



THE HIGHWAYS AGENCY

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THE SCOTTISH OFFICE DEVELOPMENT DEPARTMENT



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THE DEPARTMENT OF
THE ENVIRONMENT FOR NORTHERN IRELAND

Hazardous Cattle Crossing: Use of Flashing Amber Lamps

Summary: This Advice Note identifies cattle crossings which are more than normally hazardous and recommends ways in which safety may be improved with the aid of flashing amber lamps.

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| VOLUME 8 | TRAFFIC SIGNS AND LIGHTING |
| SECTION 2 | TRAFFIC SIGNS AND ROAD MARKINGS |

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**HAZARDOUS CATTLE CROSSINGS:
USE OF FLASHING AMBER LAMPS**

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1. INTRODUCTION

1.1 The Traffic Signs Manual chapters 1 and 4 (Ref 1), which should be read in conjunction with this Advice Note, give general guidance on the use of signs to warn drivers that they may meet animals on the carriageway. This guidance includes when and how to sign places where animals regularly cross a road under supervision.

1.2 It has been identified that at a limited number of locations, there is a need for a warning system to be used which gives more visual impact to the conventional static signing. Such locations are where farmers have reason to regularly move cattle across a road and are unable to do so with reasonable safety due to the speed and/or volume of traffic.

1.3 The warning system utilizes alternate flashing amber lights to draw attention to the appropriate prescribed sign for the hazard.

2. SCOPE

This Advice Note describes cattle crossings where it is considered safety may be improved by reinforcing the cattle warning sign to diagram 548 (Ref 2) with flashing amber lamps. This advice may also be applied to crossings for other livestock providing all the criteria are met. In addition it sets out the conditions determining when the flashing lamps may be used, the form the flashing lamps should take, the authorisation requirements and advises on positioning and associated signs. The criteria in this Advice Note are not meant to be used to overcome problems arising from severance caused by newly constructed highways or major improvements.

3. DEFINITIONS

3.1 "85 %ile speed" means the 85 percentile dry weather, free flow, spot speed of cars. This speed is only exceeded by 15% of the cars under these conditions (Ref £).

3.2 "Traffic flow" means the annual average daily (24 hr) traffic flow total in both directions.

3.3 "Regularly move cattle across a road" means at least once in each direction daily on a minimum of 200 days in each year.

4. CRITERIA FOR INSTALLATION

- 4.1 There are many sites where the prescribed warning signs to diagram 548 of the Regulations (Ref 2) used alone have been effective for many years and for most of these flashing lamps will not be needed. Where sites are being reviewed each site should be considered for the signing measures appropriate on individual merit bearing in mind that the unnecessary use of flashing amber lamps will undermine the effectiveness of existing sites and ultimately the effectiveness of the flashing amber system. their use should therefore only be considered after all other options have been rejected.
- 4.2 The use of alternate flashing lamps is not envisaged as a solution for problems created by newly constructed highways or major improvements or where at other sites, the number of cattle to be regularly moved would obstruct traffic for a period of more than three minutes. In such cases other provisions such as a segregating facility should be considered.
- 4.3 Each site at which flashing lamps is contemplated should be inspected to ensure that the size and siting of existing warning signs are as recommended in Chapter 4 (Ref 1). Where necessary, remedial measures such as resiting and cutting back of foliage should be carried out. This can often provide the necessary site improvement and remove the need for flashing lamps.
- 4.4 Subject to the provisions of paragraphs 4.1 to 4.3:
- 4.4.1 On roads where the 85%ile speed is 30 mp (48 kph) or less the warning signs alone should normally be sufficient. the use of flashing amber lamps is not recommended unless the drivers clear visibility of the crossing place is less than 70 m.
- 4.4.2 On roads where the 85%ile speed is 30 mp (48 kph) or more but is less than 62 mph (100 kph) flashing lamps may be provided when the driver's clear visibility of the crossing pace is less than the desirable minimum stopping sight distance and/or the traffic flow exceeds 10,000 vehicles per day. (Stopping sight distances are tabulated in Ref 4).
- 4.4.3 On roads where the 85%ile speed is 62 mph (100 kph) or more and/or the traffic flow exceeds 30,000 vehicles per day, a surface crossing, even equipped with flashing lamps, is not acceptable. Under these circumstances it is recommended that a segregating facility be investigated.
- 4.5 Where conditions at a cattle crossing site justify flashing lamps where there is on the same road, within approximately half a mile, another site which does not ordinarily justify lamps, consideration should be given to the provision of lamps at both sites.

5. SITING

5.1 Variable Message Signs can be of very large dimensions dependent upon the number of lines of text and/or the height of the text chosen. When choosing a site for erecting a VMS care should be taken to avoid obscuration problems with other street furniture, bridges, gantries and vegetation. The sign should be mounted high enough to deter casual vandalism but be provided with easy maintenance access. Additionally, because VMSs are fragile and expensive to replace adequate safety fence provision should be made to protect the sign's structure from the effects of errant vehicles.

5.2 A large VMS may also be visually intrusive on the surrounding area. Environmental considerations should be taken into account when selecting a suitable site.

5.3 A sign positioned on the near-side verge of a carriageway can suffer from the possibility of heavy vehicles obscuring the legend from those drivers in the outer lanes. It may be possible to overcome obscuration difficulties by providing an identical repeater sign, mounting the signs on a gantry, or by duplicating the message on a sign installed within the central reserve area.

5.4 The use of gantry mounting is a very effective but expensive alternative for improving sign conspicuity. The provision of a gantry for mounting a VMS should therefore only be considered where VMSs are required for a permanent installation, and/or where the siting of the VMS on the left of the carriageway is not practicable.

5.5 The mounting of a second sign within the central reservation of a dual carriageway or motorway can be difficult due to the restrictions of clearances and the maximum size of sign that can be erected in this position. The problems of access for maintenance may also be unacceptable.

5.6 A scheme incorporating a number of VMS and fixed plate signs should be designed so that drivers have enough time to absorb all the information provided. When applying the siting requirements in Departmental Standard TD 33/90, care should be taken to ensure that for each sign sufficient distance and response time is maintained for traffic to alter direction safely.

5.7 Problems may be encountered if light emitting type Variable Message Signs are positioned so that the sun shines directly at the display. Contrast may be lost (wash-out) or messages may be visible to drivers when the sign is not switched on (phantom). Some means of shading using a hood or louvres may be necessary, depending on the type of sign, to help to reduce these effects.

5.8 Problems with specular reflection may also be encountered whenever Variable Message Signs are enclosed behind a front screen. Careful site orientation and the use of "non reflective" or specifically designed front screens are ways to minimise this effect.

6. ASSOCIATED SIGNS

6.1 The flashing lamps, should only be used in association with a sign to diagram 548 (see Appendix 3) and in conjunction with the advance warning requirements described below. If the flashing amber lamps are to be used in relation to other livestock, then an appropriate sign should be agreed.

6.2 Advance Warning

6.2.1 Advance warning should always be given of a cattle crossing where flashing lamps are used.

6.2.2 This warning should be given by erecting, in accordance with Chapter 1(Ref 1), a sign to diagram 548 in advance of the flashing amps at the distance shown in column 4 of table 1 at Appendix 1. It should be supplemented by a plate with the legend "when lights show X yards" (see Appendix 2). the distance from the crossing expressed to the nearest 50 yards, except if it is less than 100 yards when it should be expressed to the nearest 10 yards.

6.2.3 The height of the triangular sign and 'x' height of the legend on the supplementary plate should be in accordance with columns 2 and 3 respectively of table 1 at Appendix 1.

7. MOUNTING

- 7.1 The flashing lamp unit is required to comply with The Department of Transport's Specification (Ref 5).
- 7.2 A sign, 600 mm in height, to diagram 548 should be mounted below the flashing lamp unit so that the apex of the sign is separated from the lowest part of the flashing lamp unit casing, or backing board if provided, by a 50 mm gap.
- 7.3 The complete assembly is required to be mounted so that the mid-point between the two flashing lamps is between 2.4 metres and 4.0 metres above the adjacent carriageway. This height is variable in order to obtain optimum visibility distance to the flashing lamps, commensurate with a minimum clearance of 2.1 metres below the sign plate when mounted over a footway (see also Appendix 3).

8. LIGHTING

8.1 Illumination of the sign to diagram 548 mounted below the flashing lamp unit should be in accordance with Departmental Advice Note Ta/19/81 (ref 6) and is required to comply with the regulations (Ref 2). If this sign is illuminated by means of external lighting, the lighting should only operate whilst the amber flashing lamps are switched on.

8.2 Advance warning signs to diagram 548 and their supplementary plates should be reflectorised in accordance with Departmental Advice Note TA/119/81 (Ref 6) and are required to comply with The Regulations. (ref 2)

9. CONTROL

9.1 Control of the operation of the unit should be the responsibility of the owner of the animals being taken onto or across the road, a police constable in uniform or, another person appointed for the purpose by the highway authority.

9.2 The control unit and operating switch for the flashing amber lamps are required to comply with the Department of Transport specification (Ref 5).

9.3 Normally a lamp operating switch should be provided in the lamp/pole assembly at the carriageway journey start and finish points. However, where due to physical or siting constraints the flashing lamps are installed some distance from the journey start and finish points, consideration should be given to installing remote control switching as specified in Ref 5. These should be located at the entry/exit points on Ref 5. These should be located at the entry/exit points on the carriageway in order to minimise the operating time of the flashing amber lamps.

9.4 the specification (Ref 5) requires a preset time to be incorporated which automatically switches off the flashing lamps, and if appropriate the sign lighting, should the user fail to do so. The choice of setting for this should rest with the Highway Authority and the preset period should be determined taking into account the time required to:-

- (a) establish the initiation of cattle movements in a suitable traffic gap;
- (b) cross the cattle at a reasonable speed;
- (c) return the highway use to free flow conditions and switch off the flashing lamps.

9.5 It should be the responsibility of the Highway authority to ensure that users of the crossing understand that they are required to both establish the crossing routine and return the highway to normal use as a complete safety package.

10. MAINTENANCE

In order that the equipment fulfils its function efficiently, it is required to be maintained in accordance with the Department's requirements (Ref 7).

11. SIGN AUTHORISATION AND EQUIPMENT APPROVAL

11.1 Flashing amber lamps are not prescribed in The Regulations for the use recommended in this Advice Note. Prior approval in writing, by or on behalf of the Secretary of State, is therefore required before use on any public road.

11.2 Similarly, the supplementary plate recommended in the Advice Note for use with the advance warning sign is not prescribed and also requires authorisation prior to use on any public road.

11.3 to comply with direction 41 of The Regulations (Ref 2), only flashing lamps and associated control equipment of a type which has been approved by, or on behalf of The Secretary of State may be used.

11.4 All requests for sign authorisation and equipment approval should in the first instance be referred to the appropriate Director (Transport), or in London to the assistant Chief Engineer of GLRT Division.

12. REFERENCES

1. Traffic Signs Manual, Chapter 1 - Introduction: HMSO 1982 and Chapter 4 - Warning Signs: HMSO 1979
2. Statutory Instrument 1981 No 859 - The Traffic Signs Regulations and General Directions 1981 as amended: HMSO 1979
3. TA 22/81 - Vehicle Speed Measurement on All Purpose Roads: Department of Transport 1981.
4. TD 9/81 - Road Layout and Geometry: Highway Link Design and amendment no 1, Department of Transport 1981.
5. Traffic Control and Communications Division. Specification MCE 0148. Cattle Crossing Warning Equipment.
6. TA 19/81 - Reflectorisation of Traffic Signs: Department of Transport 1981.
7. TD 25/86 - Trunk Roads and Trunk road Motorways - Maintenance of Traffic Signs. Department of Transport 1986.

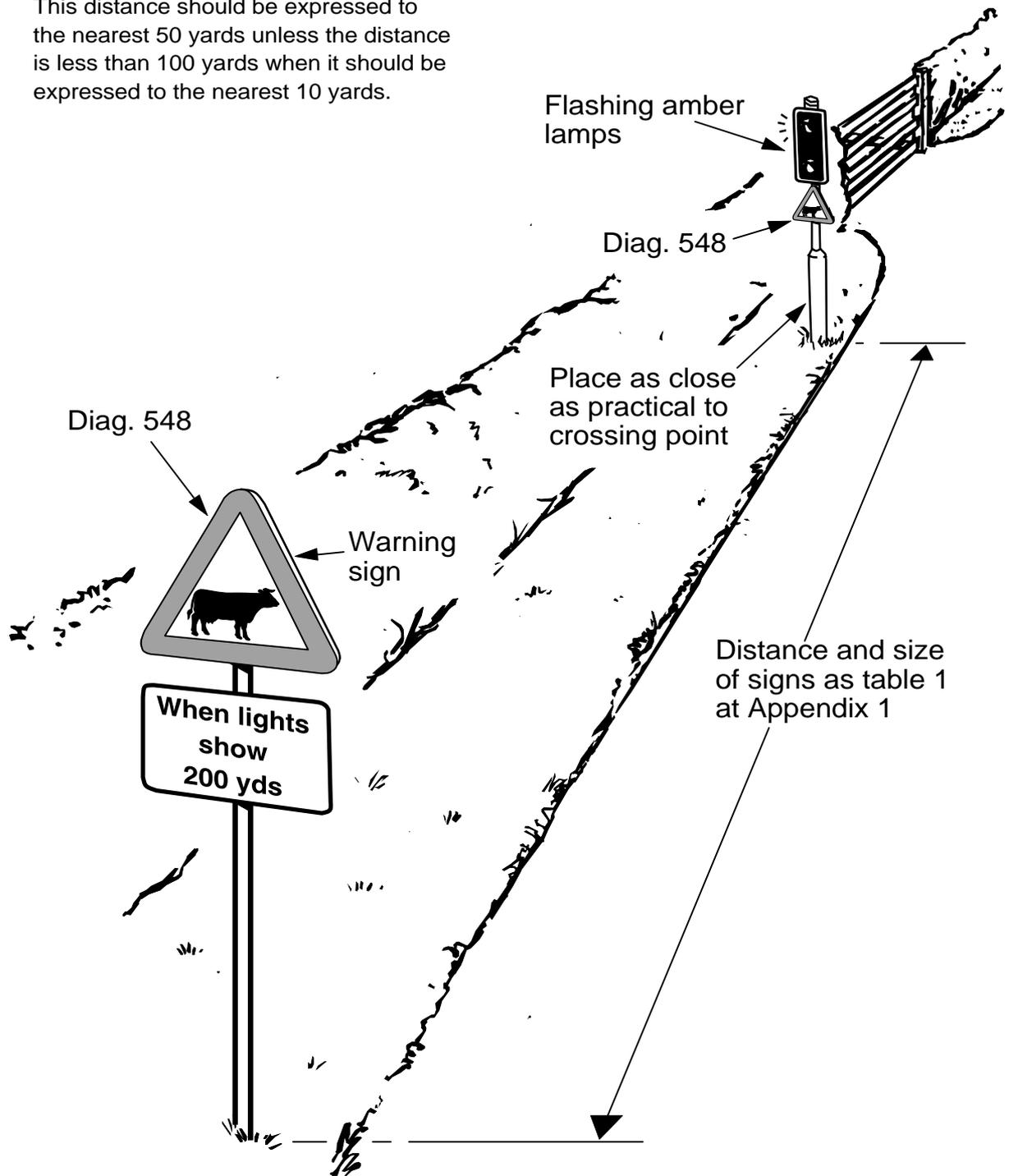
13. ENQUIRIES

TABLE 1

| 1 85 percentile approach speeds | 2 Height of sign to Diag. 548 mm | 3 Supplementary Plate x height mm | 4 Distance of Sign from hazard metres | 5 Recommended clear visibility distance of signs - metres |
|---------------------------------------|---|--|--|--|
| over 48 kph/up to 64 kph | 750 | 75 | 45-110 | 60 |
| over 64 kph/up to 80 kph | 900 | 100 | 110-180 | 75 |
| over 80 kph/up to 100 kph | 1200 | 150 | 180-245 | 75 |

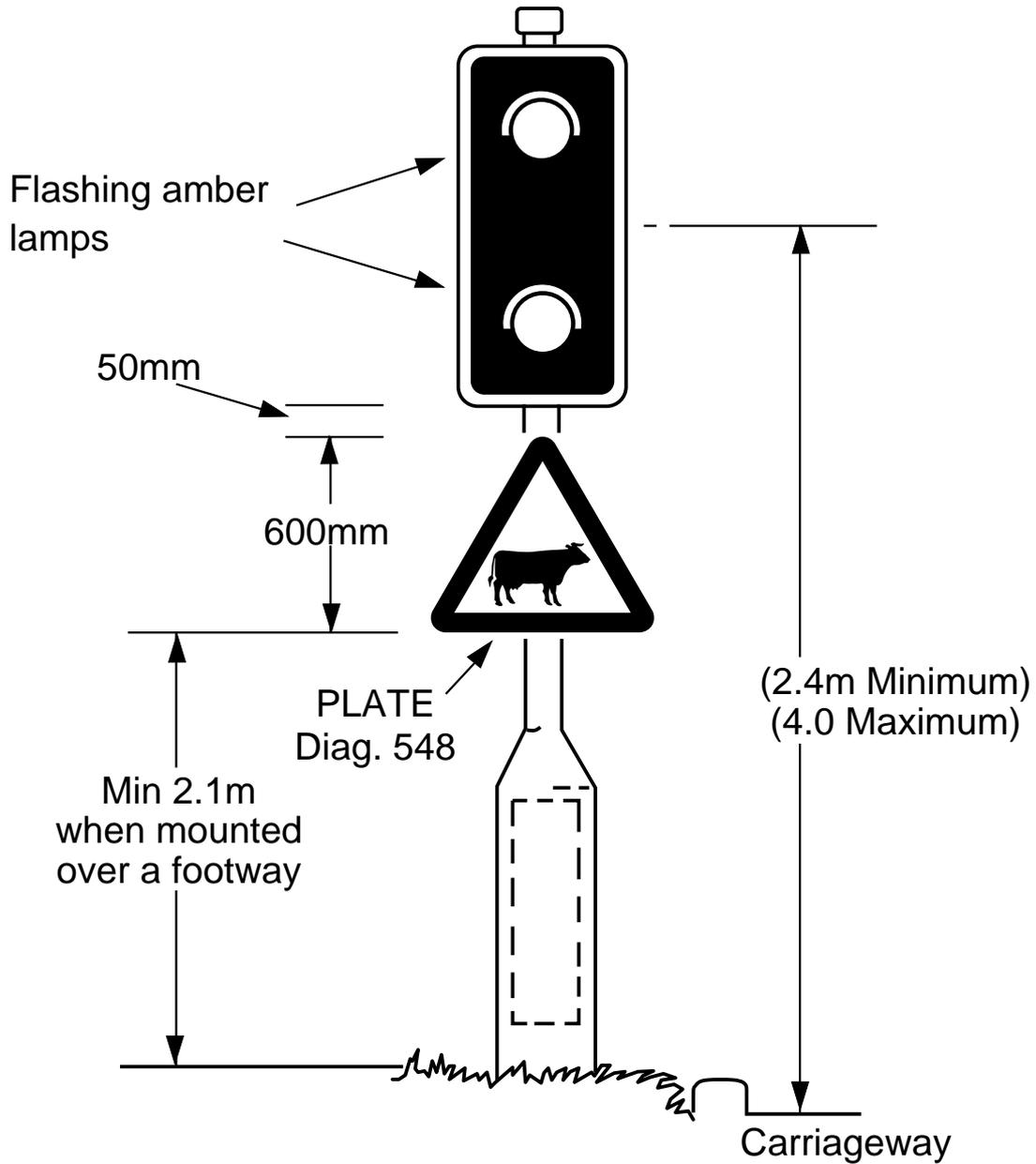
SIGNING A HAZARDOUS CATTLE CROSSING WHEN FLASHING LAMPS ARE USED

Note : The distance shown on supplementary plate should be varied to accord with its distance from the crossing site.
This distance should be expressed to the nearest 50 yards unless the distance is less than 100 yards when it should be expressed to the nearest 10 yards.



Signing a hazardous cattle crossing when flashing lamps are used

THE FLASHING LAMPS AND HOW THEY SHOULD BE MOUNTED



The flashing lamps and how they should be mounted