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chapter 17 Management of Commercial Vehicles

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17.1 Classes of commercial vehicles

The movement of people and goods by road is essential to the economic prosperity of a country and the quality of life which people enjoy. However, such movements can cause traffic and environmental problems. Effective management of commercial vehicles needs to form part of an overall traffic management strategy, for towns, cities and their surrounding areas. It is important that individual decisions about restrictions and recommended routes taken at a local level are in accordance with the overall strategy. In most towns and cities road space is at a premium and a balance between ease of access for commercial vehicles and the free flow of traffic will have to be made. The environmental impacts of commercial vehicles will need to be carefully considered in sensitive areas such as residential streets and historic or conservation areas.

HCVs and LCVs

For the purpose of this document, a distinction is made between Light Commercial Vehicles (LCVs) which have a gross vehicle weight (gvw) of 3.5 tonnes or less and Heavy Commercial Vehicles (HCVs) which have a gvw greater than 3.5 tonnes.

Light Commercial Vehicles (LCVs) are generally purpose built vans/pick-ups with a carrying capacity smaller than that of HCVs. LCVs generally pose fewer environmental problems than HCVs because of their relatively small size.

Vehicles have rights to pass along roads unless legal restrictions are made to prevent their passage along particular roads or through particular areas. In some areas physical road space may be limited or buildings/structures may restrict access.

17.2 Problems associated with commercial vehicle operation

Whilst performing an essential function HCVs can have a significant detrimental impact on the environment of towns and cities. Many urban areas were not designed to accommodate the size and number of HCVs now using them. Off-street servicing facilities, and road space in these areas can be inadequate for the size of vehicles that require frequent access.

Loading and unloading

Vehicles loading and unloading goods often have to park on the street and this can cause conflict with the needs of other road users including pedestrians and cyclists. This requirement can result in localised congestion and can conflict with other dedicated road uses such as bus lanes.

Noise, vibration and emissions

Many concerns that people have about heavy commercial vehicles relate to the size of the vehicles and the noise, vibration and local air pollution that they can generate.

Noise is generated primarily by the engine, tyres, suspension system and braking system. Noise can also be generated by insecure bodywork or fittings/loads and the effects of wind on the bodywork. Refrigeration units are a particular source of noise especially if running during the night. Occasionally, the inappropriate use of loud audible warning devices (such as horns) can constitute a nuisance. In narrow streets enclosed by buildings the noise can accentuate people's concerns.

Vibration generated by traffic can be a nuisance, with that from HCVs being higher than for general traffic. Ground-borne vibration reduces as it radiates from a

vehicle. The firmer the sub surface the more localised the vibration effect will be. Vibration levels vary markedly with the soil type in an area. BS 7385¹ gives guidance on thresholds of vibration exposure that may give rise to damage to buildings. Vibration (and noise) can be worse when a vehicle runs across a surface defect such as a pothole or a traffic calming measure such as a ramp.

Gaseous emissions from motor vehicles are a major general source of environmental concern. Congestion has a major detrimental impact on localised air quality. Air pollution such as dust, smoke, particulate matter and fumes are also a major health concern. Older or poorly maintained HCVs can contribute significantly to this problem and are often noticed more readily by people. Narrow enclosed streets with significant volumes of HCV movement and servicing needs are likely to suffer the worst localised problems.

Safety

Concerns are often expressed about the speed of HCVs. Their operation can lead to a feeling of intimidation for other road users. However it is often their size, and the noise they generate rather than their actual speed that makes the problem seem worse. Guidelines on the degree of segregation required between cyclists and trucks is included in the Cycle Manual.

Use of residential roads

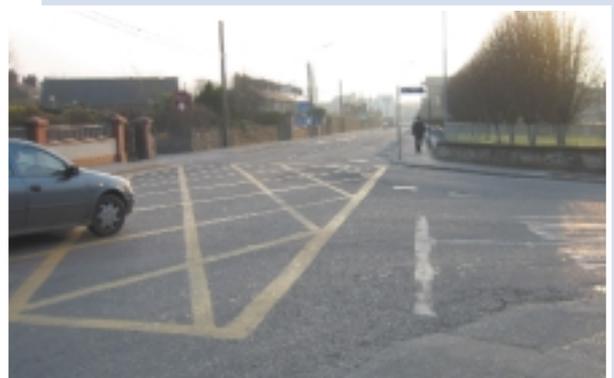
The use of residential roads by HCVs causes concern about noise, vibration and safety for residents, and can lead to requests for weight restrictions or access-only restrictions to remove them. Before introducing such measures it is necessary to investigate the cause of the problem. There are a variety of reasons why HCVs could be using residential roads:

- to take short cuts
- to avoid road works and/or delays on their normal routes
- because of poor signing for their destination
- there is no alternative route
- for deliveries
- for refuse collection

If there are problems with trucks using an unsuitable area then the signing for truck routes and industrial estates should be



Historic building restricts access



Wide junction designed for HGV causes problems for pedestrians

checked first to ensure that it is complete and consistent. Often poor signing leads to drivers getting lost and driving into residential areas to look for their destinations or ask for directions.

Although the occasional use of an unsuitable road by HCVs is unwelcome, it is the constant use of specific routes by larger numbers of HCVs that is of greatest concern.

17.3 Impact on the road network

Heavy vehicles do the most damage to the structure of the road system and lead to concern about historic buildings and structures.

The maximum possible weight of the heaviest vehicle combinations has been increased to 44 tonnes²

In preparation for the introduction of 44 tonne vehicles structures have had to be checked and some will have to be strengthened or replaced in order to carry these heavier vehicles. The vehicles themselves are not larger than before but have the potential to carry more goods and cut down on the number of trips required.

Despite legal requirements relating to manoeuvrability, HCVs may overrun footways or verges. This can result in damage to footways and verges and to street furniture such as signs. In addition to the cost of repairs, this can be a source of danger to pedestrians and can cause damage to underground services. Preventing trucks from encroaching onto footways and verges is therefore an important element in planning and design.

17.4 Licensing and planning controls

In order to achieve effective management of commercial vehicles, the movement and parking of HCVs will need to be planned for and regulated. Licensing and planning controls can help to provide and regulate issues such as routing and overnight parking.



Signs damaged by HCV

Where a local authority adopts a broad policy on truck management, the policy would be strengthened if it were incorporated into its development plan. The advantage of this is that a formal plan of this type must be taken into account when decisions are being made on planning applications.

In dealing with a planning application, the authority has to decide whether (having regard to the character of the area) a proposal will attract a significant number of large vehicles and whether access can be suitably located and designed. The difficulty is in striking the right balance between accepting development opportunities for an area, and achieving satisfactory means of dealing with generated HCV traffic.

In the case of an existing HCV depot being sited in an unsuitable area, planning controls cannot prevent this use being continued. However, much can be done to encourage the relocation of a goods depot by ensuring that sufficient sites are available in purpose built warehousing or industrial areas with good access to the main road network.

In addition to planning controls, commercial vehicle operators also have to comply with licensing controls. HCV users (with the exception of own account users) require an operator licence, which specifies where their vehicles will normally be kept. Local authorities and adjacent landowners may make objections to the granting of an operator licence on several grounds relating to truck parking, loss of amenity, etc. In addition, environmental protection conditions can be attached to an operator licence to control, for example, the number of vehicles and movements, hours of operation, and parking facilities.

17.5 Signing routes for commercial vehicles

To minimise the detrimental impacts of HCV use on the road network the signing of specific routes for HCVs can be introduced.

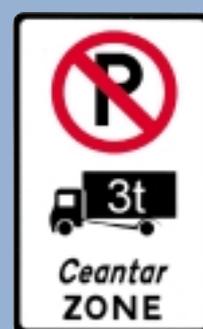
Advisory routes have the advantage that they do not rely upon high levels of enforcement to operate. For large numbers of vehicles heading to one destination it is possible for specific advisory routes to be devised. This relies on the presence of a



Weight restriction



HGV route signing



Parking restrictions for HCVs

convenient suitable route. Conflict can however arise when the best available route takes HCVs along roads with significant numbers of residential properties and pedestrian or cycle movements. In practice, "unofficial" truck routes are often created when area wide restrictions on HCV access are implemented, as this often forces displaced vehicles onto adjacent major roads.

Signing is also an important element in any truck management strategy. The first step should be to identify the main destinations on an area wide or route basis and provide special signs to guide trucks along suitable designated routes. The signing should be updated regularly to ensure that it covers new developments. The designation of specific routes and a significant investment in better and consistent signing can help to ease problems. If problems persist, it may be necessary to consider a weight limit or access restriction.

17.6 Area and route regulatory controls

In order to reduce persistent problems with HCVs unnecessarily using sensitive areas such as residential roads, area-wide restrictions on the movement of HCVs over a certain height or weight can be implemented using regulatory signs.

Weight restrictions

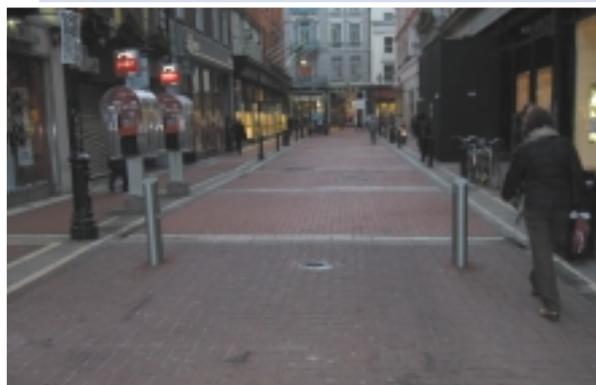
Weight restrictions are provided for in Article 17 of the Road Traffic (Traffic and Parking) Regulations, 1997 (SI No. 182 of 1997). These regulations specify that where the unladen weight of any vehicle exceeds the weight specified on the Regulatory Sign (RUS 015), then the vehicle shall not proceed beyond the sign. The only exception to such a restriction applies where it is necessary for a vehicle to enter a road solely for the purpose of gaining access to or from premises accessible only from that road. The Traffic Signs Manual indicates that weight restriction signs should be located on both sides of the road where the restriction commences and should face approaching traffic.



Fibre Optic warning sign



Height restriction



Rising bollard to restrict access

Weight restrictions are used to restrict commercial vehicles over specified unladen weights primarily for 3 purposes:

- to protect weak bridges and other structures from damage
- to restrict use of roads that are considered unsuitable for general use by HCVs
- to protect the amenity of an area

Weight restrictions require signing not only at the point of restriction, but also in advance, at locations where vehicles may turn off other roads to gain access to the restricted section. Lack of sufficient advance warning signs (and turning facilities near to the restriction) can add to enforcement problems. Restrictions that are well signed in advance and alternative routes provided for require less enforcement.

Restrictions can also be applied to the parking of HCVs to prevent drivers bringing their vehicles home or to prevent the development of commercial operations based in residential properties. Figure 5.45 of the Traffic Signs Manual shows a regulatory sign, which can be used to indicate a zonal restriction on the parking of vehicles exceeding a certain unladen weight.

Height restrictions

Where a bridge or other structure causes a headroom restriction, adequate signs indicating the restriction should be provided both on the bridge/structure concerned and on the road approaches to it. Road authorities should be satisfied as to the accuracy of the clearance shown on the signs and their compatibility with any signs provided by the owner, eg Iarnród Éireann. In the case of an overhead railway bridge, the Divisional Engineer of Iarnród Éireann should be notified prior to any proposed works, including resurfacing, so that the dangers arising from any possible raising of the road level, no matter how slight, can be discussed in advance. Article 34

of the Road Traffic (Traffic and Parking) Regulations, 1997 (S.I. No. 182 of 1997) gives effect to a regulatory traffic sign for the purpose of applying a legal prohibition on vehicles over a specified height from passing the sign.

Road authorities should review the signage at all bridge sites with restricted headroom (ie less than 5.03m headroom). It is important to provide the new regulatory height restriction sign on the bridge structure in addition to providing warning signs on the approaches. In the case of rail over road bridges, Iarnród Éircann would fix the signs on the structure and any review of such signage requires a joint approach by the Road Authority and Iarnród Éircann.

Height and weight restrictions are most commonly used to protect structures and buildings that could be damaged by HCVs. Various measures can be employed to minimise the need for enforcement activity by An Garda Síochána. Examples of such measures include:

- Secret signs – fibre optic signs which only display a message when a vehicle that infringes the restriction is detected
- Rising bollards to restrict access to specific vehicles
- Snap-off or demountable bollards to restrict access

Enforcement by physical means such as bollards could cause access problems for buses and emergency service vehicles. Hence consultation with the emergency services, bus operators and bodies representing HCV operators (in addition to any necessary statutory consultations) should be undertaken before these measures are implemented.

In all such schemes at least one unobstructed route must be provided for genuine access needs such as refuse disposal, deliveries, etc. Facilities for vehicles to turn and exit via the same route (if necessary) should also be provided.

17.7 Town and city centres

Towns, cities and villages require frequent access by HCVs to service leisure, shopping, business and commercial needs. In historic centres, roads are often narrow and buildings may be close to the edge of the road. The road layout and servicing arrangements in many areas are not designed to cope adequately with the size and number of HCVs now requiring access. The result is that conflicts with other road users can occur. HCVs loading and unloading can cause congestion. HCVs often park partially on the footway to reduce their effects on motor traffic but this then causes problems for pedestrians, and may result in damage to footways.

An increasingly common way of sharing limited road space more equitably is to introduce pedestrian priority areas. Access for vehicular traffic including deliveries is often prohibited at certain times of day and on certain days of a week when larger numbers of pedestrians are present. This can pose problems for the delivery of goods and services. Operators have to reorganise their schedules accordingly. In planning pedestrian priority schemes the servicing needs of the area will need to be considered and consultation should take place with the owners of properties affected (in addition to any necessary statutory consultations).

17.8 Abnormal and Hazardous Loads

Abnormal and hazardous loads represent only a small fraction of the total HCV journeys undertaken. However by their nature they may cause special problems or concerns. Abnormal loads² or vehicles are of a size (height, length and/or width) or weight greater than those normally allowed on roads.

All abnormal load movements are subject to the issue of a permit by the road authority through whose area they pass. The application procedure involves notification of the Garda Commissioner, giving 4

working days notice of the intention to apply to the local authority. Details of the permit procedures are set out in Regulation 59 of the Road Traffic (Construction and use of Vehicles) Regulations (S.I. No. 5 of 2003)².

Information which is required by the local authority includes the intended route and times of travel as well as a specification and description for any vehicle to which the permit relates. It may be necessary for the local authority to place restrictions on time of travel (e.g. overnight or at weekends) to minimise disruption to traffic. Paragraphs (10) and (11) of Regulation 59² specify the following:

(10) A local authority that issues a permit may attach to the permit any limitations, restrictions or conditions (including in particular conditions as to weight, dimensions, speed, number of trailers, springs, tyres and wheels) which they consider advisable to prevent unnecessary damage to public roads or which, after consultation with the Commissioner, they consider expedient to protect other road users.

(11) A permit may, in addition to specifying a particular public road in a specified area, authorise the occasional use of any vehicle to which it relates on other public roads not specified, subject to compliance with conditions specified by the appropriate local authority, including in particular the condition that before using a vehicle on any such other public road, the person in charge of the vehicle shall inform, orally or in writing, an officer of the appropriate local authority designated for that purpose by the local authority and shall comply with any instructions given by such officer.

Routes for individual abnormal loads can vary because of the weight, height or width constraints at various points along particular routes. Some routes can be circuitous. Road authorities will need to take

account of the movement of abnormal loads when considering changes to the road layout that could impose restrictions. It may be necessary to make adjustments to the alignment of schemes to ensure that loads can still pass. Care needs to be taken with the design of new structures, which might place unintended restrictions on the movement of abnormal loads. The use of demountable street furniture may be required.

It is also necessary to transport certain hazardous loads on the road network. There are National Regulations, EU Directives and international agreements governing this subject. There is also a United Nations system for classifying hazardous loads.

Vehicles carrying such loads are required to display plates and carry documentation identifying the loads and details of action required, precautions and evacuation procedures (if appropriate) in the case of a leakage. The name of the manufacturer, and contact number for obtaining specialist advice should also be clearly displayed. In the event of an incident leading to a spillage or leakage emergency services and local authorities may be called upon to deal with the incident, traffic problems, clean up the road and make the load safe and secure.

Hazardous loads normally travel to/from regular locations such as manufacturing plants, warehouses and distribution terminals at ports or railheads. These regular trips lead to the identification of specific routes which can be agreed with the haulage contractors, emergency services, road authority, etc. so that appropriate responses to possible emergencies can be worked out and environmentally sensitive areas avoided.



Service vehicle causing problems



Pedestrian priority scheme



Abnormal load

17.9 References

1. BS 7385 – part 2:1993 Evaluation and measurement for vibration in buildings (UK). Available from The Stationary Office. Telephone orders +44 20 7873 9090, Fax orders +44 20 7873 8200, Enquiries +44 20 7873 0011
2. The Road Traffic (Construction and Use of Vehicles) Regulations, 2003 (SI No 5 of 2003). (Available from Government Publications Sale Office, Sun Alliance House, Molesworth Street, Dublin 2, or by mail order from Government Publications, Postal Trade Section, 51 St. Stephen's Green, Dublin 2, Tel 01 6476879; Fax 01 6476843)
3. "Trucks In The Community" – A study sponsored by the Civic Trust, the County Surveyors Society, and the Department of Transport (UK). Available from the Stationery Office UK