses with mirrors or cameras has a benefit-cost ratio which is in all the cases examined far below 1: the benefits are smaller than the costs. For HGV, the benefit-cost ratio is only higher than 1 in the case of the lateral field of indirect vision. The accident saving potential of the retrofitting of side-view mirrors only to HGV is substantially higher than the potential of all other scenarios together: 1,313 versus 1,003. For the first scenario it would be necessary to retrofit about 4 Million vehicles, in the latter more than 25 Million vehicles are concerned.

Therefore, for policy options, only the constellation “HGV/side-view” is taken into account.

Option 1: No policy change – “do nothing”

The “do nothing” option means missing a window of opportunity to save lives with a straightforward and not overly expensive measure. The retrofitting exercise makes only sense if it is finalised before the whole HGV fleet is replaced by new HGV which have mirror sets

in line with Directive 2003/97/EC. It can be estimated that this is the case after 2020. The impact of a retrofitting directive is limited in time and decreasing every year.

Option 2: Apply the full set of requirements of Directive 2003/97/EC for the lateral field of vision to all HGV (>3.5 tonnes)

The application of the full set of requirements of Directive 2003/97/EC for the lateral field of vision to all HGV (>3.5 tonnes) is cost-effective. A benefit-cost ratio of 4.1, or slightly lower with an entry into force date in 2008, is excellent.

Some Member States have plans to make a retrofitting mandatory at national level. Individual solutions could, however, contradict the vehicle type approval scheme and, thus, create obstacles for the common market. This means that a retrofitting obligation can only be agreed upon at Community level.

Voluntary agreements seem unrealistic. None of the Member States that have already undertaken a retrofitting (NL, BE, DK) did so on the basis of a voluntary agreement.

Option 3: Apply a differentiated set of requirements on the basis of Directive 2003/97/EC for the lateral field of vision to all HGV (>3.5 tonnes)

For more than 50% of the HGV circulating on Europe's roads, it is possible to replace the old mirror glasses by new ones which are in conformity with Directive 2003/97/EC and cover the required field of indirect vision. Another 25% could be equipped with new glasses if the requirements for retrofitting with regard to the field of vision are slightly reduced (>99%). The costs for the retrofitting in these cases are normally below 150 €.

Most of the remaining 20-25% can be retrofitted with new mirrors at higher yet reasonable costs. In some cases (<10%), in particular if exchanging mirrors required substantial changes in the cabin structure or if there is no mirror available which would fulfil the requirements it is permitted to install additional devices to cover at least the field of vision of Directive 2003/97/EC. These systems have to be approved by the inspection authorities.

3. ANALYSIS OF IMPACT

3.1. Social impact

It is estimated that the benefit of the proposal will be to save about 1.200 road fatalities, which means in societal costs: around 2.4 billion Euros. This concerns foremost vulnerable road users, i.e. pedestrians, cyclists and motorcyclists.

Furthermore, enlarging the field of indirect vision is, in general, also welcomed by the drivers. Drivers are well aware of the limits of the present field of vision and they would feel more secure having a better field. Truck drivers know about the dangers of the blind spots of their vehicles and better means to cope with these dangers will improve their working environment.

This argument is also valid for the owners of the trucks. Most of them would accept a retrofitting at reasonable costs. Better coverage of blind spots is in fact also a question of Occupational Health and Safety. Fewer accidents in a given fleet reduce operational costs for down-time and insurance premiums. Their main concern with regard to retrofitting is the fear that technical problems in retrofitting mirrors on their trucks could result in significant extra costs.

3.2. Economic impact

The directive has a clear economic impact on the haulage companies. The truck owners have to pay for a measure that helps primarily other road users. However, given the advantages also for the hauliers, it can be assumed that most haulage companies are ready to pay a certain amount for this improvement as long as these costs are not disproportionate and do not cause market distortions.

The rigid application of the requirements for new mirrors could incur substantial costs in singular cases. Although the vast majority of trucks can be equipped with systems that are already available on the market for less than 150 € there are cases which incur higher costs. In a very limited number of cases a new set of bigger mirrors could even require changes in the cabin structure because of higher wind loads. Especially in such singular cases, inspection authorities have to be flexible and accept exceptional solutions at reasonable costs.

This flexible approach in singular cases is also necessary to prevent market distortion. In fact, one of the main features of the road freight industry in Europe is the preponderance of small firms. It would make a difference if one of these companies having three trucks of the same type that would need changes in the cabin structure to retrofit them, had to pay 1,500 € for each truck while all their competitors have costs in the order of 150 € for each truck.

3.3. Other impacts – administrative costs

A major problem of a retrofitting obligation is to check whether all trucks concerned by the obligation have been equipped with the necessary mirrors.

- (1) Vehicles might have been type-approved according to Directive 71/127/EEC and subsequent amendments. In most cases, the bigger field of vision required by this proposal of a directive means installing mirrors with a higher curvature which is permitted by Directive 2003/97/EC but not by the older directives. In some Member States, by exchanging mirrors, a truck could be no longer compliant with its original type-approval, unless the new mirrors are type-approved. In this context, the German government has found a solution by permitting mirrors to be replaced as long as they are in conformity with Directive 2003/97/EC. It might in fact be necessary that the some Member States find a solution for this, when transposing this directive.
- (2) Mirrors are currently type approved as an assembly, with the approval mark being placed on the body of the mirror rather than the glass. Replacement glasses are not required to have any approval mark on them, or to be approved. Therefore, if the complete assembly is not replaced, the approval mark on the body will still refer to the old directive, whilst the glass will not have any marking on it to indicate that it complies with the new requirements. In order to put inspection authorities in a position to check whether a mirror complies with the retrofitting requirements, Member States

have to foresee a procedure. Normally, it might be sufficient to prove compliance by a certificate issued by the manufacturer of the glasses.

- (3) For the vast majority of vehicles, compliance of the mirrors with this piece of legislation can be checked without incurring high costs. However, vehicles which cannot be retrofitted with new mirror glasses or new mirrors at reasonable cost need to be equipped with alternative devices. These vehicles need individual approval by an inspection authority. Inspection authorities will gather experience with appropriate systems for different vehicle types and should exchange information on possible technical solutions which have been approved. Such lists exist in the Netherlands and can facilitate the individual approval and, subsequently, substantially reduce costs for this approval.

4. MONITORING AND EVALUATION

The transposition of this Directive in the Member States will be monitored. Furthermore, with the methodology of the cost-benefit analysis, as summarised in Chapter 4, it is possible to monitor the impact of this directive: if the retrofitting requirement is successful, there should be a measurable reduction in the numbers of pedestrian/bicyclist killed in an accident involving a right-turning HGV (left-turning in the UK and IE). These figures are available in the Commission accident database CARE.