



# Briefing

## Health & Safety



INVESTOR IN PEOPLE

Construction Confederation

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# Driver visibility on mobile plant

Site transport accounts for the second largest number of fatal and serious injuries after falls from height. The effective management of risks from site transport requires a commitment from many people involved in a construction project; from clients and designers through to contractors and operators. In 2001, the Construction Confederation hosted a summit that identified 10 key points that if actively considered throughout a project, could reduce the number of accidents. These were:

- Early installation of site roads
- Site access
- Separation of vehicles and pedestrians
- Elimination and reduction of reversing vehicles
- Operator and driver training
- Loading, storage and parking areas
- Signage and lighting
- Hi-visibility clothing
- Surrounding environment
- Communication

This Health and Safety Briefing provides information on the requirements relating to visibility for the operator around mobile work equipment and describes the measures that users need to take to comply with the Provision and Use of Work Equipment Regulations 1998.

Where a driver's direct field of vision is inadequate to ensure safety, PUWER 98 requires the provision of adequate devices to improve visibility from the driver's position, so far as is reasonably practicable. This requirement is risk based, and the selection of appropriate devices will depend upon the extent and nature of the visibility problem, the speed of use of the vehicle, lighting conditions etc.

Problems have arisen both with existing mobile plant that has become subject to the requirements for improved visibility since December 2002, and with new plant supplied bearing a CE mark denoting manufacturers compliance with the Machinery Directive.

HSE's view is that compliance with the international standards in this area (IOS 5006 and EN 474), does not necessarily mean that plant complies with the Essential Health and Safety Requirements (EHSRs) of the Machinery Directive. This has led to HSE taking enforcement action against contractors to ensure that adequate mirrors, CCTV, Radar or other devices are fitted to plant already in use.

The types of equipment most likely to be affected by these requirements are wheeled loaders, telehandlers, dump trucks (not site dumpers) and 360 degree excavators.

Areas of restricted visibility commonly exist at the rear, sides and front of earth moving machinery used in construction. Areas of restricted visibility can prevent drivers seeing pedestrians and avoiding obstructions. Smaller vehicles, particularly those used in the construction industry, e.g. mini excavators, compactors and compact dumpers, generally provide adequate visibility from the driving position and are of less concern to HSE.

Drivers of earth moving equipment should be able to see all significant danger areas around the vehicle from the driving position. As a rule of thumb the operator should be able to see a one metre high object one metre away from any danger point of a vehicle. Due to the wide variety of types, designs and sizes of mobile work equipment, and uses to which they are put in construction, risk assessments need to be specific to each kind of vehicle.

### What do I need to do?

Mobile plant needs to be assessed to ensure that existing visibility aids meet the general requirements set out above. Where existing visibility aids do not meet this standard improved mirrors or other devices need to be fitted.

### Fitting reversing mirrors

The following factors need to be taken into consideration when choosing appropriate visibility aids:

#### ■ Vehicle speed and stopping performance

Visibility aids must be able to allow the driver to respond to a hazard well before the vehicle may hit it, e.g. on slow moving machines, such as excavators, mirrors are often adequate, while vehicles which move relatively quickly in the workplace, e.g. wheel loaders, may require a CCTV, or radar system.

#### ■ Vehicle articulation

As the front unit of an articulated vehicle begins to turn, all rearward vision may be lost. Reversing mirrors, wide angle mirrors, and CCTV or radar proximity devices should be fitted as necessary.

#### ■ Site conditions

The type of visibility aid fitted to the equipment should be appropriate for the sites conditions. In certain circumstances, e.g. waste disposal sites, users will prefer to use colour CCTV because of the improved definition it provides. On sites where there is deep mud or slurry, automatic cleaning systems may be required to maintain the performance of visibility aids.

#### ■ Lighting conditions

CCTV systems may need to be capable of coping with low, bright and changing light conditions, e.g. a CCTV monitor may need automatic adjustment and shielding to prevent glare.

### Wide Angle Convex Mirrors

Wide angle mirrors can improve the visibility for drivers along the sides of rigid chassis and articulated vehicles. They can also improve visibility at the front of machines, e.g. when placed on the canopy or hand rail of rigid dump trucks they enable the driver to see around the front and down the offside of the vehicle.

Convex mirrors are sometimes fitted on the back of machines and used in conjunction with the normal reversing mirrors, e.g. on loading shovels. This simple solution relies upon the operator looking behind. It may be acceptable on excavators or other slow moving equipment but it should not be relied upon on faster moving machines such as wheeled loading shovels. For these vehicles CCTV or radar devices can provide a better option. There is often little price difference between fitting a system of mirrors and basic CCTV systems.

### Dealing with Suppliers

Hire and lease companies are required, by Regulation 28(e) of PUWER 98, to immediately provide, where reasonably practicable, additional driver visibility aids to their earth moving equipment, when supplied to a new workplace. Manufacturers are required to manufacture machinery in accordance with the Supply of Machinery (Safety) Regulations 1992.

If in doubt, manufacturers should be challenged to demonstrate that the mobile plant they are supplying complies with the Essential Health and Safety Requirements of the Machinery Directive prior to taking delivery.

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Convex mirror fitted to the rear of a telehandler (used in conjunction with a normal reversing mirror).

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