

Introduction to the generic hazards database

The following section brings you information about a range of hazards that might be a risk to you or to the people you are responsible for while working at a live music event. They are additional to the ones that have been identified for the job roles, although there is overlap between them. Some hazards might not be relevant to your work or workers, but they are presented here so you can look through them and decide which ones affect you. You might not immediately think that you or your team could be at risk from pressurised gas, for example, but do read through the description of what might go wrong, before you decide.

For each hazard, there is a list of some control actions that can be taken. You may already have taken these precautions. If you have not, you should think about putting them in place. You might not be able to arrange for these controls yourself if they require additional resources outside your responsibility. In this case, you should ask someone else who has access to these resources to help to put them in place for you.

Note that the controls suggested here should be possible in most European countries. However, there may also be specific health and safety legislation in each country that means you will be required to take certain actions. You must carefully check the regulations for the country you are working in, to make sure you comply with the law.

What this part of the website cannot do is to tell you what the risks are when several hazards interact with each other in your work environment. It may be relatively straightforward to control the risks of a hazard on its own, but in combination with other hazards the effects may be more difficult to predict and control.

Similarly, you may be able to control the risks from these hazards when you work on your own. However, the nature of live music events means that many other workers may be carrying out their own work activities very close to you. You need to find out what other workers are doing – and make sure to tell them about the hazards in your own work that might affect them.

Not all hazards or controls are listed here. This is the first version of this risk management tool and it is designed to evolve. We need you to tell us more about what hazards are relevant to you and to tell us how you control them, so that we can add these in to the database.

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Hazard/danger

Alcohol/drugs

What can go wrong?

Intoxication has the immediate effect of making it more difficult to perform physical and mental tasks.

People take less care, have slower reactions and can become aggressive.

In the longer term, serious health problems may develop.

People sometimes forget or do not realise that medicines can also have the same detrimental effect on their performance as other drugs.

Mixing drugs, alcohol and medicines can intensify the problems.

Although someone may not be intoxicated themselves, they may need to work with other people who are, either work colleagues or others at the event.

Possible consequences

Carelessness (causing accidents)

Inability to concentrate and make judgements

Unconsciousness

Time off work

Stress (from working with other people who are intoxicated)

Common controls

Promote a policy of prohibiting alcohol/drug use before or during work activity.

Be alert for other people who are intoxicated.

Provide backup and support for workers in situations where others are intoxicated and may be abusive/aggressive.

Have a system in place to remove people who cause trouble when intoxicated.

Supervise workers and remove them from duties if intoxicated.

Monitor and offer support if alcohol/drug use is problematic.

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Hazard/danger

Asbestos

What can go wrong?

Asbestos-containing materials are still present in many older buildings. Their use has now been banned in many countries.

Asbestos mixed in materials such as concrete or composite panels is difficult to detect.

Asbestos can be released from the materials containing it, by drilling, cutting or breaking down panels.

Even small amounts of particles breathed in the atmosphere can cause serious health problems.

The delay between first exposure to asbestos and the onset of disease can be 15 - 60 years.

Possible consequences

Asbestosis

Mesothelioma

Lung diseases

Cancers of the lungs and chest lining

Common controls

Venues should have an asbestos management plan, including a register of the location and condition of asbestos-containing materials.

Asbestos-containing materials should be labelled with an asbestos warning sign.

All workers who might disturb asbestos-containing materials during their work should be informed of its location.

Consider using a permit-to-work system when work is carried out on parts of a building where asbestos containing materials are prevalent.

Asbestos removal is only to be done under controlled conditions.

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Hazard/danger

Electricity

What can go wrong?

Most workers are exposed to an electrical power supply, which may be more vulnerable to damage in a live music event environment. Failure of power and lighting can have very serious consequences.

Power supply cables may not be obvious and could be moved or disturbed accidentally.

Users may not understand the restrictions on the power supply, in terms of what equipment etc they can use from it.

Users may attempt to carry out electrical repairs if it is difficult to get hold of the site electrician.

Generators may fail or perform unreliably.

Possible consequences

Death

Heart attack

Electric shock

Burns

Failure of emergency systems

Fire

Accident caused by receiving an electric shock (e.g. fall from height)

Common controls

All workers: Know the location of underground electric cables. Prevent other people from working in the area near buried cables, unless authorised by the site electrician. Avoid danger from overhead power lines during construction of structures or when using ladders, mobile elevating working platforms (MEWPs) etc.

Provide appropriate fire extinguishers and train workers in correct use.

Keep liquids away from cables, connectors and electrical equipment (e.g. only allow closed drinks containers on the stage).

Switch off all equipment affected by an accidental spillage.

Choose equipment suitable for the environment (e.g. waterproof equipment for outdoors).

Instructions to be given to people working with electricity and any electrical equipment supplied.

Installation of fixed electrical supply: competent people install and maintain the supply.

Installation of temporary electrical supply: competent people install and maintain the supply.

Weatherproof cables and connections outdoors, earth grounding, use residual current device (RCD) and protect from mechanical damage (e.g. bury cables and mark location).

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Spillage procedure for refuelling generators.

Fence around generators to prevent unauthorised access.

Use of portable electrical equipment: protect electrical equipment from weather outdoors.

Use battery-powered equipment if possible.

Check electrical equipment is in good working order. Visual inspection for obvious faults by the person using the equipment (e.g. train users to check that cables and plugs are in good condition).

Formal visual inspection and testing to be done according to suppliers' and manufacturers' recommendations. Keep record of formal inspections.

Portable electrical appliances to be tested and inspected (e.g. lights).

(Camlock/powerlock connectors).

Keep cabling to a minimum and protect against abrasion, rough and sharp edges.

Use of power tools: use low voltage or battery powered hand-held equipment, especially outdoors and protect with residual current device (RCD).

Glove protection against electric current.

NOTE: the introduction of changes to cable colour codes in electrical supply installation is taking place in the UK. This could mean there will be an increased potential for confusion. Managers and workers need to be aware of the impact of the colour changes, for example, by adopting rules so that either old colours or new colours can be used, but not a mixture of both.

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Hazard/danger

Environment - general

What can go wrong?

It is more difficult to create a comfortable and hygienic work environment on a temporary site. It may be more difficult to provide adequate lighting, furniture, temperature and humidity control, washing facilities etc.

A great amount of work activity may be condensed into a short time, with many workers on site together.

Working areas may be cramped and workers may be carrying out different activities close to each other, which interrupt and impinge on each other's work.

It may be more difficult to keep the workplace tidy and dispose of waste quickly.

Storage may be limited, so it is difficult to keep equipment, raw materials, food etc. stored in the right conditions.

Cleaning the work environment and personal hygiene may be more difficult because of limited access to hot water.

Possible consequences

Ill health, infections and diseases

Cuts, bruises, needlestick injuries

Hot and cold burns

Scalds

Injury from falling objects and falls

Common controls

Provide a suitable working environment.

Organise work areas.

Ensure fire doors and emergency routes are not obstructed.

Mark boundaries of hazardous areas and control access.

Organise work activities so they do not create dangers for others (e.g. testing of spotlights to be done in restricted area to avoid harming other workers).

Provide good lighting, ventilation and temperature control indoors.

Minimise the numbers of workers and the length of time they need to spend in hot or chilled environments.

Ensure adequate storage space.

Store raw and cooked foods at the correct temperature.

Keep work areas clean and tidy. Use surfaces that are easy to clean.

Provide and empty litter bins. Dispose of waste carefully (e.g. broken glass, food waste).

Keep liquids away from electricals.

Ensure all drinks taken onto the stage are in containers with lids.

Keep containers of drinks covered when near smoke or fumes (e.g. from special effects).

Provide clean toilets and washing facilities, including barrier creams, soap, clean towels, disinfectant and sterilised wipes, if required.

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Hazard/danger

Environment - outdoors

What can go wrong?

The outdoor environment is unpredictable, as weather conditions can change quickly. People have to work in all conditions. However, if weather conditions become too extreme, work has to stop. People may not realise that they are suffering from the effects of weather conditions until it is too late and they become ill.

It may be difficult working among some features of the landscape, such as slopes, trees or areas of water.

Wind can be particularly difficult to shelter from and can cause many problems, including moving structures and equipment.

Substances, such as the smoke from special effects, can be more difficult to control outdoors.

Workers may be exposed to different diseases when working in an outdoor environment.

Possible consequences

Electric shock

Cuts

Bruises

Broken limb

Unconsciousness, fainting

Sunstroke

Skin cancer

Hypo/hyper-thermia

Diseases

Ill health

Drowning

Animal/insect bites, kicks etc.

Common controls

Protect from becoming ill in hot weather by using sunscreen, wearing a hat, drinking plenty of water and staying in the shade, where possible.

Protect from cold weather by wearing warm clothing.

Protect from wet weather by wearing waterproof clothing.

Damp down dust or use a facemask in dry conditions.

Have plans showing underground electricity cables and service pipes. Use an insulated shovel for digging, if underground electric cables might be in the area.

Check the height of vehicles and overhead cables etc.

Lightning strike protection and procedure for taking shelter.

Use electrical safety grounding and protect connections from wet.

Use a wind speed and strength gauge (anemometer). Wet and windy conditions can significantly increase the risk of people or things falling or collapsing. Stop work if it is too windy. Remember that objects on wheels can move, even in low wind strength.

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Have adequate lighting in dim conditions.

Use a (head-mounted) torch for personal work. Wait until daylight if adequate artificial lighting cannot be provided.

Use mulch, gravel or trackway on slippery ground conditions.

Check for dangerous tree branches.

Remove insect infestations (e.g. wasps' nests).

Provide life jackets and rescue boat for work on or near water.

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Hazard/danger

Falling and thrown objects

What can go wrong?

Objects can be both carelessly left behind after someone has been working at height, or deliberately stored there.

Unattended, there is always the chance that these objects may fall or be knocked off and cause damage to someone or something underneath. There may also be loose parts of a structure, which fall when they become unattached.

Other objects may be deliberately thrown, either with the intention of causing injury, or at/by a performer on stage.

Possible consequences

Being hit, causing cuts, bruises, broken bones, unconsciousness

Common controls

Prevent access to areas beneath overhead work.

Use helmets when below overhead work.

Use toeboards on scaffolding.

Use nets beneath overhead work.

Secure tools when working overhead.

Use safety lines on flown objects.

Secure equipment with primary and secondary fixings to a solid structure.

Ensure lights have effective hook clamps and safety wires. Visually check the security of each light as it is rigged.

Check that ceiling and wall fixings are rated for the load to be attached.

Tie speaker stacks.

Secure scaffolding on stillage.

Check all high surfaces are free from loose objects (e.g. tools, spare parts etc).

Check and remove unsafe tree branches outdoors.

Train stage and pit workers to be alert for thrown items from the crowd.

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Hazard/danger

Falls

What can go wrong?

Falls from only a low height (e.g. one meter) cause many injuries.

Workers may climb a relatively small height to do a job but lose their footing or overbalance.

They may fall onto a sharp or hot object, or onto someone else.

Possible consequences

Broken bones

Bruises

Common controls

See also - Working at height.

Restrict access to authorized people only.

Provide handrails on steps and ramps.

Provide edge barriers of sufficient strength (e.g. pit barrier).

Mark edges with white lines or luminous tape (e.g. stage edge).

Ensure bright lights don't cause temporary blindness.

Provide adequate lighting.

Take care when visibility is reduced by use of smoke machines.

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What can go wrong?

The three ingredients of fire (oxygen, fuel/combustible materials and a source of ignition, such as heat or sparks) will all be present at live music events.

Fire can spread extremely quickly, producing thick smoke and toxic fumes which overcome people. Fire can start in hidden spaces, where it rapidly grows without detection.

Using the wrong kind of fire extinguisher or using it incorrectly can cause burns or spread the fire.

Explosives may be found at events in the form of pyrotechnics or fireworks.

Smoking or using heat-generating machinery or spark-producing equipment near explosives is obviously dangerous.

Possible consequences

Death

Burns

Ill health from smoke inhalation

Electrical disruption to equipment and emergency functions

Evacuation

Common controls

Prevent fire by having a system for controlling combustible materials and flammable liquids and gases.

Clearly sign restricted storage areas (e.g. for pyrotechnics, fuel etc). 'No smoking' areas around highly flammable or explosive materials.

Use guards on heaters.

Flame retardant upholstery and decorations.

Stage lighting to be heat-safe for performers and nearby materials.

Reduce risk of burns from hot lights (allow to cool before handling, use heat-resistant gloves).

Good housekeeping to minimise sources of combustion.

Protect against arson.

Detect fire by automatic detectors and observations.

Contain or fight the fire by having adequate, fire fighting equipment suitable for the situation. This equipment must be clearly marked and its use explained.

Keep fire doors closed but check that they can be easily opened and are not obstructed.

Display notices showing fire response instructions.

Escape from the fire with warning alarms, clear means of escape, emergency lighting, good signage.

Training in fire prevention, fire fighting and escape. Use of different types of fire extinguisher.

Explosive materials should be stored safely and their storage areas marked with signs. Entry to the area should be restricted to authorised people.

Only trained operators to use fireworks, pyrotechnics and other special effects.

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What can go wrong?

These could be supplied to you, created during your work or present in your workplace (e.g. flammables, corrosives, fumes, dust, chemicals, radiation, poisons, bacteria etc).

Some types found at events are cleaning fluids, paints, battery acid, petrol, dust from woodworking or dry soil outdoors, liquids used in special effects, disinfectants, clinical waste, etc. Some of these are very hard to detect or to control once released, such as liquids, airborne particles, smoke, infectious micro-organisms etc.

Some substances are volatile or explosive.

People may be unfamiliar with the effects of some of the substances that are used during work in temporary environments, especially if used by workers carrying out other activities nearby. You may not be aware that other workers have brought hazardous substances into the area where you are working. You may be working in an area where fumes and smoke are given off, such as from soldering or special effects.

Storage space may be limited, so substances cannot be stored separately or at the correct temperature.

Substances produced during the work activity may need to be stored on site for a few days, before disposal can be arranged, especially at weekends.

A very diverse range of waste may be generated, some of which should be stored separately in secure conditions, such as clinical waste.

Hand-picking of waste may be hazardous, because of the unknown substances that may be left by other people, or if it needs to be done in poor lighting conditions.

Working in close contact with a large number of other people, especially in an enclosed space, or in physical contact with other people, increases the exposure to infections and diseases.

Possible consequences

Death

Fire

Explosion

Burns

Cancer

Allergic reactions

Asthma, lung disease and ill health from breathing fumes and dust

Loss of consciousness from toxic fumes

Poisoning from swallowing

Skin irritation or dermatitis from skin contact (depending on potency of the substance and length of time in contact with skin)

Eye injuries from splashes

Infection (tetanus, hepatitis, aids etc) from exposure to viruses, bacteria etc.

Sickness, diarrhoea, vomiting

Headaches

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Common controls

Identify all hazardous substances in the workplace. Replace with less hazardous substances or processes, wherever possible (e.g. use steam or heat treatment for cleaning).

Operate a system for safe use and secure storage, in accordance with supplier's safety data sheets.

Prevent people from being exposed to hazardous substances or limit the number of people who have to use or work in an environment with hazardous substances.

Minimise the quantity of hazardous substances in use.

Reduce exposure time and monitor exposure levels. Comply with occupational exposure standards and maximum exposure limits.

Mark stores and containers with warning signs and labels. Oil storage outside must have secondary containment (bund).

Clean up spillages immediately.

Safe waste disposal.

Dispose of clinical waste, used needles etc carefully. Clean and disinfect areas where blood, vomit etc has been spilled.

Store and dispose of food and kitchen waste carefully.

Follow manufacturers'/suppliers' instructions for use (safety data sheets).

Ensure good ventilation. No smoking near highly flammable substances.

Use ATEX-approved safety torches in areas where flammable fumes are present.

Reduce risk from vehicle fumes in enclosed spaces.

Warn people with breathing sensitivities (e.g. asthma) if chemicals/dry ice are to be used for special effects, such as fogs.

Eye protection (goggles) and eyewash station for chemical splash treatment.

Gloves resistant to chemicals and tearing for handling and disposing of substances.

Protective clothing, gloves, boots etc for waste collectors.

Wear facemasks when using machinery that creates dust or in dusty weather conditions.

Dust masks/disposable respirators must be appropriate for the type of particle and be CE marked (do not use 'nuisance dust masks').

Monitor the health of workers exposed to hazardous substances (e.g. skin conditions).

Consider immunisation protection of exposed to infectious diseases.

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Hazard/danger

Hot work

What can go wrong?

Work such as welding or soldering may need to be done on site. Other people may be in the same area.

Tools such as soldering irons can remain hot for some time.

Sparks from welding can land on combustible materials in the area and remain hidden.

Possible consequences

Fire

Burns

Electric shock

Eye injury

Illness from fumes

Common controls

Use a permit-to-work system.

Check the work area for signs of burning or heat one hour after the end of the work.

Ensure good ventilation for welding and soldering fumes.

Use personal protective equipment (goggles, face mask, respirator or visor, gloves, protective footwear etc).

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What can go wrong?

Most lasers used at live music events have outputs high enough to cause eye injury. The eye cannot respond quickly enough to block the entry of concentrated light. The extent of eye injury depends on factors such as wavelength, length of exposure and viewing conditions.

The nature of the light emitted enables it to travel long distances and it can be dangerous to view, even from a long way away.

While your eyes may not be damaged by laser light, the brightness may dazzle, disorientate or distract you.

Surfaces in the venue/site can also act as reflectors that divert the light.

Possible consequences

Eye injury/blindness (permanent)

Skin burn (laser power output over 0.5w)

Fire, explosion

Electric shock

Common controls

Suppliers or installers must consider the safety of their products when used by someone at work, and provide information.

Users or installers should assess the risks to anyone exposed to laser radiation, including workers, performers and the audience.

The equipment (including external mirrors) should be protected to prevent any unauthorised re-alignment or configuration changes.

Areas should be identified and marked with warning signs where personal exposure over the recognised maximum permissible value is possible.

Provide an easily operated and clearly marked emergency stop control.

Once installed, check the possibility of unexpected reflection hazards arising from other installations or occurrences e.g. wet surfaces, glazed areas, lighting rigs, scaffolding, camera lenses, balloons etc.

Ensure eye protection is used, if required.

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What can go wrong?

This includes cranes, forklift trucks, hoists, telehandlers and accessories (e.g. chains, slings etc).

Live music events usually involve the moving of large, heavy items of equipment or components of structures. This may need to be done where other workers are carrying out their own activities and they may not be aware of the need to keep a safe distance. Other workers who are involved in their own work activities may not know to check if there is any work going on above their head.

People may use lifting equipment with which they are not familiar, in a venue or on a site they do not know.

Other people may be familiar with the lifting equipment, but may not have had to lift the particular heavy items before and may not know about the vulnerability of the items they are lifting.

Possible consequences

Injury from falling loads

Injury from failure of lifts carrying people

Injuries from overturning

Impact with people or objects

Common controls

Assess the risk of the lifting operation, taking into consideration the type of load, the risk of the load falling or hitting someone and the risk of the lifting equipment turning over.

Have a plan for, and supervise, the lifting operation.

Choose equipment, including lifting tackle, that is suitable for the environment, the operation and for the load.

Equipment to be marked to show the safe working load or working load limit. Don't exceed safe working load.

Operators to be adequately trained.

Position equipment where people cannot be injured while the equipment is being used.

Restrict access to the area during lifting.

Maintain equipment, periodically examine thoroughly and keep records of inspections and certificates. Competent person to decide how frequently each piece of equipment must be inspected.

Check the correct inflation of forklift tyres.

Keep within safe speed limits when moving the equipment and take care when turning and going up/down gradients.

Keep the load as low as possible, when moving.

Minimise risk from rollover and overturning of telehandlers, forklift trucks etc. (e.g. fit a rollover protective structure and restraining system such as seat belt).

Equipment should fail-to-safe.

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Hazard/danger

Lone working

What can go wrong?

People working by themselves without close supervision; in an isolated position (e.g. stewards on gates, where access is limited; e.g. in the roof, outside normal working hours e.g. late at night).

Because of the nature of event sites, people may be working on their own in places away from any other workers.

Because of the overnight nature of some event work, people may be working without supervisory or colleague support during the night.

It may be hard to communicate with anyone if support is needed or if a worker becomes unwell.

Possible consequences

- Tiredness
- Stress
- Injuries
- Violence
- Emergencies

Common controls

Avoid lone working wherever possible (e.g. work in pairs).

Communications to be provided (e.g. tracking device) and a contact procedure should be established.

Supervision and monitoring by a manager, visiting regularly, especially for inexperienced workers.

Checks on safe return when a shift is over.

Clear instructions about which situations would necessitate stopping work and when the supervisor's advice should be sought.

Emergency procedures.

Access to first aid and welfare facilities.

Access to food and meal arrangements.

Training in handling aggression.

Torch needed in badly lit areas.

Consider whether any special medical condition could be an additional risk when alone.

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Hazard/danger

Machinery and tools

What can go wrong?

This includes a range of equipment such as circular saws, drills, photocopiers, knives, ovens, etc.

Many tools or machinery parts are very sharp or move very rapidly when in use.

Working on some machines results in the ejection of small particles (swarf).

Some equipment can get very hot in use or require the use of very cold substances (e.g. dry ice machines).

While many workers will have their own tools, it may be necessary to hire in machinery or use equipment from a pool. Equipment may be used intensively for a range of different purposes. It may be more difficult to ensure that equipment is used carefully or maintained, especially if servicing is needed on a weekend.

Possible consequences

- Cuts
- Crushing
- Trapping
- Loss of limb
- Eye injury
- Electric shock
- Hot and cold burns
- Scalds

Common controls

(See also Mobile Work Equipment.)

Select suitable equipment for the work. Use CE marked equipment.

Prevent access to dangerous parts of machinery by fixed, interlocking or automatic guarding, (e.g. guard on a food slicer).

Fit easily accessible and clearly marked safety switches.

Use the equipment in a suitable environment (e.g. where there is sufficient space, light etc, to operate it properly).

Train workers in safe use (e.g. of abrasive wheels, woodworking machines, kitchen knives, fat fryers, steam ovens etc).

Follow (manufacturer's) operating instructions.

Only operators with relevant certificate to be allowed to operate or mount machinery/equipment that requires such a certificate.

Regular inspection, maintenance and thorough examination, including hand-tools.

Keep a record of the inspections.

Store equipment carefully.

Knowledge of hidden dangers in the environment (e.g. buried electric cables).

Use of personal protective equipment (goggles, gloves, protective footwear) suitable for the equipment.

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Hazard/danger

Manual handling

What can go wrong?

(This includes lifting, moving, pushing, pulling, carrying people or things.)

Most workers need to move things or people, while doing their job. The items to be moved can be very varied and difficult to predict. They might be heavy, large, hot, sharp, slippery or an awkward shape. Things or people might have to be carried over long distances, on uneven surfaces or changing levels.

Moving a person can be very difficult, as they may have injuries, or not keep still, or not want to be moved. Stewards in the stage pit often have to lift people over the front of stage barrier. Sometimes the moving has to take place in restricted spaces or in a range of environmental conditions.

Many workers have to lift things into or out of vehicles, including trucks, vans, cars or ambulances.

It may also require several people to do the move, with workers who have not had to do a group move together previously.

Possible consequences

Back injuries, muscle sprains, hernias (rupture in the abdominal wall)

Cuts

Bruises

Foot injuries or broken bones from dropping heavy or sharp objects

Muscle strain from repetitive tasks

Common controls

Organise the process to avoid or minimise manual handling.

Use mechanical means of lifting, pushing or pulling, instead of manual handling, wherever possible (e.g. pallet truck, sack truck, lift hoist etc).

Plan the lift/move and use proper lifting techniques, considering the load, the person and the environment.

Reduce the number of times a load is handled and reduce load size and weight.

Put wheels and handles on cases and provide smooth surfaces to roll cases along.

Show the weight on the outside of the load.

Reduce the distance loads have to be carried. Reduce the height loads have to be lifted up or put down (e.g. have a standing platform/deck when lifting people over the pit barrier).

Check visibility when carrying bulky or long loads. Ensure the route is free from obstacles. Avoid steps. Have adequate lighting.

Wherever possible, avoid carrying hot objects (e.g. hot water in a kitchen).

Make sure the load is safe when it is put down.

Arrange breaks during repetitive handling tasks.

Wear protective footwear (e.g. steel toecap shoes, slip resistant soles, gloves resistant to sharp edges).

Take account of personal factors (e.g. the ability of the person to lift/carry etc).

Ensure there are sufficient people to do the lifting.

Team handling should be co-ordinated by a controller.

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Hazard/danger

Mobile work equipment

What can go wrong?

(This includes mobile elevating work platforms (cherry pickers) etc.)

The operating of this equipment is usually only done by experienced and qualified operators, although they may be working on a type of equipment that they have not used before.

There could be other tall obstructions where the work needs to take place, or the space may be restricted.

The equipment may need to be used on or moved over uneven ground.

The work may need to be done where other people are also working at height, perhaps testing bright spotlights, which could cause temporary blindness or distractions.

Possible consequences

Cuts

Crushing

Trapping

Injuries caused by falling from platform

Overturn or collapse of platform

Common controls

(See also movement of people and vehicles)

Select suitable equipment for the work and the venue/site.

Check the weight of the load and capacity of the vehicle.

Consider the use of attachments.

Use on stable, flat and firm ground.

Check weather conditions haven't altered the stability of the ground.

Knowledge of hidden dangers in the environment (e.g. buried electric cables).

Ensure good visibility, to avoid collisions.

Keep well clear of overhead power lines, tree branches etc.

Keep pedestrians and other vehicles away (restricted areas) or restrict hours of operation.

Impose speed limits, especially on rough ground, temporary trackways and near people.

Establish limits for safe operation (e.g. maximum wind speed).

Examine and inspect before use and maintain regularly.

Operators to have appropriate training and certification. Only operators with a relevant certificate to operate equipment requiring such a certificate. Follow operating instructions.

Use helmet, eye protection, boots, gloves and high visibility clothing.

Wear work restraint system or fall arrest protection equipment suitable for work at height, except when working near water.

Check with the manufacturer of fall arrest system and mark the anchor points for the system they can be used with.

Have a rescue plan in place for a fall.

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What can go wrong?

(This can include: people moving on foot either alone or as a crowd; internal vehicle movement; journeys between workplaces, work journeys to other countries.)

A wide range of vehicles types, including large vehicles, often carrying heavy and large loads, need to move around the event site.

'Quad' type vehicles and 'buggies' are often used, sometimes by inexperienced drivers.

Some parts of the site can be very congested, especially if the crowds are large, or if there are restricted routes around the site.

The terrain can be uneven outdoors, and it can be difficult for drivers of large vehicles to see pedestrians in the dark.

Drivers sometimes think that, once they have left the public road, they can drive without the usual regulations or precautions.

Pedestrians can think that because they are inside an event site, they do not have to be alert for vehicle movement.

It has been known for a collapsed person to have been injured because they were hidden among debris after the event and not seen by a driver.

Traders are often anxious to move their vehicle off the event site quickly at the end. Sometimes a performer's vehicle has been driven dangerously fast in order to leave the site without being surrounded by 'fans'.

Possible consequences

Impact between people and vehicles

People bumping into objects

People being crushed in a crowd

Vehicles overturning

Falling from vehicle

People struck by loads falling from vehicles

Common controls

Organise and control traffic and pedestrian routes suitable for the types of vehicle involved and volume of traffic and people.

Separate pedestrians and vehicles, using vehicle crash barriers if possible. Ensure the barriers between workers and vehicles, and between people, are suitable for the purpose.

Ensure workers have safe access routes through crowds, when necessary during their work.

Indicate where people or vehicles have right of way (pedestrian crossing). Use traffic lights and a traffic controller.

Wear high visibility clothing when working near moving vehicles.

Keep traffic away from vulnerable structures and hazardous materials.

Have two-way routes if possible, otherwise a one-way system. Provide sufficient parking space, including for adapted vehicles.

Provide a clear, separate route for emergency vehicles.

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Impose speed limits (with signage along routes) and curfews.
Vehicles to use hazard warning lights at all times.
Restrict vehicle movement around the site/venue to essential journeys only.
Prohibit traffic movement when the public are nearby.
Allow sufficient space for manoeuvring, turning circles and parking, especially for large vehicles.
Minimise the need to reverse and have a banksman to assist large vehicles reversing. Have automatic alarms when reversing.
Drive only on surfaces that can take the vehicle weight and load.
Provide temporary road surfaces and protect underground services.
Provide adequate lighting so that obstructions are visible.
Keep vehicles away from open edges by barriers.
Clearly sign routes on and off site. Provide drivers (especially deliveries) with detailed instructions for the safest access route to the drop off/pick up or parking area, including weight, width and height restrictions. Use traffic marshals where necessary.
All drivers to be provided with site safety rules for driving around the site. This includes the driving of 'quad' vehicles and 'buggies'.
Drivers of 'quad' vehicles must wear a helmet and, if necessary, eye protection, boots etc.
No one to travel on the outside of a vehicle where there is a risk of falling off, or as a passenger on a 'quad' vehicle.
Only drivers with relevant permit/licence to drive/operate a vehicle requiring such a permit.

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Hazard/danger

Noise

What can go wrong?

All workers are likely to work in or move through noisy areas during their work at live music events. The sound may come from performers; work equipment such as machine saws, drills, hammers; noisy vehicles; the setting off of fireworks; or from a screaming audience, who might also use whistles.

Some workers may find their workplace has been positioned in a high noise area. Hearing damage or other noise-related harm may not be immediately obvious and people may remain in a damaging environment without being aware of the harm being caused.

Loud noises can also prevent people from hearing alarm sounds and interfere with communication.

Possible consequences

Hearing damage (which is not reversible and is cumulative). The extent of the damage depends on the intensity of the noise and the duration of exposure to the noise.

Tinnitus (ringing in the ears)

Dizziness or loss of balance

Inability to concentrate

Stress or irritability

Fatigue

Interference with communications

There is some evidence emerging that intense pulses of low frequency high energy sound (bass box) cause the lungs to collapse (pneumothorax)

Common controls

Assess noise levels.

Monitor both general noise levels and personal exposure with a dosimeter.

Reduce noise levels.

Use less noisy equipment. Information should be available from manufacturers and suppliers on noise levels likely to be generated.

Reduce the number of people working in high noise level areas.

Reduce the length of time spent in noisy areas.

Sound checking should be done in a controlled high risk area, to avoid damaging other people.

Employers should provide information, instructions and training to workers likely to be exposed to noise levels above specified limits (see national legislation).

Put up signs around areas of high noise level, showing (mandatory) use of hearing protection.

Advise workers of the times when high noise levels are likely (e.g. the time of sound checks, when fireworks will be set off etc).

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Provide hearing protection and ensure it is used correctly in high noise level areas.
Explain the dangers of not wearing hearing protection.
Use earplugs with stems, which need minimal touching to insert, especially if your hands are dirty.
Hearing protection must be comfortable, useable with hard hats and enable communications and warning alarms to be heard.
Provide access to hearing checks or audiometric testing.

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Hazard/danger

Portable electrical equipment

What can go wrong?

Items of portable electrical equipment can get very heavy use at events.

Many are not designed for outdoor use.

Users might not be aware that they should make a visual inspection before use, or what to look for.

Possible consequences

Electric shock

Fire

Common controls

Choose suitable equipment for the work and the environment.

Test regularly and mark test date on the equipment.

Visual inspection by the user, before use.

Faulty equipment to be repaired or put out of action.

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Hazard/danger

Pressurised gas

What can go wrong?

Pressurised gas is used mainly by caterers and at the bars, both in the audience area and workers' kitchens.

It can be difficult to have gas supplies delivered to or removed from event venues/sites, especially at weekends, so large quantities of full and partially used cylinders may need to be stored throughout the event.

Smaller quantities of pressurised gases are used in welding or other workshop activities.

Other occurrences are in fire extinguishers and medical supplies.

Pressurised gas canisters, even small ones, can be explosive when exposed to heat, or emit gases rapidly and damage the skin, when punctured.

Many gases are poisonous to people in small enclosed spaces.

Possible consequences

Explosion

Fire

Cold burns

Common controls

Minimise the need to use pressurised gas and the quantities required.

Store all cylinders in an adequately ventilated area, away from heat and ignition sources and where there is no danger of impact.

Store cylinders containing flammable gas outdoors, in a protected cage, away from flames or heat and indicate with warning signs.

Cylinders must be clearly marked to show what gas they contain and the associated hazards.

Secure cylinders when in use and ensure cables cannot be disconnected.

Cylinders must be secure to prevent them moving or falling when being transported.

Never leave gas-powered appliances (e.g. cookers) unattended.

Keep a minimum distance between different sources of gas in use.

Users should be able to carry out an external visual inspection of the cylinder and connections.

Gas cylinders must also be regularly inspected by a competent person and the examination shown on the cylinder.

Dispose of used cylinders correctly.

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Hazard/danger

Slips

What can go wrong?

Slips are more likely to happen outdoors, although floor surfaces can also become slippery indoors in very humid or steamy atmospheres where ventilation is poor. Floor surfaces or items you need to pick up can become slippery in environments where special effects, such as dry ice or oil mists, are used.

Because of the large quantity of equipment and lack of space in some parts of the event site/venue, a slip is likely to result in someone knocking into something hard or sharp, or a hot surface (e.g. in kitchens).

Possible consequences

- Broken bones
- Sprains
- Bruises

Common controls

Keep floors dry and mop up spills (e.g. water, oil, dry ice residue etc).

Clean mud from steps and ramps.

Provide anti-slip flooring (slip-resistant paint, matting, grating), especially on slopes and areas likely to get wet (e.g. ramps, pit working, deck outdoors (use gravel)).

Use a slip-resistant cleaning substance for floors.

Put barriers around wet areas.

Keep surfaces as even as possible.

Ensure adequate lighting.

Wear suitable footwear (with slip-resistant soles).

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Hazard/danger

Stress

What can go wrong?

Workers may come into an event without knowing many colleagues and it may take time to develop a good working relationship. Alternatively some groups of workers who know each other may develop 'cliques' which other workers find hard to integrate into.

The pressures of tight timetables and the need to control both time and budget means workers may not be able to complete their work to their satisfaction.

There may be misunderstandings among workers about their role within the whole event structure.

The hierarchy and levels of responsibility and authority may be unclear and supervisors may not be aware of their duties.

Possible consequences

Mental health problems and depression.

Ill health (e.g. heart disease, back ache, headaches).

Drug/alcohol misuse.

Absence from work.

Tiredness/fatigue.

Sleeplessness

Carelessness causing accidents.

Irritability.

Common controls

Acknowledge the possibility of stress and enable help to be sought.

Provide support and good management.

Managers to set a good example.

Re-assess role and responsibilities.

Communicate about tasks and provide training.

Reduce demands and time pressure by realistic scheduling.

Supervisors to be trained in recognising stress, supporting workers experiencing problems and dealing with workplace bullying.

Prevent bullying, discrimination, sexual or racial harassment at work.

Have system for confidential reporting of workplace bullying.

Encourage participation in decision-making and planning, and influence over the work.

Reduce the risk of violence from other people during the work.

Reduce the amount of time spent in stressful work environments e.g. high noise areas, high/low temperatures, windy conditions.

Provide support for workers who have been involved with a distressing incident e.g. witness to a severe accident or death of a colleague or another person during their work.

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Hazard/danger

Structures

What can go wrong?

Workers may not be aware of the purpose of some structures or may not realise what the restrictions are on their use of the structure.

A worker may remove or change a vital component without appreciating the consequences.

Structures may not be built to have anything added to them.

Structures may deteriorate during the course of the event, while in use.

Possible consequences

Trapping

Crushing

Common controls

Competent designer and builder.

Provide information to people using the structure.

Make it clear what purposes the structure can be used for.

Users must not tamper with the structure unless authorised by the person responsible for it.

Firm foundations.

Check weather forecast and monitor wind speeds outdoors.

Regular inspections, continuing through until the structure is dismantled.

Structure contractors available to carry out maintenance and repairs.

Safe access on and off structures, with signage and one-way systems if necessary, for equipment/people.

Provide separate access for people and equipment if possible.

Mark edges of steps and ramps and provide railings.

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Hazard/danger

Tiredness, lack of sleep

What can go wrong?

Tiredness can be caused by lack of sleep or the effect of alcohol/drugs/medicines. Exhaustion arises from exceeding the body's physical or mental capacity. This can occur without the worker being fully aware that it is happening to them or to a colleague.

Adrenaline or peer pressure can drive a person to exceed their normal limits. Event work is often physically and mentally tiring and long shifts are worked. A combination of sleep loss and working at the body's low point is particularly dangerous.

When working night shifts, some people cannot sleep properly during the day and daytime sleep is more easily disturbed by environmental factors such as heat and noise.

People are more susceptible to diseases, when tired.

Possible consequences

- Exhaustion, fainting, collapse
- Carelessness causing accidents and injuries
- Inability to concentrate and make judgements
- Increased errors
- Stress
- Depression
- Irritability
- Conflict with other people
- More vulnerable to illness, infections and diseases
- Reduced motivation
- Some evidence of changes in hormone secretion levels

Common controls

Realistic scheduling of activities, shift system for long activities.

Managers should understand about the need for sleep and the dangers of fatigue. They should set a good example to others.

Plan adequate rest and sleep breaks and sleeping facilities, particularly for overnight and touring work. A quiet place to sleep should be available, particularly for overnight workers.

Design shift rota to avoid successive early starts (before 7am) and restrict night shifts. Make shifts with early starts shorter. Allow sufficient recovery time between shifts. Maximum shift length of eight hours.

Prevent excessive overtime.

Good supervision of workers' rest and work patterns.

Meal arrangements that fit in with shift patterns.

Reduce the amount of time spent in environments that can cause fatigue (e.g. hot, noisy, badly ventilated or badly lit environments).

Avoid starting a difficult or strenuous activity after a long drive.

Avoid driving long distances or in restricted spaces, when tired.

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Hazard/danger

Trips

What can go wrong?

Trips usually happen because someone is moving but does not notice an obstruction in their path.

Small things like a cable across the floor can cause a trip.

Trips are more likely to happen if someone is tired, carrying something (especially a bulky object), moving in a badly lit area, or where an effect such as a smoke effect has reduced the visibility, or where something has been placed on a route that is usually kept clear.

Possible consequences

Broken bones

Bruises

Strained muscles

Head injuries

Common controls

Keep site tidy (e.g. cables buried or covered, boxes kept to the side of pathways, guy ropes clear of routes).

Adequate lighting (to see obstacles).

Put padding on protruding items (e.g. tent pegs). Mark guy ropes so they are visible in the dark.

Remove rubbish.

Use cordless tools to avoid trailing cables.

Securely fix mats and carpets.

Keep emergency escape routes clear.

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Hazard/danger

VDUs and display screen equipment

What can go wrong?

Many workers may use display screen equipment for long periods, including laptops. It may be difficult to set up an ergonomic work space in cramped conditions.

Possible consequences

- Musculoskeletal disorders
- Backache
- Repetitive strain injury (RSI)
- Temporary eyestrain (e.g. from watching CCTV closely)
- Headaches
- Stress

Common controls

Organise the workstation ergonomically, with sufficient space for the work.
Good lighting, preferably natural.
Position screen to reduce glare. Appropriate contrast between screen and background.
Take breaks from the display screen work (five minutes each hour is suggested).
Use an adjustable chair, with proper back support.
Include a consideration of the use of laptops.
Investigate reports of aches, pains, numbness or tingling in the limbs.

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Hazard/danger

Vibration

What can go wrong?

Vibrations shake either a part of the body or the whole body.

Problems are likely to develop the longer someone is exposed to the vibration and the more intense the vibration is.

Young workers are at greater risk of injury.

Vibration damage can be due to driving or riding on a vehicle over rough ground or from use of hand held power tools (e.g. angle grinder).

Vibration can also loosen parts of equipment.

Possible consequences

Hand-arm vibration syndrome (white finger), including impaired blood circulation, nerve and muscle damage, loss of grip.

Back pain from whole-body vibration.

Work-related musculo-skeletal disorder.

Common controls

Use equipment designed to minimise vibration.

Limit amount of time spent using tools (e.g. sanders, grinders).

Use vibration monitoring meters for tools.

Limit amount of time spent driving, especially on rough ground and in vehicles with poor suspension.

Plan work routes with smoothest terrain and keep speed low.

Inspect vehicles, particularly the suspension, and ensure driver's seat provides good support.

Check vehicle tyres are at correct pressure.

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Hazard/danger

Violence and aggression

What can go wrong?

Violence and aggression cannot always be predicted.

Workers may be subjected to a sudden physical attack, verbal assault or be threatened. They may be the victim of a lower level of threatening behaviour over a longer period of time. The aggression towards them may have a racial or sexual dimension.

People who work alone, at night, with other people who may behave unpredictably, whose job involves preventing access or who are responsible for valuable items, are more vulnerable.

Possible consequences

Injury from assault etc.

Stress from dealing with people's aggressive behaviour

Depression

Demotivation

Time off work

Common controls

Training to recognise the early signs of aggression, how to diffuse it and how to deal with aggression if it occurs.

Have a system for reporting incidents.

Good communications to enable assistance to be called for, especially for vulnerable workers.

Provide personal protection (alarms etc) for vulnerable workers.

Provide back-up from stewards.

Ensure pass system is effective in limiting access by non-authorized people into restricted areas.

Improve lighting in areas where there is a risk of violence.

Keep tools and equipment that could be used as weapons, tidy and out of the way.

Reduce the quantity of valuable items in vulnerable places (e.g. box offices).

Provide support for the victims and witnesses of violence.

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Hazard/danger

Working at height

What can go wrong?

Someone or something may be liable to fall from the edge of a drop or through a gap in many parts of the event venue/site.

Workers may have to step up or climb up structures to perform a task. They may not have their own means of getting up or down, but have to borrow equipment for it. If the available access equipment is not suitable, they may improvise or have to stretch or lean from it.

It may be difficult to position ladders so that they are stable when working outdoors on uneven ground. Over-reaching is a common cause of ladder movement. Ladder work is especially dangerous when vehicles are moving nearby.

If things are dropped, they can injure other people underneath or damage equipment. It is difficult to provide assistance if someone becomes unwell or needs to be rescued from a height.

People working at height may be more vulnerable than other workers in an emergency.

Possible consequences

Death.

Serious injury from fall from height or while climbing up or down.

Trapped at height.

Suspension trauma/unconsciousness from hanging after a fall wearing harness.

Being hit by a falling object dropped by someone working overhead.

Temporary blinding of other workers when adjusting spotlights.

Common controls

Avoid working at height if possible (e.g. focus lamps from the ground, using an extendable pole).

Use a safe system of work (select the most suitable equipment for the job, schedule the work when others are not around, cordon off the work area, erect signage).

Consider using a permit-to-work system.

Use only competent, trained workers (rigger and rescue training).

Never work alone at height without someone else to check on your safety.

Plan for emergencies (e.g. have a rescue plan in place).

Visually inspect all equipment before use.

Prevent unauthorised access to scaffolding and restrict access to the area during erection and dismantling. Display warning signs at access points.

Restrict access so that no one stands underneath where people are working above.

If not possible, wear a helmet. Provide protection from falling materials (nets, instructions).

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Ensure that there is no vehicle movement or other work activity going on nearby that could knock into a structure on which someone is working at height, or their means of access.

Metal access equipment should not be used if there is a possibility of contact with live electricity. Consider the use of fibreglass ladders.

Take account of weather conditions outdoors. Wet and windy conditions can significantly increase the risk of people or things falling.

Working at height should be done on a suitable, stable flat platform. Use a working platform (with fully boarded floor, guard rail, toe board etc) in preference to working from ladders.

Ensure a safe means of access and exit. It may be safer to use an access tower or powered access equipment (e.g. mobile elevating work platforms (MEWPs)), as long as workers are trained in its use.

Use a pulley or hoist to lower and raise heavy and bulky tools, equipment and materials to the workplace – don't carry them or throw things down. Carry light tools in a workbelt, holster or shoulder bag.

Prevent anyone from falling (e.g. use a barriered walkway in roofs).

Use safety nets, installed as close as possible beneath the roof. This is the preferred option over harnesses, since it provides collective protection and does not rely on individual discipline.

If use of net is not possible, use personal protective equipment (fall protection, safety line secured to a sufficiently strong anchorage point). Always use a harness when edge protection is inadequate. All fall protection equipment must be inspected, including a pre-use check, and records kept of the inspections.

Ladder work: ensure the ladder is suitable for the job and rests on a firm, level surface. Secure it to prevent movement (e.g. tie onto a secure point, have one person to hold the ladder while the other climbs). Check the steps are not slippery, wet etc. Angle 'one out, four up'. Extend the ladder about one metre above the landing place. Do not over-reach when working from a ladder.

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