

INTERIM ADVICE NOTE 187/15

Use of a Convoy Control Vehicle for Controlling Traffic through Guide Islands at Relaxation Works on Dual Carriageways

Summary

Guidance for temporary traffic management contractors using Convoy Control Vehicles to control traffic through guide islands at road works where “relaxation scheme” works criteria apply.

This IAN introduces a method to generate traffic-free working windows during works on the carriageway, in order to eliminate the requirement for TTM operatives to work in live traffic lanes.

Instructions for Use

This document is supplementary to (but does not replace any elements of) the existing guidance provided in the DfT Traffic Signs Manual – Chapter 8 (2009),

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1.2 Scope

This IAN provides guidance to service providers using Convoy Control Vehicles for control of traffic through guide islands within relaxation scheme road works on dual carriageways.

This document builds upon the guidance given in the Traffic Signs Manual Chapter 8 Part 1: Design and Part 2: Operations. In particular, this document adapts the guidance given in Section O.11 (Mobile Carriageway Closure Technique) dealing the use of multiple convoy control vehicles to take control of traffic on a dual carriageway.

This IAN applies to relaxation scheme road works on dual carriageways with two or more lanes, including relaxation scheme road works which are being provided within the existing traffic management for a major scheme. It does not apply to standard scheme road works, except where relaxation scheme traffic management is being used to install traffic management in support of standard schemes.

This IAN applies to the Highways England network. Application of this document on any other road is subject to approval for its use being given by the appropriate Highway Authority and appropriate authorisation being granted by the Department for Transport allowing the traffic signs fitted to the convoy control vehicle to be used on roads other than trunk dual carriageway roads and motorways in England.

This interim guidance details a technique for relaxation schemes for consideration by the service provider, which allows use of a duly authorised convoy control vehicle (CCV) to take control of traffic within a guide island in order to generate a traffic free window for the purpose of carrying out works or associated activity, such as installation of traffic management. A duly authorised vehicle may, subject to suitable and sufficient risk assessment of all options, be used to take control of traffic within a guide island if the eligibility criteria given in Section 1.4 are met.

As part of the risk assessment the service provider must determine whether implementation of the technique will reduce risks to road workers to a level that is acceptable or tolerable but As Low As Reasonably Practicable, whilst ensuring risks to road users remain acceptable. This is in accordance with the general principles applied in Section O.11 of the TSM Chapter 8 and within GD04/12.

The service provider should determine whether the technique is suitable for use at any specific location by carrying out a site specific risk assessment of the type of work being undertaken and all other appropriate factors. This assessment should include factors such as those given in TSM Chapter 8 Part 1 2009 paragraphs D1.6.3 to D1.6.5, D3.8 and TSM Chapter 8 Part 2 2009 paragraphs O1.6.3 to O1.6.5, Section O11.9, O11.10, O11.14, O11.17, O11.21 and O11.22 , with the definition of "low traffic flows" given in TSM Chapter 8 Appendix A2.41.

In all cases, the selection of traffic management technique should be based on a location specific risk assessment which considers the risks to both road users and road workers.

This guidance is supplementary to (but does not replace any elements of) the existing guidance for TTM at road works, provided in the TSM Chapter 8 Parts 1 and 2. The intention is that the guidance given in this document may be included within future revisions or updates to the TSM Chapter 8.

1.4 Eligibility Criteria

The alternative technique detailed in this document applies only if all of the generic eligibility criteria shown below are met:

- The carriageway on which the technique will be used is a dual carriageway with two or more running lanes
- The convoy control vehicle will be used under relaxation scheme conditions (defined in TSM Chapter 8 Section D1.6/O1.6, with maximum traffic flow as per Appendix A2, Paragraph A2.41).
- The convoy control vehicle is equipped with Impact Protection in accordance with TSM Chapter 8 Part 2: Operations paragraph O5.5.5 and is either
 - Of the type shown in TSM Chapter 8 Part 2: Operations Figure O11.1 and is duly authorised for use on the main carriageway; or
 - Of the type shown in TSM Chapter 8 Part 2: Operations Figure O11.2 and equipped with a plate sign that has been duly authorised for use on the main carriageway of a trunk dual carriageway road or motorway
- A guide island will be established, comprising:
 - Advance signing warning of the lane(s) closed in accordance with either TSM Chapter 8 or a suitable equivalent layout such as that specified in the current version of Interim Advice Note 150
 - A taper to Plan DZB3 from TSM Chapter 8 or alternative taper layout as described in Interim Advice Note 163/12, with backlit sequentially flashing warning lamps used in accordance with the requirements given in TSM Chapter 8 Part 2: Operations, paragraph O4.7.19.
 - A longitudinal section of coning downstream of the taper of the minimum length appropriate to the required working window
- The service provider has carried out a suitable location specific risk assessment, which indicates that it is both safe to use the convoy control technique and that it represents the lowest risk approach for road workers and road users.
- Only one running lane will remain open during the works.

For the avoidance of doubt, it is not appropriate to use this technique:

- As part of standard scheme (as defined in Section D1.6/O1.6 of TSM Chapter 8) traffic management; or
- On single carriageways.

1.5 Site specific risk assessment

A site specific risk assessment enables the risks to road workers and road users to be suitably identified and subsequently managed to a level that is as low as reasonably practicable. Temporary traffic management operations should be subject to suitable and sufficient risk assessment as detailed in TSM Chapter 8 Part 1: Design Section D2.

The advice contained within this document is given on the basis that the service provider ensures that:

- a competent person carries out a suitable and sufficient site specific risk assessment
- the risk assessment is carried out in accordance with the requirements and guidance within TSM Chapter 8 and GD 04/12 of the Design Manual for Roads and Bridges
- the risk assessment is completed before work commences on site and is appropriately recorded; and
- the project-specific method statement that is supported by this risk assessment is followed by those carrying out the work

2. Guidance: The Convoy Control Vehicle Technique

2.1. Introduction

Section 2 of this IAN provides interim guidance to the service provider with regard to the use of a convoy control vehicle (CCV) for the control of traffic through a guide island that forms part of the relaxation scheme temporary traffic management for road works on a motorway or dual carriageway trunk road with two or more lanes. This interim guidance enables a CCV to be used to control traffic, provided that all of the eligibility criteria described in Section 1.4 in this IAN are met.

2.2 Issues

Trials have shown that for relaxation schemes a CCV may be used to control traffic through a guide island without affecting the safety of road users. Creating a traffic-free working window in this way eliminates one of the major risks to road workers by removing the need for road workers to undertake carriageway crossings or live lane working as the carriageway is effectively closed to traffic by the CCV. This eliminates risk to road workers from live traffic while not increasing risk for road users.

The service provider should consider this technique as an option when planning the TTM and assessing the risks and benefits of the various alternatives. The safety benefit that this alternative TTM technique can deliver is significant, as provision a traffic-free working window eliminates a source of risk.

Where traffic flows are very light and it is not certain that there will be a vehicle in front of the CCV when it enters the guide island, consideration should be given to using a monitor vehicle (as defined in TSM Chapter 8 Part 2: Operations paragraph O11.2.1) to indicate the start of the traffic-free working window in front of the CCV.

2.3 Duly authorised alternative signing

The traffic signs on the vehicle used as a convoy control vehicle must be duly authorised in order to take control of traffic lawfully. Service providers seeking to use a CCV must ensure that only duly authorised traffic signs are used, that such signs are fitted to a vehicle equipped with impact protection (see eligibility criteria in Section 1.4 above) and that the vehicle with signs is used in accordance with the terms of the Signs Authorisation.

Current signs that can be or are authorised for use are:

- Signing as shown in Figure 11.1 (Closure vehicle sign) of the Traffic Signs Manual Chapter 8 part 2 (2009) comprising:
 - An upper panel red cross signal equivalent to Diagram 6031.1 of the Traffic Signs Regulations and General Directions (TSRGD); and
 - A lower panel 'CONVOY VEHICLE NO OVERTAKING' sign to Diagram 7029 of TSRGD
- Signing that complies with DfT Signs Authorisation GT50/056/0023 (DfT Traffic Authorisation Case 4227), comprising:
 - An upper panel with two top flashing amber strobe lamps only illuminated
 - A lower panel "CONVOY VEHICLE NO OVERTAKING" plate sign to Diagram 7029 of TSRGD .

In both cases, the vehicle should be fitted with a system that is controllable from the driver's position and which is capable of covering and uncovering the "CONVOY VEHICLE NO OVERTAKING" sign while the vehicle is in motion with the vehicle's Lorry Mounted Crash Cushion in the deployed (down) position.

2.4 On-road Implementation of the CCV Technique

It has been shown that the CCV technique can be safely applied in the approach zone of relaxation schemes using the vehicle movements and signing changes as described in Annex B and C. This document provides guidance that the service provider should consider in developing site specific method statements or safe systems of work for using a convoy control vehicle to take control of traffic within a guide island.

The information in this document, including Annexes B and C, is presented for service providers to consider during their development of site specific method statements. Service providers must ensure that the method statement is appropriately reviewed and the method adapted to take account of site specific circumstances and activities as described in Section 1.5.

3. Withdrawal Conditions

This IAN will remain in force until such time as this guidance can be incorporated permanently in to a future revision of the DfT Traffic Signs Manual Chapter 8, or superseded by revised HA guidance.

4. Training and Qualifications

Service providers should ensure that suitable and sufficient training is given to road workers. This training should include:

- Full briefing as to the processes and procedures to be followed when using this technique for control of traffic through guide islands
- Appropriate training in the implementation, risk assessment and planning of use of CCVs for control of traffic through guide islands

On motorways and trunk roads in England where this technique is used, the driver of the Convoy Control Vehicle shall have the appropriate Sector Scheme 12A/B IPV training and hold a valid 12A/B IPV qualification. The monitor vehicle (where used) shall be driven by a person holding a valid Sector Scheme 12A/B IPV, TSCO or TMF qualification.

The person in charge of the operation and responsible for co-ordinating the movements of the CCV and workforce (the supervisor) should be qualified as a Sector Scheme 12A/B IPV driver. The supervisor may be the driver of the CCV, provided they are able to carry out both co-ordination/supervision and driving duties safely.

5. Contacts

Further information may be obtained from:

Ian Smith,
Health and Safety Division,
Highways England,
Woodlands,
Manton lane,
Bedford,
MK41 7LW.

Tel: 01234 796276.

GTN: 3013 6276.

Email: Standards_Feedback&Enquiries@highways.gsi.gov.uk

6. Normative References

- DfT Design Manual for Roads & Bridges GD 04/12 Standard for Safety Risk Assessment on the Strategic Road Network.
<http://www.dft.gov.uk/ha/standards/dmrb/vol0/section2/gd0412.pdf>
- DfT Traffic Signs Manual (TSM) Chapter 8 (2009) Traffic Safety Measures and Signs for Road Works and Temporary Situations, Part 1 – Design & Part 2 – Operations.
<https://www.gov.uk/government/publications/traffic-signs-manual>
- DfT Traffic Authorisation GT50/056/0023, case 4227, Mobile Lane Closure Sign
<http://assets.dft.gov.uk/trafficauths/case-4227.pdf>
- Statutory Instrument 2002 No. 3113 Traffic Signs Regulations and General Directions 2002 (TSRGD).
<http://www.legislation.gov.uk/uksi/2002/3113/contents/made>

7. Informative References

7.1 Highways England - Aiming for Zero and Road Worker Safety

The following documents can be downloaded from the appropriate web site using the links provided:

- Highways England Aiming for Zero introduction.
<http://www.highways.gov.uk/our-road-network/safety/>
- Aiming for Zero overarching strategy and Road Worker Safety Strategy.
<http://www.highways.gov.uk/our-road-network/safety/road-worker-safety/>
- Guidance for Safer Temporary Traffic Management. 2002.
<http://webarchive.nationalarchives.gov.uk/+http://www.highways.gov.uk/aboutus/1091.aspx>

7.2 TRL Reports

The following documents are available from the Highways England Knowledge Compendium.

- TRL Report CPR1425 (2012): Monitoring of management of traffic during lead-in zone installation. Results from trial in Area 3, 2012.
- TRL Report CPR 2055 (2015): Monitoring of management of traffic during lead-in zone installation. Results from trial in Area 3, 2015.

Annex A: Guidance to assist with development of site specific method statements: Research and On-road Trials

Development of an authorised technique for controlling traffic during the installation and removal of lead-in zones has involved a number of stages..

C1 TRL Report CPR 1425 (2012): Monitoring of management of traffic during lead-in zone installation. Results from trial in Area 3, 2012

This monitored roll-out, carried out on the M4 in HE Area 3, used the Mobile Carriageway Closure Technique (MCCT) Convoy Control Vehicle (CCV) showing a red cross (a.k.a. a red 'X') signal and a 'CONVOY VEHICLE NO OVERTAKING' sign below to Diagram 7029 of the Traffic Signs Regulations and General Directions, TSRGD, (2002).

Overall, it was considered that this technique provided a good way to manage the risk to road workers associated with the installation and removal of the lead-in zone within TTM. There was a limited supply of suitable vehicles available, so alternative solutions were sought.

C2 Trials Track demonstration 10th July 2013

A track-based demonstration of TM vehicles equipped to display a red 'X' and carrying a a roller blind with the sign a 'CONVOY VEHICLE NO OVERTAKING' sign was given on the TRL test track. There were concerns expressed regarding the clarity of the signs mounted on roller blinds.

C4 Consultation: Demonstration event, South Mimms Motorway Depot

A proposed alternative sign, based on the slip road closure vehicle from the MCCT, as shown in Figure 11.2 of the Traffic Signs Manual Chapter 8 part 2 (2009), see Figure 3, which would use a plate sign displaying the message "CONVOY VEHICLE NO OVERTAKING" mounted to conceal the TMIPV's '610' arrow used in conjunction with the vehicle's high-intensity beacons, was demonstrated at an event at the South Mimms motorway depot. Subsequently, a submission was made for the signing to be authorised for an on-road trial and this was granted.

C5 TRL Report CPR 2055 (2015): Monitoring of management of traffic during lead-in zone installation. Results from trial in Area 3, 2015.

On road trials of the CCV technique took place on the M27 and M3 during March 2015. No incidents were noted and drivers responded appropriately to the presence of the CCV. The report recommended that the CCV technique should be used for the installation and removal of lead-in zones and considered for use during the installation and removal of splitter details, allowing these activities to be undertaken in a controlled traffic-free window.

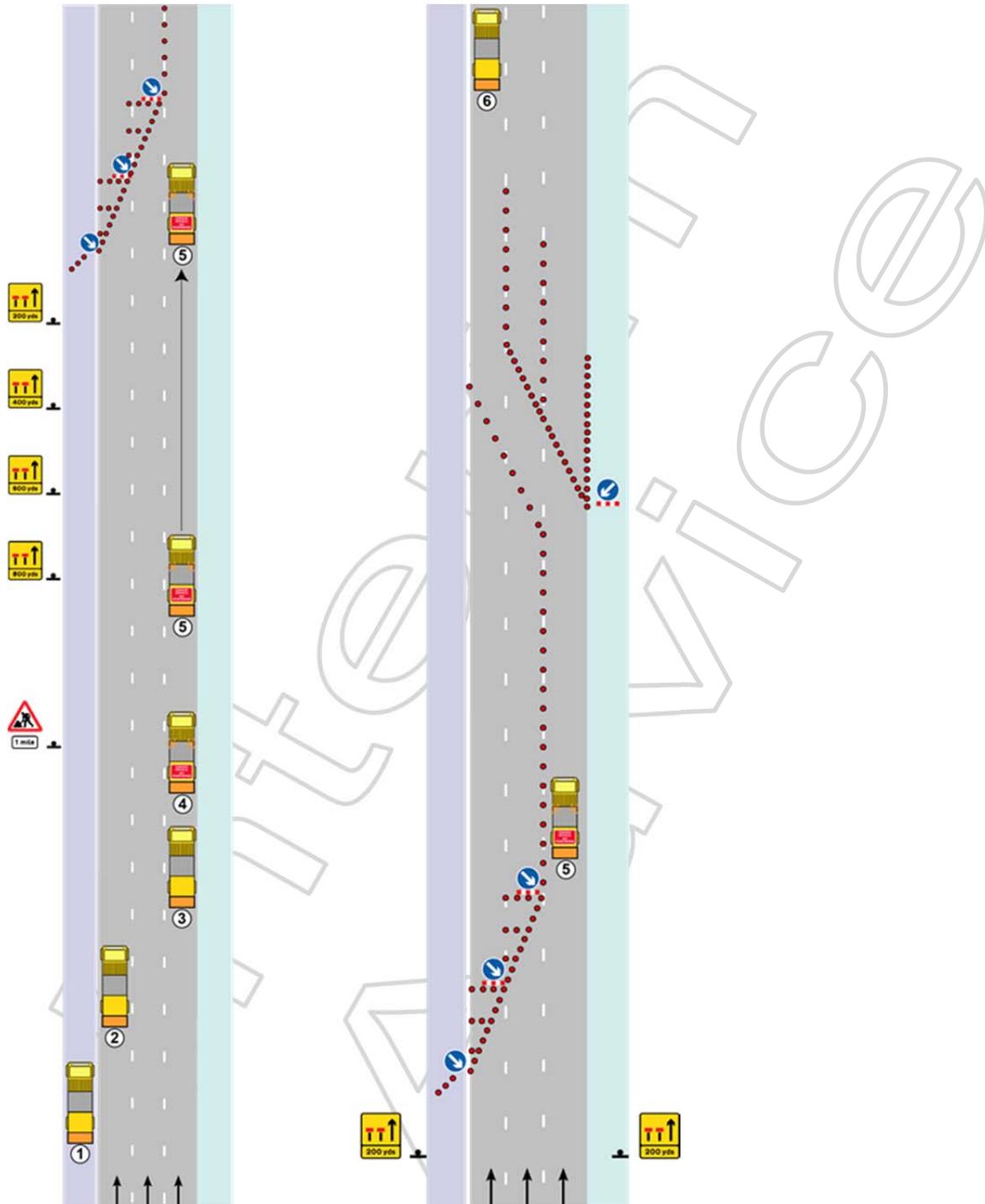
C6 Conclusions – CCV Technique

The results of this research indicated that drivers behaved in a safe and consistent manner while both MCCT and slip road CCV vehicles were in use. There were no significant changes in any safety critical behaviour by road users on the approach to road works or transit through the guide island and lead-in zone.

Highways England has accepted this technique, using either duly authorised vehicle, for control of traffic through guide islands within relaxation works on dual carriageways.

Annex B: Guidance to assist with development of site specific method statements: On-road trial method

Movements of the CCV on the approach to and through the advance signing zone (left diagram) and transit through the guide island and works location (lead-in zone illustrated, adapted from Diagrams DZA3, DZB6 and DZC2).



Annex C: Guidance to assist with development of site specific method statements: On-road trial descriptive technique

The implementation of the CCV technique, with the accompanying signing and lighting changes, should consider inclusion of the following (or equivalent) steps.

Phase 1 - Co-ordinate

- CCV (and monitor vehicle when used) assumes a position on the hard shoulder (or other suitable safe location) approximately 2-3 miles upstream of the entry taper. (The CCV driver should be aware of the works site location and marker post location for the road works 1 mile sign).
- CCV driver establishes contact with the traffic management foreman. If suitable, the foreman confirms that the crew are ready to begin the task and continues to hold for further instructions at a position of partial safety (within the lane closure).

Phase 2 - Check systems

- CCV driver deploys the crash cushion and verifies it has deployed correctly
- CCV driver to verify lighting / signing operates correctly
- Driver of monitor vehicle (if used) to check lighting and verify it operates correctly
- If equipment checks are passed, vehicle(s) start to build speed on the hard shoulder
- Vehicle(s) re-join(s) the main carriageway

Phase 3 - Commence approach

- CCV and monitor vehicle (when used) build up speed
- Monitor vehicle (when used) moves across into Lane 3 when it is safe to do so
- CCV moves into Lane 3 when it is safe to do so (behind monitor vehicle when used)

Phase 4 - Change sign

- When CCV is in Lane 3 and adjacent to the 'road works 1 mile' sign, driver to:
 - Activates light signals (red cross or xenon beacons)
 - Raise roller blind in order to display the convoy vehicle sign
- Driver of monitor vehicle (where used) to:
 - Activate vehicle beacons
 - Remains in position immediately in front of CCV

Phase 5 - Control traffic

- At the 800yds position
 - CCV driver gradually reduces speed to 40mph (if safe to do so)
 - Monitor vehicle (where used) to remain in position in front of CCV
- As the CCV reaches the end of the entry taper, CCV driver resumes contact with the CCV crew to inform them of either:
 - The details of the last vehicle that entered the lane closure, providing details to allow clear identification of the last vehicle ahead of the CCV, allowing the crew to identify the start of their working window; or
 - That the monitor vehicle has entered the guide island and confirmation that no other vehicles are behind the monitor vehicles.
- Where monitor vehicle is used, the monitor vehicle should then proceed at a safe speed through the guide island and work zone
- Depending upon the distance between the CCV and the last vehicle to enter the works zone or the monitor vehicle (referred to as the clearance distance), CCV driver may reduce speed further to ensure a sufficient working window is provided
- If, when entering the work zone, the CCV cannot maintain a speed greater than 20mph due to the proximity of a road user vehicle, CCV passes through site and works activity is aborted

Phase 6 – Clear site

- CCV passes through guide island, leading traffic safely through any works being undertaken within the works zone
- Once CCV has cleared the work zone, CCV driver conceals convoy vehicle sign, cancels any light signals shown (xenon beacons / red cross) and proceeds as normal traffic in Lane 1 whilst retracting the crash cushion

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