

**EXPLANATORY MEMORANDUM TO
THE ROAD VEHICLES LIGHTING AND GOODS VEHICLE (PLATING AND
TESTING) (AMENDMENT) REGULATIONS 2009**

2009 No. 3220

AND

**THE ROAD VEHICLES (CONSTRUCTION AND USE)(AMENDMENT)(NO.4)
REGULATIONS 2009**

2009 No. 3221

1. This explanatory memorandum has been prepared by The Department for Transport and is laid before Parliament by Command of Her Majesty.
2. **Purpose of these instruments**
 - 2.1 To permit the use of distinctive retro-reflective markings (the battenburg pattern) on vehicles used for police, fire and rescue, ambulance, Vehicle and Operator Services Agency (VOSA) or traffic officer purposes,
 - 2.2 To require goods vehicles with a gross vehicle weight (gvw) exceeding 7,500 kg and trailers with a gvw exceeding 3,500 kg to be fitted with retro-reflective conspicuity line markings if they are first used (or manufactured in the case of trailers) on or after 10 July 2011,
 - 2.3 To update a number of provisions of the Road Vehicles Lighting Regulations 1989 to align with the vehicle regulations of the United Nations Economic Commission for Europe (UNECE) on lighting installation, and
 - 2.4 To simplify the criteria that determine whether the front and rear position lights on goods vehicles parked on the road at night should be illuminated.
 - 2.5 To permit vehicles used by mountain rescue services for emergency purposes to be fitted with blue warning beacons and use warning sirens,
 - 2.6 To permit vehicles used by mountain rescue services for emergency purposes to be fitted with and use warning sirens,
3. **Matters of special interest to the Joint Committee on Statutory Instruments**
 - 3.1 None
4. **Legislative Context**
 - 4.1 The Road Vehicles Lighting Regulations 1989, as amended, (known as RVLR) are made under the Road Traffic Act 1988 and regulate all forms of lighting and retro-reflective markings permitted on vehicles used on the public roads.

4.2 RVLRL require that retro-reflective markings on the sides of vehicles that are intended to make the vehicle more visible must be amber in colour. Retro-reflective markings of other colours such as the blue, green or red schemes used in the battenburg pattern are currently prohibited unless the Secretary of State for Transport has issued an order under section 44 of the Road Traffic Act 1988 (“a special order”).

4.3 RVLRL require goods vehicles with a gvw exceeding 7,500 kg and trailers with a gvw exceeding 3,500 kg to be fitted with retro-reflective marking plates on the rear. However, the fitting of retro-reflective conspicuity line markings to outline the width and length of the vehicle is optional.

4.4 Blue flashing warning lamps may be fitted to emergency vehicles as defined in RVLRL, including vehicles used by the RAF mountain rescue service. However vehicles operated by other mountain rescue services are not defined as emergency vehicles and are not permitted to use blue warning beacons, despite being engaged in the same activities as the RAF rescue service.

4.5 RVLRL contains a number of provisions that are out of step with the equivalent UNECE regulations. These differences are minor but they place restrictions on vehicle manufacturers who design vehicles for sale in both the UK and European markets.

4.6 Goods vehicles with an unladen weight exceeding 1,525kg, when parked on the roadside at night must leave their position lights switched on. (Goods vehicles of lower weights may park without lights if the prevailing speed limit is 30mph or less). The unladen weight of a vehicle is often difficult to verify and is influenced by the addition of optional features by the manufacturer or the fixing of specialist equipment to the vehicle. This uncertainty makes it difficult for vehicle operators and enforcement agencies to apply these requirements in practice.

4.7 The Road Vehicles (Construction and Use) Regulations 1986 regulate, among other things, the fitment and use of sirens on vehicles. Only vehicles specified in the regulation, such as those used for police purposes, may be fitted with a siren or two-tone horn. Non-RAF mountain rescue vehicles are not currently permitted to use such sirens or horns.

5. Territorial Extent and Application

5.1 These instruments apply to Great Britain.

6. European Convention on Human Rights

6.1 As the instruments are subject to negative resolution procedure and do not amend primary legislation, no statement is required.

7. Policy background

7.1 In 2004 the Police Scientific Development Branch published guidelines for a high conspicuity livery for police vehicles. This was based on research into methods to enhance the visibility and recognition of police vehicles. The recommended livery

consists of large rectangular blocks of retro-reflective material in blue and yellow colours. This became known as the battenburg pattern.

7.2 The Secretary of State for Transport issued a special order to the police authorities which temporarily permits vehicles operated by them to use the blue and yellow retro-reflective colour scheme.

7.3 Subsequently the battenburg pattern was adopted by the NHS ambulance service and the fire and rescue services and more recently by the Highways Agency for their traffic officer vehicles and by VOSA. In each case special orders have been issued to permit the particular colour scheme used.

7.4 This amendment will formally permit the use of the colour schemes on these vehicles without the need to continue issuing and maintaining special orders. Private ambulances will be allowed to use the same colours as NHS ambulances.

7.5 A study in 2005 carried out by Loughborough University for the Department showed that retro-reflective conspicuity marking on goods vehicles and their trailers can reduce accidents where a vehicle collides to the front or side of the goods vehicle. A follow up consultation by the Department showed that there is strong support to require certain classes of heavy goods vehicles and their trailers to be fitted with retro-reflective line markings on the rear and sides.

7.6 From October 2007 amendments to the UNECE Regulation 48 on vehicle lighting entered into force. These amendments provide for the fitting of conspicuity markings to certain heavy goods vehicles (over 7,500kg gross vehicle weight) and their trailers. The cut off date of 10th July 2011 has been chosen because from that date all new heavy goods vehicles to which the mandatory conspicuity requirements will apply will be required to be fitted with conspicuity markings in order to be registered (and hence used on the public roads). This is a consequence of the application of the type approval directive 76/756/EEC as amended.

7.7 The Transport Select Committee recommended in 2005 that official mountain rescue vehicles should be able to use blue lights to reach incidents in the same way as RAF mountain rescue teams.

7.8 This amendment will implement the recommendation regarding blue warning beacons and provide the same benefits already enjoyed by the RAF mountain rescue service. Further, these vehicles will also be permitted to use sirens when responding to an emergency.

7.9 The Department for Transport has received requests from vehicle manufacturers to better align the RVLRL with the equivalent UNECE regulations on vehicle lighting.

7.10 The differences are small, concerning items such as the height of retro-reflectors and the fitting of particular categories of direction indicators. Making these amendments does not affect vehicle safety and will give manufacturers greater flexibility when designing new vehicles.

7.11 The Road Haulage Association has raised concerns over the criteria set out in RVLRL that decide whether or not the position lights on a goods vehicle must remain switched on when it is parked on the road at night.

7.12 By changing the reference in one of the criteria from unladen weight to gross vehicle weight it is simpler for the operator and enforcement agencies to identify the correct requirements.

Consolidation

7.13 The Department does not intend to consolidate the relevant legislation at this time.

8. Consultation outcome

8.1 A public consultation was carried out between 17 July and 9 October 2008.

8.2 68% of respondents agreed with our proposal to require conspicuity marking tape on certain goods vehicles and their trailers and 44% agreed that rear marking plates should be optional in cases where marking tape is fitted. 4% and 28% opposed these measures respectively and the remainder did not respond to these questions.

8.3 75% agreed that emergency services, traffic officer vehicles and VOSA enforcement vehicles should be able to use distinctive retro-reflective schemes in colours not currently permitted. 64% agreed that private ambulance operators should be able to use the same colours as ambulances operated by NHS Trusts. Some concerns were raised that some operators of private ambulances may illegitimately abuse the colours to impersonate NHS ambulances. However the NHS Trusts may still use their logo which is protected as intellectual property and the crown symbol to differentiate themselves from other ambulance services.

8.4 74% supported the use of blue beacons and sirens on mountain rescue vehicles, 68% were in favour of the updates to align with current UNECE vehicle regulations and 73% of those who responded supported the simplification of the procedures on the use of lights on parked goods vehicles.

9. Guidance

9.1 Vehicle manufacturers, commercial vehicle operators, mountain rescue services, emergency services and relevant government agencies have been informed of our intentions through the consultation process. The results of the consultation and the obligations of the new requirements will be reported on the Department's website.

10. Impact

10.1 Impact Assessments are attached to this memorandum.

11. Regulating small business

11.1 The legislation applies to small business.

11.2 To minimise the impact of the requirements on firms employing up to 20 people, the approach taken is to introduce changes that broaden the scope without adding additional burdens, except in the case of mandatory retro-reflective

conspicuity markings which will be limited to those vehicles first used, or manufactured in the case of trailers, from 10 July 2011.

11.3 The views of small businesses were sought in the public consultation. By limiting the implementation of retro-reflective conspicuity markings to new vehicles, small businesses will not face the additional burden of modifying their existing vehicle fleet.

11.4 Making rear marker plates optional will reduce costs to small fleet operators. It is acknowledged, however, that this may be to the detriment of a number of small businesses that manufacture these plates.

12. Monitoring & review

12.1 Implementing retro-reflective conspicuity marking from 10 July 2011 is expected to prevent nearly 7 serious and fatal accidents in the first year. This will rise each year as new vehicles enter the vehicle parc. A review of accident data will take place within 5 years.

12.2 Other measures implemented by this amendment are intended to simplify or deregulate the existing legislation and no additional monitoring or review is expected to be necessary.

13. Contact

13.1 Adrian Burrows at the Department for Transport Tel: 020 7944 2105 or email: adrian.burrows@dft.gsi.gov.uk can answer any queries regarding the instruments.

Summary: Intervention & Options

Department /Agency: Department for Transport	Title: Impact Assessment of The Road Vehicle Lighting Regulations amendment covering conspicuity markings on goods vehicles	
Stage: Implementation	Version: 1	Date: 21/10/09
Related Publications: Public consultation		

Available to view or download at:

<http://www.dft.gov.uk/consultations/archive/2008/regulationsamendments/>

Contact for enquiries: Adrian Burrows

Telephone: 020 7944 2105

What is the problem under consideration? Why is government intervention necessary?

Between 2005 and 2008 there was an average of 563 fatal and serious accidents per year between the rear or side of a HGV and another vehicle. The Road Vehicles Lighting Regulations require large goods vehicles and their trailers to be fitted with rear marker plates to improve their conspicuity and indicate their size however, research suggests up to 40 of these accidents could be avoided if conspicuity marking tape was fitted to all HGV's.

What are the policy objectives and the intended effects?

The proposal fulfils the Department's commitment to require conspicuity marking tape which was made during parliamentary discussions on the Road Safety Bill. It will apply to all goods vehicles with a gross vehicle weight (GVW) exceeding 7500kg and trailers with a GVW exceeding 3500kg first used after 10 July 2011. (The original commitment to implement by 10 October 2009 is considered to burdensome in the prevailing economic climate.)

Fitting conspicuity marking tape removes the need to fit rear marking plates. The use of rear marking plates can therefore be made optional although if fitted they should comply with the latest UNECE Regulation 70.01

What policy options have been considered? Please justify any preferred option.

1. Maintain current situation.
2. Goods vehicles with a GVW exceeding 7500kg and trailers with a GVW exceeding 3500kg registered from 10 July 2011 to be fitted with conspicuity marking tape. In addition require the fitting of rear marking plates which comply with UNECE Regulation 70.01
3. As option 2 however rear marking plates optional on vehicles fitted with conspicuity marking tape. where fitted rear marker plates should meet UNECE Regulation 70.01 (preferred option)

Option 3 fulfils the department's commitment and reduces the regulatory burden.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? 5 years

Ministerial Sign-off For implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul ClarkDate: 7th December 2009

Summary: Analysis & Evidence

Policy Option: 2	Description: Goods vehicles with GVW exceeding 7.5t and trailers over 3.5t to be fitted with conspicuity marking tape.
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COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' Cost per Vehicle between £166 and £388 depending on the type of vehicle			
	One-off (Transition)	Yrs				
	£ 0					
	Average Annual Cost (excluding one-off)					
£ 17m	12	Total Cost (PV)		£ 164m		
Other key non-monetised costs by 'main affected groups'						

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' In first year the number of fatal and serious accidents will be reduced by 7. This figure will rise each year as the existing vehicle parc is replaced by new vehicles.			
	One-off	Yrs				
	£ 0					
	Average Annual Benefit (excluding one-off)					
£ 34m	12	Total Benefit (PV)		£ 297m		
Other key non-monetised benefits by 'main affected groups'						

Key Assumptions/Sensitivities/Risks. The benefit estimates are based on research carried out in the U.S.A. These benefits may not be fully realised in the UK. It is assumed that all relevant vehicles will comply from October 2009. Net benefits will be lower if operators take advantage of derogations that are available for the first 21 months.

Price Base Year 2007	Time Period Years 12	Net Benefit Range (NPV) £ 103-163m	NET BENEFIT (NPV Best estimate) £ 133m
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What is the geographic coverage of the policy/option?				UK	
On what date will the policy be implemented?				December 2009	
Which organisation(s) will enforce the policy?				VOSA, Police	
What is the total annual cost of enforcement for these organisations?				£ 13,000	
Does enforcement comply with Hampton principles?				Yes	
Will implementation go beyond minimum EU requirements?				Yes	
What is the value of the proposed offsetting measure per year?				£ 0	
What is the value of changes in greenhouse gas emissions?				£ 0	
Will the proposal have a significant impact on competition?				No	
Annual cost (£-£) per organisation (excluding one-off)		Micro £36	Small £214	Medium £1,978	Large £10,658
Are any of these organisations exempt?		No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)			(Increase - Decrease)	
Increase of £ 0	Decrease of £ 0	Net Impact		£ 0

Kev: Annual costs and benefits: Constant Prices

Summary: Analysis & Evidence

Policy Option: 3

Description: Require conspicuity marking to option 2 and make rear marking plates optional if the conspicuity tape fitted.

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups'
	One-off (Transition)	Yrs	
	£ 0		Cost per vehicle between £136 and £358 depending on the type of vehicle.
	Average Annual Cost (excluding one-off)		
£ 16m	12	Total Cost (PV)	£ 153m
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups'
	One-off	Yrs	
	£ 0		In first year the number of fatal and serious accidents will be reduced by 7. This figure will rise each year as the existing vehicle parc is replaced by new vehicles.
	Average Annual Benefit (excluding one-off)		
£ 34m	12	Total Benefit (PV)	£ 297m
Other key non-monetised benefits by 'main affected groups'			
If rear marker plates are fitted they will meet UNECE Regulation 70.01 which offers vehicle users better performance over current plates.			

Key Assumptions/Sensitivities/Risks The benefits are based on research carried out in the U.S.A. These benefits may not be fully realised in the UK. The analysis assumes conspicuity marking tape with rear marker plates provide the same benefits as conspicuity marking tape alone. Net benefits will be lower if operators take advantage of derogations that are available for the first 21 months.

Price Base Year 2007	Time Period Years 12	Net Benefit Range (NPV) £ 115-174m	NET BENEFIT (NPV Best estimate) £ 144m
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What is the geographic coverage of the policy/option?		UK	
On what date will the policy be implemented?		December 2009	
Which organisation(s) will enforce the policy?		VOSA, Police	
What is the total annual cost of enforcement for these organisations?		£ 13,000	
Does enforcement comply with Hampton principles?		Yes	
Will implementation go beyond minimum EU requirements?		Yes	
What is the value of the proposed offsetting measure per year?		£ 1,074,630	
What is the value of changes in greenhouse gas emissions?		£ 0	
Will the proposal have a significant impact on competition?		No	
Annual cost (£-£) per organisation (excluding one-off)	Micro £33	Small £199	Medium £1,838
Are any of these organisations exempt?	No	No	N/A

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of	£ 0	Decrease of	£ 0
		Net Impact	£ 0

Kev:	Annual costs and benefits: Constant Prices	(Net) Present Value
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1. Title and effect of measure

Amendment of the Road Vehicle Lighting Regulations 1989 (S.I. 1989/1796) (RVLR) – covering conspicuity markings on goods vehicles.

2. Objective

This proposal fulfils the Department's commitment to require conspicuity marking tape on certain categories of goods vehicles and their trailers.

3. Background

The RVLR require certain vehicles with a gross vehicle weight of exceeding 7.5 tonnes to be fitted with retro reflective rear marker plates approved to the European Regulation, UNECE Regulation 70.00. (The latest version of this regulation is known as Regulation 70.01 however the UK still permits the use of Regulation 70.00 marker plates). These plates are fitted in addition to rear lights and reflectors and are intended to make the vehicle more conspicuous to other drivers so they are aware of the presence of a large, potentially slow moving, vehicle.

Some vehicle operators also fit conspicuity markings to their vehicles. These are vertical and horizontal lines of retro-reflective tape which emphasise the length and shape of the vehicle and also warn other drivers of their presence. UNECE Regulation 104 (R104) provides a technical specification for these conspicuity markings and their use on vehicles in the UK is optional at present.

UNECE Regulation 48 (R48) is a European regulation that sets out harmonised installation requirements for vehicle lights and reflectors. It is broadly equivalent to RVLR and the UK cannot refuse registration of vehicles approved to this regulation on the grounds of their lighting. Recently R48 was amended to mandate R104 specification conspicuity markings on certain new HGVs and trailers.

The Department made a commitment to align RVLR with R48 from October 2009 and require conspicuity marking tape on new heavy goods vehicles and their trailers. However, after careful consideration, implementation from 10 July 2011 was considered more appropriate. This reduces the regulatory burden on vehicle operators and manufacturers and aligns with the implementation date for the EC directive on vehicle lighting, 76/756/EC, as amended.

In addition we must consider whether it is still necessary to mandate the fitment of rear marker plates on goods vehicles fitted with conspicuity marking tape. Rear marker plates are intended to serve the same function as conspicuity marker tape so there appears to be no need to mandate both, however the optional use of rear making plates in addition to conspicuity markings can still be permitted. We must also decide whether to update RVLR to require rear marker plates, when fitted, to comply with the latest technical specifications set out in UNECE Regulation 70.01. This would align with the latest requirements in R48.

The format of the conspicuity markings are shown in Annex A. The proposals require a full contour marking on the vehicle's rear, i.e. horizontal and vertical markings to outline the shape of the vehicle, and partial contour markings on the side. Partial contour markings consist of a horizontal line showing the length of the vehicle and "tick" marks showing the upper corners of the vehicle. If a vehicle has rear marker plates fitted which comply with UNECE Regulation 70.01 these can be counted as contributing to the rear contour marking. Marker plates approved to UNECE Regulation 70.00 do not count towards the conspicuity marking.

4. Rationale for government intervention

Large vehicles that are either stationary or moving relatively slowly compared with the speed of following traffic, represent a traffic hazard and a possible cause of accidents. Similarly, large vehicles crossing a stream of traffic (slowly) also present a hazard for drivers who do not accurately perceive their size or speed.

It has been estimated by the Transport Research Laboratory (TRL) that each year in Great Britain 30-34 car occupants are killed in collisions with the rear of HGVs and 40-44 are killed in collisions with the side of HGVs (Robinson, 1994). In 2005 (latest available figures) in Great Britain there were 7 fatal and 25 serious accidents involving HGVs of 7.5t or over, hit in the rear or side, in rainy daylight conditions, and 40 fatal and 138 serious in fine or rainy conditions during the hours of darkness.

Accident data suggests that large trucks are over-represented in fatal accidents. In 2005 Heavy goods vehicles represented about 1.3% of the vehicles on UK roads yet they resulted in 16% of fatal casualties caused by two vehicle accidents. However HGVs travel on average 6 times the average distance travelled per year by cars. Similar patterns have been found in Europe and America.

In the early 1980s the Motor Industry Research Association (MIRA) undertook a two year study of commercial vehicle accidents. Of the 200 accidents recorded and analysed, 26 were considered to be conspicuity related; defined as those accidents which 'might have been lessened in severity or eliminated altogether had another road user seen the commercial vehicle earlier'. Of these 26 accidents, half (equivalent to 6.5% of the total sample) occurred in conditions of poor visibility (twilight or night) where improvements to truck conspicuity might have helped.

Some of these accidents can be accounted for by failures in driver perception such as failure to see the vehicle, failure to recognise it and failure to understand its speed characteristics. All three factors are associated with a failure to adjust vehicle speed in sufficient time. These accident statistics illustrate the current situation and if there is no government intervention, i.e the 'do nothing' option is chosen, accidents figures in relation to conspicuity issues are unlikely to be reduced.

5. Consultation

The following stakeholders have been consulted for technical advice in the preparation of this report;

- Freight Transport Association (FTA)
- Road Haulage Association (RHA)
- The Vehicle & Operator Services Agency (VOSA)
- Retro reflective tape manufacturers and fitters

A formal public consultation was carried out in 2005. Over 75% of responses favoured the introduction of conspicuity markings however the trade associations representing a significant number of vehicle operators were opposed to mandatory fitment of the markings.

A statutory consultation on a draft Statutory Instrument took place between July and October 2008 and 68% of respondents supported the proposed legislative amendments to introduce conspicuity markings.

6. Options for achieving the policy objectives

6.1 Option 1

Do nothing. The use of Conspicuity marking tape would be optional, Retro-reflective marker plates approved to UNECE Regulation 70.00 would continue to be mandatory on large goods vehicles.

6.2 Option 2 (See Annex A figures 1, 2a & 2b)

Require goods vehicles of the following categories registered from 10 July October 2011 to be fitted with conspicuity marking tape in accordance with UNECE Regulation 48.03 paragraph 6.21:

On the rear of the vehicle:

full contour marking on vehicles exceeding 2,100 mm in width of the following categories:

Goods vehicles with a gross vehicle weight exceeding 7.5 tonnes (ECE Category N2 and N3) (with the exception of chassis-cabs, incomplete vehicles and tractors for semi-trailers)

Trailers with a gross vehicle weight exceeding 3.5 tonnes

On the side of the Vehicle:

partial contour marking on vehicles exceeding 6,000 mm in length (including the drawbar for trailers) of the following categories:

Goods vehicles with a gross vehicle weight exceeding 7.5 tonnes (ECE Category N2 and N3) (with the exception of chassis-cabs, incomplete vehicles and tractors for semi-trailers)

Trailers with a gross vehicle weight exceeding 3.5 tonnes

In addition the existing requirements for rear marker plates will be amended to require them to comply with UNECE Regulation 70.01

6.3 Option 3 (See Annex A Figures 1, 2a, 2b & 2c)

As option 2 but the use of retro-reflective rear marking plates would be made optional on vehicles fitted with conspicuity marking tape.

Conspicuity markings perform the same safety function as retro-reflective marker plates so there appears to be no need to require both. This option represents a cost saving to vehicle operators who would otherwise need to purchase conspicuity tape and rear marker plates.

7. Risks

The primary risk associated with the proposed regulatory change is that the tape does not have the intended effect. A cost/benefit assessment has been undertaken as a preparatory activity, to estimate the potential effects of fitting retro reflective tape on UK heavy vehicles, and the results are presented in this Impact Assessment. Due to a lack of UK research, the effect of the intervention on UK accident figures was calculated by applying research findings from studies conducted in America and it is recognised that there is a risk that research findings from America may not translate to the UK situation.

Changes to drivers' visual behaviour/attention may result from the proposal, whereby making conspicuity marking tape compulsory will lead to distraction related accidents.

Drivers of HGVs may over-estimate the visibility of their vehicles with the addition of the retro reflective tape. This may be problematic because regular vehicle cleaning is needed to maintain the benefit of the retro reflective tape.

8. Compliance and enforcement

Enforcement will be a matter for the existing enforcement agencies i.e. police and VOSA. It may be possible to include a check in the annual HGV/PSV road worthiness test although this will add to the cost of the proposals (refer to section 9).

9. Costs and benefits

9.1 Sectors and groups affected

The businesses directly affected by these measures would be the owners and operators of commercial vehicles in the freight haulage sector. Costs falling upon vehicle owners and operators are likely to be passed on to consumers as with any other operating cost.

Other road users and society as a whole will also benefit in terms of reduced accident and related costs.

Groups that will benefit significantly are manufacturers, suppliers and fitters of retro reflective tape.

9.2 Analysis of cost benefits

Costs and Benefit estimates are based on the following reports:

- "Assessment of the Safety benefit of retro reflective markings on HGVs and buses" by C Lawton, J Richardson, R Welsh 2005, Loughborough University
- The Effect of Rear Markings on Rear Impact Accidents Involving Heavy Goods Vehicles, 1976, TRL
- Road Casualties Great Britain 2005

9.2.1 Costs

Policy Option 2

Table 1 presents the estimated costs associated with initial fitting of different retro reflective tape patterns to new vehicles.

Marking Type	Line Markings	Contour Markings
Materials	£86	£228
Labour	£80	£160
Total	£186	£388

Table 1 Cost of materials and installation

It is estimated that approximately 35,821 HGVs with a GVW exceeding 7.5 tonnes are registered each year. Approximately 22,997 of these will only be able to be fitted with line markings, the remaining 12,824 will be able to be fitted with contour markings. This gives an expected annual cost to mark newly registered vehicles of around £8,793,214.

Since retro reflective materials have an average life of seven years, replacement costs will be incurred after this time. Replacement costs will include a slight increase in labour costs due to increased time required to remove old tape and prepare the surface. There will be additional off road costs, see Annex B table 7. It can be expected that the majority of vehicles will need the markings replaced at least once during their working life.

Costs regarding enforcement are anticipated to be small as checks on compliance can be conducted as part of the current vehicle enforcement checks made by the police and VOSA. In addition it may be possible to include a check in the annual test. If 10,000 vehicles were

checked for compliance during roadside inspections each year the enforcement costs would be around £13,000 assuming that a vehicle inspector would take approximately 2 minutes to make a decision as to the state of repair of the retro reflective markings.

There will be no additional administrative burdens on vehicle manufacturers and operators. Those manufacturers who approve vehicles to UNECE Regulation 48 will continue to do so and so will incur the same administrative costs under these new proposals. Those who chose not to approve to Regulation 48 may continue to do so as long as this is permitted by other relevant regulations.

Policy Option 3

The costs associated with option 3 are expected to be the same as for option 2 except for some additional savings to vehicle operators who chose not to continue to fit retro-reflective rear marker plates to their vehicles at a cost of between £30 and £40. Currently these marker plates must be fitted to certain HGVs. If their use was made optional on vehicles fitted with conspicuity marking tape, this would represent a potential source of cost saving for vehicle operators. If all operators chose not to fit these marker plates then the savings would reduce the annual cost for operators by at least £1m. A saving of £30 per vehicle would mean that the average net annual cost of option 3 would be approximately £16,164,524: significantly lower than the cost of option 2 (around £17,237,073 on average).

9.2.2 Benefits

Policy options 2 and 3 are both predicted to result in a similar reduction in accidents and injuries, since fitting conspicuity tape is expected to prevent equal numbers of accidents occurring with and without additional rear marker plates.

Casualty savings relate to;

- Reduction in human costs which reflect the non resource element of the cost i.e. the pain and distress suffered by accident victims, their relatives and friends, and in the case of fatalities, the intrinsic loss of enjoyment of life, beyond the consumption of food and services.
- Reduction in lost output
- Reduction in medical costs

Accident related savings relate to;

- Damage to vehicle or vehicles involved and to other third party members. Damage costs include related costs such as engineers and assessor fees, the amount of excess on the insurance policy and payment made to loss of use of the vehicle and for hire of a replacement vehicle.
- Insurance and administration costs.
- The cost of police time in dealing with and investigating the accident. The costs also take account of the time spent by administrative support teams.

Table 2 shows the estimated savings in the first year after requiring all newly registered Goods vehicles with a GVW exceeding 7.5 tonnes to be fitted with conspicuity markings. These calculations assume that conspicuity markings will reduce relevant accidents by approximately 8% during the daytime and 25% at night.

	Estimated number of accidents prevented per year	Cost per accident	Estimated accident savings in first year
Fatal	1.44	£1,881,915	£2,708,963
Serious	5.34	£218,232	£1,166,251
Slight	30.37	£22,400	£680,302
Total estimated savings in year 1			£4,555,515

Table 2 accident savings in first year of compliance by new vehicle registrations

The accident reduction benefits will increase steadily over the appraisal period because the requirement to fit conspicuity markings is in effect phased in. Over time an increasing proportion of the total vehicle fleet will become equipped with the conspicuity tape and this is expected to lead to further reductions in conspicuity related accidents. See Annex B for further details.

9.3 Summary of costs and benefits

The proposed measures are intended to reduce the number of accidents caused by drivers failing to see and respond to larger stationary or slow moving HGVs. In such accidents, the injuries and costs of vehicle repair are more likely to reside with the striking vehicle since it is likely to be the lighter vehicle. While the costs of implementing the measure will fall on the owners of the struck vehicle in the first instance, the costs are likely to be passed on to customers and consumers as with any other operating cost.

The overall cost benefits for fitting retro reflective markings to all new HGVs have been calculated for a period spanning 12 years (the average life of a vehicle), see Annex B. This is based on the following assumptions:

- Retro reflective tape has a life span of 7 years and is replaced at this time;
- Vehicle parc figures will remain constant (number of newly registered vehicles = number of decommissioned vehicles each year);
- Newly registered vehicle numbers will remain constant at figures based on average figures of 2000-2003; and,
- Accident figures estimated for 2005 are sustained for the following 12 years (based on costs that would occur if tape not introduced and the monetary value for these is constant at today's rates).
- All eligible vehicles are equipped with the markings from the introduction date

Based on these assumptions, a positive net benefit is achieved two years after requiring contour markings to be fitted to HGV exceeding 7.5t and their trailers for both options 2 and 3 (refer to Annex B for a more detailed profile of costs and benefits). Table 3 shows the present value of the overall benefits over 12 years.

	Policy option 2	Policy options 3
Costs	£164,165,669	£152,595,905
Benefits	£297,045,127	£297,045,127
Overall benefit	£132,879,458	£144,449,222

Table 3. Costs and Benefits of policy options over 12 years in 2007 prices and values

The exact scale of accident benefits that will derive from the proposals are subject to some uncertainty. If fitting conspicuity tape turns out to be ten percent more, or less, effective at avoiding road accidents than is assumed above then the present value of the net benefit from option 2 will range between £103m to £163m, whilst the actual net benefit arising from option 3 could vary from £115m and £174m over a twelve year period (in 2007 prices).

A further complication is the introduction of EC Whole Vehicle Type Approval for new vehicle types. This becomes mandatory for new complete vehicle types from October 2010; such vehicles will need to be correctly marked with tape from this date.

10. Small firm impact test

The total fleet of goods vehicles with a GVW exceeding 7.5 tonnes and trailers is estimated to be 402,701¹.

In total there are 100,000 operators of goods vehicles in the UK². Micro operators with use of only one vehicle make up 57,900 of the total number. There are 36,100 small operators who have between 2 and 10 vehicles, and 5600 medium sized vehicle operators with between 11 and 100 goods vehicles. The number of large operators, with fleets over 100 vehicles, is just 275. To calculate the annual cost per organisation by size, it is assumed that all operators replace vehicles and trailers at the same rate that was estimated for the national vehicle parc, i.e. 8.9% of trailers and vehicles replaced each year. For policy option 3 the cost for micro-size operators is forecast to be around £33, while small operators will incur costs of about £199 per business. Medium sized businesses are expected to face costs of approximately £1,838 whilst the expense for the largest few vehicle operators will be £9,905.

It is expected that smaller operators will face lower costs from the proposal than the figures above suggest because of the tendency for smaller businesses to operate vehicles that are older, and therefore more likely to be beyond the scope of the requirements, than operators of large fleets on average. However the proposal is anticipated to have a proportionately greater impact on small firms, and small operators may be less able to pass on the costs of the proposal than companies running large vehicle fleets.

Manufacturers of rear marker plates may suffer if we make their use optional. It is not possible to say how many vehicle operators will cease to use them altogether and how many will use a combination of conspicuity marking tape and rear marker plates. However the potential cost savings to vehicle operators through using only one conspicuity aid suggest that the majority would stop using rear marker plates.

11. Competition assessment

A competition assessment has been carried out. The main markets affected have been identified as HGV owners and operators of commercial vehicles in the freight haulage sector. The results of the assessment are that the proposal is unlikely to have a significant detrimental effect on the market. The costs resulting from the implementation of any of the options for fitting line or contour markings to HGVs are small when compared with annual operating costs.

Manufacturers of retro reflective tape are also likely to be affected. The introduction of the proposal will significantly increase demand for retro reflective tape. This will increase sales in

¹ Assessment of the Safety benefit of retro reflective markings on HGVs and buses, Loughborough University, May 2005.

² Road Freight Statistics 2006, DfT publication, September 2007.

http://www.dft.gov.uk/162259/162469/221412/221522/222944/285840/01_Road_Freight_Stats_2006_1.pdf

the UK and the turnover of UK manufacturers and suppliers but it may also result in other companies entering this market. These may be new UK manufacturers or suppliers of imported goods. Currently there are three main UK manufacturers. However it is unlikely that this will have a detrimental affect on current manufacturers given the predicted increase in overall sales.

12. Enforcement, sanctions and monitoring

The enforcement of the proposed regulations can be provided by extending existing procedures that allow VOSA to enforce the law on vehicles to ensure that they comply with legal standards and regulations. This would involve:

1. extending the scope of the HGV annual test to cover the correct fitting of conspicuity markings.
2. the enforcement of the new regulations by way of observation and road-side inspection by VOSA personnel in mobile patrol vehicles
3. the provision of training and advice for commercial operators

Sanctions would comprise the failure to issue a test certificate to vehicles that fail the test and this may include the imposition of a fine (to be determined) for vehicles found to be operating with absent or non-compliant retro-reflective tape.

Monitoring would comprise the collection of routine statistics regarding the numbers of vehicles failing annual inspection and the numbers of vehicles identified as being non-compliant in road side checks.

A review of the regulation's effectiveness would require the collection of detailed accident data regarding the involvement of relevant vehicles. Current data collection instruments (STATS 19) are not suitable for this task. An alternate, and complementary, approach would be the continuance of on-scene accident investigation research programmes such as the On the Spot accident investigation project currently funded by the DfT. Only such detailed accident investigations can provide the causal information necessary for the determination of the efficacy of the safety measure. It should be noted that data collection would need to continue for some years in order that sufficient numbers of accidents were available for reliable analysis.

13. Race, Disability and Gender Issues

The policy options proposed are not expected to have a disproportionate impact on individuals based on their race, gender or any disability.

14. Summary and recommendations

UK accident data suggests that a measure that is restricted to goods vehicles with a GVW exceeding 7.5 tonnes and their trailers (Option 3) could reasonably be expected to provide most of the potential benefit of the change in regulation. The benefits are expected to exceed the costs in the 3rd year of implementation.

Over 12 years the benefits are expected to be around £300 million. The costs are likely to be around £150 million compared to £164 million for option 2. Thus Option 3 is preferred because it is expected to yield a net benefit to society of approximately £144m in present value terms, whilst option 2 would likely produce lower social benefits of around £133m.

Large goods vehicles in the UK must currently be fitted with retro-reflective rear marker plates approved to UNECE Regulation 70.00. These serve the same purpose as conspicuity marker tape, there is therefore a strong case to allow their fitment to be optional when conspicuity marker tape is used. There is also an improved technical specification for these plates, UNECE Regulation 70.01, and we should take the opportunity to ensure that, where fitted, marker plates

meet the latest standards aligning with existing European standards and ensuring the maximum performance of these plates.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

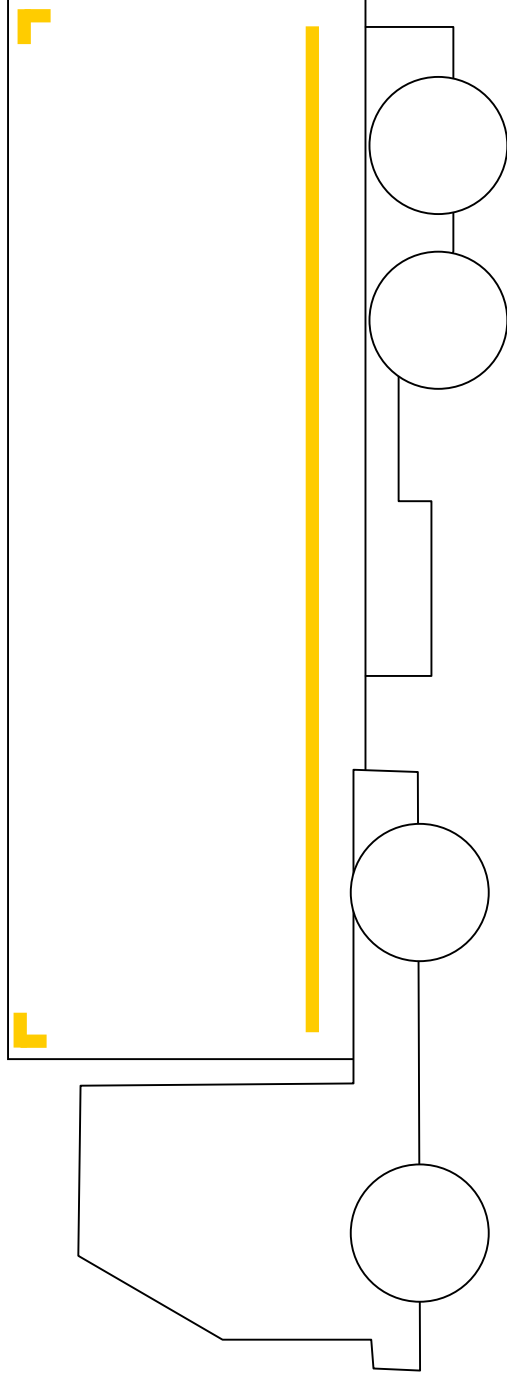
Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	No	No
Rural Proofing	No	No

Annexes

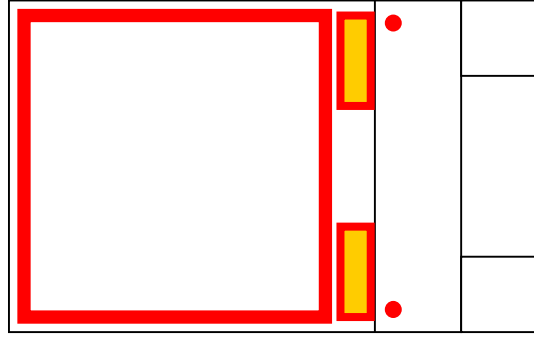
Annex A
Examples of conspicuity markings

Figure 1: Side Markings (Partial Contour)

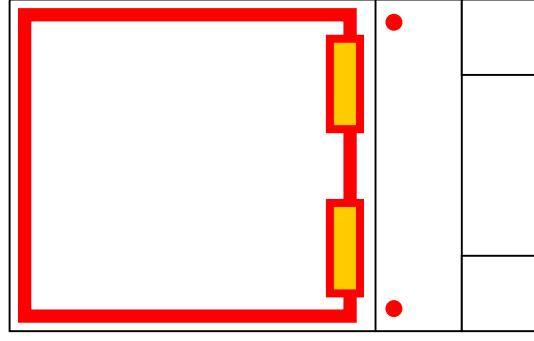


NB. Dotted line marking is also permitted.

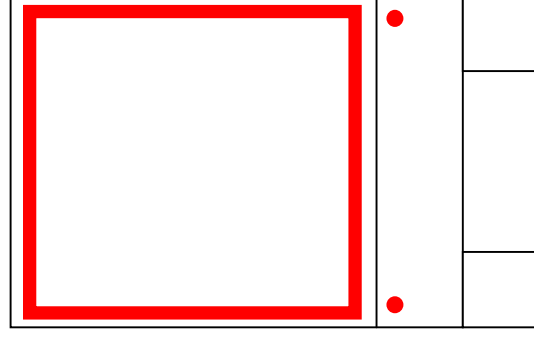
Figure 2: Rear Markings (Full Contour)



a) full contour + rear marker plates
No rear



b) full contour + rear marker plates
contributing to contour



c) full contour.
Marker plates

Policy Option 2 requires format a) or b)
Policy Option 3 require format a), b) or c)

Annex B

Contour markings cost benefit calculations

The main sources of data used in these tables are:

- "Assessment of the Safety benefit of retro reflective markings on HGVs and buses" by C Lawton, J Richardson, R Welsh 2005, Loughborough University
- The Effect of Rear Markings on Rear Impact Accidents Involving Heavy Goods Vehicles, 1976, TRL
- Road Casualties Great Britain 2005

		Severity of accident			number of accidents
Daylight/Darkness	Weather conditions	Fatal	Serious	Slight	Total
Daylight	Fine	75	310	2,176	2,561
	Rain	7	25	273	305
	Total	82	335	2,449	2,866
Darkness	Fine	34	113	480	627
	Rain	6	25	117	148
	Total	40	138	597	775

Table 1 Accidents involving a side or rear impact into a HGV with a GVW of 7.5t or over. (Road Casualties Great Britain 2005.)

	Potential Benefits of Conspicuity Markings	Existing Benefits of Rear Marker Plates ³
Daytime	8.15%	0%
Night time	25.1%	1.8%

Table 2 Potential accident reduction of conspicuity markings and rear marker plates.

	Fatal	Serious	Slight	Total
Potential Accidents prevented during day light (Assuming whole vehicle par fitted with conspicuity markings)	6.68	27.30	199.59	233.58
Potential Accidents prevented during darkness (Assuming whole vehicle par fitted with	9.49	32.74	141.65	183.89

³ Refers to the accidents that are already avoided in the UK due to the widespread fitting of rear marker plates. These markings are not compulsory in the USA where the study was carried out, so the findings of that research would overstate the potential benefits of conspicuity tape for the UK unless they are modified by such an amount.

conspicuity markings)				
Total	16.17	60.05	341.24	417.46
Total in first year (Assuming 8.9% of vehicle parc are newly registered and fitted with conspicuity markings)	1.44	5.34	30.37	37.15

Table 3 Potential reduction in accidents if newly registered vehicles are fitted with conspicuity markings⁴.

	Accident Type		
	Fatal	Serious	Slight
Year 1	£1,756,788	£203,722	20911
Year 2	£1,734,722	£201,163	20648
Year 3	£1,712,933	£198,636	20389
Year 4	£1,687,115	£195,643	20133
Year 5	£1,661,686	£192,694	19880
Year 6	£1,636,640	£189,789	19630
Year 7	£1,611,972	£186,929	19383
Year 8	£1,587,676	£184,111	19140
Year 9	£1,563,746	£181,336	18900
Year 10	£1,540,176	£178,603	18662
Year 11	£1,516,962	£175,911	18428
Year 12	£1,494,097	£173,260	18196

Table 4 Net present values of the cost of prevention per accident in 2007 prices. Based on figures from 2005 Highways Economic Note No.1 document uplifted in line with forecast nominal per capita GDP growth and discounted to 2007.

	Accident Type			Total
	Fatal	Serious	Slight	
Year 1	£2,528,845.95	£1,088,707.79	£635,069.20	£4,252,622.00
Year 2	£4,994,164.99	£2,150,065.45	£1,254,184.70	£8,398,415.15
Year 3	£7,397,154.56	£3,184,589.76	£1,857,647.30	£12,439,391.62
Year 4	£9,714,214.89	£4,182,120.29	£2,439,530.53	£16,335,865.71
Year 5	£11,959,747.24	£5,148,857.09	£3,003,450.89	£20,112,054.40
Year 6	£14,135,380.91	£6,085,501.22	£3,549,817.35	£23,770,699.47
Year 7	£16,242,714.32	£6,992,740.59	£4,079,031.85	£27,314,486.00
Year 8	£18,283,310.14	£7,871,248.69	£4,591,486.65	£30,746,045.47
Year 9	£20,258,702.05	£8,721,685.67	£5,087,566.50	£34,067,954.93
Year 10	£22,170,393.41	£9,544,698.66	£5,567,649.73	£37,282,741.11
Year 11	£24,019,853.65	£10,340,919.93	£6,032,104.47	£40,392,878.05
Year 12	£24,985,792.11	£10,731,791.91	£6,214,388.14	£41,931,972.81

⁴ In the UK it is presumed that we will not see the full benefits of conspicuity marking plates, i.e 8.15% and 25.1% accident reduction during the day and night respectively, due to the existing benefits that are achieved through the use of rear marking plates (See table 2)

Table 5 Present value (in 2007 prices and values) of potential benefits that will be realised if the accident reductions shown in table 3 are achieved.

	Costs to fit to a new vehicle				
	Line marking		Contour marking		Marker plates
	materials	labour	materials	labour	materials
Year 1	£80.28	£74.68	£212.84	£149.36	£28.01
Year 2	£79.70	£74.14	£211.30	£148.28	£27.80
Year 3	£79.12	£73.60	£209.77	£147.20	£27.60
Year 4	£78.55	£73.07	£208.25	£146.14	£27.40
Year 5	£77.98	£72.54	£206.74	£145.08	£27.20
Year 6	£77.42	£72.01	£205.24	£144.03	£27.01
Year 7	£76.85	£71.49	£203.75	£142.98	£26.81
Year 8	£76.30	£70.97	£202.28	£141.95	£26.62
Year 9	£75.74	£70.46	£200.81	£140.92	£26.42
Year 10	£75.20	£69.95	£199.36	£139.90	£26.23
Year 11	£74.65	£69.44	£197.91	£138.88	£26.04
Year 12	£74.11	£68.94	£196.48	£137.88	£25.85

Table 6 Present values of average cost of fitting conspicuity markings and marker plates to a new vehicle. This assumes an inflationary rise of 2.75% per annum, in line with future GDP deflator projections.

	Replacement costs					
	Line marking			contour marking		
	materials	labour	off-road costs	materials	labour	off-road costs
Year 8	£76.30	£106.46	£94.04	£202.28	£212.92	£188.08
Year 9	£75.74	£105.69	£93.36	£200.81	£211.38	£186.72
Year 10	£75.20	£104.92	£92.68	£199.36	£209.85	£185.37
Year 11	£74.65	£104.16	£92.01	£197.91	£208.33	£184.02
Year 12	£74.11	£103.41	£91.34	£196.48	£206.82	£182.69

Table 7 Present values of average cost of replacing conspicuity markings to a vehicle. Based on an estimated lifespan of 7 years for the markings and an inflationary increase of 2.75% per annum for all costs, in line with future GDP deflator projections.

	Number of vehicles
Vehicles suitable for line Marking	22,997
Vehicles suitable for contour Marking	12,824

Table 8 Estimated number of new vehicles requiring marking each year

Vehicle type	Costs	Benefits	Cumulative overall monetary cost or benefit
Year 1	£8,208,559	£4,252,622	-£3,955,937
Year 2	£8,149,077	£8,398,415	-£3,706,599
Year 3	£8,090,026	£12,439,392	£642,767
Year 4	£8,031,402	£16,335,866	£8,947,230
Year 5	£7,973,204	£20,112,054	£21,086,081
Year 6	£7,915,427	£23,770,699	£36,941,353
Year 7	£7,858,069	£27,314,486	£56,397,770
Year 8	£21,903,126	£30,746,045	£65,240,690
Year 9	£21,744,407	£34,067,955	£77,564,238
Year 10	£21,586,839	£37,282,741	£93,260,140
Year 11	£21,430,413	£40,392,878	£112,222,605
Year 12	£21,275,120	£41,931,973	£132,879,458

Table 9. Present value (2007 prices and values) of costs and benefits of fitting tape to newly registered vehicles over 12 year period (Option 2).

Vehicle type	Costs	Benefits	Cumulative overall monetary cost or benefit
Year 1	£7,205,381	£4,252,622	-£2,952,759
Year 2	£7,153,168	£8,398,415	-£1,707,511
Year 3	£7,101,333	£12,439,392	£3,630,547
Year 4	£7,049,874	£16,335,866	£12,916,538
Year 5	£6,998,788	£20,112,054	£26,029,804
Year 6	£6,948,072	£23,770,699	£42,852,431
Year 7	£6,897,724	£27,314,486	£63,269,193
Year 8	£20,949,740	£30,746,045	£73,065,499
Year 9	£20,797,930	£34,067,955	£86,335,523
Year 10	£20,647,221	£37,282,741	£102,971,044
Year 11	£20,497,603	£40,392,878	£122,866,319
Year 12	£20,349,070	£41,931,973	£144,449,222

Table 10 Present value (2007 prices and values) of costs and benefits of fitting tape to newly registered vehicles over 12 year period (Option 3).

Summary: Intervention & Options

Department /Agency: Department for Transport	Title: Impact Assessment of the Road Vehicles Lighting Regulations - Covering Minor amendments	
Stage: Implementation	Version: 2	Date: 21 October 2009
Related Publications: Public consultation		

Available to view or download at:

<http://www.dft.gov.uk/consultations/archive/2008/regulationsamendments/>

Contact for enquiries: Adrian Burrows

Telephone: 020 7944 2105

What is the problem under consideration? Why is government intervention necessary?

RVLR is broadly similar to UNECE Regulation 48 however a number of differences exist as a result of updating Regulation 48 in line with technical progress. RVLR should be similarly updated.

Operators of goods vehicles find it difficult to determine whether requirements on the use of position lights on vehicles parked at the road side apply to their vehicle. Amendments are needed to simplify the situation.

What are the policy objectives and the intended effects?

Align RVLR with certain provisions in Regulation 48, removing differences and simplifying the design process of their vehicles.

Help vehicle operators to understand whether lighting requirements for parked vehicles apply to them, reducing the risk of non-compliance with the law.

What policy options have been considered? Please justify any preferred option.

There is one available option:

Update certain provisions in RVLR to align with the equivalent requirements in Regulation 48 and clarify requirements for using lights on goods vehicles when parked on the road at night.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

These amendments align with existing European regulations or simplify existing regulations, no further review is necessary

Ministerial Sign-off For Implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul ClarkDate: 7th December 2009

Summary: Analysis & Evidence

Policy Option: 2	Description: Update RVL R in line with UNECE Regulation 48 and amend requirements for the use of parking lamps
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COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' Proposals are permissive and so there will be no additional costs to vehicle manufacturers
	One-off (Transition)	Yrs	
	£		
	Average Annual Cost (excluding one-off)		
	£ 0		
Total Cost (PV)			£ 0
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups'
	One-off	Yrs	
	£		
	Average Annual Benefit (excluding one-off)		
	£ 0		
Total Benefit (PV)			£ 0
Other key non-monetised benefits by 'main affected groups'			
Aligns UK regulations with their European equivalents and clarifies the law on parking goods vehicles at night on the road.			

Key Assumptions/Sensitivities/Risks No major risks, this aligns with existing European regulations that are already accepted in the UK.

Price Base Year 2007	Time Period Years 12	Net Benefit Range (NPV) £ 0	NET BENEFIT (NPV Best estimate) £ 0
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What is the geographic coverage of the policy/option?	UK
On what date will the policy be implemented?	December 2009
Which organisation(s) will enforce the policy?	VCA, VOSA, Police
What is the total annual cost of enforcement for these organisations?	£ 0
Does enforcement comply with Hampton principles?	Yes
Will implementation go beyond minimum EU requirements?	No
What is the value of the proposed offsetting measure per year?	£ 0
What is the value of changes in greenhouse gas emissions?	£ 0
Will the proposal have a significant impact on competition?	No
Annual cost (£-£) per organisation (excluding one-off)	Micro Small Medium Large
Are any of these organisations exempt?	No No N/A N/A

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)
Increase of £ 0	Decrease of £ 0	Net Impact £ 0

Kev:	Annual costs and benefits: Constant Prices	(Net) Present Value
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1. Title and effect of measure

Amendment of the Road Vehicles Lighting Regulations 1989 (S.I. 1989/1796) (RVLR) - update the regulation in line with certain provisions in UNECE Regulation 48 and clarify the requirements for use of lights by large goods vehicles when parked on the road at night.

2. Objective

To remove differences between UK and European legislation on the installation of lighting on motor vehicles, providing manufacturers with a common set of requirements.

This amendment also simplifies the rules on the use of lights on goods vehicles when parked on the roadside at night.

3. Background

The RVLR, and its amendments, set out the requirements for the installation and use of lamps on motor vehicles used in the UK. As an alternative, vehicles may be approved to the equivalent European regulations: UNECE Regulation 48 or European Directive, 76/756/EEC which set out lighting installation requirements that are accepted throughout Europe.

Experts from the Department are involved in the development of the UNECE Regulations and European Directives, together with experts from other countries, and so the requirements are broadly similar to those in RVLR. However, a number of small differences exist which may disadvantage manufacturers who choose to work to the UK national regulations rather than the European alternatives. It is therefore necessary to remove these differences by aligning key parts of the RVLR with UNECE Regulation 48.

RVLR also controls the use of vehicle lighting and requires the position lights to remain switched on for goods vehicles the unladen mass of which exceeds 1,525 kg when parked at the road side during the hours of darkness. This is intended to make potentially large vehicles parked at the roadside more visible to other drivers.

It is not always easy for operators to determine the unladen mass of their vehicles. It will often depend on the options and additional equipment fitted and members of the haulage industry have requested that gross vehicle mass (GVM) is used instead. GVM is specified by the vehicle manufacturer and remains unchanged for a given vehicle regardless of any additional equipment fitted. GVM is the maximum design weight of the vehicle and the vehicle operator can find it marked on the statutory plate fitted to the vehicle.

Using GVM to determine when the position lights must be left switched on when the vehicle is parked would reduce confusion and make it easier for operators to comply with the law.

The proposed changes to RVLR are:

3.1 *Direction Indicators (RVLR Schedule 7)*

Permit category 6 side indicators in addition to category 5 to be installed on goods vehicles and buses. (Aligns with UNECE Regulation 48 paragraph 6.5.3)

3.2 *Stop lamps (RVLR Schedule 12)*

Reduce the visibility angle above the horizontal from 15° to 5° if the lamp is fitted at a height exceeding 2,100 mm. (Aligns with UNECE Regulation 48 paragraph 6.7.5)

3.3 Rear Retro-reflectors (RVLR Schedule 18)

Reduce the minimum mounting height from 350mm to 250mm and Increase the maximum mounting height from 1,200mm to 1,500mm. (Aligns with UNECE Regulation 48 paragraph 6.14.4.2).

Reduce the visibility angles above and below the horizontal plane from 15° to 10°. (Aligns with UNECE Regulation 48 paragraph 6.14.5)

3.4 Front Retro-reflectors (RVLR Schedule 21)

Reduce the minimum mounting height from 350mm to 250mm. (Aligns with UNECE Regulation 48 paragraph 6.16.4.2)

Reduce the visibility angles above and below the horizontal plane from 15° to 10°. (Aligns with UNECE Regulation 48 paragraph 16.16.5)

3.5 Parking Lights (RVLR Regulation 24)

Vehicles with a gross vehicle mass exceeding 2,500 kg should not be left parked at the roadside during the hours of darkness unless position lights are left on. (replaces requirement that vehicles with an unladen weight exceeding 1,525 kg should not be left parked at the roadside during the hours of darkness unless position lights are left on)

4. Rational for Government Intervention

RVLR is out of step with the latest amendments to UNECE Regulation 48 and so it is necessary to align RVLR with this regulation to eliminate discrepancies.

Requirements for the use of position lights on parked goods vehicles at night are not clear and need to be redrafted to make them easier to apply in practice.

5. Consultation

These changes have been discussed with the motor industry who are supportive of the changes.

Representatives of the haulage industry requested that the lighting requirements for parked goods vehicles are simplified.

A public consultation was carried out between July and October 2008. This identified support for aligning the identified measures with UNECE Regulation 48. While changes to the use of lights on parked vehicles was supported, some respondents called for the weight limit to be raised to 3,500 kg. However, no information was provided to support this change.

6. Options for achieving the Policy Objectives

Align RVLR with UNECE Regulation 48 as proposed above and amend the parking requirements in RVLR such that all goods vehicles with a GVM exceeding 2,500 kg must be left with their parking lights switched on when parked at the roadside at night. This will remove many discrepancies between RVLR and Regulation 48 and provides manufacturers access to the same technical requirements whether or not they approve vehicles to European regulations or RVLR. It also simplifies the requirements for using lights on goods vehicles parked at the road side. This benefits both operators of goods vehicles who will know what requirements apply to their vehicle and enforcement agencies who will also be able to determine whether a vehicle is correctly parked.

7. Risk

There are no major risks associated with the changes set out in paragraphs 3.1 to 3.4 to RVLRL. RVLRL and UNECE Regulation 48 are already similar and the proposed changes are minor. Compliance with UNECE Regulation 48 is already accepted in the UK and throughout the rest of Europe so the changes to RVLRL do not introduce requirements that are any more or less restrictive than those already in use.

If the proposed method to determine when position lights should be used on parked goods vehicles does not align closely with the existing method, there is the risk that more vehicles than originally intended are covered by the rule. A survey of popular commercial vehicles with GVM's exceeding 2,500 kg found kerb weights (i.e. unladen mass) between 1,634 kg and 2,045 kg. No complete vehicles were found with kerb weights below 1,525 kg. This indicates that there will not be an increase in the number of vehicles affected. Some chassis cabs and incomplete vehicles do have kerb weights below 1,525 kg, however these vehicles usually have additional body work and equipment added before they are used commercially and it is expected that this would take them above the 1,525 kg threshold.

It is not possible to select a GVM which exactly corresponds to an unladen mass of 1,525 kg for all vehicles. Choosing a GVM value of 2,500 kg will mean that some vehicles with an unladen mass exceeding 1,525 kg will no longer be required to leave their lights on when parked at night. However the largest vehicles, for which the risks are highest, will continue to need to illuminate lights when parked at night. Choosing a lower GVM value would reduce the number of vehicles that become exempt but then risk penalising some vehicles currently exempt from the lighting requirements due to their unladen mass.

8. Compliance and Enforcement

Enforcement of RVLRL is a matter for the Police and VOSA. The changes to align with UNECE Regulation 48 do not affect enforcement since they are already permitted on vehicles approved to the UNECE Regulation. Using GVW to determine which vehicles must be parked with position lights switched on at night will simplify the enforcement task. It is much easier for the enforcement agencies to determine the GVW of a vehicle than its unladen mass. This means there will be no additional enforcement costs.

9. Cost and Benefits

There are no additional costs for vehicle manufacturers. The proposed changes do not place any new restrictions on manufacturers; a vehicle which currently complies with RVLRL complies with the proposed amendments. The changes will give manufacturers who use the RVLRL the same design freedom as those who use UNECE Regulations. There are not expected to be any safety consequences from these changes since many vehicles designed to the European regulations on which these proposals are based are already in use on the road with no reported problems.

The changes to the use of lights on goods vehicles parked at night will clarify the regulations and so benefit both operators and enforcement agencies. The GVM value was chosen to align closely with the existing criteria without extending the scope. It is not known how many operators fail to correctly use their lights due to confusion over the applicability of the regulations. However, by simplifying the requirements more operators will know whether or not they must leave their lights switched on which is expected to lead to increased compliance and improved road safety.

None of the measures being introduced will increase the enforcement costs associated with ensuring compliance with RVLRL. There will also be no additional administrative burdens placed

on industry to comply with these requirements since the process of designing and approving vehicles will remain unchanged.

10. Small firm impact test

There is no increase in burden on small firms. Many already design vehicles to UNECE Regulation 48 and so the changes will have no impact. For those who do not approve their vehicles to Regulation 48 these changes will allow them to compete on level terms with those who do.

The changes to the lighting requirements for goods vehicles parked at night will not affect more small firms than is currently the case so there will be no additional burdens on small companies.

11. Competition assessment

As the proposed amendments do not introduce additional requirements, it will not result in any mandatory increase cost on the vehicle manufacturers or operators. The associated risks are low and the measures have no significant effect on the market structure. The proposed measures still allow for a level playing field and do not put potential or existing, large or small businesses in a situation where one has an advantage over the other.

12. Enforcement, Sanctions and Monitoring

Enforcement will be handled by either the police or VOSA. These changes reduce differences between UK national legislation and European regulations and should make enforcement simpler.

13. Implementation and Delivery plan

As the intended measures are deregulatory, they can be introduced without delay. A detailed implementation plan is not necessary. However it's imperative that those affected or concerned about the proposed changes are informed of the changes to the regulation. In this case, businesses involved in lighting and retro reflective markings for vehicles will be informed of the proposed changes.

14. Summary and recommendations

RVLR is currently out of step with UNECE Regulation 48. This places manufacturers who do not approve to Regulation 48 at a disadvantage. Aligning RVLR with the UNECE Regulation will ensure all manufacturers are designing to the same requirements.

Operators of goods vehicles have difficulty applying the requirements on the use of position lights on a vehicle parked on the road side during the hours of darkness. These amendments will clarify the situation.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

Summary: Intervention & Options

Department /Agency: Department for Transport	Title: Impact Assessment of use of blue warning beacons and sirens by Mountain Rescue	
Stage: Implementation	Version: 2	Date: 21 October 2010
Related Publications: Public consultation		

Available to view or download at:

<http://www.dft.gov.uk/consultations/archive/2008/regulationsamendments/>

Contact for enquiries: **Adrian Burrows**

Telephone: **020 7944 2105**

What is the problem under consideration? Why is government intervention necessary?

Vehicles used by the Mountain Rescue services are not defined as emergency vehicles in the Road Vehicle Lighting Regulations, RVLRL, hence they may not use blue warning beacons. This is at odds with RAF Mountain rescue who carry out the same services and are permitted to use blue warning beacons. Similarly Mountain Rescue services are not permitted to use sirens as set out in the Road Vehicles (Construction and Use) Regulations, C&U.

What are the policy objectives and the intended effects?

Amend RVLRL to permit the use of blue warning beacons on emergency vehicles operated by the official Mountain Rescue services. Amend C&U to permit the use of sirens on emergency vehicles operated by the official Mountain Rescue services

What policy options have been considered? Please justify any preferred option.

The Option is to amend the definition of emergency vehicle in RVLRL to include Mountain Rescue vehicles. This will then permit such vehicles to fit and use blue warning beacons. Equivalent amendments will be made to C&U to allow the use of sirens.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? 5 years

Ministerial Sign-off For implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul ClarkDate: 7th December 2009

Summary: Analysis & Evidence

Policy Option: 1	Description: Permit mountain rescue vehicles to be fitted with blue warning beacons
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COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' Proposals are permissive and so there will be no additional costs
	One-off (Transition)	Yrs	
	£		
	Average Annual Cost (excluding one-off)		
	£ 0		
Total Cost (PV)			£ 0
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups'
	One-off	Yrs	
	£		
	Average Annual Benefit (excluding one-off)		
	£ 0		
Total Benefit (PV)			£ 0
Other key non-monetised benefits by 'main affected groups'			
Removes uncertainty over the use of blue lights and sirens by mountain rescue services.			

Key Assumptions/Sensitivities/Risks

Changes will need to be fully understood by the mountain rescue teams to prevent inappropriate use of blue warning beacons and sirens.

Price Base Year 2007	Time Period Years 12	Net Benefit Range (NPV) £ 0	NET BENEFIT (NPV Best estimate) £ 0
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What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			December 2009	
Which organisation(s) will enforce the policy?			Police	
What is the total annual cost of enforcement for these organisations?			£ 0	
Does enforcement comply with Hampton principles?			Yes	
Will implementation go beyond minimum EU requirements?			No	
What is the value of the proposed offsetting measure per year?			£	
What is the value of changes in greenhouse gas emissions?			£	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)
Increase of £ 0	Decrease of £ 0	Net Impact £ 0

Kev:	Annual costs and benefits: Constant Prices	(Net) Present Value
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1. Title and effect of measure

Amendment of the Road Vehicles Lighting Regulations 1989 (S.I. 1989/1796) (RVLR) - Covering definition of emergency vehicle and use of blue warning beacons and The Road Vehicles (Construction and Use) Regulations 1986 (SI 1986/1078).

2. Objective

To permit the use of blue warning beacons and sirens on vehicles operated by the official mountain rescue services.

3. Background

The use of blue warning beacons and sirens is carefully controlled to prevent excessive and inappropriate use. The RVLR & C&U restrict their use to emergency vehicles at the scene of an emergency or when it is necessary to indicate to other road users the urgency of the purpose for which the vehicle is being used or to warn of its presence on the road.

The definition of emergency vehicle for the purposes of RVLR (see Annex A) includes vehicles used for police, ambulance and fire and rescue service purposes. Mountain Rescue vehicles operated by the RAF are also considered to be emergency vehicles however, vehicles owned and operated by other official mountain rescue services are not.

Despite this many Mountain Rescue services use blue lights on their vehicles under the assumption that they are being used for ambulance or police purposes. In practice this solution has generally been acceptable but we are aware of instances where there have been disputes over the use of blue lights by these services and it would be for the courts to give a definitive view.

The Department has received requests to remove any doubt and amend RVLR specifically to give Mountain Rescue vehicles permission to use blue warning beacons. The report of the Transport Select Committee, printed on the 23rd March 2005, recommended that:

Official mountain rescue and lowland search vehicles operated by trained drivers should be able to use blue lights and sirens to reach incidents in the same way as RAF Mountain Rescue teams. The Government should lay amending Regulations to correct this anomaly. (Paragraph 61)

In its response the Department stated that it "will consider whether it is safe and practical to remove the Mountain Rescue "anomaly" identified by the Committee."

The use of blue lights does not automatically exempt vehicles from the need to comply with speed limits, treat red traffic lights as give way signs etc. These are covered in other pieces of legislation. Under these regulations vehicles such as those used for ambulance and police purposes are provided with certain exemptions but other vehicles defined as emergency vehicles in RVLR are not, for example RAF mountain rescue vehicles may not exceed speed limits etc. If RVLR is amended to define Mountain Rescue vehicles as emergency vehicles this would not provide them with exemptions in other traffic regulations. If these services feel there is a need for them to exceed speed limits etc. in emergency situations they would need to make a formal request to the Department so that the amendment of relevant legislation can be considered.

In considering the report of the Transport Select Committee, the Department has noted that a similar anomaly exists in the Construction and Use Regulations regarding the use of Sirens and this should be corrected at the same time.

4. Rational for Government Intervention

Current regulations appear to limit the use of blue lights and sirens on Mountain Rescue vehicles to those operated by the RAF. Both the RAF and other official Mountain Rescue services carry out similar operations and so it makes sense to extend the use of blue lights and sirens to all official Mountain Rescue services.

5. Consultation

The Mountain Rescue services have requested blue lights. This was discussed by the transport select committee where the DfT agreed to consider the matter. The Department has noted that for completeness the use of sirens on these vehicles should also be permitted.

A public consultation on the proposals was carried out between July and October 2009. All respondents who had a view on this issue supported the use of blue lights and sirens on Mountain Rescue vehicles.

6. Options for achieving the Policy Objectives

Define Mountain Rescue vehicles as emergency vehicles in RVLRL, thereby permitting the use of blue warning lights when responding to an emergency. Amend C&U to permit the use of Sirens on Mountain Rescue vehicles.

This option would clarify that Mountain Rescue services can fit blue beacons and sirens on their vehicles and use them when responding to an emergency. In the Department's view, this option is not intended to apply to vehicles owned by staff and volunteers and guidance will be issued to this effect.

Permission to use blue lights and sirens in an emergency does not provide the driver with exemption from other traffic laws and the Mountain Rescue services would need to make a separate request to the Department if they consider exemptions are necessary.

7. Risk

The regulations on blue light and siren use are intended to minimise proliferation and inappropriate use. Their use is generally restricted to organisations with the necessary controls in place to ensure their drivers are fully trained in emergency driving, they have systems to prioritise call outs and dedicated vehicles are used, not private cars.

Extending the use of blue lights and sirens could result in greater misuse if these controls are not in place and advice will need to be provided to ensure that the changes are fully understood and to make it clear when blue lights and sirens may be used. The changes are not intended to extend to privately owned vehicles operated by staff or volunteers. This will be clearly communicated to the organisations involved.

8. Compliance and Enforcement

Enforcement of RVLRL is a matter for the Police. However, as this is a permissive requirement there will be no additional enforcement costs beyond those already undertaken by the police to enforce the correct use of warning lights on vehicles.

9. Cost and Benefits

Blue lights and sirens are used by emergency services to warn other drivers of their presence and the urgency of their purpose. Search and rescue services often respond to emergencies of a similar nature to other emergency services and are often called upon by the police to attend

the scene of an emergency. Clarifying the use of blue lights and sirens by search and rescue vehicles will ensure they can take advantage of these benefits.

The use of blue lights and sirens will enable the rescue services to better warn other drivers of their presence, potentially improving their response time to incidents.

There are no additional costs for the rescue services. The regulations are permissive so Mountain Rescue organisations will not be required to fit new lighting equipment or sirens. Those that already have blue lights fitted will be able to continue to use this equipment provided it complies with the requirements for warning beacons contained in schedule 16 of the RVLRL.

The changes to the regulations will remove any uncertainty over the use of blue lights and sirens by Mountain Rescue services and removes the risk that drivers might be prosecuted when responding to an emergency for using blue lights and sirens.

Other road users and society as a whole will also benefit in terms of improved response times for Mountain Rescue emergency vehicles.

There are no additional enforcement costs. The police already enforce the requirements for the use of warning beacons and sirens and these commitments will remain under the new proposals. However less police time will be spent unnecessarily investigating the use of blue lights and sirens by mountain rescue services. The proposals place no additional administrative burdens on the mountain rescue organisations.

10. Small firm impact test

As the proposed measure is permissive there will be no new or increased burden.

11. Competition assessment

As the proposed regulation is permissive it will not result in any mandatory increase cost on the part of the Mountain Rescue services. The associated risks are low and measures have no significant effect on the market structure. The proposed measures allow for a level playing field and do not put potential or existing, large or small businesses in a situation where one has an advantage over the other.

12. Enforcement, Sanctions and Monitoring

Enforcement will be handled by either VOSA or the police. The changes to the regulations should reduce any uncertainty over the lawful use of blue warning beacons or sirens by the Mountain Rescue services.

13. Implementation and Delivery plan

As the intended measures are permissive, they can be introduced without delay. A detailed implementation plan is not necessary. However it's imperative that those affected or concerned about the proposed changes are informed of the changes to the regulation. In this case, official mountain rescue services will be informed of the proposed changes.

14. Summary and recommendations

The current regulations leave scope for some confusion over the use of blue lights and sirens by official Mountain Rescue services.

Amending regulations giving Mountain Rescue services the option to use blue warning beacons sirens, by adding official mountain rescue services to the list of emergency vehicles defined in

the road vehicle lighting regulations, will provide the same blue light privileges already enjoyed by RAF Mountain Rescue services.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

Annexes

Annex A

"Emergency vehicle" as defined in the Road Vehicle Lighting Regulations (para 3(2))

A vehicle of any of the following descriptions-

(a) a vehicle used for-

relevant authority (as defined by section 6 of the Fire (Scotland) Act 2005 (asp 5) or, in England or Wales, fire and rescue authority,

ambulance or

police

purposes;

(aa) as regards England and Wales, and so far as relating to the functions of the Serious Organised Crime Agency which are exercisable in or as regards Scotland and which relate to reserved matters (within the meaning of the Scotland Act 1998), a vehicle used for Serious Organised Crime Agency purposes;

(ab) so far as relating to the functions of the Serious Organised Crime Agency which are exercisable in or as regards Scotland and which do not (within the meaning of the Scotland Act 1998) relate to reserved matters, a vehicle used for Serious Organised Crime Agency purposes;.

(b) an ambulance, being a vehicle (other than an invalid carriage) which is constructed or adapted for the purposes of conveying sick, injured or disabled persons and which is used for such purposes;

(c) a vehicle owned by a body formed primarily for the purposes of fire salvage and used for those or similar purposes;

(d) a vehicle owned by the Forestry Commission or by a local authority and used from time to time for the purposes of fighting fires;

(e) a vehicle owned or operated by the Secretary of State for Defence and used-

(i) for the purposes of the disposal of bombs or explosives,

(ii) for the purposes of any activity—

(aa) which prevents or decreases the exposure of persons to radiation arising from a radiation accident or radiation emergency, or

(bb) in connection with an event which could lead to a radiation accident or radiation emergency; or

(iii) by the Royal Air Force Mountain Rescue Service for the purposes of rescue operations or any other emergencies,

(f) a vehicle primarily used for the purposes of the Blood Transfusion Service provided under the National Health Service Act 1977 or under the National Health Service (Scotland) Act 1978;

(g) a vehicle used by Her Majesty's Coastguard or Coastguard Auxiliary Service for the purposes of giving aid to persons in danger or vessels in distress on or near the coast;

(h) a vehicle used for the purposes of rescue operations at mines;

(i) a vehicle owned by the Royal National Lifeboat Institution and used for the purposes of launching lifeboats;

(j) a vehicle primarily used for the purposes of conveying any human tissue for transplanting or similar purposes and

(k) a vehicle under the lawful control of the Commissioners for Her Majesty's Revenue and Customs and used from time to time for the purposes of the investigation of serious crime (which, save for the omission of the words "and, where the authorising officer is within subsection (5)(h), it relates to an assigned matter within the meaning of section 1(1) of the Customs and Excise Management Act 1979", has the meaning given in section 93(4) of the Police Act 1997)."

Summary: Intervention & Options

Department /Agency: Department for Transport	Title: Impact Assessment of The Road Vehicle Lighting Regulations amendment covering reflective markings on emergency vehicles	
Stage: Implementation	Version: 2	Date: 21 October 2009
Related Publications: Public consultation		

Available to view or download at:

<http://www.dft.gov.uk/consultations/archive/2008/regulationsamendments/>

Contact for enquiries: **Adrian Burrows**

Telephone: **020 7944 2105**

What is the problem under consideration? Why is government intervention necessary? The emergency services, Highways Agency and Vehicle Operator Services Agency (VOSA) use distinctive retro-reflective liveries (known as battenburg) on their vehicles. This livery is based on research by the Police Scientific development branch to develop a livery that improves conspicuity and creates a common easily recognisable identity. This livery is prohibited by the Road Vehicle Lighting Regulations (RVLR) and each organisation has been issued with a temporary special order under section 44 of the Road Traffic Act 1988 to permit its use.

What are the policy objectives and the intended effects? To provide a firm legal basis for the use of distinctive retro-reflective liveries by the emergency services, Highways Agency and VOSA and to ensure their use can continue in the long term.

The existing special orders for ambulances are restricted to those operated by the NHS. These amendments offer the opportunity to extend the use of this livery to ambulances operated by the private sector provided they are used for emergency purposes.

What policy options have been considered? Please justify any preferred option.

1. Continue to rely on special orders for the foreseeable future (status quo).
2. Amend RVLR to permit the use of these liveries by the organisations currently issued with special orders.
3. Amend RVLR to permit the use of these liveries and extend the use to non-NHS emergency ambulances (preferred option).

Option 3 meets the needs of the existing services and allows all ambulances that operate an emergency service to benefit from these markings.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? A review is not required. The use of these liveries has been established over the past 7 years, this policy simply provides a long term solution for their use.

Ministerial Sign-off For implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Paul ClarkDate: 7th December 2009

Summary: Analysis & Evidence

Policy Option: 1	Description: Continue to issue special orders under section 44 of the Road Traffic Act 1988
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COSTS	ANNUAL COSTS	Description and scale of key monetised costs by 'main affected groups' Current situation, no additional costs are incurred.				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 2px;">One-off (Transition)</td> <td style="width: 30%; text-align: center; padding: 2px;">Yrs</td> </tr> <tr> <td style="padding: 2px;">£ 0</td> <td></td> </tr> </table>		One-off (Transition)	Yrs	£ 0	
	One-off (Transition)		Yrs			
	£ 0					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 2px;">Average Annual Cost (excluding one-off)</td> </tr> <tr> <td style="padding: 2px;">£ 0</td> </tr> </table>	Average Annual Cost (excluding one-off)	£ 0				
Average Annual Cost (excluding one-off)						
£ 0						
Total Cost (PV)		£ 0				
<p>Other key non-monetised costs by 'main affected groups'</p> <p>private ambulance operators not permitted to use the ambulance livery on their emergency vehicles</p>						

BENEFITS	ANNUAL BENEFITS	Description and scale of key monetised benefits by 'main affected groups' Current situation, no additional benefits will be achieved.				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 2px;">One-off</td> <td style="width: 30%; text-align: center; padding: 2px;">Yrs</td> </tr> <tr> <td style="padding: 2px;">£</td> <td></td> </tr> </table>		One-off	Yrs	£	
	One-off		Yrs			
	£					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 2px;">Average Annual Benefit (excluding one-off)</td> </tr> <tr> <td style="padding: 2px;">£ 0</td> </tr> </table>	Average Annual Benefit (excluding one-off)	£ 0				
Average Annual Benefit (excluding one-off)						
£ 0						
Total Benefit (PV)		£ 0				
<p>Other key non-monetised benefits by 'main affected groups'</p> <p>Improved conspicuity and public awareness of liveried vehicles over non-liveried vehicles</p>						

Key Assumptions/Sensitivities/Risks

Price Base Year 2007	Time Period Years 12	Net Benefit Range (NPV) £ 0	NET BENEFIT (NPV Best estimate) £ 0
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What is the geographic coverage of the policy/option?	UK				
On what date will the policy be implemented?	December 2009				
Which organisation(s) will enforce the policy?	VOSA, Police				
What is the total annual cost of enforcement for these organisations?	£ 7,000				
Does enforcement comply with Hampton principles?	Yes				
Will implementation go beyond minimum EU requirements?	No				
What is the value of the proposed offsetting measure per year?	£ 0				
What is the value of changes in greenhouse gas emissions?	£ 0				
Will the proposal have a significant impact on competition?	No				
Annual cost (£-£) per organisation (excluding one-off)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Micro</td> <td style="width: 25%; text-align: center;">Small</td> <td style="width: 25%; text-align: center;">Medium</td> <td style="width: 25%; text-align: center;">Large</td> </tr> </table>	Micro	Small	Medium	Large
Micro	Small	Medium	Large		
Are any of these organisations exempt?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">N/A</td> <td style="width: 25%; text-align: center;">N/A</td> </tr> </table>	No	No	N/A	N/A
No	No	N/A	N/A		

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)
Increase of £ 0	Decrease of £ 0	Net Impact £ 0

Key: Annual costs and benefits: (Net) Present

Summary: Analysis & Evidence

Policy Option:
2

Description: Amend RVL R to permit the use of retro-reflective liveries

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups'
	One-off (Transition)	Yrs	
	£ 0		No additional costs over existing situation.
	Average Annual Cost (excluding one-off)		
£ 0		Total Cost (PV)	£ 0
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups'
	One-off	Yrs	
	£ 0		Admin costs for the department to maintain existing special orders plus admin costs of emergency services and agencies to implement special orders will no longer be imposed.
	Average Annual Benefit (excluding one-off)		
£ 1,148		Total Benefit (PV)	£ 9,830
Other key non-monetised benefits by 'main affected groups'			
Guarantees the long term use of these liveries.			

Key Assumptions/Sensitivities/Risks

Price Base Year 2007	Time Period Years 12	Net Benefit Range (NPV) £ 7,612 - 12,047	NET BENEFIT (NPV Best estimate) £ 9,830
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What is the geographic coverage of the policy/option?			UK	
On what date will the policy be implemented?			December 2009	
Which organisation(s) will enforce the policy?			Police, VOSA	
What is the total annual cost of enforcement for these organisations?			£ 7,000	
Does enforcement comply with Hampton principles?			Yes	
Will implementation go beyond minimum EU requirements?			No	
What is the value of the proposed offsetting measure per year?			£ 0	
What is the value of changes in greenhouse gas emissions?			£ 0	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of	£ 0	Decrease of	£ 9,830
		Net Impact	£ 9,830

Kev: Annual costs and benefits: Constant Prices

Summary: Analysis & Evidence

Policy Option: 3

Description: Amend RVLIR to permit the use and extend to non-NHS ambulances

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' No additional costs over existing situation
	One-off (Transition) Yrs		
	£		
	Average Annual Cost (excluding one-off)		
	£ 0		Total Cost (PV) £ 0
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' Admin costs for the department to maintain existing special orders plus admin costs of emergency services and agencies to implement special orders will no longer be imposed.
	One-off Yrs		
	£		
	Average Annual Benefit (excluding one-off)		
	£ 1,148		Total Benefit (PV) £ 9,830
Other key non-monetised benefits by 'main affected groups' Guarantees the long term use of these liveries.			

Key Assumptions/Sensitivities/Risks

Price Base Year 2007	Time Period Years 12	Net Benefit Range (NPV) £ 7,612 - 12,047	NET BENEFIT (NPV Best estimate) £ 9,830
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What is the geographic coverage of the policy/option?			UK		
On what date will the policy be implemented?			December 2009		
Which organisation(s) will enforce the policy?			Police, VOSA		
What is the total annual cost of enforcement for these organisations?			£ 7,000		
Does enforcement comply with Hampton principles?			Yes		
Will implementation go beyond minimum EU requirements?			No		
What is the value of the proposed offsetting measure per year?			£ 0		
What is the value of changes in greenhouse gas emissions?			£ 0		
Will the proposal have a significant impact on competition?			No		
Annual cost (£-£) per organisation (excluding one-off)		Micro	Small	Medium	Large
Are any of these organisations exempt?		No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)			(Increase - Decrease)	
Increase of	£ 0	Decrease of	£ 9,830	Net Impact £ 9,830

Kev: **Annual costs and benefits: Constant Prices** (Net) Present Value

1. Title and effect of measure

Amendment of the Road Vehicles Lighting Regulations 1989 (S.I. 1989/1796) (RVLR) - Covering Retro-reflective markings for emergency vehicles.

2. Objective

To update the RVLR to permit the use of distinctive retro-reflective markings on vehicles used by the emergency services, Vehicle Operator Services Agency (VOSA) and Highways Agency Traffic Officers (HATO) to ensure they are highly visible and easily distinguishable.

3. Background

Many emergency services use distinctive retro-reflective markings on the sides and rear of their vehicles. This usually consists of large blocks of colour, known as the battenburg pattern (see figure 1), on the side and chevrons on the rear. This marking arrangement was developed by the Police Scientific Development Branch to enhance visibility and to enable police vehicles to be clearly recognisable. Subsequently it was adopted by other emergency services using their own colours.

More recently the battenburg markings have been adopted by VOSA for use on their enforcement vehicles and by the Highways Agency on their Traffic Officer (HATO) vehicles.

The use of retro reflective markings on vehicles is controlled by the RVLR which specify, in so far as is relevant, that reflective markings used to make the vehicle more visible must be red for the rear, any colour except red for the front of a vehicle, and amber for the side. If side retro-reflective markings are within 1m from the rear, red may be used rather than amber. The retro-reflective markings used by the emergency services and agencies do not comply with these colour requirements and so the Secretary of State has issued each service with a special order, under section 44 of the Road Traffic Act 1988, which gives exemptions from the relevant parts of RVLR for vehicles operated by them.

Table 1 below summarises the colours of reflective material which each service may use under their special order.

	Side	Rear
NHS Ambulance	Yellow Green White	Yellow orange
Police	Yellow Blue White	Yellow orange
Fire & Rescue Service	Yellow Red	Yellow orange
VOSA	Yellow Silver/white	Yellow Orange
HATO	Yellow White	Yellow

Table 1 Colours currently allowed by special order

The special order covering ambulances was issued to the Ambulance Services Association and is restricted to ambulances used for emergency purposes that are operated on behalf of the NHS. However, there is a large private ambulance industry and many of these operators have

also adopted green and yellow reflective markings on the side, either in the battenburg format or using alternative patterns, despite the restrictions in RVLR. The private ambulance industry believe that they operate the same services as NHS ambulances and therefore should be granted the same benefits as NHS vehicles.

Special orders are a temporary solution and must be regularly renewed. The Secretary of State must now consider whether to continue issuing special orders or to amend RVLR to permit the distinctive markings and to extend the requirements to emergency vehicles operated by the private ambulance industry.

4. Rational for Government Intervention

The Secretary of State has issued special orders to the emergency and enforcement agencies permitting the use of colours in their distinctive reflective liveries which would otherwise be prohibited by RVLR. Special orders are a temporary measure and in these cases are renewed on a regular basis. Amending the RVLR will eliminate the need for special orders for retro-reflective colour schemes and clarify which vehicles may use them.

Secondly the opportunity exists to extend these amendments to include ambulances operated by the private sector provided the vehicles are used for emergency purposes. This would harmonise the requirements across the ambulance sector. However caution will be required to ensure that use is strictly limited to those vehicles which are used primarily for emergency purposes. Vehicles used for patient transport for example are not considered by the Department to be emergency vehicles and would not be permitted to use the markings. If there is a need to improve the conspicuity of non-emergency vehicles, RVLR currently permits additional retro-reflective amber coloured side markings to be used.

Consideration will also need to be given as to whether extending markings to the private industry would have a negative impact for the NHS ambulance service. This would happen if the use by the private industry changed the public's response to vehicles fitted with these markings. This can be mitigated by limiting the use of the markings to privately operated ambulances used primarily for emergency purposes and not those intended as patient transport. The NHS also has the option to use specific brand logos on their ambulances to help differentiate them from other ambulance operators.

5. Consultation

We consulted informally with emergency services, VOSA, Highways Agency and representatives of the private ambulance industry who indicated they would like to use distinctive retro-reflective markings. Each organisation has indicated they want exclusive use of their particular choice of colour.

The ambulance services association has raised concerns about extending battenburg to private ambulances suggesting this could have a negative impact on the public image of NHS ambulances.

The following stake holders were informally consulted for technical advice

- VOSA
- Highways Agency
- NHS
- Private Ambulance industry
- ACPO
- Fire Brigade

A public consultation took place between July and October 2008. There was full support for using the markings on Highways Agency, NHS and VOSA vehicles. Some concern was raised that private ambulance operators may abuse the markings to give themselves a degree of "accreditation". However NHS ambulances have other means to distinguish themselves from other operators such as the NHS logo.

6. Options for achieving the Policy Objectives

OPTION 1

Maintain current situation, continue issuing special orders

OPTION 2

Amend RVLIR to permit vehicles used for Police, Fire and Rescue and Ambulance purposes, VOSA enforcement vehicles and HA traffic officers vehicles to use distinctive retro-reflective markings

This option considers assigning the colour of retro-reflective markings to the vehicles listed above. The colours permitted for each vehicle purpose would be those listed in table 1. Use of these markings will be optional but if fitted they would need to meet the colour specification above.

OPTION 3

As Option 2 but extend the use of these markings to all ambulances used for emergency purposes not just those operated by the NHS.



Figure 1.

7. Risks

Option 1 presents no major risks other than the inconvenience to both the Department and emergency services of maintaining existing special orders.

Option 2 presents no additional risks. While there is no control on the pattern used, all those currently issued with special orders use the battenburg pattern which has been shown to have significant benefits for conspicuity and recognition and there is no reason to believe they will switch to alternative patterns.

If option 3 is chosen there is a risk that private ambulance operators will choose not to use the battenburg pattern. Alternative patterns may not be so conspicuous and the benefits of a common identity may be lost. However non-NHS ambulances could also use alternative patterns to differentiate themselves and avoid any suggestion that they may be impersonating NHS ambulances.

There is a risk that private ambulance operators who use the battenburg pattern are mistaken for NHS ambulances. This may lead to security issues when ambulances are being directed to an emergency in a restricted area. However options exist for the NHS ambulances to differentiate themselves from other ambulance operators such as the use of the NHS logo on the side of their vehicles.

8. Compliance and Enforcement

Enforcement of RVLR is a matter for the Police and VOSA.

9. Unintended consequences

Restricting the use of these markings to the existing emergency services should have no unintended consequences. Emergency vehicles have been using these markings for over 7 years and there have been no reports of any problems.

Extending the requirements to the private and voluntary ambulance sector may lead to a proliferation of the markings and, if misused, their effectiveness could be reduced, this could have a negative impact on the public image of the NHS ambulance service. The Department of Health has received correspondence from members of the public relating to vehicles that they assumed were operated by the NHS but were in fact privately operated.

10. Cost and Benefits

Sectors and Groups affected: These proposals will affect the Police, Fire and Rescue, NHS Ambulance Services, VOSA and Highways Agency.

Ambulance services operated by commercial and charitable organisations will also be affected. Extending the use of these markings will make those private ambulance operators who already mark their vehicles with green and yellow reflective liveries compliant with the RVLR. Others who have not fitted the markings because of existing regulations would be permitted to do so.

Safety Benefits

Statistics are not available to show how beneficial these markings have been since their use began. However, research by the Police Scientific Development Branch compared the conspicuity of vehicles using the battenburg livery, using the blue and yellow colour scheme, with civilian vehicles and other police liveries. The study found that under daylight conditions the proposed livery was picked as the most conspicuous when viewed from the side by 53% of subjects compared to 42% for the most conspicuous civilian vehicle. Under night time conditions the battenburg livery performed almost twice as well as the best performing police livery. Subjective feedback suggested that the battenburg livery was distinctive and readily associated with the police.

Option 1 maintains the current status. There are no additional costs or benefits to those organisation already issued with special orders. The administrative costs associated with maintaining special orders, both for the Department and the emergency services, will remain however these costs are small.

Option 1 also maintains the current situation for non-NHS ambulances. They would continue to be prohibited to use Green reflective markings. For conspicuity purposes they would continue to be permitted to use amber reflective markings on the side but the advantage of being associated with the emergency services provided by the green markings would not be present.

Option 2 provides a regulatory basis for the use of these liveries and removes any uncertainty over their future use. The administrative costs associated with maintaining the existing special orders will be removed however, as stated previously, these costs are small.

Option 3 extends the use of the green and yellow livery to privately operated ambulances. This may provide benefits when these ambulances are genuinely used for emergency purposes to assist the vehicle to make progress through traffic and when at the scene of an emergency.

Extending the markings to the private industry may have an additional cost for the NHS ambulance service if the proliferation of the markings reduces their impact on the public. This can be avoided if the use of markings by private industry is restricted to vehicles used primarily for emergency purposes.

There is potential that this option could increase the demand for reflective material, however our understanding is those operators who would like to use the markings already do so despite the existing regulations so we do not expect demand for reflective material to increase significantly.

Administration costs

The current situation of issuing special orders carries a small administrative burden on both the Department and the emergency services and agencies using them. It is estimated that the Department spends $\frac{1}{2}$ days per special order at a cost of around £53. Each special order lasts for approximately 3 years so with 5 special orders to maintain the average yearly cost is about £88. The Emergency services and agencies will need to spend a greater proportion of their time implementing the special orders however it is unlikely to require more than 2 days per year. With 5 special orders in place this imposes an administrative cost of approximately £1060. The total administrative costs will therefore be around £1148 per year.

Material Costs

The use of such liveries would be optional so there would be no mandatory costs on the private industry to comply. If markings are fitted we estimate the cost per vehicle to be between £900 to £1,400 based on materials and labour when fitted to vehicle the size of an ambulance, e.g. Ford Transit, Renault Master, etc. We are aware that many private ambulances are marked with green reflective liveries, despite the current regulations, and we do not expect a large increase in privately operated ambulances being marked as a result of these changes.

Enforcement costs

Costs regarding enforcement are anticipated to be small as checks on compliance can be conducted as part of the current vehicle enforcement checks made by the police and VOSA. If 5,000 vehicles were checked for compliance during roadside inspections each year the enforcement costs would be around £7,000 assuming that a vehicle inspector would take approximately 2 minutes to make a decision as to whether the correct retro-reflective livery was being used.

Material Suppliers

There is unlikely to be a large increase in demand for retro-reflective tape under options 1, 2 or 3. None of these options will require the fitment of tape and those that have special orders already use marked vehicles. The options proposed do not favour any particular supplier.

There are not expected to be any significant impacts on consumers. A social benefit of the battenburg pattern is the creation of a common identity for the emergency services. However the widespread use of the battenburg markings means that any such benefits are likely to have been achieved already and these proposals are unlikely to give further benefits in this area.

We do not expect environmental impacts.

11. Small firm impact test

As the proposed measure is permissive there should be no new or increased burden on vehicle operators.

All vehicles covered by existing special orders will comply with Options 2 and 3. There will be no cost implications for these vehicles. Many private ambulances also meet Option 3. We are not aware of any privately operated ambulances operating using alternative colour schemes to the green and yellow markings or the amber schemes already permitted by RVLR.

12. Competition assessment

The proposed regulation will not result in any mandatory increase cost on the part of operators of emergency vehicles however those private ambulance operators currently using retro-reflective markings incorrectly would be required to remove them under options 1 and 2 if the regulations are fully enforced.

Option 1 and 2 may also put private ambulance operators at a disadvantage when responding to an emergency compared to NHS ambulances, particularly if the public do not regard the vehicles with the same caution given to NHS ambulances.

The proposed measures still allow for a level playing field among the private ambulance industry and do not put potential or existing, large or small businesses in a situation where one has an advantage over the other.

13. Enforcement, Sanctions and Monitoring

Enforcement will be handled by either VOSA or the police. This will not be a burden as the proposed measures are permissive and enforcement of the use of retro-reflective markings is already permitted by RVLR.

14. Implementation and Delivery plan

As the intended measures are deregulatory, they can be introduced without delay. A detailed implementation plan is not necessary. However it is imperative that those affected or concerned about the proposed changes are informed of the changes to the regulation. In this case, businesses involved in lighting and retro-reflective markings for vehicles will be informed of the proposed changes.

15. Summary and recommendations

Option 3 gives a regulatory basis to the continued use of retro-reflective colour schemes by the emergency services and other government agencies who are involved in enforcement work on the road network. The pattern used by these organisations will not be regulated however the

existing pattern is based on research which has shown it to offer conspicuity benefits. Its use has provided these services with an identity that is recognisable to the public and so it is unlikely there will be proliferation of alternative patterns.

Extending the colour scheme to private ambulance operators will provide them with the same benefits as NHS ambulances when operating in emergency situations.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No