

SIP 001- Guidance on Port and Terminal Planning (Workplace Transport)



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1. INTRODUCTION

- 1.1. The Health and Safety Executive provided support to Port Skills and Safety in producing this guidance, which is aimed at improvements within the Ports industry. This guidance may go further than the minimum you need to do to comply with the law with regard to health and safety.
- 1.2. It is for companies operating in the UK ports industry with responsibility for the safe design, construction, operation, management and maintenance of ports and terminal facilities and management of port and terminal activities. It will also be useful to employees and their representatives.
- 1.3. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance. If the guidance goes beyond compliance, then this will be clearly identified.
- 1.4. This document addresses port and terminal planning including topics such as: transport management; specific hazards; all movements and the ***vital importance of segregating people and plant.***
- 1.5. Regulations in this document are referred to by title but not year, because they are amended from time to time and the reader should always seek the current version. Acts are given a year as they tend to change less frequently. The list of references at the end of this document however does include a year that was correct at the time of publication.

2. REGULATORY FRAMEWORK AND GUIDANCE

- 2.1. The two principal relevant pieces of law are the [Health and Safety at Work etc. Act \(HSWA\) 1974](#), and the [Management of Health and Safety at Work Regulations](#) (MHSWR), which set out the basic requirements to ensure, so far as is reasonably practicable, the health, safety and welfare of all involved.
- 2.2. Port specific, Merchant Shipping and other legislation applies and should be referred to.
- 2.3. Approved Code of Practice (ACOP) L148 'Safety in Docks' was introduced on 6 April 2014: <http://www.hse.gov.uk/pubns/books/l148.htm>
- 2.4. The PSS/HSE Safety in Ports guidance suite, available from the PSS website at: <https://www.portskillsandsafety.co.uk/resources> is an important supplement to Safety in Docks ACOP L148.

- 2.5. The guidance is aimed at routine operations and does not cover some of the specialised and high-risk activities associated with handling dangerous goods and hazardous cargoes, or major hazards sites which are subject to the Control of Major Accident Hazards Regulations for which specialist advice may be required.
- 2.6. Reference can also be made to the International Labour Organisation's (ILO) Code of Practice on Safety and Health in Ports (ILO 152): http://www.ilo.org/sector/activities/sectoral-meetings/WCMS_546257/lang--en/index.htm

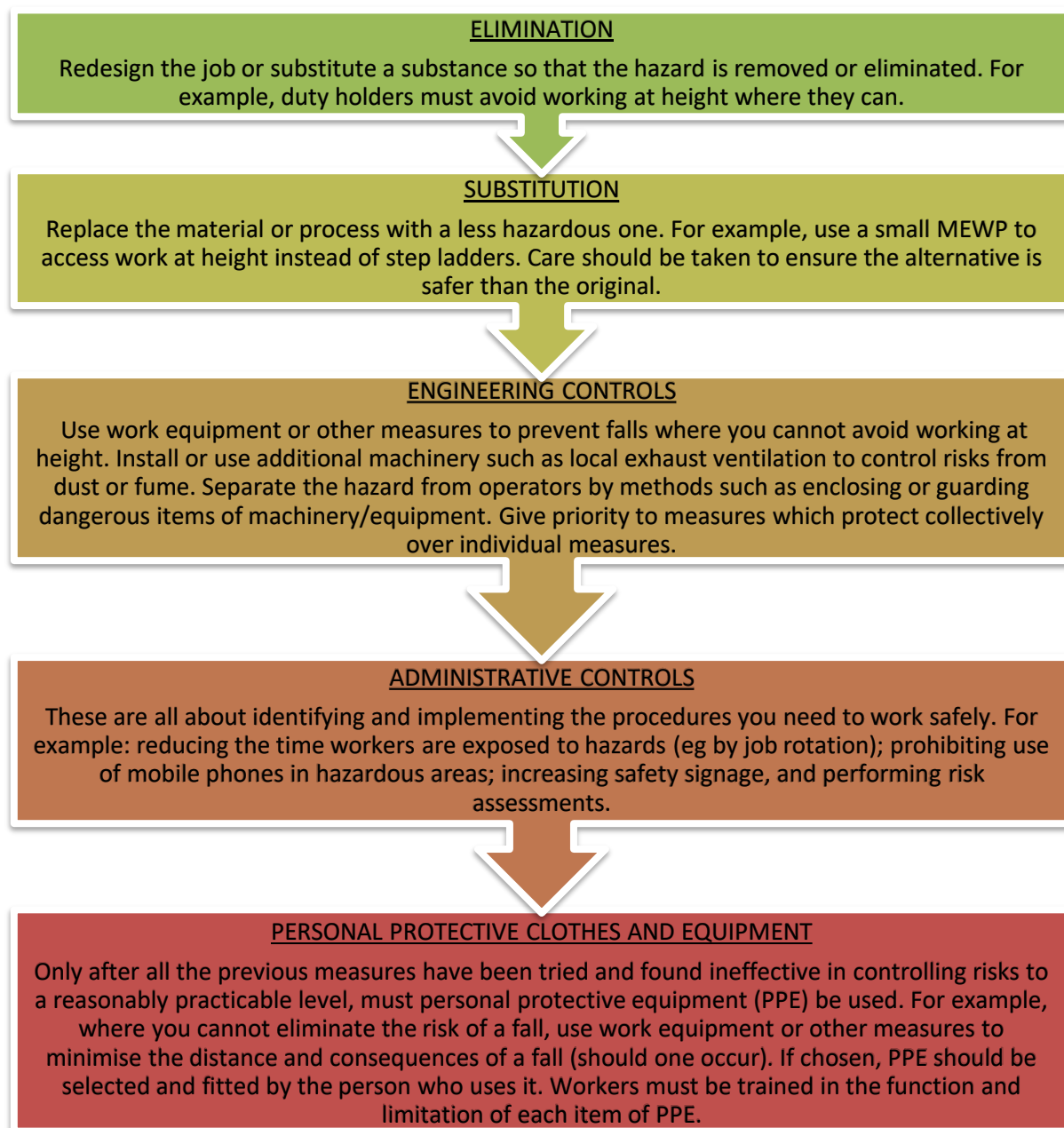
3. HEALTH

- 3.1. The wide range of activities in ports can give rise to possible health risks such as exposure to dusty cargoes; back injuries, sprains and strains from lifting and handling, pushing and pulling; noise and vibration. There is specific legislation including the Control of Substances Hazardous to Health Regulations, the Control of Noise at Work Regulations, the Manual Handling Operations Regulations and Personal Protective Equipment at Work Regulations.
- 3.2. While there is reference to some specific health risks in these guidance documents, it is not possible to cover all the issues. Further information and guidance on the identification, assessment and reduction or avoidance of such risks can be found on the HSE website at:
 - 3.2.1. Ports web pages:
<http://www.hse.gov.uk/ports/index.htm>
 - 3.2.2. Control of Substances Hazardous to Health:
<http://www.hse.gov.uk/coshh/index.htm>
 - 3.2.3. HSE Whole Body Vibration in Ports Information Paper
<http://www.hse.gov.uk/vibration/wbv/ports.pdf>
 - 3.2.4. Musculoskeletal disorders (MSDs)
<http://www.hse.gov.uk/msd/index.htm>
 - 3.2.5. Noise at Work
<http://www.hse.gov.uk/noise/>
 - 3.2.6. Personal Protective Equipment
<http://www.hse.gov.uk/toolbox/ppe.htm>
 - 3.2.7. Vibration at Work
<http://www.hse.gov.uk/vibration/>

4. RISK ASSESSMENT

- 4.1. Risk Assessments must be undertaken in accordance with the Management of Health and Safety at Work Regulations. The risk assessment must consider the risks – not only to permanent employees but also to others including non-permanent employees (NPE's), ship's crew, passengers and visitors that may be affected by the activity. The appropriate control measures must be introduced and should consider collective measures ahead of personal or individual measures.
- 4.2. Risks should be reduced to as low as is reasonably practicable by taking preventative measures in order of priority in the Hierachy of Controls diagram on the following page. The Hierachy of Controls sets out an ideal order to follow when planning to reduce risk.
- 4.3. Risk assessments must be reviewed regularly and immediately after any incident or when there are significant changes to the operation. Most accidents and near misses can be avoided if the risks from the work are suitably and sufficiently assessed and appropriate control methods are adopted
- 4.4. The risk assessment should record the significant hazards and the risks of the operation together with the relevant control measures. In port operations risk assessments should take into account changes such as tidal changes, weather, trim, list, load/cargo and vessel dynamics.
- 4.5. Planning and work execution is discussed in HS(G) 177, Managing Health and Safety in Dockwork: <http://www.hse.gov.uk/pubns/books/hsg177.htm>
- 4.6. The Health and Safety at Work Act 1974 applies on board a ship when shore based workers are engaged in cargo handling or other tasks on board. Cargo handling may include, but is not limited to, loading, unloading, stowing, unstowing, pouring, trimming, classifying, sizing, stacking, unstacking as well as composing and decomposing unit loads; and also, services in relation to cargo or goods such as tallying, weighing, measuring, cubing, checking, receiving, guarding, delivering, sampling and sealing, lashing and unlashng.
- 4.7. The Health and Safety at Work Act 1974 also applies to the Master and ship's crew when working with shore-based personnel on board ship.
- 4.8. Cooperation and coordination between shipside and landside employers is required. Employers must therefore carry out risk assessments and develop safe systems of work (in consultation with the workers involved) that all parties agree to, so that the respective employers can co-operate effectively with each other
- 4.9. A signed agreement or an agreed and recorded system of work with the master of each vessel is recommended - this is not a legal requirement but may help to ensure effective co-ordination with other parties.

Hierarchy of Controls



4.10. The regulations made under the Health and Safety at Work Act 1974; such as The Management of Health and Safety at Work Regulations; The Lifting Operations and Lifting Equipment Regulations and The Provision and Use of Work Equipment Regulations, do not apply to a master or crew of a ship, or any persons employing them, in relation to safe access, plant and equipment which remain on board the ship and for any undertakings or work which are carried out on board ship solely by the master and the crew. Instead, the Merchant Shipping Act 1894 and related Merchant Shipping Regulations impose similar duties on board ship in UK territorial waters.

- 4.11. A ship's master has duties under the Health and Safety at Work Act 1974 in relation to the ship's crew who are put ashore to perform their own tasks (for example loading ship's stores or carrying out maintenance work on their ship). Those duties also extend to plant and equipment (for example a forklift truck) which is under the master's control that is used ashore by ship's crew, or when used by shore based workers ashore or on-board ship.

5. TRANSPORT MANAGEMENT

- 5.1. All terminals must have risk assessments carried out and safe systems of work in place. These should be communicated to all relevant parties, including: terminal staff, security, visitors, visiting hauliers and drivers, ship's crew, agents, ship's deliveries, emergency services, contractors and those who have business on the port or terminal
- 5.2. The main hazards in ports and terminals occur at the interface between vehicles and pedestrians, and vehicles with other vehicles. This guidance deals with transport issues, however there may also be significant manual handling activity and potential for slips, trips and falls. Many serious injuries have occurred with people getting access to or from plant and equipment that is in operation at terminals.
- 5.3. The design of ports and terminals is vital to ensure they operate safely. Consider: gatehouse and weighbridge location and arrangements to segregate for security and operational personnel from traffic, traffic routes, storage areas, handling areas, linkspan locations, cranes, gantries and pedestrian routes to ensure there is an effective and safe flow of traffic around the terminal. The HSE have produced "[A Guide to Workplace Transport Safety](#)" HSG136 and "[Vehicles at work](#)", which covers general workplace transport issues and the contents of these should be taken into account when developing ports and terminals. The document advocates "Safe Sites", "Safe Vehicles" and "Safe Drivers" which are underpinning principles to safe management of transport in the workplace. A suitable and sufficient risk assessment must be carried out to cover all aspects of port and terminal operations
- 5.4. Careful thought and planning must be given to traffic routes and the location of storage areas within the site. Traffic routes including interchanges and roundabouts etc. should be delineated so they are obvious to all users. Signage and markings as required by the Road Traffic Act and the Traffic Signs Regulations and General Directions are recommended, as these will be familiar to all drivers of road going vehicles including foreign drivers. Planning should also include designated areas for: queuing, loading and unloading operating twistlocks, sheeting and securing of loads, and maintenance of Cargo Transport Units (CTUs) and trailers including areas where hot works could be undertaken.

- 5.5. Handling areas for cargo will need to be adequate and surfacing suitable to withstand the rigors of the heavy plant and equipment and stacking of lift units that will operate in these areas. Storage areas for ships trailers, mafi trailers and cassettes may need to be considered
- 5.6. Design and operational planning:
 - 5.6.1. **Lighting:** should be suitable for the work undertaken. See SiP009 Lighting.
 - 5.6.2. **Visibility:** take into account vehicles with reduced visibility where appropriate
 - 5.6.3. **Quay edges:** take into account risks associated with manoeuvring near edges where appropriate
 - 5.6.4. **Overturning:** ensure that traffic routes are suitable for the vehicles/plant, e.g. the cornering requirements of higher centre of gravity loads or equipment
- 5.7. Traffic management systems should include:
 - 5.7.1. Terminal speed limits and means to enforce as required
 - 5.7.2. Relevant signage appropriate to the traffic route and operations being undertaken
 - 5.7.3. Clearly marked traffic routesand may include:
 - 5.7.4. Clearly marked safe pedestrian routes and crossings
 - 5.7.5. Suitable lighting
 - 5.7.6. The use of traffic lights, barriers and gate control
 - 5.7.7. The use of flashing beacons or flashing hazard lights on vehicles
 - 5.7.8. Suitable traffic calming measures
 - 5.7.9. One-way systems
 - 5.7.10. Minimising the need for reversingThis list is not exhaustive.
- 5.8. Consider cargo for shipment such as mobile plant and equipment which may need to be located close to the ships' ramp or lifting areas.

- 5.9. Ports and terminals may have separate areas for import and export cargo. Carefully consider traffic routes to and from the ship and around the terminal for collecting and delivering drivers.
- 5.10. Current international, European and national security regulations need to be considered for the type of terminal used i.e. passenger traffic, high value cargo etc.
- 5.11. In addition to port and terminal staff there will be a significant number of visitors who need to be provided with appropriate information. To ensure their own and other port and terminal users' safety. Visitors to operational areas need to be given information appropriate to the risk such as traffic routes/flows, emergency and reporting procedures. This may be provided by means of a map and basic written instructions or pictograms to allow for the fact that some visitors may have a limited understanding of English. Consideration should be given to translation of materials into other languages. See also SiP12, Passenger and Cruise Operations
- 5.12. Access to operational areas should be strictly controlled and only authorised persons allowed on site. Some ports and terminals operate induction schemes for visitors.
- 5.13. In managing port and terminal activities, particularly when more than one employer may be working in the same area the provisions of [Managing Health & Safety in Dockwork HSG177](#) published by the HSE should be taken into consideration. This may include, but not be limited to, careful planning of traffic routes for neighbouring operations, ensuring that different activities can safely be conducted by different or the same employers without increasing the risk.
- 5.14. While subject to risk assessment, ports and terminals will normally require the mandatory wearing of high-visibility clothing and possibly other PPE as required by the risk assessment. All personnel entering ports and terminals including drivers must have relevant PPE and when outside the vehicle these must be worn at all times.
- 5.15. A port or terminal must additionally provide access to adequate welfare facilities for drivers and visitors. A minimum of toilets and handwashing facilities must be provided. Canteen facilities may also be provided where appropriate. Adequate parking and safe access to and from such areas must be provided.
- 5.16. Safe management and monitoring of port and terminal road systems is vital to ensuring safety, it is important that a robust management of issues such as speeding and failure to comply with road safety instructions can be demonstrated.

6. SPECIFIC HAZARDS

- 6.1. You may need to consider hazardous substances, their safe handling and segregation, and how to safely deal with emergency situations that involve these substances. This may include providing hazardous substance containment areas such as pits, bins or troughs. Where these are located may be affected by prevailing wind direction and location of buildings and offices. Alternatively they could be mobile.
- 6.2. It may be appropriate to designate specific areas of the port or terminal for specific dangerous goods, particularly for items of class 1 explosive and class 7 radioactive. Some operators use the provisions of the segregation section of the IMDG Code to segregate dangerous goods on the terminal areas.
- 6.3. Plug-in electrical connections for refrigerated units and heated cargo units may be provided and these will require significant electrical capacity, possibly requiring specific substations nearby to the connection points. Any such electrical supply connection will need to comply with the requirements of the [Electricity at Work Regulations](#). Portable electrical equipment will require regular testing and inspection in accordance with the guidance. [see [HSG107 Maintaining portable and transportable electrical equipment](#)]
- 6.4. In some cases Government Agencies such as Border Force, the Forestry Commission, etc may require CTUs to be inspected and sometimes unloaded for inspection. This may also require the re-loading of such cargo into the units and may include securing and un-securing of cargo within these units. This work may be labour intensive and require undercover areas in which to work. In some cases it may require machinery to be operated inside CTUs. The work may also require specific equipment and training of personnel, and staff need to be appropriately trained in these requirements if needed, including the issue of container packing or fumigation certificates.
- 6.5. Engineering activities may be required on the terminal. Control measures should be put in place to ensure they are safely managed. Measures should be put in place to ensure others are aware of the presence of any such activities and personnel.

7. PARKING / COLLECTION OF TRAILERS

- 7.1. Employers should ensure their drivers should be aware of the guidance on coupling/uncoupling trailers.
 - [HSE/Freight Transport Association \(and others\) 'Safe coupling & uncoupling guide'](#)

- 7.2. Where fitted, trailer parking brakes must be used ***unless there are circumstances where the application of the brake may increase the risk of injury to dock staff and collecting/delivering drivers***. In these circumstances, the cargo handler should undertake a comprehensive assessment of the risks of the activity to ensure that adequate control measures are in place.
- 7.3. When conducting such a risk assessment the following points below must be considered: **design of the trailer park** (layout, surface condition, gradient, size of bays, backstops); **instructions to workers and visiting drivers**; **control of pedestrians**; and **general site rules**.
- 7.4. The trailer park should be designed in such a way, and systems of work adopted, to ensure that risks to all workers are avoided or reduced so far as is reasonably practicable. If there are specific reasons why trailer parking brakes cannot be used, clear instructions should be provided for drivers and staff as to how such trailers are handled, parked and inspected, emphasising the use of cab unit park brakes.
- 7.5. Trailers when parked must be prevented from rolling. Consideration should be given to surface condition and any possible gradients especially in the case of mafi and skeleton trailers which may not have braking systems. Back stops and other means of roll prevention may be required.
- 7.6. Back stops if used should be of adequate size and strength to ensure that trailers cannot be reversed over them when being positioned.
- 7.7. When trailers are parked back to back, either directly or in herringbone formation, care must be taken to ensure that pedestrians cannot become trapped between trailers.
- 7.8. Site rules should be specific as to how drivers: sheet or secure loads, fit light lenses, number plates etc. and check trailers. Safe areas must be provided to do this, either within the parking bay or an adjacent area.
- 7.9. Parking bays must be clearly marked, provide adequate width for manoeuvre, and should be of adequate length to accommodate the longest trailers handled.
- 7.10. Adequate space must be provided between bays to enable drivers to safely gain access to leg handles, trailer control systems, parking brakes and the rear of the trailer.
- 7.11. Consider how trailer maintenance can be undertaken safely including things like tyre repairs, leg damage repair and other small maintenance work etc.
- 7.12. Design and layout of parking bays and roadways should provide safe working areas for all purposes.

8. INFORMATION, INSTRUCTION, TRAINING AND SUPERVISION

- 8.1. All persons engaged in work must be trained and assessed as competent for the role that they are required to perform by a competent person. These persons must have their fitness for work assessed against the requirements for each task being performed and consideration should be given to the requirement for a drug and alcohol monitoring system to be in place.
- 8.2. All persons involved in operations must be provided with adequate information, instruction, training and supervision. This is particularly important where Non-permanent employees (NPEs) are utilised who may be generally competent but have limited experience of the particular operation.
- 8.3. All persons involved in port working must know who is in control of the operation. This is particularly important where NPEs are working alongside permanent employees.
- 8.4. Supervisors should be trained, competent and experienced in the areas of work that they are supervising and/or have access to relevant competent advice and assistance.

9. REFERENCES AND FURTHER READING

- 9.1. Relevant legislation and guidance includes the following. Please note that these are the correct versions at the time of publishing but the reader should always seek out the most current version.
- 9.2. The current versions of other PSS Safety in Ports Guidance documents can be found at: <https://www.portskillsandsafety.co.uk/resources>
- 9.3. Consulting and involving your workers:
<http://www.hse.gov.uk/involvement/index.htm>
- 9.4. Control of Major Accident Hazards Regulations (COMAH) 2015
<http://www.hse.gov.uk/comah/>
- 9.5. Control of Substances Hazardous to Health Regulations (COSHH) 2002
<http://www.hse.gov.uk/coshh/index.htm>
- 9.6. Control of Vibration at Work Regulations 2005
<http://www.hse.gov.uk/vibration/wbv/regulations.htm>
- 9.7. Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002
<http://www.hse.gov.uk/fireandexplosion/dsear.htm>

- 9.8. Electricity at Work Regulations 1989 and guidance on electrical safety
<http://www.hse.gov.uk/electricity/index.htm>
- 9.9. HSE Whole Body Vibration in Ports Information Paper
<http://www.hse.gov.uk/vibration/wbv/ports.pdf>
- 9.10. International Labour Organisation's (ILO) Code of Practice on Safety and Health in Ports (ILO 152):
http://www.ilo.org/sector/activities/sectoral-meetings/WCMS_546257/lang--en/index.htm
- 9.11. Maintaining portable and transportable electrical equipment HSG107
www.hse.gov.uk/pubns/priced/hsg107.pdf
- 9.12. Managing Health and Safety in Dockwork HS(G) 177
<http://www.hse.gov.uk/pubns/books/hsg177.htm>
- 9.13. Manual handling/ pushing and pulling
<http://www.hse.gov.uk/msd/index.htm>
- 9.14. Noise at Work
<http://www.hse.gov.uk/noise/>
- 9.15. Ports web pages
<http://www.hse.gov.uk/ports/index.htm>
- 9.16. Risk Management HSE web page
<http://www.hse.gov.uk/risk/>
- 9.17. Vehicles at work HSE web page
<http://www.hse.gov.uk/workplacetransport/index.htm>

10. DOCUMENT AUTHORS

This guidance document has been produced by Port Skills and Safety with the support of the Health and Safety Executive and representatives of the UK ports industry.

11. FURTHER INFORMATION

For further information, please contact:

Port Skills and Safety, First Floor, 30 Park Street, London SE1 9EQ

Tel: 020 7260 1790 Fax: 020 7260 1795 Email: info@portskillsandsafety.co.uk

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