



**SUPPLY CHAIN SAFETY
LEADERSHIP GROUP**

**Highways Safety Hub
Raising the Bar 35
Loading and Unloading of Mobile Plant**

Issued December 2020

Contents

Objective	1
Scope	1
Background	1
Governance Requirements	1
Minimum requirements	2
Guidance – Applying the Hierarchy of Controls	2
Overview	2
1. Elimination	2
2. Isolation	5
3. Engineering Controls applied via safe working practices	5
4. Minimise	9
People Requirements	9
Emergency Arrangements	10
Definitions and Notes	10
References	11
Appendix 1 – Loadmaster Check Sheet	12
Appendix 2 – Loadmaster Hazard Awareness Training Syllabus	14

Objective

This Raising the Bar Guidance Document provides practical guidance on how to comply with the Supply Chain Safety Leadership Council, Common Intent Document on People Plant Interface as well as providing guidance to Designers and Contractors to help reduce the number of loading and unloading plant related injuries and incidents, to recognise the benefit of common user controls (minimum standards), and to enable the understanding and good practice for operations where the loading and unloading of plant is undertaken.

This document is to be used in conjunction with specific logistics management plans and is subject to ongoing improvement as new technologies are developed.

Scope

The expectation is that this Raising the Bar Guidance Document will apply to all items of plant provided on Highways England worksites and will be implemented by all supply chain partners working with Highways England.

It will be used by:

- › Highways England/ Principal Designers – when commissioning, designing and planning works
- › Supply Chain Partners – when working for Highways England
- › Highways England and Supply Chain Partners when assuring compliance.

Background

Thousands of people in Great Britain work on or near mobile plant as part of their regular job. The loading and unloading of mobile plant needs to be carefully planned to minimise the associated risks with this activity, which include:

- › Over boarding
- › Bridge strikes
- › Working at height
- › Lost loads
- › Slips, trips & falls etc.

The effectiveness of all the solutions described in this document depends on them being applied.

Governance Requirements

There is a clear expectation within the Supply Chain Safety Leadership Group, Common Intent Document on People Plant Interface that where working in close proximity to plant and equipment cannot be designed out then the Senior Representative for the Principal Designer and subsequently for the Principal Contractor needs to be satisfied that all mitigation measures have been considered and exhausted with respect to Elimination and Isolation prior to accepting proposals for Engineered Controls to be relied upon for working in the vicinity of plant and equipment.

Minimum Requirements

The following elements are mandatory requirements and suppliers shall ensure these elements are applied fully on Highways England sites.

Mandatory Elements

- › A project specific traffic management plan or Plant, Vehicle and Pedestrian Management Plan (PVPMP) should be in place prior to commencement of work which sets out the safe loading and unloading of mobile plant
- › A detailed document explaining the minimum standards for loading and unloading plant must be sent to all delivery organisations and drivers prior to attending site.
- › Areas for loading and unloading mobile plant must be clearly defined, controlled and maintained.
- › A risk assessment must be in place to identify the segregation and separation methods of people and vehicles / plant.
- › A sufficient number of Loadmasters must be appointed, based on project size/complexity and different shifts
- › The working at height hierarchy of controls should always be considered prior to the commencement of any working at height related activities.
- › The driver of the vehicle to be loaded should be the only person permitted to load/unload the item of plant. This driver should hold the necessary training card to operate the item of plant safely or hold CPCS A49/A50 or agreed similar.
- › Loads should be secured, or arranged so that they do not slide around
- › Minimum lighting levels should be provided in vehicle depots and on the vehicle. Min lux levels should be aligned to Raising the Bar 15 task lighting
- › All trailers to be fitted with an Air Coupling parking brake fail safe

Guidance – Applying the Hierarchy of Controls

Overview

The following guidance is written with the expectation that it represents best practice and as such should normally be followed unless a better local solution has been devised to meet the overall objective.

The guidance follows the Hierarchy of Controls and assumes that we will first Eliminate the hazard posed by moving and overturning vehicle and plant by designing to avoid it. Where this is not possible, we will seek to isolate it – i.e. physical segregations between persons and plant and only when this is shown to not be possible will we rely on engineering controls.

1. Elimination

Getting mobile plant to work areas is inevitable, however greater effort can always be applied to reducing the risk mobile plant poses when being loaded on and off transporter units. During the detailed design phase of works as part of the regular constructability reviews (see RTB26 Design for Safety) Principal Designers and Principal Contractors need to fully understand what plant is required and just importantly how the plant is getting to the point of works. Eliminating the need to transport plant should always be the first principle. Where this is not possible detailed logistical planning must be undertaken early in the contract to both minimise the number of loading and unloading operations as well ensuring the activity can be undertaken safely.

As part of this planning, consideration should be given to only loading and unloading plant on site under lane and road closures, as this provides greater distance between loading activities and live traffic. Loading and unloading plant directly next to live traffic should be avoided at all costs.

Planning

A project specific Traffic Management Plan or Plant, Vehicle and Pedestrian Management Plan (PVPMP) should be in place prior to commencement of work. This must consider the safe loading and unloading of mobile plant to include:

- › Pedestrians and vehicle separation
- › Loading / unloading and storage areas
- › Public protection
- › Reversing
- › Load dimensions (weight / height / width / configuration)
- › Site layout plan including consideration of space restrictions and access points e.g. A minimum distance of 3m between low loader (or tracks of the machine) and the temporary or permanent barrier to be established on motorway projects
- › Hazard identification and control measures including loadmaster role
- › Specific detailed drawings / sketch (marked up site traffic management layouts)

As part of the offsite logistical planning a clear, detailed delivery document must be produced and sent to all delivery organisations and drivers to inform them of the minimum standard required for all vehicles, including:

- › Types of vehicle
- › Drivers responsibilities
- › Local routes i.e. restrictions, planning constraints etc.
- › Destination points i.e. specific gates etc.
- › Security of the loads
- › Evidence of driver training and competence to include: - loading, unloading, and securing.
- › Loadmaster training
- › Specific client rules
- › Specific project rules
- › Safe stowing of equipment prior to travelling
- › Compliance with Fleet Operator Recognition Scheme (Minimum FORS Silver / CLOCS or Earned Recognition)
- › Driver competency requirements CPCS / NPORS

For further information on Traffic Management Plans and Logistical planning please see [Raising the Bar 20 Transport Logistics](#)

Plan operations in line with Work at Height Regulations

Whilst working at height should be avoided wherever possible, it is recognised that falling from height is often an inescapable hazard during loading and unloading of mobile plant in certain circumstances. And for this reason, every reasonable effort must be made to reduce the risk as low as practicable.

The working at height hierarchy of controls should always be considered prior to the commencement of any working at height related activities.

As part of the planning process consideration needs to be given to why people are likely to be working at height e.g. the width of the load overhangs the transporter or trailer therefore edge protection cannot be used. Early in the project consider innovative solutions such as remotely operated plant which can be loaded and unloaded from outside eliminating the need to access the cab. Work with suppliers and delivery organisations during pre-let meetings to look at how people get on and off the bed of the vehicle, especially during loading and unloading and ensure through risk assessments and method statements that operatives are doing this as safely as possible. On long term construction site compounds and maintenance compounds consider the use of permanent vehicle access platforms such as the one below



Whilst it is recognised working at height is unavoidable in some cases there are important safety related measures to be adhered to.

- › Any operative working at height should ensure they always maintain 3 points of contact, facing the vehicle – “Do not jump”. You are much more likely to fall or sustain injuries.
- › Appropriate footwear should always be worn, the treads should be clear from mud and debris to ensure maximum grip is always available
- › Appropriate hard hat to be worn with chin strap to prevent it from falling off
- › Special consideration should be taken during adverse weather conditions (rain, ice & snow) as the risks of working at height can be heightened
- › Report missing or damaged access equipment.
- › Report slip, trip and fall hazards and discuss with managers/supervisors how these risks could be minimised
- › Look at what other companies do - if you see a good idea, suggest it to your health and safety or site management teams

It is vital that robust risk assessments are in place at a local level for the loading and unloading of mobile plant from delivery vehicles.

Reminder to Managers

The management of this activity requires a collective approach between the contractor and the delivery company to carefully assess the tasks involved when planning the loading and unloading of mobile plant.

Personnel may include: Responsible person from both site and delivery company, delivery driver and appointed Loadmaster.

It is suggested that engagement with personnel involved with the activity is carried out during the planning stage as they know how the job is really done and may have good input on how to make the operation safer and more efficient.

Consider giving any relevant health and safety executive publications, or equivalent documents if available in a principal contractor’s safety management system, as “toolbox talks” to relevant workers, for example:

- › Preventing falls from vehicles pocket card, HSE Series code: INDG 413, copies of which are available in English, Polish (Polski) and Welsh (Cymraeg)
- › Risk assessments and method statements
- › Loadmaster checklist – see appendix 1
- › Managers slips, trips & falls checklist etc.

The effectiveness of all the solutions described here depends on them **being used**. You will need to have procedures in place to check that systems of work are being followed.

The image shows three overlapping safety documents:

- Preventing falls from vehicles (Pocket Card):** Titled "Advice for workers", it includes a warning that "More than 2000 serious injuries to r to HSE each year. Many of these in sites off work and possible more injuries that are not reported." It lists key advice: "DON'T jump down", "Always use steps", "Take a low step", "Use handrails", "Peacock for ladders", and "Belted in".
- Balfour Beatty Risk Assessment:** A form for "Loading and Unloading of Vehicles" with fields for "Strategic Business Unit", "Sub-Sector/Delivery Unit", "Project", "Rev 02", "ID No", and "Method Statement (or Work Package Plan) Ref: N/A Model Assessment".
- Loading & Unloading Vehicles Model Risk Assessment:** A detailed risk assessment table with columns for "Hazardous Activity", "Associated Risk", "Severity", "Likelihood", "Risk Rating", "Control Measures", "Severity", "Likelihood", "Risk Rating", and "Assessed by". The "Risk Rating" column shows a red "High" risk for the activity "Lifting & stacking of falling loads".

2. Isolation

Where the hazard cannot be eliminated, the Supply Chain safety Leadership Group Common Intent document on Safe Working with Plant makes it clear that our default will be physical segregation to isolate the risk. Where people are required to unavoidably enter the “risk zone” as defined in Raising the Bar 3, this will be subject to approval by a manager of appropriate seniority (Managing/Sector/Operations Director or equivalent Level).

3. Engineering Controls applied via safe working practices

When loading and unloading cannot be eliminated then the following considerations need to be taken into account when developing the safe system of work which needs to be signed off by a senior leader of each project in order to meet the requirements of the Supply Chain Safety Leadership Group, Common Intent Document on Safe Use of Plant.

Loading and Unloading areas

Areas for loading and unloading mobile plant must be clearly defined, controlled and maintained. The minimum requirements for all loading and unloading of mobile plant must be as follows;

- › Segregated from other plant and people, not involved in loading, or unloading
- › Exclusion zone to be established
- › Clearly marked as loading/unloading areas
- › Clear of overhead cables, structures, and other obstructions so there is no chance touching them, or of electricity jumping to ‘earth’ through machinery, loads or people
- › Ensure access and egress to the loading and unloading area is suitable for the type and size of delivery vehicle to allow for safe manoeuvring.

- › Must have level, even ground, ensuring weight bearing loads are in tolerance and free of manholes, debris and nearby excavations,
- › Suitable signage and barriers to be erected and maintained to provide information and segregation of traffic routes
- › A minimum distance of 3m between low loader (or tracks of the machine) and the temporary or permanent barrier to be established on motorway projects

When delivering plant and machinery to motorway projects attention must be made to:

- › Communication with a suitably trained loadmaster prior to arrival
- › A minimum distance of 3m between the low loader/beavertail (or tracks of the machine) and the temporary or permanent barrier must be established. Where applicable a slew restrictor must be set and used during loading/unloading operations.
- › Buckets must be securely stored on the low loader. Under no circumstances should buckets be stored or positioned between the tracks whilst loading/unloading.
- › Machine configuration - where necessary the load must be adjusted at the compound prior to arriving on site.

There must be safeguards against drivers accidentally driving away too early. Measures could include:

- › Traffic lights
- › The use of vehicle or trailer restraints
- › The person in charge of loading or unloading could keep hold of the vehicle keys
- › These safeguards would be especially effective where there could be communication problems.

Common Considerations

Loads should be:

- › Spread as evenly as possible, during both loading and unloading. Uneven loads can make the vehicle or trailer unstable
- › Secured, or arranged so that they do not slide around
- › Configured to allow for safe unloading
- › Checked before unloading to make sure loads have not shifted during transit and are not likely to move or fall when restraints are removed

Vehicle Considerations

Vehicles / trailers should:

- › Be braked accordingly and all stabilisers used. The vehicle should be as stable as possible.
- › All trailers to be fitted with an Air Coupling parking brake fail safe
- › Should be parked on firm level ground
- › Never be overloaded. overloaded vehicles can become unstable, difficult to steer and braking efficiency will be affected
- › Free from debris & broken deck boards etc. before loading to make sure it is safe.
- › The use of agricultural trailers is prohibited on Highways Schemes.

Vehicle preparation

- › A risk assessment must be in place to identify the segregation and separation methods of people and vehicles / plant
- › Measures should be in place to prevent unauthorised or mistaken movement of vehicles including the control of vehicle keys
- › Any trailers should be parked on firm level ground with trailer parking brake applied and stabilisers deployed.

Overloading of Vehicles

- › Vehicle load weights should be determined prior to the materials being loaded, these should be communicated to drivers of loading machines, banksmen, and loadmasters
- › Weighbridges on board weighing to be considered to check vehicle weights

Vehicle load security

- › Loads should be spread as evenly as possible, during both loading and unloading. Uneven loads can make the vehicle or trailer unstable.
- › Where a load is wider than the bed of the vehicle then greedy boards or similar approved systems must be used to ensure there is sufficient coverage under the tyres / tracks of the machine.
- › Loads should be secured, or arranged so that they do not slide around
- › Preferably mobile plant should be secured using metal chains. Where a fibre webbed Load Restraint Assembly is used then it must be marked with a tag that shows the break strength and working load limit of the strap. The break strength is the weight in KG at which any load-bearing part of the strap fails. The working load limit is the maximum load assigned to each ratchet strap by the manufacture, this should not exceed one third of the overall assembly breaking strength.
- › Specific checks should be developed to make sure loads have not shifted during transit, and are not likely to move or fall when restraints are removed
- › When delivering to all projects, buckets must be stored to the rear of the low loader bed by the ramps. Under no circumstances are buckets to be stored between the tracks
- › Consideration should also be given to the suitability of the material used for the vehicle bed / ramps of the vehicle to be loaded and the item of plant being loaded. For example, several incidents have occurred in Highways in the past when a drum roller has overturned as it was being driven up and onto a metal checker plate ramp.

These points should be briefed to anyone involved in loading or unloading operations. Vehicle operators / drivers are bound by law to pay attention to the weight, size and security of any load carried on their vehicle or trailer attached to it. The law requires a load to be arranged and secured so that there is no likelihood of danger, injury, or nuisance to any person.

- › Any conviction arising from overloading or insecurity can lead to a maximum fine of £5000, obligatory endorsement and discretionary disqualification and it can also lead to disciplinary action against the company's operator's licence
- › Driver and vehicle standards agency (DVSA) and the police have powers to issue fines (graduated fixed penalty scheme) to any driver in charge of a vehicle that is overloaded or if the load is insecure see link to DVSA web site <https://www.gov.uk/annual-test-for-lorries-buses-and-trailers>

To comply with the legislation drivers are responsible to ensure the following points are observed:

- › Any load carried is evenly distributed and secured avoiding axle overload
- › The over-hanging part of the load must be clearly marked
- › The maximum axle, gross vehicle weight and train weight are not exceeded (including towed plant) maximum permissible weights for the vehicle are shown on the ministry plate (VTG6) located inside the cab, trailer weights are stamped on a plate usually fixed to the A frame (any doubts must be brought to the attention of the drivers supervisor and the appointed Transport manager or coordinator)
- › No loose items (boxes, cans etc.) are present on vehicle floor
- › No broken pallets or cages are used on the load
- › All plant and machinery is securely positioned correctly for weight distribution and all load locking devices and lashings are in good condition, secure and attached to the correct anchor points
- › All load lashing equipment utilised must be in good condition, sufficient to restrain the load carried and specifically designed for the task of load securing
- › All doors (including internal bulkhead doors) are secured

- › Crane and fittings are properly stowed and secured with correct fixings
- › All steps, ladders, cables, or pipes are safely stowed and secured in position with the correct fixings
- › Cab items (tools, jacks etc.) are safely stowed and secured
- › All stowage systems, racking and load restraint anchorage points must be specifically designed and tested for the purpose intended and meet all the requirements of construction and use and vehicle type approval legislation

Working Environment Considerations

Prevention of overhead equipment / structure (bridge) strikes

- › All vehicles to have their cab/ trailer heights & widths displayed
- › Physical check to be made and recorded of loads/ plant heights if they exceed the cab height
- › Logistics/ vehicle plan to be produced to ensure all existing and proposed overhead structures are identified and maximum heights are identified and recorded
- › Audible and visual warning to be fitted in the cab to remind driver/ operator if fixed items, including the hydraulic arm fitted to plant equipment, is not safely stowed prior to travelling
- › Compliance with Raising the Bar 7 Overhead Structures and service Protection
- › Projects to display maximum vehicle/ load heights within the compound and work areas of the project

Lighting should be provided in vehicle depots and on the vehicle. Poor lighting makes it difficult to identify slip and trip hazards. Winter working can involve significant time spent working in the dark, as drivers often start work very early in the morning. Truck loading areas tend to be poorly lit, and uneven ground around the vehicle will present a more significant risk in the dark, for example in accessing the fifth wheel area.

Further information relating to the types of artificial task lighting available is contained in Raising the Bar 15 Task Lighting.

Yards and compounds should be even and free from potholes and obstacles, to enable safe access and egress from a vehicle. Defined traffic routes should be in place with appropriate signage

Weather conditions can make the driver's job more difficult and hazardous when loading and unloading. An important part of the planning process is to make sure that the effects of poor weather conditions are considered. For example, very high winds may cause people to fall, and rain, ice and snow will make surfaces a lot more slippery.

Minimising Slips, Trips and falls

The drivers of many vehicles have reported slipping or falling, after getting diesel, oil, or grease on the soles of their footwear or on the areas where they have to walk. Rainwater, snow, and ice are also common problems.

Ways of reducing the risk of falls due to contamination include:

- › Provide vehicle washing facilities to remove contaminants, such as diesel and mud, which will increase the likelihood of slip incidents
- › Provide convenient disposal facilities for waste packaging, broken pallets etc.
- › Carry out periodic checks to ensure vehicles are kept in a good and clean condition. This should be a default check carried out by the driver of each vehicle, at least daily when vehicles are in use
- › Provide drivers with safety footwear which is slip resistant on the surfaces they will be walking on
- › Provide drivers with cleaning equipment to remove contamination from areas of the vehicle where they must walk and to clean footwear if necessary. See Raising the Bar 14, Slips Trips & Falls

Housekeeping

- › Set up safe systems for cleaning the vehicle, internally and externally in line with current Site Operating Procedures (SOP). Prior to use on site and after off-loading, to prevent material from contaminating the compound and access areas.
- › Sweep the load area after deliveries
- › When leaving a high-speed road compound, the driver should ensure that there is no loose material which could drop off the vehicle during transit on the road network, using wheel wash stations to ensure this is the case
- › Inform drivers and other workers of these systems. Have a system for checking that housekeeping standards are being met and that access equipment is clean and in good repair.

Considerations in constricted areas such as Motorways

- › Consider machine configuration and adjust accordingly at the compound prior to delivery.
- › Loadmaster to ensure ground conditions are suitable -firm and level with no manholes, cambers, or open trenches.
- › Loadmaster to ensure no overhead obstructions are present in the loading and unloading area.
- › Stabilisers must be in position before any movement takes place.
- › Ramps must be set to the correct width to ensure machine integrity.
- › Trailer bed should be extended beyond the outer edge of the roller/sprocket.
- › The machinery for un/loading) must have its mirrors folded out for maximum visibility.
- › Machines must be configured correctly before un/loading) – ROPS to be put in the upright position and locked in place.
- › Slewing movement must be kept to a minimum, so the counterweight does not encroach the temporary or permanent barrier
- › Buckets are to be removed off the trailer bed individually
- › All buckets/attachments for collection must be placed close to the trailer bed to minimize slewing movement
- › Driver must face the direction of travel where possible

- › Machine must be configured for uphill and downhill travel
- › Driver must always maintain three points of contact when entering or exiting the HGV /machine
- › Load height to be checked prior to setting off for travel. In-cab indicator to be displayed.
- › A desirable option would be to introduce a Controlled safe exit protocol for works vehicles e.g. short-term lane closure (Red X)

Refer to Appendix 1 for the Loadmaster Check list

4. Minimise

PPE Requirements

All persons involved with loading and unloading mobile plant must comply with the site PPE requirements.

Maintenance Activity

Organise safe systems for maintenance work. Consider whether access to height on the vehicle is required for cleaning or maintenance, for example to the engine, plant, load area or gantry.

If access to height is unavoidable and on-vehicle access is not provided, then you should provide other safe access solutions, such as tower scaffolds, gantries, platforms etc. An example would be for repair or service of tipper lorries, lorry loaders (HIAB) vehicles or vehicles delivering or collecting plant, equipment, or materials. If it is not safe to carry out the work at site, because suitable work equipment is not available, arrange for it to be done back at the depot.

If vehicle maintenance works is carried out at site, it should be in accordance with a safe system of work, accepted by the project / principal contractor.

Keeping vehicles in good order

Make sure your maintenance checklists include items that are there to keep the driver safe, as well as those that affect the vehicle running. Checklists should be signed at the beginning of each day to say that, for example, steps are in good condition and can be used.

Monitoring

Regular assurance checks and audits should be undertaken to check controls are being met. This can include not only physical inspection of sites, equipment but also the random sampling of traffic management plans and risk assessments.

People Requirements

Appointment of Loadmaster

All Projects and Schemes must nominate and formally appoint a trained and competent Loadmaster. Any persons designated as being responsible for receiving equipment on site should have received training in relation to this role in accordance with the Loadmaster training course (Appendix 2).

Training and Competency Requirements

Supply Chain Partners must ensure that all persons loading and unloading plant and equipment are trained and competent. The driver of the vehicle to be loaded should be the only person permitted to load/unload the item of plant. This driver should hold the necessary training card to operate the item of plant safely or hold CPCS A49 Loader Securer for non STGO plant or A50 for STGO plant or agreed similar equivalent.

Front Line Supervisors must adhere to the requirements of the Common Intent on the Safe Use of Plant and Supervision.

Training related to working at height

Delivery partners should organise and provide awareness training to known delivery drivers on the rules associated with the delivery, loading, and unloading of vehicles with relation to working at height

Loading and unloading of mobile plant should only be carried out by appropriately trained persons, with identification of these persons carried out in advance of arrival on site

Standard check list to be produced which should be used to inform delivery drivers and loadmasters of correct ways to deliver when working at height.

Communications and briefings

Supply Chain Partners must have robust procedures for ensuring that hazards and risks identified in the design and their risk assessments are briefed to all who are potentially at risk on site.

Emergency Arrangements

Site Emergency Plan

If any emergency occurs in relation to the loading and unloading of plant the site should follow their own emergency procedures

Reporting and Recording

All accident, incidents or near miss events involving any part of the loading and unloading of mobile plant activity must be reported immediately to the project team and investigated in accordance with their potential severity.

Definitions and Notes

Loadmaster - A member of the site team who is tasked with meeting the delivery driver on arrival to site. The loadmaster is responsible for recognising good practice and perceiving potential hazards during the loading and unloading process.

Mobile plant - Any plant item that is provided with some form of self-propulsion that is ordinarily under the direct control of an operator.

Loading - The collective actions required for the placing of the load onto the vehicle bed

Unloading - The collective actions required for the removal of a load from a vehicle bed

Traction aids (internal) – Components fitted to mobile plant that provides additional traction on poor surfaces or inclines

Traction aids (external) – equipment such as matting, timber etc. that provides a frictional surface to aid traction for mobile plant

Lashings/load restraint equipment – securing equipment used to tie down plant (mobile or static) or loads to prevent movement during transit.

STGO – Special Types Good Order – regulatory requirements for transporting of loads that exceed the requirements of Road Vehicles (Construction and Use) Regulations 1986 and Road Vehicles (Authorised Weight) Regulations 1998

Winching – Winching mechanism that uses a combination of a motor (electric/hydraulic) and wire rope fitted with a hook to draw mobile plant onto a vehicle bed

Load Anchorage Points – components fitted to both the load or plant and the vehicle bed which are designed with a rated load capacity to allow the fitment of lashings to secure the load

Dunnage – material such as timber used to minimise load damage or movement by being placed between each load or a load and vehicle component

Locking devices – equipment fitted to mobile plant that physically restricts movement of a component (s) such as articulation bars on dumpers, stabilisers etc.

Abnormal Indivisible Load – a load which cannot be divided into two or more loads for carriage on the road owing to dimensions or weight.

References

Below is a list of publications where you can find important information surrounding the legislation & guidance of loading and unloading operations:

HSE Publications & Guidance: <http://www.hse.gov.uk/>

- › HSE series code HSG150: Health and safety in construction (Health and Safety Executive books)
- › HSE series code INDG199 (rev 2): Workplace transport safety, a brief guide HSE series code INDG290 (rev 1): A brief guide to the legal requirements of the Lifting operations and Lifting Equipment at Work Regulations 1998 (LoLER)
- › HSE series code INDG367: Inspecting fall arrest equipment made from webbing or rope (leaflet)
- › HSE series code INDG401: The Work at height regulations 2005 (as amended) a brief guide
- › HSE series code INDG413: Preventing falls from vehicles
- › HSE Case Study 2, Reducing falls from vehicles - MultiServ reduce the risk of slips and trips
- › HSE Case Study 7, reducing falls from vehicles - Balfour Beatty saves time and increases safety

Other Industry Guidance:

- › Construction safety manual (CIP)
- › <https://www.gov.uk/government/organisations/department-for-transport>
- › Build UK and Gov UK documents
- › DfT Code of Practice: Safety of loads on vehicles (Third edition) <http://webarchive.nationalarchives.gov.uk/20110130163601/http://www.dft.gov.uk/pgr/roads/vehicles/vssafety/safetyloadsonvehicles.pdf>
- › Flannery Plant Hire Loadmaster Training Module - <https://www.flanneryplanthire.com>

Appendix 1 - Loadmaster Check Sheets

Loadmaster Unloading Check Sheet		Complete
1	Establish communication prior to driver arriving on-site (Driver called)	
2	Agree meet point	
3	Ascertain configuration of machines and buckets (does the load need reconfiguration at the compound prior to arriving at site?)	
4	Access meets minimum requirements (50m)	
5	Driver is aware of site rules	
6	Driver has been inducted to site and competencies have been checked	
7	Agree method of communication (radio / hand signal/ mobile phone etc)	
8	Ground conditions: Level/ Firm; free from manholes/drain covers; no open trenches	
9	Free from overhead cables and structures	
10	Sufficient access point for entry	
11	Sufficient manoeuvring area	
12	Exclusion zone meets minimum standard (<i>when on a motorway, this should be a minimum 3.0m from the trailer bed or the edge of the tracks to temporary or permanent barrier</i>)	
13	Integrity of exclusion zone is maintained – cones/ fencing/ free from personnel	
14	Driver is wearing suitable PPE	
15	Low Loader driver is responsible for the unloading of the plant	
16	Ramps are set to correct width (look to the back of the trailer to ensure ramps are in line with the wheels/ track/ drum)	
17	Ramps / stabilisers are placed on firm level ground	
18	Driver is wearing his seatbelt (seatbelt indicator flashing light is active)	
19	ROPS are upright and locked	
20	Integrity of the exclusion zone is maintained – cones/ fencing/ free from personnel	
21	Ensure operator is always maintaining three points of contact whilst accessing the trailer / machine. All steps/ handrails are being used correctly and free from debris	
22	Chains/ securing devices are removed and stored correctly to ensure no obstructions on trailer bed	
23	Buckets are removed individually and positioned close to the rear of the trailer	
24	Plant does not encroach on the temporary or permanent barrier	
25	Bucket/ Boom as low as possible when descending the ramps	
26	When descending, machine to be kept square and in line with ramps	
27	All machine movements are slow and controlled	
28	Driver faces direction of travel	
29	If banksman is to be used always ensure safe system of work is in place, machine exclusion zones have been determined and hand signals are agreed	
30	When machine is off the ramps, ensure attachments are grounded, hand brake is applied, and all controls are isolated before the driver exits the cab and hands over the machine	

Appendix 1 - Loadmaster Check Sheets (Continued)

Loadmaster Loading Check Sheet		Complete
31	Establish communication prior to driver arriving on-site (Driver called)	
32	Agree meet point	
33	Ascertain configuration of machines and buckets	
34	Access meets minimum requirements (50m)	
35	Driver is aware of site rules	
36	Driver has been inducted to site and competencies have been checked	
37	Agree method of communication	
38	Ground conditions: Level/ Firm; free from manholes/drain covers; no open trenches (near loading/ unloading point)	
39	Free from overhead cables or structures	
40	Sufficient access point for entry	
41	Sufficient manoeuvring area	
42	Mobile plant is prepared for collection - Tracks/ wheels dug out and clean; re-fuelled; attachments within reach of the machine	
43	Exclusion zone meets minimum standard (when on a motorway, this should be a minimum 3.0m from the trailer bed or the edge of the tracks to the temporary or permanent barrier)	
44	Integrity of exclusion zone is maintained – cones/ fencing/ free from personnel	
45	Driver is wearing site specific PPE	
46	Low Loader driver is responsible for the loading of the plant	
47	Ramps are set to correct width (look to the back of the trailer to ensure ramps are in line with the wheels/ track/ drum)	
48	Ramps/ stabilisers are placed on firm level ground	
49	Driver is wearing his seatbelt (suitable warning light is active)	
50	Mirrors are folded out for visibility	
51	Ramps and trailer bed are set to correct width	
52	Integrity of the exclusion zone is maintained – cones/ fencing/ free from personnel	
53	Whilst operator is gaining access to trailer or machine ensure three points of contact at all times. All steps/ handrails are being used correctly and free from debris	
54	ROPS are upright and locked prior to loading	
55	Machine to be configured correctly for uphill travel onto the trailer bed, i.e. bucket and boom as low as possible	
56	Plant does not encroach on the temporary or permanent barrier	
57	Track positioning maintained as machine passes over the crest of the ramps	
58	All machine movements are slow and controlled	
59	Mobile plant faces the direction of travel	
60	Machine is parked correctly and isolated before operator exits cab	
61	Ensure the delivery driver is aware of the height of the load and it is displayed on the load height indicator in his cab - prior to setting off for travel (this is a legal requirement)	

Appendix 2 - Loadmaster Hazard Awareness Training Syllabus - LESSON PLAN

Aimed at:	Foreman, Site Supervisors, Managers and Planners who are responsible for the safe practice of loading and unloading mobile plant.
Vehicle types:	Low Loaders / Beaver Tails
Course Duration:	1.5 hours
Max delegates:	12
Course delivery:	Theory / Practical
Course assessment:	Multiple choice theory questionnaire on completion of course
Outcomes:	At the end of this session you will be able to identify correct procedures for the safe loading and unloading of mobile plant.

The Unloading Process

No.	Time	Module Title	Module Outline	Trainers notes	Resources / Training Environment
1.	15Min	Establishing Communication	<ul style="list-style-type: none"> ▪ Establish communication prior to driver arriving on-site ▪ Agree meet point ▪ Agree whether any adjustments need to be made to the load prior to arriving on site (where required, adjustments to configuration to be made at the compound – i.e. buckets not to be stored between the tracks and machine to be reconfigured depending on positioning of machine on the low loader). ▪ Ensure access meets minimum standards (50m on motorway) ▪ On arrival, ensure driver is aware of site rules ▪ Agree that unloading area confirms with minimum standard ▪ Agree use of two-way comms if required 	<ul style="list-style-type: none"> ✓ Driver will contact loadmaster in advance of delivery 	Use of two-way radio if applicable
2.	20 Min	Site Set up / Exclusion Zone	<ul style="list-style-type: none"> ▪ Sufficient entry point to site (50m) ▪ Manoeuvring area needed for different types of low loader ▪ Exclusion Zone – no personnel; no passing traffic; no overhead cables or structures 	<ul style="list-style-type: none"> ✓ On a motorway a minimum clearance of 3.0m to the temporary or permanent barrier is compulsory. ✓ Where no space restrictions, exclusion zone to be determined based on height/width and size of machine being delivered ✓ Ensure the integrity of the exclusion zone is maintained at all times; i.e. cones/ fencing 	Low Loader exclusion zone diagram specific to motorways

				positioned. No personnel within the radius of the exclusion zone	
3.	15 min	Lorry Positioning	<ul style="list-style-type: none"> ▪ Ground Conditions ▪ Level/ Camber ▪ Firm ▪ No Manholes/ Drain Covers ▪ No overhead cables or structures ▪ No open trenches ▪ Stabilisers to be in position 		Photos of unlevel and level ground.
4.	30 min	Unloading Process	<ul style="list-style-type: none"> ▪ Drivers to wear suitable PPE according to site rules. ▪ It is the low loader driver's responsibility to unload the plant. Under no circumstances should other site personnel carry out this activity. ▪ Ramps to be set to correct width to ensure machine stability ▪ Air to be released out of trailer suspension ▪ All chains/ securing devices to be removed and stored correctly ▪ ONLY the Low Loader driver to remove chains to avoid injury to untrained personnel. ▪ Machines to be configured correctly before unloading – ROPS to be put in the upright position and locked in place. ▪ Delivery driver to ensure seatbelt is worn at all times during plant movements. ▪ Buckets/ tools must be unloaded using correct procedures, locking quick hitch where applicable to ensure bucket safety (all drivers are briefed on the safe use of the quick hitch if fitted). ▪ Buckets to be removed off the bed individually. ▪ Buckets to be placed close to trailer bed on firm level ground. ▪ Lorry driver to minimise slewing movement so the counterweight does not encroach on the temporary or permanent barrier (motorway). 	<ul style="list-style-type: none"> ✓ Look down back of trailer to ensure ramps are in line with wheels/ tracks/ drum. ✓ Ensure ramp/ stabiliser are placed on firm level ground away from drain covers/ inspection chambers as this could result in a machine overturning. ✓ Trailer bed should be extended beyond the outer edge of the roller/ sprocket (this may not be achievable on machines over 35T) ✓ When air is released you will notice the trailer drop approx. 6 inches ✓ Ensure seatbelt indicator flashing light is active to indicate driver is wearing his seatbelt. ✓ Ensure mirrors are folded out for maximum visibility. ✓ ROPS are upright and locked being plant movements. ✓ Buckets/ Tools to be unloaded and positioned close to the rear of the trailer ✓ Bucket/ Boom as low as possible when descending the ramps. ✓ When descending, machine to be kept square and in line with ramps. ✓ Ensure all machine movements are slow & controlled. ✓ Ensure plant does not encroach on the temporary or permanent barrier. 	<p>Safe/unsafe practices photos of:</p> <p>Steps/ handrails/ three points of contact</p> <p>Back of trailer – ramps/ stabilisers positioning</p> <p>Level/ unlevel ground</p> <p>ROPS in upright and folded position</p> <p>Stabilisers and ramps on manholes</p> <p>Correct boom/ bucket position</p>

- | | | | | | |
|--|--|--|--|--|--|
| | | | <ul style="list-style-type: none">▪ Where possible, operators of mobile plant must face direction of travel.▪ Machines must be configured correctly for downhill travel where possible.▪ Once machine is off the ramps, the machine is to be parked, isolated, and secured according to manufacturer's guidance and handed over to site. | <ul style="list-style-type: none">✓ All 360 slew machines must be slewed around so the driver faces the direction of travel at all times. NOTE: 360 MACHINES MUST NOT TRACK BACKWARDS AT ANY TIME✓ If banksman is to be used always ensure safe system of work is in place, machine exclusion zones have been determined and hand signals have been agreed.✓ When machine is off the ramps, ensure attachments are grounded, hand brake is applied where applicable and all controls are isolated before the driver exits the cab and hands over the machine.✓ Ensure the integrity of the exclusion zone is maintained at all times; i.e. cones/ fencing positioned. No personnel within the radius of the exclusion zone.✓ Whilst operator is gaining access to trailer or machine ensure three points of contact at all times. Operator to be facing machine when climbing up / down from steps.✓ All steps/ hand rails are being used correctly and free from debris. | |
|--|--|--|--|--|--|

IF IN DOUBT, STOP! THINK! SHARE!

The Loading Process					
No.	Time	Module Title	Module Outline	Trainers notes	Resources / Training Environment
5.	10 Min	Establishing Communication	<ul style="list-style-type: none"> ▪ Establish communication prior to driver arriving on-site ▪ Agree meet point ▪ Ensure access meets minimum standards (50m) ▪ On arrival, ensure driver is aware of site rules ▪ Agree that loading area confirms with minimum standard ▪ Agree use of two-way comms if required 	<ul style="list-style-type: none"> ✓ Driver will contact loadmaster in advance of collection. <p style="text-align: center;">IF IN DOUBT, STOP! THINK! SHARE!</p>	Use of two-way radio if applicable
6.	15 min	Machine Collection preparation	<ul style="list-style-type: none"> ▪ Prior to ALL machines being collected tracks to be dug/ wheels to be cleaned down and machine to be cleaned down. ▪ Machine to be re-fuelled fully ▪ All attachments to be present at collection point in preparation for the low loader driver. 	<ul style="list-style-type: none"> ✓ Ensure clean tracks, wheels and machine ✓ Attachments to be present within reach of machine <p style="text-align: center;">IF IN DOUBT, STOP! THINK! SHARE!</p>	
7.	5 min	Site Set up / Exclusion Zone	<ul style="list-style-type: none"> ▪ Sufficient entry point to site (50 metres) ▪ Manoeuvring area needed for different types of low loader ▪ Exclusion Zone – no personnel; no passing traffic; no overhead cables or structures 	<ul style="list-style-type: none"> ✓ On a motorway a minimum clearance of 3.0m to the temporary or permanent barrier is compulsory. ✓ Where no space restriction, exclusion zone to be determined based on height/width and size of machine being delivered. ✓ Ensure the integrity of the exclusion zone is maintained at all times; i.e. cones/ fencing positioned. ✓ No personnel within the radius of the exclusion zone. <p style="text-align: center;">IF IN DOUBT, STOP! THINK! SHARE!</p>	Low Loader exclusion zone People Plant Interface diagram.
8.	5 min	Lorry Positioning	<ul style="list-style-type: none"> ▪ Ground Conditions ▪ Level/ Camber ▪ Firm ▪ No Manholes/ Drain Covers ▪ No overhead cables / structures ▪ No open trenches 		

9.	30 min	Loading process	<ul style="list-style-type: none"> ▪ Drivers to wear suitable PPE according to site rules. ▪ It is the low loader driver's responsibility to load the plant. Under no circumstances should other site personnel carry out this activity. ▪ Attachments to be positioned so they can be easily reached from the trailer bed by the machine. Or attachments to be loaded before the machine is loaded dependent on type of attachments present (consideration to size). ▪ Buckets/ tools must be unloaded using correct procedures, locking quick hitch where applicable to ensure bucket safety (all drivers are briefed on the safe use of the quick hitch if fitted). ▪ Buckets to be loaded onto the bed individually. ▪ Buckets must be stored to the rear of the low loader bed by the ramps and correctly secured. Under NO circumstances should buckets be stored between the tracks ▪ Ramps and trailer bed to be set to the correct width according to machine size and width. ▪ Machine to be positioned squared to the ramps before loading commences. ▪ Machine to be configured correctly for uphill travel onto the trailer bed, i.e. bucket and boom as low as possible. ▪ Machine to be positioned square and in line with trailer bed. ▪ Machines to be parked correctly before operator exits the cab. ▪ Mirrors/ windows to be closed. ▪ Check the height of all loads before setting off for travel. Total height of loaded plant to be noted if restrictions apply on route. ▪ Access/Egress to machine using three points of contact. 	<ul style="list-style-type: none"> ✓ Ensure seatbelt indicator light is active to indicate driver is wearing his seatbelt. ✓ ROPS are upright and locked securely prior to machine loading. ✓ Are attachments within safe range of excavators reach? ✓ Bucket/ Boom is configured as low as possible to the trailer bed. ✓ All attachments to be grounded on the trailer bed where possible. ✓ All steps/ hand rails are being used correctly and free from debris. ✓ Trailer bed should be extended beyond the outer edge of the roller/ sprocket (this may not be achievable on machines over 35T) ✓ Ensure all machine movements are slow & controlled. ✓ The upper structure must never be slewed whilst positioned on the ramps. ✓ Loadmaster to observe track position when the machine passes over the crest of the ramps ✓ If banksman is to be used always ensure safe system of work is in place, machine exclusion zones have been determined and hand signals have been agreed. ✓ Whilst operator is gaining access to trailer or machine ensure three points of contact at all times. Operator to be facing machine when climbing up / down from steps. ✓ Loadmaster to ensure personnel are maintaining the exclusion zone. ✓ Ensure the HGV driver is aware of height of the load and displayed it on the load height indicator in his cab - prior to setting off for travel. <p style="text-align: center;">IF IN DOUBT, STOP! THINK! SHARE!</p>	<p>Safe/unsafe practices photos of:</p> <p>Steps/ handrails/ three points of contact</p> <p>Back of trailer – ramps/ stabilisers positioning</p> <p>Level/ unlevel ground</p> <p>ROPS in upright and folded position</p> <p>Stabilisers and ramps on manholes</p> <p>Correct boom/ bucket position</p>
----	--------	-----------------	--	---	--