

# Road Haulage of Round Timber Code of Practice



and  
Forest Industry Transport Group





# ROAD HAULAGE OF ROUND TIMBER

## Code of Practice

Acknowledgements .....	2
1. INTRODUCTION .....	3
1.1 Background .....	3
1.2 Aims and Objectives .....	3
2. VEHICLE SPECIFICATIONS .....	4
2.2 Load Weighing Devices .....	6
2.3 Vehicle Maintenance .....	7
2.4 Road Freight Licence .....	7
2.5 Guidelines .....	7
3. SAFETY AND HEALTH .....	7
Recommendations .....	7
3.1 Safety and Health in Forestry Operations .....	8
3.2 Driving Hours, Breaks and Rest Periods .....	9
Recommendations .....	9
4. ROADS NETWORK .....	10
4.1 Forest Roads .....	10
4.2 Raising Non-Drive Axles of Tractor Units .....	11
4.3 Roadside Facilities .....	11
4.4 Road Defect Reporting .....	11
4.5 County Roads and Agreed Routes .....	11
4.6 Extraction and Stockpiling of Timber .....	12
5. LOADING TIMBER IN THE FOREST .....	13
5.1 Lifting Equipment .....	14
5.2 Load Stability .....	14
5.3 Personal Protection .....	14
5.4 Overhead Lines .....	15
5.5 Anchorage Points .....	15
5.6 Headboard .....	15
5.7 Lashings .....	15
5.8 Stacks on the Longitudinal Axis .....	16
5.9 Supports .....	16
5.10 Stacks on the Transverse Axis .....	17
5.11 Environment and Pollutants .....	17
6. TRANSPORTING TIMBER .....	18
6.1 Route Planning .....	18
7. UNLOADING TIMBER AT THE FINAL DESTINATION .....	18
Bibliography .....	20

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## 1. INTRODUCTION

### 1.1 Background

Timber volume production from Ireland's forests has reached 3 million m<sup>3</sup> and will rise to 10 million m<sup>3</sup> by 2035, if the national afforestation targets are achieved. Forestry sustains an estimated 14,500 jobs, the majority of which are rural based. In addition to its economic contribution to rural development, forests fulfil a number of important environmental functions like carbon sequestration, recreation, leisure, landscape etc.

Road haulage of round timber is one of the more visible forestry operations and has come under increasing scrutiny by both local authorities and the public. The *Code of Best Forest Practice* issued by the Forest Service, while providing a number of guidelines, is not sufficiently comprehensive to address all of the issues associated with the haulage of round timber.

Policy for the forestry transport sector in the *Strategic Plan for Forestry* is: *to develop an efficient, economically viable, safe and environmentally compatible transport sub-sector*. Investment in roading infrastructure in rural Ireland has not recognised the transport needs of the expanding forest sector. In 1995 Coillte (Irish Forestry Board) conservatively estimated that up to 2,000 km of county roads required improvement for forestry transport. Ireland's forestry industry must compete on international markets and transport of timber represents a significant cost.

In developing this Code of Practice (CoP), IFIC has drawn heavily on the experience in the UK and Northern Ireland.

### 1.2 Aims and Objectives

The Government's Strategic Plan for Forestry identified the need for codes of practice for harvesting and transport. To date issues relating to timber haulage have not been addressed. This Code of Practice provides guidance on the best practice to be adopted in the transportation of round timber. The safety of the operators of haulage vehicles, the public at large and the need to limit the damage to roads were prime factors in the development of this code.

In adopting this Code of Practice, the forest industry recognises the requirement to improve the competitiveness of the industry in the context of safety and environmental standards and the need to act in a co-operative fashion to ensure continued endorsement of the code. To this end the industry aims to:

- Allocate sufficient resources for haulage-related health and safety to secure safe operations for drivers as well as for other road users.
- Direct research and development to improve productivity and reduce costs for road haulage.



- Encourage co-operation across the industry through regular discussion and debate.
- Engage in dialogue with industry partners, local communities and Local Authorities to resolve and/or prevent difficulties at local level.
- Improve environmental awareness for timber transport.

The current legal and statutory requirements for road vehicles are only dealt with where there is specific relevance to round timber haulage. This code should be read in addition to the normal legal requirements for owning and operating haulage vehicles.

Implementing the code will provide a safer supply chain from the forest, assist haulage operators to ensure that their vehicles are correctly loaded and demonstrate to the public and authorities the responsible nature of the Irish forest industry.

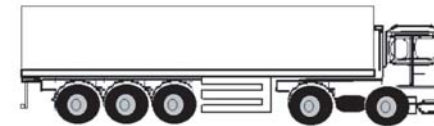
## 2. VEHICLE SPECIFICATIONS

All parties within the supply chain have a duty to monitor compliance with Gross Vehicle Weight (GVW) regulations. An overview of different vehicle types and their specifications is presented below and based on the Road Traffic (Construction and use of Vehicles) Regulations 2003 Statutory Instruments S.I. No. 5 of 2003.

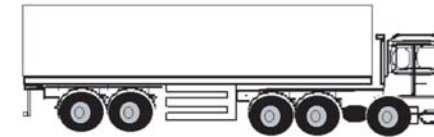


▲ Loading timber in the forest.

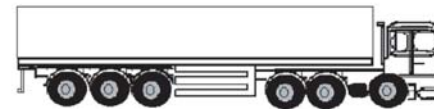
### 2.1.1 Maximum Weight



**Artic 5 axles (2+3)**  
Max weight = 42 tonnes  
From 2008, max weight = 40 tonnes



**Artic 5 axles (3+2)**  
Max weight = 42 tonnes



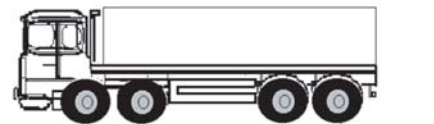
**Artic 6 axles (3+3)**  
Max weight = 44 tonnes



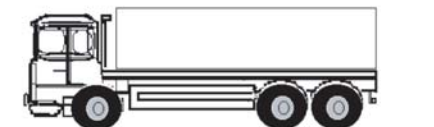
**Rigid + Drawbar 5 axles (3+2)**  
Max weight = 42 tonnes



**Rigid + Drawbar 6 axles (3+3)**  
Max weight = 44 tonnes



**Rigid 4 axles**  
Max weight = 30 tonnes  
With twin tyres and road friendly suspension, max weight = 32 tonnes



**Rigid 3 axles**  
Max weight = 25 tonnes  
With twin tyres and road friendly suspension, max weight = 26 tonnes

### 2.1.2 Maximum Vehicle Length

Rigid Lorry	12 m	Artic	16.5 m
Trailer	12 m	Combination of Vehicles	18.75

### 2.1.3 Maximum Vehicle Width

The maximum width of any vehicle, with a design gross weight greater than 3.5 tonnes, is **2.55 metres**. The maximum width of a vehicle together with its load is **2.9 metres**.

### 2.1.4 Overhanging Load Restrictions

The maximum allowable side projection is 300 mm. The maximum allowable end projection is 3 metres and all loads with end projections greater than 1 metre will be clearly marked with a red rag for example.

### 2.1.5 Special Permits

In exceptional circumstances, the legal limits on weights and dimensions may be exceeded, in which case a permit must be obtained from the relevant local authority through whose functional area the load is to be carried.

## 2.2 Load Weighing Devices

The method of assessing vehicle and axle weight by the authorities is generally to use weighbridges. Owing to the dispersed nature of forests and the forestry industry, travelling to the ‘nearest weighbridge’ is not always practicable. A number of manufacturers provide load cells for haulage vehicles or devices for fitting to loaders, which could provide a record of the vehicle gross weight or load and some also provide an axle weight record. Mobile weighbridges of varying types that provide similar information are also available.

It may be necessary to carry out a detailed survey of the national haulage fleet in order to determine the requirement in relation to these devices, the increased operational costs and to confirm a practical timescale for their introduction.



▲ Timber extraction.

## 2.3 Vehicle Maintenance

It is the responsibility of hauliers to ensure that their vehicles are maintained in a road worthy condition. There is a legal requirement that both tractor and trailer units have a current road worthiness certificate (DoE).

## 2.4 Road Freight Licence

All haulage contractors should be in possession of a current road freight licence and each vehicle should display the appropriate disc.

## 2.5 Guidelines

Hauliers must inform consignors of the legal capacity of their vehicle(s).

Whoever within the supply chain employs the haulier, either directly as an employee or as a contractor, for the carriage of round timber, and finds the haulier to have exceeded the prescribed weight limits, must warn the haulier and prohibit such practice.

Payment for any load is to be restricted to the legal capacity of the vehicle.

It is the responsibility of the vehicle operator to provide methods and training by which the driver can be satisfied that the vehicle meets the legal restrictions before proceeding from the loading site.

### Recommendations

- ▶ COFORD in collaboration with the forest industry to undertake research and evaluation of load cells and mobile weighing devices. Following this, the phased introduction, based on the COFORD recommendations, of weighing devices/load cells on all road vehicles used in the transportation of roundwood.
- ▶ An industry-wide penalty system for non-compliance to be agreed and introduced. The system should incorporate tolerance levels recognising the weight variability of timber.

## 3. SAFETY AND HEALTH

The Safety, Health and Welfare at Work Act, 1989 aims to ensure that all employers, employees and self employed take adequate precautions regarding their own and others safety and health.

Employers need to consider the health and safety training requirements of drivers while recognising that they work unsupervised in a constantly changing environment. It is the employers responsibility to carry out a risk assessment and this should be incorporated into their safety statement.



Those who share a work site in the forest should liaise to co-ordinate the measures that they (as employers or self employed) need to take to comply with their health and safety responsibilities. On a large site, this liaison may need to be undertaken formally at the start of a project with all of the parties presenting their completed risk assessments. On smaller sites, an employer may instruct their drivers to carry out liaison on their behalf (as long as adequate training has been given).

There is an onus on all within the forest industry to take responsibility in relation to the health and safety of forest workers.

### 3.1 Safety and Health in Forestry Operations

In May 2003 the Health & Safety Authority published a *Code of Practice for the Management of Health and Safety in Forestry Operations* which came into effect on 1 July 2003. In the code the prevalence of contracting of harvesting and haulage operations in forestry is recognised and responsibilities or roles in relation to health and safety issues are clearly defined.

Everyone involved in forestry operations has a legal duty to ensure people's health and safety is not put at risk during or as a result of these operations. Responsibilities, and where they lie, are clearly defined in this code and there is an onus on all involved in the industry to become familiar with its content.

Four specific roles are identified:

- ▶ **Landowner** The person or company in control of the land on which the forestry work takes place.
- ▶ **Forestry Work Manager (FWM)** The person or company who commissions work on the forestry site.
- ▶ **Contractor** The provider of a forestry service.
- ▶ **Subcontractor** Anyone engaged by a contractor other than by direct employment.

Depending on how the contracts are organised an individual may have more than one role. Generally hauliers take on the role of contractor or subcontractor in the implementation of these safety procedures. Depending on the contract, they have specific duties and responsibilities to themselves and to others involved in the operations. For example, hauliers undertaking the role of contractor will:

- Work with the FWM to ensure compliance with safety and health standards;
- Select subcontractors who are competent and who have made adequate provision for health and safety; and
- Manage subcontractors to promote good safety and health practices.

The contractor must supply the FWM with a Safety Statement and a written Risk Assessment along with training and machinery certificates etc. as required. Following discussions with the FWM, control measures and safety rules will be

agreed and finalised. A clear line of communication and responsibility must be established prior to the commencement of operations.

### 3.2 Driving Hours, Breaks and Rest Periods

Permissible driving hours can have major implications for vehicle scheduling and route planning. The geographical spread of forests and of processing plants, coupled with the variable nature and quality of forest and public roads, often requires long journey times. Co-operation between hauliers and consignors has a substantial bearing on route planning and scheduling and ultimately the economic viability of haulage companies.

The main points in tachograph legislation (Statutory Instruments 392 and 393 of 1986) applicable to heavy goods are:

- A driver can drive for a maximum of 9 hours in one day. This can be increased to 10 hours twice a week.
- After 4 hours and thirty minutes driving, a driver must take a break of 45 minutes. This break may be replaced by breaks of at least 15 minutes each, distributed over the driving period or immediately after this period.
- A driver must have a minimum daily rest of 11 consecutive hours. This may be reduced to 9 hours not more than 3 times a week, subject to compensation.
- A weekly rest period must be taken after no more than 6 daily driving periods.
- A driver must have a minimum weekly rest of 45 consecutive hours, reducible to 36 hours minimum at base or 24 hours away from base subject to compensation.
- The maximum number of hours a driver can drive in a week can not exceed 56 hours.
- The maximum number of hours a driver can drive in a fortnight can not exceed 90 hours.

### Recommendations

- ▶ Increase awareness among hauliers of the *Code of Practice for Managing Safety and Health in Forestry Operations* through workshops and meetings.
- ▶ Encourage the preparation of generic Safety Statement Templates and associated documentation for use in the haulage sector.
- ▶ Encourage closer co-operation between consignors and hauliers to plan routes in a manner which optimises the economic returns within a legal framework.

## 4. ROADS NETWORK

Road transport is and will remain the most important mode of timber transport in Ireland. It represents a substantial part of the industry’s raw material costs and has a major influence on the sector’s overall competitiveness. The development of an efficient timber transporting road network is vital to the future success of the forest industry.

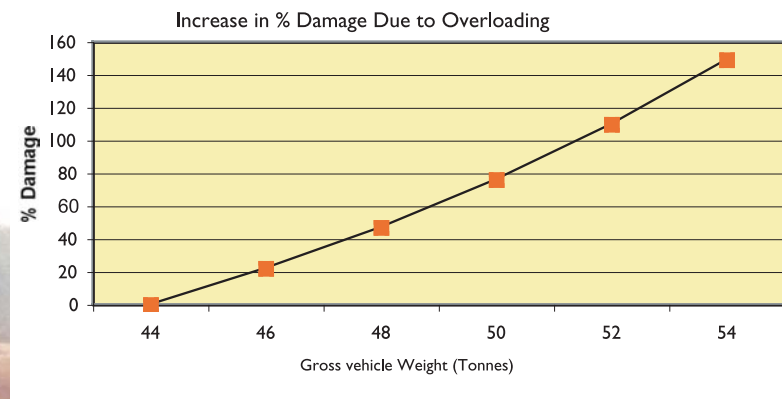
### 4.1 Forest Roads

Forest roads are a major investment made by the grower. Forest roads can be designed to carry the same vehicles as public roads, but the effects of overloading and abuse are probably more immediately evident on forest roads. Road failure is due to separate and combined effects of axle loads and weather conditions.

Forest roads open to haulage traffic need to be capable of sustaining the loads imparted by the vehicles using the road. Like any other civil engineering works, a road is a structure and as such is designed to carry specific loadings. This is primarily vehicle loading applied through the wheels and axles. If vehicles are overloaded and/or exceed the design standard, damage to the road occurs.

The normal method of designing roads is to express the design capacity as millions of standard axles, where a standard axle is 8,200 kg. A motorway for example may be designed to carry 50 million standard axles, while a forest road could be designed for 0.5 million standard axles. The road will suffer a small deterioration from each axle that passes over it, eventually failing.

If vehicles are overloaded this process is accelerated. Studies over many years have shown that the damage caused is proportional to the fourth power of the weight. Increasing by a factor of 1.5 the vehicle weight of a 40 tonne gross weight vehicle will result in a fivefold increase in road damage.



Source: Road Haulage of Round Timber, Code of Practice UK. Third Edition

The grower is responsible for providing a safe means of access. It is the responsibility of the grower to provide a forest access road capable of safely carrying haulage vehicles of a size agreed before haulage contracts commence, and to state any limits within the contract.

The grower is responsible for providing a map, either directly, or through the Forestry Work Manager, to the haulier detailing possible hazards and features that could effect haulage.

### 4.2 Raising Non-Drive Axles of Tractor Units

The practice of lifting non-drive axles to increase traction could, on a loaded vehicle, lead to overloading of the other axles on the tractor unit. This can, in turn, lead to increased levels of damage to the road. Where possible, situations which require the driver to lift the axles are to be avoided as for example by careful planning and liaison beforehand and providing suitable level sites for stacks to be loaded to vehicles.

### 4.3 Roadside Facilities

Adequate passing and off-road parking facilities should be provided to keep forest roads open to traffic and emergency vehicles. Guidance in this regard is taken from the *Forest Road Manual - Guidelines for the design, construction and management of forest roads* published by COFORD in 2004 which sets out design recommendations for loading bays, passing places, turntables etc.

### 4.4 Road Defect Reporting

Each timber grower, when offering timber for sale, needs to assess the road conditions and ensure that they are of an adequate standard and have in place a contingency plan in case the road deteriorates during haulage.

A road defect reporting procedure should be considered as part of the contract whereby the road users take responsibility to report defects early before they become sufficiently serious to render the forest road unsafe. This does not imply that the road will receive immediate repair, but allows the implementation of a system whereby the road repair can be assessed and promptly effected. In some instances, the landowner may reserve the right to close the road, or provide an alternative route.

### 4.5 County Roads and Agreed Routes

Public roads are the responsibility of the National Roads Authority or the Local Authority depending on their designation. Under the roads act 1993 it is an offence to damage public roads. The industry, through Coillte in consultation with Local Authorities has encouraged a voluntary agreement on “Preferred





▲ Loading lorry and trailer in the forest.

Routes”, enabling limited Local Authority resources to be channelled into improving a reduced quantity of county roads. This may involve more use of internal forest roads and longer and more costly haul distances.

To minimise impact on public roads the following guidelines apply:

- Plan roadside operations well in advance and discuss proposals with Local Authority;
- Construct a hard standing to allow forwarders and haulage vehicles to operate away from the roadway;
- Ensure Bell Mouth entrances are well designed and allow the lorry wheels to remain on the hard edge and not on the soft verge; and
- All loading of lorries to take place off the public road.

#### 4.6 Extraction and Stockpiling of Timber

Hazards to timber haulage should be taken into consideration in the harvesting site plan and control stated in the risk assessment procedure. Key extraction points onto the forest road should be located to reduce risk to both extraction and haulage. The identified hazards must be clearly described in the site plan and site and safety rules delivered to the haulier and drivers.

The following guidelines apply:

- Timber should be stacked at a safe distance from the road but still easily accessible to the haulier;
- The height of the stacks should not exceed 2 metres from the road surface, unless specifically covered by risk assessment;

- Designated passing points and turning places should not be obstructed by timber, vehicles or equipment;
- Ideally the timber stacks should be placed on even ground and not between trees rocks etc.;
- Stacks should be free from branches, stones and other materials;
- Stacks on an incline should be positioned to facilitate loading with the lorry facing downhill;
- Use bearers under the piles on wet soft sites;
- Stacks should not restrict the movement of drainage water; and
- Stacks should be sited away from power lines.

#### 5. LOADING TIMBER IN THE FOREST

Loading timber is a potentially dangerous operation and hauliers must manage the safety of the loading activity. A risk assessment process should be undertaken. The person (consignor) engaging the haulage contractor must provide information on the hazards at the site and on access routes which may affect the haulage activity.



▲ Forwarder extracting logs to roadside.



The public and others using the area must be warned of such activities. This can be achieved by supplying and erecting warning and prohibition signs (or barriers) when loading timber. Drivers should erect warning signs on both sides of a truck indicating safe distance.

Before setting off on a journey, all tensioning devices must be adequately tightened and properly stowed. The load should be checked frequently for security and the lashings tested for adequate tension after a few miles and at intervals during the journey.

Care should be taken that the remaining roadside stack is left in a safe manner following removal of the load.

## 5.1 Lifting Equipment

The Safety Health and Welfare at Work (General Application) (Amendment) Regulations, 2001, S.I. 188 of 2001, applies to work equipment used in forestry. Included in the regulations are specific requirements on lifting equipment. In particular the requirement for periodic inspection by a competent person of equipment, which is exposed to conditions causing deterioration liable to result in the danger to safety and health.

Existing legislation should be used as a reference for best practice, i.e. Safety in Industry Acts 1955 and 1980.

## 5.2 Load Stability

It requires much more force to stop a load that has started moving than it does to prevent movement in the first place. This 'battering ram' effect increases rapidly with the increase in distance through which the load moves relative to the vehicle. It is essential that the load be restrained in such a way that the movement relative to the vehicle is prevented.

To achieve maximum vehicle stability the load should be placed so that the centre of gravity is kept as low as possible and the load spread to give an even weight distribution over the carrying area. Maintaining speeds appropriate to the road conditions will reduce the likelihood of shedding a load.

## 5.3 Personal Protection

Drivers should be equipped with clothing that will protect them during the loading and unloading of round timber. Round timber is not a stable material during loading and when loaded and drivers should wear a safety helmet when outside of the cab. A high visibility garment must be provided and worn for identification in the forest, when stopped at the roadside or at the point of delivery. Safety footwear should be worn at all times.

It is the responsibility of all drivers to familiarise themselves with each site's safety rules and procedures. Each vehicle should carry a suitable first aid kit.

## 5.4 Overhead Lines

Overhead power lines, where present, are a major hazard within the forest. It is the responsibility of the landowner to draw their presence to the attention of the purchaser and haulier of the timber and their location should be clearly marked on the harvesting and/or site plan and as part of the risk assessment procedure. Before work commences, the ESB should be contacted. Great care should be taken when loading and the driver should ensure that the operation is carried out a safe distance away from any overhead power cables. Similarly, driving within the forest should be on routes where power lines crossing the access road are clearly marked and can be safely passed. ESB guidelines on this subject are available and should be observed.

## 5.5 Anchorage Points

Traditional rope hooks can only restrain light loads. For this reason it may be necessary to equip vehicles, particularly those with platform bodies, with additional anchorage points. These should be designed and integrated into the structure so that the forces imposed on them are transmitted to the main chassis frame of the vehicle and are in accordance with manufacturers recommendations and legal requirements.

## 5.6 Headboard

A headboard should be treated as part of the load restraint system and be capable of restraining half the rated payload of the vehicle in a forward direction and be of sufficient height to protect the tractor unit. The design of the headboard should be such that the whole vehicle body and vehicle structure will withstand the forces imposed on it when the headboard is under load.

Headboards should be examined regularly for damage and wear. Damaged headboards should not be used for restraint purposes.

The load should be placed in contact with the headboard and should not exceed the height of the headboard. Where this is not practicable then additional means of securing must be used.

## 5.7 Lashings

The use of chain or webbing lashings rather than rope is strongly recommended and all lashings should be capable of being tightened by use of toggle or load binder. The lashings, which should be fit for purpose, should be regularly checked for fraying or damage and should be attached to suitable anchorage points. Lashings should be regularly checked during the journey and retightened if necessary. Loaders fitted to vehicles must be secured during travel. Loaders resting on top of timber are not considered sufficient to secure the load. Lashings must be used.



◀ Unloading in mill yard.

### 5.8 Stacks on the Longitudinal Axis

Each outer log should be supported by at least two uprights. Pieces shorter than the distance between two uprights should be placed in the interior of the load. Where only two pairs of uprights support a pile, the ends of the outer logs should extend at least 300 mm beyond the uprights where practicable. Where possible logs should preferably be laid top to tail alternatively so as to ensure a more even distribution of the load.

Each pile should be lashed to the body of the vehicle and the lashings secured by a suitable device. A single chain stretched between uprights, even if well secured, is not sufficient. For debarked roundwood, at least two lashings are required.

### 5.9 Supports

The uprights, bolsters and any associated supports should be manufactured from suitable material, fit for purpose, and should be securely fixed to the frame of the vehicle, and the uprights should be vertical. Unsecured bolsters should not be used. Damaged or distorted supports will not perform adequately and should be replaced.



▶ Loading in the forest.



▲ Artic awaiting unloading at panel mill.

### 5.10 Stacks on the Transverse Axis

There is evidence to suggest that there is a high incidence of loads being shed when logs are stacked in the transverse axis making this generally an unsafe practice. Timber stacked transversely across a flat bed vehicle cannot be adequately secured by conventional restraint methods. Passing straps or chains from the front of the vehicle across the top of the timber to the rear with cross straps is not considered to be an acceptable load securing method.

All cross-loaded round timber must be restrained using suitable side gates and loads should not be higher than these gates. Netting is not sufficient for securing cross loads.

### 5.11 Environment and Pollutants

The influence of transport on the environment is well documented and the forestry industry is striving to reduce the environmental impact of the transport chain. Efforts should be made to use the most economical loaded weights for vehicles.

Drivers should be made aware of the consequences of fuel/lubricant spillage and the provision of simple pollutant kits for each vehicle is recommended. Drivers should be aware of who to contact in the event of pollutant emergencies.

The Forest Service *Forestry and Water Quality Guidelines* is the accepted standard for all work in the forest that could affect water quality. The following working checklist is recommended as a minimum practice:

- Make sure that fuels, oils and all chemicals are stored away from watercourses;
- Refuel and maintain machinery away from the watercourse; and
- Guard against on-site spillage.



## 6. TRANSPORTING TIMBER

It is a legal requirement to ensure that all loads carried on vehicles are adequately secured so that there is no likelihood of them moving or falling off, with the very real possibility of danger to the driver and other road users. This applies to all vehicles and all types of load. If a load either causes or is likely to cause danger or nuisance to people in the vicinity of the vehicle an offence may have been committed.

It is the operators' responsibility to provide suitable vehicles and securing equipment for each load carried and to ensure that drivers and loading staff are competent and have received sufficient instruction in its use. It is the driver's duty to check and ensure that the load is adequately secured at all times.

The design and construction of the vehicle and its bodywork should be suitable for the loads that it is likely to carry, particularly in terms of the characteristics and strengths of the materials to be used.

The height of a loaded vehicle must be checked to ensure that it is less than that of any overhead obstruction likely to be encountered en route.

### 6.1 Route Planning

Given the extent of regulatory and legislative controls in Heavy Goods Vehicle (HGV) transportation and the increased international competitiveness of the timber industry, the importance of route planning has never been greater. The key factor in improving route planning is co-operation between all sectors of the timber industry. Technological advancements in route planning which incorporate Global Positioning Systems (GPS) mapping software and route optimisation software have been utilised by other industries and are readily available for use in the forestry sector.

Improved co-operation can be achieved through open dialogue between all players in the industry.

## 7. UNLOADING TIMBER AT THE FINAL DESTINATION

The requirements for unloading timber depends on the unloading method and site arrangements at processing plants, ports or railheads. The unloading site should have visible rules and/or a copy of the rules should be obtained before hauliers proceed to the unloading site.

It is the drivers' responsibility to make themselves aware of the safety requirements of the individual sites. If the driver is not involved in the unloading of the vehicle, he should remove himself to a safe distance from the vehicle or remain in the cab (except when unloading is over the cab).

Persons involved in the unloading of timber should wear highly visible clothing, hard hat and protective boots. Where signage is unclear or hauliers are unfamiliar with the site, assistance should be sought from site personnel. Hauliers should co-operate with site operators and comply with site rules.

Drivers unloading their own lorries must ensure stabilisers are used and should stack timber as instructed. Site personnel who are responsible for off loading lorries should be adequately trained to unload vehicles safely and to avoid damage. Both site operator and haulier have responsibility for an accident or damage reporting procedure.

Timber which is sold based on the Volume/Weight system will require sample loads to be measured. Hauliers should co-operate with measurement personnel operating the system.

Every timber load requires verifiable loading documentation. This documentation is not standardised nationally but the minimum requirement usually consists of a forest docket and a weight docket. Hauliers must be familiar with timber load documentation requirements.



▲ Artic unloading at sawmill.





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