

# Driver & Vehicle Testing Agency Regulatory Impact Assessment In respect of Seat Belts on Buses

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Date: 10 July 2001

Dear Sir/Madam

**Motor Vehicles (Construction and Use)(Amendment No. \*)Regulations  
(Northern Ireland) 2001**

The Department of the Environment is proposing to amend the requirements relating to the fitment of seat belts on goods vehicles, buses and minibuses. The purpose of this letter is to invite your comments on the attached draft Regulations and the associated Regulatory Impact Assessments. The draft regulations amend regulations 54, 55, 56 and 57 of the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999. Operational dates within the draft Regulations will be revised. The main thrust of the amendments will be to require seat belts to be fitted to all new heavy goods vehicles, coaches, minibuses and other non-urban buses.

The key provisions of the draft regulations are as follows: with effect from a date approximately 2 months after the date the Regulations are made -

- All new buses over 3500kg gross weight (including minibuses and coaches but not including urban buses) will be required to have 3 point seat belts, lap belts, disabled persons belts or child restraints fitted to all forward facing seats. Lap belts may only be fitted to non-exposed seats if an energy-absorbing seat or surface is present in front. Lap belts will be required as a minimum on rear-facing seats.
- All new buses under 3500kg gross weight (including minibuses but not including urban buses) will be required to have 3 point seat belts, lap belts, disabled persons belts or

child-restraints fitted to all forward facing seats. Again, lap belts will be required as a minimum on rear facing seats.

- Seat belt anchorages on all new buses (including minibuses and coaches) and goods vehicles will have to comply with Directive 96/38/EC, but formal Type Approval will not be required. Similar requirements will apply to the non-mandatory anchorages fitted to existing vehicles, from the operative date of the Regulations.
- The Regulations would also make a consequential change to regulation 48A, which covers groups of children on organised trips in coaches and minibuses. At present, the children must be provided with forward facing seats with seat belts fitted: the proposed modification would also allow them to use rear facing seats with seat belts which meet the requirements of the Directive.
- From the operative date of the Regulations, all goods vehicles over 3500kg gross weight would be required to have 3 point belts or lap belts fitted to all forward facing seats in accordance with Directive 96/36/EC.
- The assessments takes account of comments made in response to an informal notification of proposals, circulated in July 2000.

Please send any comments you may have on the above proposals, in writing, to Mr. Terry Dawson at the above address by 26<sup>th</sup>. November 2001. Please note that we may be asked to make public a summary of the contents of files received. When you send in your reply, could you please therefore say if you do not want us to divulge the contents, should we be requested to do so.

Yours faithfully,

Harry Fitzpatrick

## 1. TITLE

Implementation of EU Bus and Coach Seat Belt requirements into Northern Ireland Law.

## 2. PURPOSE AND INTENDED EFFECT

### 2.1 The Issue

Although buses and coaches represent the safest form of road transport, when accidents do occur they can result in heavy casualties. Of those seated passengers who have been killed or injured in bus or coach accidents, many would have suffered less severe injuries had seat belts been available.

Seat belts are not currently required in the rear seats of minibuses or in unexposed rear seats of coaches (unless groups of children are being carried), or in any seats on other types of bus. However, European Directives (96/38 and 96/36) permit the Department to require seat belts (which meet specified standards) on other passenger seats in all passenger vehicles with more than eight passenger seats (except for vehicles intended for urban use and standing passengers).

### 2.2 Risks

The RUC compiles statistics that show the number of casualties in passenger carrying vehicles. In the period 1990-1999, there were 9 passengers killed and 233 seriously injured. These figures are for all passenger carrying vehicles. As regards the number of passenger carrying vehicles that would be affected by the proposed legislation, it is assumed that (a) all mini-buses and (b) some 45% of large buses will be affected. In arriving at assumption (b) the following was taken into account:

- ◆ passengers on urban journeys represent more than 50% of people carried on passenger carrying vehicles; and
- ◆ passenger carrying vehicles on scheduled urban services are less likely to be involved in major accidents where passengers may be killed or seriously injured as such journeys generally involve low speeds (ie, within 30 mph and 40 mph restricted areas).

The figures showing numbers of passengers killed or seriously injured are included in Table 1 below. An increasing number of vehicles have been fitted with seat belts over recent years, either voluntarily or in order to meet the 1997 legislation requiring the fitment of seat belts in vehicles used to carry groups of children on organised trips. While it is too early to give a reliable estimate of the effect of these changes, it is entirely reasonable to expect that, even without further legislation, the casualty totals should fall. It is apparent from the table that in the period since 1997, the number of people seriously injured on passenger carrying vehicles has (generally) reduced, although not dramatically. Because of the relatively low numbers involved, it will be

appreciated that 1 or 2 major road traffic accidents in any year have the potential to affect dramatically the totals of passengers killed or seriously injured.

**Table 1**

**Casualties in Passenger Carrying Vehicles in Northern Ireland 1990 to 1999**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Totals
Killed			7		1				1		9
Seriously injured	32	20	53	23	20	13	25	9	26	12	233

Figures supplied by RUC – Traffic Statistics Branch

**3. OPTIONS**

**3.1 Three options have been identified:**

- (a) Do nothing and rely on existing legislation.**
- (b) Do not require seat belts to be fitted, but where new seat belt installations are fitted voluntarily, require them to meet European technical standards in respect of both the seat belts and their anchorages.**
- (c) Require seat belts to be fitted to all forward and rearward-facing seats in all new buses and coaches (except for buses intended for urban use and standing passengers) to the full extent allowed by the Directive.**

**3.2 Issues of Equity or Fairness**

Currently, seat belt fitting requirements only apply to specific vehicles (minibuses and coaches) used for the carriage of children on organised trips. Otherwise, provision of rear seat belts is voluntary and, currently, this voluntary action has led to a fitting rate (nationally) of around 97% in those new vehicles which are affected by the proposed legislation.

This might suggest that no legislative action is necessary. However, if no regulatory action is taken to increase new-vehicle fitting rate to 100%, there will inevitably be the situation where some passengers are less well protected than others (either because a seat belt was not originally fitted, or because one had quite legally been removed). It is reasonable to require broadly equivalent standards of protection for all passengers on a particular type of vehicle.

Furthermore, GB has already made regulations requiring the fitment of seat belts. If NI does not introduce similar provisions, this would leave the local travelling public in a less safe position than that in other parts of the UK.

## **4. BENEFITS**

### **4.1 Identifying Benefits**

The benefits are a reduction in fatal and serious injuries to bus and coach occupants. Those who benefit will be members of the public. An additional, less tangible benefit will be a reduction in the perceived risk of travelling by bus or coach, with the potential effect of increasing the use of public transport which is inherently safer and more environmentally friendly than private transport.

### **4.2 Quantifying Benefits**

#### **Option a.**

It could be argued that benefits will be gained by relying on existing legislation, since many manufacturers and operators are already equipping vehicles with seat belts on a voluntary basis, and casualty savings will result from this voluntary action.

However, the industry has to some extent been anticipating the proposed legislation since 1996 (when the amending Directive was issued) and if the full requirements of the Directive are not implemented, some manufacturers or operators may undercut their more safety-conscious competitors by not supplying seat belts. This could lead to an overall reduction of voluntary fitting. In addition, existing legislation does not require European technical standards for seat belts and anchorages in all vehicles, so installation standards for voluntary belts may be inadequate.

#### **Option b.**

As for Option a, but requires the full technical requirements to be met with regard to any voluntary installations. This will lead to casualty savings due to the (eventual) removal of the less adequate systems, but could still lead to a minority of occupants being completely unprotected. Although the requirement for seat belt installations to meet European technical standards will ensure that those fitted are of an acceptable quality, it is likely that without a legislative requirement for the fitment of seat belts the increase in new vehicles with seat belts will slow.

#### **Option c.**

This option will realise the greatest benefits, but the implementation costs will be higher. The benefits are a reduction in fatal and serious injuries to bus and coach occupants as a result of requiring all such vehicles to be fitted with seat belts to European technical standards.

### 4.3 Projected Savings

#### Option a.

It is difficult to gauge with accuracy possible savings from this option, given the relatively low number of casualties over the 10 years since 1990. In addition, it is possible that the current high rate of voluntary fitment of seat belts may slow down if it became apparent that legislative measures to require 100% fitment were not forthcoming. The likelihood is that installation standards would reduce once it became clear that legislation would not be introduced to require EU technical standards for seat belts and anchorages. The estimated annual casualty savings from this Option are included in Table 2 below.

**Table 2**

#### Estimated Annual Casualty Savings for Option a.

	<b>Baseline 1990-96 (7 years)</b>	<b>Estimated casualty savings expressed as a %</b>	<b>Ø Annual savings expected (See Note h)</b>
Killed (Mini-buses)	1	7%	£10,891
Seriously Injured (Mini-buses)	63	7%	£77,099
Killed (Large buses)	3	5%	£23,339
Seriously Injured (Large buses)	55	5%	£48,078
<b>Total</b>			<b>£159,407</b>

ØThe annual savings are calculated by taking the average casualties per annum, applying estimated casualty savings expressed as a % and taking account of the figures detailed in Note h. of the 'Assumptions' listed below.

**Option b.**

It is estimated that savings in this category would be similar to Option a with a possible small increase reflecting the additional savings due to the progressive removal of less adequate systems. There are no figures available on the rates of death or serious injury resulting from improper fitting of seat belts on buses.

**Option c.**

This option is expected to realise the greatest benefits. The anticipated casualty savings for this option are shown below in Table 3. As for Option a above, the baseline figures use data from the years up to 1996 because seat belt use, particularly in large vehicles, was very low at that time. From 1997, the fitting of seat belts in these vehicles increased considerably and it is uncertain to what extent this affected casualty figures.

**Table 3****Estimated Annual Casualty Savings for Option c.**

	<b>Baseline 1990-96 (7 years)</b>	<b>Estimated casualty savings expressed as a %</b>	<b>Ø Annual savings expected (See Note h)</b>
Killed (Mini-buses)	1	15%	£23,338
Seriously Injured (Minibuses)	63	15%	£165,213
Killed (Large buses)	3	15%	£70,016
Seriously Injured (Large buses)	55	15%	£144,234
<b>Total</b>			<b>£402,801</b>

ØThe annual savings are calculated by taking the average casualties per annum, applying estimated casualty savings expressed as a % and taking account of the figures detailed in Note h. of the 'Assumptions' listed below.

**ASSUMPTIONS USED IN CASUALTY SAVINGS CALCULATIONS**

- a. Actual figures of casualties travelling in minibuses have been used.
- b. The actual figures of casualties for all large buses include both vehicles not covered by the legislation (urban buses) and other passenger vehicles that will be covered by the legislation. At para 2.2 it has been estimated that 45% of the casualties would likely have travelled in such vehicles affected by the legislation.
- c. For the 1990-1996 period, it is assumed that no seat belts were fitted to passenger carrying vehicles. Although some coaches would have had seat belts fitted, at

- d. Casualty savings obtainable from wearing seat belts are 30% for lap belts (with energy absorbing seats) and 40% for 3-point seat belts in minibuses. (Where seat belts are not to recognised standards, these values are taken as 10% for lap belts and 20% for 3 point belts.)
- e. Wearing rates of 50% are assumed.
- f. Seat belts and anchorages are to recognised standards for Option c.
- g. A vehicle life of 15 years is assumed so the entire fleet of vehicles would be equipped some 15 years after regulations come into effect. Savings assume that the whole fleet is equipped.
- h. Road Safety and Vehicle Standards Division, Department of Environment has advised that £1,089,130 should be assumed for each fatality and £122,380 for each serious injury.
- i. It is assumed that 97% of all new vehicles covered by the legislation now have seat belts fitted.

## 5. COMPLIANCE COSTS

### 5.1 Manufacturers' Costs

Although current construction legislation only requires seat belts on the front seats of minibuses up to 3500 kg maximum gross weight and in the exposed seats in coaches,

a combination of market forces and anticipation of future legislation has meant that the vast majority of coaches and minibuses are already fitted with seat belts on all seats.

It is estimated that nationally 97% of new vehicles above 3,500 kg (apart from urban buses) are fitted with lap or three point belts on all forward-facing seats. In the case of vehicles up to 3,500 kg, virtually all will have seat belts, with 97% having three point belts. Therefore the additional cost to manufacturers and operators of complying with the proposed legislation as far as the *provision* of seat belts is concerned is likely to be minimal.

However, the other main facet of the proposed legislation is to require seat belts and anchorages which are fitted to vehicles over 3,500 kg to meet recognised standards. In the case of the seat belts themselves this is relatively straightforward, since virtually all seat belts on the market now (apart from some special purpose belts) meet either BS or European standards. In the case of anchorages most coaches, particularly if intended for European markets, already meet the requirements of the 76/115 Anchorage Directive, although there may be other vehicles in this weight category which do not. There may, therefore, be a cost to manufacturers of vehicles above 3,500 kg who will be required to upgrade their seat belt installations to meet EU standards.

#### **5.1.1 Estimated Costs for Vehicles up to 3,500 kg (minibuses/small buses)**

Approximately 230 such vehicles are registered in Northern Ireland per year, of which 97% can already be expected to have three point belts. Almost all of these vehicles will be minibuses, and the technical requirements for belts and anchorages on such vehicles will generally be unchanged. The only exception to this will be disabled person's belts which currently do not have to be attached to approved anchorages, but these are only fitted in about 1% of vehicles in this class. Of the 7 vehicles (ie, 3% of 230 new vehicles each year) without 3 point belts, it is likely that nearly all would have lap belts or disabled person's belts, so the increased costs to the manufacturer will largely be the increased cost of providing a three point anchorage system.

An extensive development programme is unlikely to be a viable option for small scale manufacturers. In such cases, the purchase of an 'off-the-shelf' tested kit, incorporating a lattice sub-frame to which seats with integral belts are attached, is more practical. We estimate that the increased cost of fitting three point belts would be £10 per belt with, typically 10 seats per vehicle being affected. The cost of a tested sub frame is likely to be £1000 per vehicle, including design and testing costs. This gives a figure of £1,100 per vehicle: £7,700 for a year's production.

#### **5.1.2 Estimated Costs for Vehicles over 3,500 kg**

An average of 42 such vehicles are registered in Northern Ireland per year, (includes urban buses). Of these vehicles, 97% would not be affected by the legislation, either due to the fact that seat belts have already been fitted or the vehicles do not come

within the scope of the legislation. Therefore, 2 additional vehicles per year will need to have at least lap belts fitted (in conjunction with energy absorbing seats). In addition, even where seat belts are fitted, only about half of the vehicles in this category are likely to be meeting European anchorage standards, so the cost of developing belts and seats which meet the standards would need to be taken into account.

Responses from local manufacturers indicate that the additional cost of fitting seat belts to the required standard would be in the region of £1,000 per vehicle; £2,000 for a year's production.

### 5.1.3 Development Cost

The costs of conducting stress tests to ensure that seat belts and their anchorages comply with European Directives (96/36 & 96/38) would be £6,000. The cost of producing a prototype and preparing for test would be £3,000. Design costs would be £27,000. The total cost would, therefore, be £36,000 per model. The total increased cost, assuming one new vehicle 'type' per year for both large buses and mini-buses would be £72,000.

## 5.2 Operators' Costs

Operators of vehicles covered by these regulations fall into four main categories: private users, local authority operators, charity organisations and commercial operators. Generally, seat belts require very little maintenance unless they are misused or vandalised. Some operators of school contract vehicles report a replacement rate of several belts per week as a result of vandalism.

Another possible cost to operators will be the potential reduction in carrying capacity due to the loss of the 'three for two' concession where belts are fitted. This is a concession in the Public Service Vehicle Regulations which allows three children under 14 to share a double seat, but does not apply where either of those seats is fitted with a seat belt. Thus one effect of fitting seat belts is to reduce the child-carrying capacity of a vehicle. However, since the vast majority of the vehicle types affected by the proposed legislation are already required to have belts fitted when used by groups of children, any additional effect from this new legislation is likely to be minimal and no allowance for this has been made in the costing.

If 166 additional belts are fitted annually and assuming an average life span for each vehicle of 15 years, after that period there will be an additional 2490 belts (15 years x 166 belts per year) to be maintained at a cost of £10 per belt which equates to £24,900 maintenance costs per year. (See also Assumption g.)

### 5.3 Approval Costs

The Department may consider whether a formal approval mechanism is appropriate in the longer term for seat belt installations on new vehicles. For the purposes of the present exercise, no additional approval costs have been assumed.

### 5.4 Total Cost for Various Options

**Table 4**

#### **Comparison of Annual Costs for Options**

<b>Option</b>	<b>Cost of fitting belts to remaining 3% of vehicles</b>	<b>Development cost – mini-bus</b>	<b>Development cost – large bus</b>	<b>Maintenance cost</b>	<b>Totals</b>
<b>a.</b>	N/A	N/A	N/A	N/A	Nil
<b>b.</b>	N/A	N/A	£36,000	N/A	£36,000
<b>c.</b>	£9,700	£36,000	£36,000	£24,900	£106,600

**Option a.** presents no additional requirements, therefore no additional costs.

For **Option b**, only the cost for developing approved systems for the larger vehicles is included as the technical requirements for seat belts and their anchorages on smaller vehicles will generally be unchanged. The cost of supplying and maintaining additional belts will not apply. Hence the cost of Option b would be £36,000.

Adding the elements contained under Sections 5.1 and 5.2, the estimated total annual cost to manufacturers and operators of complying with the proposed requirements as outlined in **Option c** is £106,600.

## 6. SMALL BUSINESS LITMUS TEST

Although there are manufacturers in Northern Ireland who will be affected by any proposed measures, there are larger numbers of such firms in Great Britain. Several manufacturers have noted that the assumptions previously made underestimated the likely development costs since (for example) tested sub-frames may not be available for all types of vehicles and in-house development, estimated at around £36,000 per type, may be necessary for some types. This, ultimately, may restrict the choice for customers who require the 'bespoke' systems that are largely demanded by community associations and supplied by the smaller specialist manufacturers. One consequence of this may be a trend towards greater standardisation of vehicle interior

layouts and seating types. For the purpose of this assessment, provision for 2 development costs annually has been made, 1 for large buses and another for mini-buses. This takes account of concerns as regards development costs that were raised at an earlier informal consultation stage.

**7. OTHER COSTS**

None.

**8. RESULTS OF INFORMAL CONSULTATIONS**

A number of organisations in Northern Ireland were consulted informally on the GB proposals in July 2000. Each of the responses has been considered carefully.

Some respondents were concerned that the GB figures were not wholly representative of the Northern Ireland situation, in particular in terms of the number of new buses already fitted with seat belts. Concerns were also raised regarding the definitions of various types of buses, however, these definitions are as prescribed in the relevant Directives. The costs of fitting seat belts to all large buses was also raised.

There was also broad support for the proposals and in fact the Department was urged to extend the provisions to include a phasing out of all mini-buses with side-facing or bench seats.

**9. SUMMARY AND RECOMMENDATIONS**

**Table 5**

**Summary of Benefits and Costs for Options a. and c.**

<b>Option</b>	<b>Projected savings (benefits)</b>	<b>Projected additional costs</b>	<b>Additional benefits of option c. (benefits of c. – a.)</b>
<b>a.</b>	£159,407	Nil	N/A
<b>c.</b>	£402,801	£106,600	£243,394

The benefits and costs for Options a. and c. are summarised in Table 5 above. The benefit/cost ratio for Option c. is 2.3:1.

The projected savings identified for option a would likely decrease over time if the proposed legislation requiring the fitment of belts were not introduced

Although option b would likely give a more favourable benefit/cost ratio, choosing this option would mean accepting that 3% of seats on new buses and coaches would not

be fitted with seat belts (but the belt installations that were provided would be of a high standard).

**Given these points, and the relatively small cost of equipping the remaining 3% of seats, the Department proposes to adopt option c.**

#### 10. **ENFORCEMENT, SANCTIONS, MONITORING AND REVIEW**

In the future, the Department may consider a formal approval mechanism for seat belt installations on new vehicles. In the shorter term, it is anticipated that the annual roadworthiness test or Public Service Vehicle test, in conjunction with roadside enforcement, will check for continuing seat belt presence and condition.