EXPLANATORY MEMORANDA TO THE

TRAFFIC SIGNS (AMENDMENT) REGULATIONS AND GENERAL DIRECTIONS 2005

2005 No.1670

M42 (JUNCTIONS 3A TO 7) (ACTIVELY MANAGED HARD SHOULDER AND VARIABLE SPEED LIMITS) REGULATIONS 2005

2005 No.1671

1. This explanatory memorandum has been prepared by the Department for Transport and is laid before Parliament by Command of Her Majesty.

2. Description

2.1 These instruments enable the introduction of an Active Traffic Management (ATM) Pilot for Junctions 3A to 7 of the M42 Motorway which is due to become operational from Summer 2005.

2.2 The M42 (Junctions 3A to 7)(Actively Managed Hard Shoulder and Variable Speed Limits) Regulations 2005, ("the ATM Regulations"), modify the Motorways Traffic (England and Wales) Regulations 1982, ("the 1982 Regulations"), in respect of the M42 Motorway between junctions 3A and 7 and the adjoining slip roads, ("the relevant roads"). This modification introduces two new concepts:

2.2.1 an "actively managed hard shoulder" which is a hard shoulder which may be used by motor vehicles as an additional running lane; and
2.2.2 an "emergency refuge area" which is an area beside an actively managed hard shoulder that can be used as a normal hard shoulder.

2.3 The ATM Regulations also introduce variable speed limits in relation to the relevant roads.

2.4 The Traffic Signs (Amendment) Regulations and General Directions 2005, ("the Traffic Signs Regulations"), amend the Traffic Signs Regulations and General Directions 2002 (S.I. 2002/3113), ("TSRGD 2002") to enable certain traffic signs to be used to convey information applying to an actively managed hard shoulder of a motorway.

3. Matters of special interest to the Joint Committee on Statutory Instruments

3.1 None.

4. Legislative Background

4.1 The ATM Regulations have been made under Section 17(2) and (3) of the Road Traffic Regulation Act 1984, which empowers the Secretary of State to make regulations with respect to the use of special roads generally and, as in this case, with respect to particular lengths of motorway. The 1982 Regulations set out what can and cannot be done, and by whom, on various parts of a motorway in England and Wales. The ATM Regulations modify the 1982 Regulations only in relation to the relevant roads, they do not amend the 1982 Regulations on a national basis.

4.2 Regulation 3 of the ATM Regulations amends the 1982 Regulations in relation to the relevant roads so as to allow controlled use of the hard shoulder as an additional running lane in certain circumstances. A vehicle may use the hard shoulder whilst a variable speed limit sign is displayed over it. During this period the hard shoulder is treated as a lane of the carriageway and it cannot be used as a stopping area.

4.3 Regulation 4 of the ATM Regulations allows implementation and enforcement of Mandatory Speed Limits. This regulation requires a vehicle that passes a speed limit sign indicating that a speed limit other than the national speed limit applies, to obey that sign until it passes a further sign indicating that a new speed limit or the national speed limit applies. There are two exceptions to this provision. First, if a speed limit sign appears requiring a change from the national speed limit to a lower speed limit less than 10 seconds before it is passed by a vehicle, the vehicle may continue at the national speed limit until it passes another variable speed limit sign. Second, if a variable speed limit sign changes from a higher limit to a lower limit less than 10 seconds before it is passed by a vehicle, the vehicle may continue at the higher speed until it passes another variable speed limit sign.

4.4 The Traffic Signs Regulations amend the TSRGD 2002 in relation to motorways with an Actively Managed Hard Shoulder. Accordingly schemes for hard shoulder running similar to the M42 ATM proposal could be implemented elsewhere without the need for further amendment to the TSRGD 2002, although modifications to the 1982 Regulations related to the length of motorway concerned would still be necessary.

4.5 The amendments to Part I of TSRGD 2002 (the Regulations) do not prescribe any new traffic signs but prescribe the significance of existing traffic signs when used in relation to an actively managed hard shoulder. Part II of TSRGD 2002 (the General Directions) is amended so as to restrict the use of signs in connection with an actively managed hard shoulder to cases where variable speed limit signs are displayed on the adjoining carriageway.

5. Extent

5.1 The ATM Regulations apply to England.

5.2 The Traffic Signs Regulations apply to Great Britain.

6. European Convention on Human Rights

6.1 Not applicable.

7. Policy background

7.1 The M42 J3A to 7 Active Traffic Management Pilot is the first of its kind to be introduced in this country and will pilot a range of innovative traffic management measures (Operational Regimes) with the potential to reduce congestion, improve journey time reliability and make a significant contribution to the 10-year Plan for Transport. The Operational Regimes will be introduced as part of a phased programme to ensure that benefits to road users are maximised. Extensive monitoring will be undertaken to quantify the impacts of the traffic management measures and to improve understanding for any future rollout of Active Traffic Management at other locations.

The Pilot aims to tackle congestion through the introduction of new technology and innovative solutions to make best use of the existing road space, including:

- Advanced information systems, Motorway Incident Detection and Automatic Signalling (MIDAS) with automatic queue detection and a network of CCTV cameras to monitor traffic conditions;
- Lightweight gantries at nominal 500m spacing with lane specific Advanced Motorway Indicator (AMI) signals, variable speed limits, digital enforcement equipment and MS4 signs (the next generation of variable message signs, the Advanced Message Sign Mark 4) to open and close lanes and control speeds to prevent flow breakdown and provide enhanced driver information;
- Controlled use of the hard shoulder as an additional running lane for incident management and during periods of heavy congestion;
- Emergency Refuge Areas for use in case of breakdown, equipped with emergency telephones, lighting and monitored by CCTV cameras;
- Incident Management including provision of Highways Agency Traffic Officers to ensure effective incident management;
- Rapid incident response teams, to remove obstructions, assist with traffic management and repair roadside technology;
- ATM will contribute to:

  - Reducing congestion;

  - Providing more reliable journey times;

- Reducing the impact of accidents/incidents;

- Increased information for the driver;

- Maintaining current safety levels; and

- Reducing driver stress.

7.2 In order for ATM to operate successfully and safely it is essential that drivers comply with the requirements of the operational regimes. This means compliance with the variable speed limits in particular. The legislation does not introduce any new offences or sanctions. Variable speed limits will be enforced using gantry mounted speed cameras. Work is underway to develop enforcement systems to counter misuse of the hard shoulder and non-compliance with lane-based signals.

7.3 During the SI Consultation process the draft SIs were issued to over 100 consultees including members of the emergency services, road user groups, local Members of Parliament and vehicle recovery operators. The process began on the 19th July 04 and over the following 14 weeks a number of comments were received from consultees regarding both the draft SIs and the project itself.

7.4 The main comments made in the consultation were as follows:

- Concern over the safety of road users, in particular when the hard shoulder is being used as a running lane and emergency services need to reach an incident.

- A question regarding to the timescales for the completion of the scheme.

- A query relating to how the ATM section is to be enforced.

- Questions over the use of Emergency Refuge Areas, also design and size of Emergency Refuge Areas.

- Query with regard to driver behaviour, in particular if using the hard shoulder could encourage drivers to use the hard shoulder on other motorways.

7.5 The SI Consultation report was prepared by Mouchel Parkman (Managing Consultants for the project), and subsequently reviewed by the Department for Transport and the Highways Agency. Replies were sent to all of the consultees responding to questions raised or comments made. Taking into account all of the comments received from the consultees it was not considered necessary to make any substantive changes to either of the instruments.

8. Impact

8.1 A Regulatory Impact Assessment is attached to this memorandum.

8.2 The impact on the public sector is that ATM will benefit the motorist by helping to reduce congestion, be informative and improve journey times. It aims to reduce the impact of accidents and reduce driver stress.

9. Contact

9.1 Mr Simon Kirby at the Highways Agency Tel: 0121 678 8204 or e-mail: Simon.Kirby@highways.gsi.gov.uk can answer any queries regarding the instruments.

Regulatory Impact Assessment

A Regulatory Impact Assessment (RIA) is a tool that informs policy decisions. It is an assessment of the impact of policy options in terms of the costs, benefits and risks of a proposal. RIA must be carried out for all policy proposals that have an impact on businesses, charities or voluntary bodies.

1. Title

A. The M42 (Junctions 3A to 7) (Actively Managed Hard Shoulder and Variable Speed Limits) Regulations 2005

B. The Traffic Signs (Amendment) Regulations and General Directions 2005

2. Purpose and Intended Effect of the Measure

2(i) The Objective

The Highways Agency intends to carry out a pilot project for Active Traffic Management (ATM) on the M42 motorway from Junctions 3A to 7 and these regulations put in place the required legislative framework.

ATM aims to:
- Reduce congestion;
- Provide more reliable journey times; and
- Reduce the impact of accidents / incidents.

Operational safety is integral to all of these aims.

The M42 pilot aims to:
- Prove the Operational Regimes – an Operational Regime is the scenario or plan that a control centre operator or system implements in response to real time traffic conditions;
- Prove the Business Case; and
- Demonstrate the technology.

2 (ii) The Background

As part of the Government's targeted programme of investment in trunk road improvements, the Highways Agency has been tasked with developing its role as Network Operator by implementing traffic management, network control and other measures aimed at:
- Making best use of the existing road space;
- Responding faster to incidents and reducing clear-up times;
- Reducing congestion and increasing the reliability of journey times.

Active Traffic Management (ATM) is a key deliverable against these requirements, aiming to tackle congestion through the introduction of new technology and innovative solutions to make best use of the existing road space.

2(iii) Rationale for Government Intervention

The Highways Agency manages approximately 6,500 miles of motorways and trunk roads, approximately 4% of the total road network in England. These roads carry about a third of England's total traffic and two thirds of its freight mileage.

More than a quarter of trunk road traffic uses sections of the network prone to recurrent congestion. Congestion leads to wasted time, additional wear and tear on vehicles, increased fuel consumption, additional exhaust emissions and stress for drivers.

Unreliable journeys cause late or early arrivals or require travellers to allow extra time for their journeys, which causes inconvenience, frustration and imposes extra costs on businesses.

3. Options

Option 1: Do nothing. This would mean it would not be possible to assess the implications (i.e. safety, congestion and incident management) of using the hard shoulder as a running lane. This would result in no actual benefits being brought to the region.

Option 2: Modify the regulations to allow ATM to be piloted on the M42 from Junctions 3A to 7. This will allow the Highways Agency to demonstrate the Operational Regimes, prove the technology and build a business case for ATM, allowing informed decisions to be made on the suitability of implementing ATM elsewhere on the Strategic Road Network.

The proposed modifications are as follows:

A. To modify the Motorway Traffic (England and Wales) Regulations 1982, S.I. 1982/1163 in order to:

- Allow implementation and enforcement of Mandatory Variable Speed Limits;
- Allow controlled use of the hard shoulder as an additional lane;
- Define the 'Actively Managed Hard Shoulder' and 'Emergency Refuge Area'.

The above modifications apply to the M42 Junctions 3A to 7 only.

B. To amend the Traffic Signs Regulations and General Directions 2002, S.I. 2002/3113 in order to:

- Allow the lane control red X (5003.1) to be used over the Actively Managed Hard Shoulder to indicate that it is not available as a running lane, but may be used for the usual reasons of using a hard shoulder (breakdown, illness etc);
- Allow the stop signal red X with flashing lanterns (6031.1) and lane divert arrow (6002) to be used over the Actively Managed Hard Shoulder;
- Allow for the lane control red X signal (5003.1) over the Actively Managed Hard Shoulder to be cancelled by a variable speed limit (670) or superseded by a stop signal red X with flashing lanterns (6031.1);
- Modify the definition of the solid white line (1012.1) between:

    - Actively Managed Hard Shoulder and lane 1;
    - Actively Managed Hard Shoulder and verge;
- Allow the white line (1010), between the Actively Managed Hard Shoulder and Emergency Refuge Area (ERA).

The numbers in brackets refer to the diagrams in Traffic Signs Regulations and General Directions 2002, S.I. 2002/3113. The above amendments would apply to any motorway with an Actively Managed Hard Shoulder.

There are some operational risks associated with introducing Variable Speed Limits and controlled use of the hard shoulder; these have been addressed through a comprehensive operational risk assessment.

The approach adopted by the project is to demonstrate that for the ATM controlled stretch of M42; the overall risk level per vehicle kilometre will be in accordance with the Safety Baseline document (Mouchel Parkman reference 42690/DOC/021). The GALE target commits the project to showing that the safety of the ATM Pilot will be as good as the baseline once ATM is in operation. The safety baseline is the level of safety against which the GALE safety target will be measured and is the M42 prior to the construction of ATM, with triple package.

4. Benefits

Option 1 – The do nothing situation would keep the status quo for safety and congestion on English motorways.

Option 2 – ATM will contribute to:
- Reducing congestion;
- Providing more reliable journey times;
- Reducing the impact of accidents/incidents;
- Increased information for the driver;
- Maintaining current safety levels; and,
- Reduced driver stress.

The M42 pilot will allow actual benefits to be measured leading to a robust business case for ATM.

4(i) Business Sectors Affected

ATM as a concept has the potential to benefit all businesses that use the Strategic Road Network nationally.

The M42 ATM pilot will be of particular benefit to those who use the M42 corridor between the M40 and the M6.

4 (ii) Issues of Equity or Fairness

The legislation does not favour any particular type of road users above others. The variable speed limits may slow some vehicles but, overall, congestion is expected to

reduce due to the alleviation of stop/start conditions and the additional capacity provided by the hard shoulder during congested periods.

Therefore, on balance, the legislation will confer broadly equal benefits on all classes of traffic.

5. Costs

5(i) Compliance Costs for Business, Charities and Voluntary Organisations

The legislation does not add to compliance costs for business, charities or voluntary organisations.

5(ii) Other Costs

The project is partly funded through a £40m contribution from the Capital Modernisation Fund and supplemented with funding from other Highways Agency capital programmes to bring the total cost of the project in the region of £100m including extensive development costs.

5(iii) Costs for a Typical Business

Not applicable.

6. Consultation with Small Business: The Small Firms' Impact Test

The proposed measures do not impose any new or increased burden. Small businesses have not been consulted separately. However the HA ATM Communications Team will send targeted information on the scheme to small businesses within the M42 area.

As part of this consultation process, the impact of the options on small businesses needs to be assessed i.e. those with not more than 50 employees and on micro businesses with not more than 10 employees.

7. Competition Assessment

It has been assessed that the proposed measures have no effect on competition. A detailed assessment is not considered necessary.

8. Enforcement and Sanctions

The legislation does not introduce any new offences or sanctions. Variable speed limits will be enforced using gantry-mounted speed enforcement cameras.

It is proposed that an automatic system be developed for enforcement of hard shoulder offences. However this may not be in place when ATM becomes operational and enforcement may initially be carried out through a combination of deterrence, police patrols and traditional enforcement techniques.

9. Monitoring and Review

Monitoring and assessment will be carried out to establish the effect of ATM on a range of factors including traffic conditions, accidents and environmental factors. A business case will be developed for ATM and this will inform decisions on the use of ATM elsewhere on the Strategic Road Network.

The business case includes before and after monitoring to establish the effects of each Operational Regime. Preliminary results should be available by the end of 2006.

10. Consultation

The ATM scheme has been developed in close consultation with the Department for Transport and the Central Motorways Policing Group. Discussions have also been held with other emergency services including:

- West Midlands Ambulance;
- Warwickshire Ambulance NHS Trust;
- West Midlands Fire and Rescue Service;
- Warwickshire Fire and Rescue Service;
- Staffordshire Fire and Rescue Service; and
- Hereford and Worcester Fire Brigade.

During the SI Consultation process the draft SIs were issued to over 100 consultees including members of the emergency services, road user groups, local Members of Parliament and vehicle recovery operators. The process began on the 19 July 04 and over the following 14 weeks, comments were received from consultees regarding both the draft SIs and the project itself. The SI Consultation report (Mouchel Parkman reference 42691/DOC/605). was prepared and the report and SI's were reviewed by DfT, HA and Mouchel Parkman (Managing Consultants of the Project), taking account of comments received from consultees. It was considered that no changes were necessary to the draft regulations.

11. Implementation and Delivery Plan

Active Traffic Management on the M42 is being introduced in phases. Construction began in 2003 and the programme objective is the introduction of mandatory 3 lane Variable Speed Limits on the section by summer 2005. The final stage to be introduced is hard shoulder running and this is programmed for winter 2006.

12. Post Implementation Review

Subject to the successful implementation, operation and assessment of the M42 ATM Pilot Project, the HA will develop a "tool box" of measures for managing the network in a pro-active manner. This will result in a set of standards for the future deployment of ATM and the development of a Business Case for the provision of ATM at other candidate sites.

In order to enable ATM to be rolled out onto the wider motorway network, it is necessary to demonstrate the economic viability of the pilot project. This will be achieved through a Business Case that puts forward the overall socio-economic benefits compared with the costs, of the M42 Pilot, as well as appraising its contribution in achieving the Government's objectives of Economy, Safety, Environment, Accessibility and Integration.

The Operational Development Team (ODT) has also been introduced as part of the Pilot project. The objective of the ODT is to optimise the benefits of the M42 J3A-7 ATM Pilot Project and to inform future applications of ATM through the collation and analysis of operational data and experience. The ODT will coordinate the following areas:·

- Safety Monitoring;·
- Maintenance Monitoring;·
- Traffic Behaviour and Response;·
- Control Room Operation;·
- Business Case Monitoring.

13. Summary and Recommendation

The Highways Agency recommends Option 2 in sections 3 and 4 – this will allow the benefits of ATM to be demonstrated and its suitability for use elsewhere on the Strategic Road Network to be assessed. The summary costs and benefits table below shows the recommended option. ATM has the potential to produce considerable benefits, particularly in the areas of reduced congestion and improved journey time reliability, and makes a significant contribution to the Highways Agency meeting its objectives as Network Operator.

Option	**Cost to Business**	**Benefits**	**Balance of Costs and Benefits**
2. Modify the regulations to allow ATM to be piloted on the M42 from Junctions 3A to 7.	See section 5. The legislation does not add to compliance costs for business, charities or voluntary organisations	See section 4. ATM will contribute to: • Reducing congestion; • Providing more reliable journey times; • Reducing the impact of accidents/incidents; • Increased information for the driver; • Maintaining current safety levels; and,	ATM has the potential to produce considerable benefits, particularly in the areas of reduced congestion and improved journey time reliability, which will not add to compliance costs for business.

		• Reduced driver stress.	

14. Declaration

I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs.

Signed by responsible Minister:

Date: June 2005

Department for Transport