Reducing ill health and accidents in motor vehicle repair

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Introduction

This leaflet is aimed at anyone involved in motor vehicle repair and maintenance.

It covers the main causes of accidents and ill health and explains some of the precautions you can take to prevent them.

A checklist at the end of the leaflet will help you ask the right questions and prioritise your actions.

Slips and trips

Keep workshops, walkways and showroom floors in good condition, and free from tripping and slipping hazards.

Slips and trips are the most common cause of motor vehicle repair (MVR) accidents and can be serious, resulting in broken or dislocated bones and long periods off work.

Ensure that floors and traffic routes are cleaned as required

Keeping the workplace clean and tidy, and the floors in good condition, and providing slip-resistant footwear can make a big difference. Note that 'slip-resistant' does not mean 'oil-resistant'.

Dos and Don'ts

Do keep the workplace tidy – clear away tools, used items and airlines after use.
Do provide non-slip floor surfaces. Clear up spillages immediately and repair flooring damage.
Do provide slip-resistant footwear when necessary.
Do ensure that snow, ice or water from vehicles is cleaned up.

Don't ignore spillages caused by others.

Plant and equipment

Select and install plant and equipment properly, use it carefully, and make sure it is maintained.

MVR can be a tough environment for tools and machinery. Defective or incorrectly used vehicle lifts and vehicle supports can kill. Poorly maintained equipment can be excessively noisy and vibrate.

Always use axle stands if working beneath a vehicle raised on a jack

The risk from a vehicle lifted or supported off the ground is often underestimated and causes fatal accidents, for example as a result of:

- poorly maintained, overloaded or incorrectly positioned lifting equipment;
- vehicles supported only on jacks;
- vehicles being lifted on sloping or unstable ground;
- wheel chocks not used with axle stands;
- wrong pins in axle stand extensions; or
- unsafe props or no props used with HGV bodies and trailers.

The unsafe use of machinery such as grinding wheels, pedestal drills and compressors causes many injuries. Vibrating, hand-held power tools can damage bones and joints.

Dos and Don'ts

Do ensure that all equipment is installed, used, regularly inspected and maintained as recommended by the manufacturer.
Do train people to use equipment and machinery correctly.
Do buy and use reduced-vibration tools wherever possible and maintain them.

Don't use machines and equipment unless the correct safeguards are in position (eg guards and rests on grinding wheels, chuck and drill guards on pedestal drills, drive belts guarded on compressors, toe protection on vehicle lifts, and original specification support pins on axle stands).
Don't use any vehicle lifts, lifting plant/equipment or compressors unless they have a valid certificate of inspection and thorough examination from a competent person.

Manual handling

A gas cylinder trolley

Identify safe methods for handling heavy/bulky items.

Manual handling means lifting, carrying, supporting or moving heavy or bulky loads by hand or bodily force. It causes nearly a third of all accidents in MVR.

Avoid manual handling where there is a risk of injury, but where this is not possible, take sensible precautions to reduce the risk.

Dos and Don'ts

Do consult the workforce because they will be familiar with handling problems and may have practical solutions to them.
Do provide mechanical aids where appropriate, eg engine hoists, trolleys for tyres and gas cylinders, and train people to use them correctly.
Do encourage staff to ask others to help them with awkward or heavy loads.

Don't let people struggle.

Falls

Provide precautions for working areas where people could fall a distance that could injure them.

These are the most common cause of death or serious injury to people at work. (In MVR they account for nearly 10 per cent of injuries, mainly involving falls from ladders.)

The main areas of concern are:

- falls from raised storage areas, moveable ladders or HGV and trailer units under repair; and
- falls into inspection pits.

A pivoting safety barrier ensures the fence opening is guarded at all times

Dos and Don'ts

Do take appropriate precautions to stop people falling into pits.
Do provide suitable access for work at height.
Do check ladders, steps, platforms and scaffolding – record your findings.

Don't use ladders that are unsecured or on uneven/unstable ground.
Don't allow people to climb racking to get parts.
Don't use faulty access equipment – get it repaired or replaced.

Transport

This site entrance has a segregated walkway and a marshal for directing traffic

Vehicle movements are a serious risk, particularly in cramped or busy premises, so make sure they are managed correctly.

Transport accidents often involve vehicles reversing or moving unintentionally, for example if they:

- are started in gear with the handbrake off;
- roll down a slope; or
- are moved away when someone is working underneath them.

Such accidents can result in fatal injuries to both employees and customers.

MVR will always involve vehicle movement so segregation of vehicles from people is important.

Dos and Don'ts

Do keep vehicles and pedestrians apart, provide safe parking for customers and reduce the need for reversing.
Do provide an adequate number of traffic routes, of sufficient width and headroom, to allow people and vehicles to circulate safely with ease.
Do make a plan of the work area – identify parking and loading areas and directions of travel.

Don't leave vehicles unbraked or unchocked, eg when on vehicle lifts or sloping ground.
Don't start the engine from outside the vehicle. Always start vehicles from the driver's seat with both feet inside and the gear disengaged.

Fire and explosion

A fuel retriever showing mechanical pump and earthing cables

Always treat fuel and flammable materials with respect. Incidents involving fire and explosion can cause burns, death and property damage.

Fire and explosion incidents in MVR are mainly caused by:

- mishandling petrol;
- grinding, cutting or welding near fuel tanks/lines, brake pipes or other flammable materials; and
- mishandling or misuse of flammable liquids such as degreasers or thinners.

Incorrect storage or use of gas cylinders may cause incidents and can also make them much worse.

Dos and Don'ts

Do use a proprietary fuel retriever/adaptor when draining petrol from tanks and lines – make sure the vehicle and the retriever are both earthed.
Do keep the tops/lids on containers of highly flammable liquids.
Do store containers of highly flammable liquids in a safe place, in the open air or in a suitable storeroom.
Do fit flashback arresters to both the fuel and oxygen gas cylinder regulators. For longer lengths of hose, also fit them to the blowpipe.
Do store gas cylinders in a safe, well-ventilated space, preferably outside.

Don't drain petrol over, or close to, a pit or drain.
Don't smoke, weld or carry out other hot work while removing petrol.
Don't store more than 50 litres of highly flammable liquids in the workroom.
Don't spray highly flammable liquid paints in the open workshop or where there is a risk of fire/explosion.
Don't use petrol/solvents to burn rubbish.
Don't carry out hot work before removing or shielding items that may be affected.

Electrical safety

RCD protection provided for portable vacuum cleaner

Make sure electrical equipment is installed and maintained correctly – take particular care in wet or potentially explosive areas.

The combination of trailing leads, vehicle movements and contamination (by oil, fuel, solvents, water etc) can cause damage to portable electrical equipment. Minimise the use of portable mains-voltage equipment and visually check and test it regularly.

Dos and Don'ts

Do have the fixed electrical system checked (recommended at least every five years) by a competent electrician and keep records of the results.
Do use air-tools or cordless or low-voltage (110 v or 50 v) equipment wherever possible.
Do use residual current device (RCD) protection for each electrical socket.
Do visually check portable tools, eg hand lamps, drills and grinders, before use and have them tested regularly by a competent person.

Don't use a pressure washer without an RCD or earth-monitoring device, which should be tested every day.

Skin disease

Wearing nitrile gloves reduces hand contamination

Repairing vehicles can be dirty work so avoid skin contact if possible and provide cleaning facilities for workers.

Dermatitis is common in MVR and disease rates are up to seven times the average for UK workers. Symptoms can be so severe that sufferers have to leave the industry. Common causes in garages include chemicals in two-part glues, body fillers and sealants.

Other materials such as oils, solvents, fuels and abrasive materials cause dermatitis through irritation or drying out of the skin. There is evidence to suggest that used engine oils can cause skin cancer.

Risks of skin disease can be reduced by taking the 'avoid, protect, check' approach:

- **Avoid** contact, eg provide local exhaust ventilation (LEV) for sanding, and use automatic dispensers for two-part glues.
- **Protect** skin: use single-use, nitrile or low-protein, non-powdered latex gloves, use the mildest skin cleaner that works, and use after-work creams.
- **Check** for early signs of dermatitis wherever there is a risk, by encouraging self-reporting of skin problems and by appointing a responsible person (supported by a health professional) to carry out skin checks.

Dos and Don'ts

Do use the right type of disposable glove to keep the hands clean, eg nitrile for oils and grease.
Do make sure washing facilities have running hot and cold or warm water, soap and clean towels or other means of cleaning or drying.
Do provide dispensers for pre-work creams, cleansers and after-work creams so workers will be more likely to use them.

Don't use cleaners that are too strong as these can damage the skin.

Want to know more?

Health and safety in motor vehicle repair and associated industries HSG261 HSE Books 2009 ISBN 978 0 7176 6308 8

Preventing slips and trips at work Leaflet INDG225(rev1) HSE Books 2005 (single copy free or priced packs of 15 ISBN 978 0 7176 2760 8) www.hse.gov.uk/pubns/indg225.pdf

Using work equipment safely Leaflet INDG229(rev1) HSE Books 2002 (single copy free or priced packs of 10 ISBN 978 0 7176 2389 1) www.hse.gov.uk/pubns/indg229.pdf

Control the risks from hand-arm vibration: Advice for employers on the Control of Vibration at Work Regulations 2005 Leaflet INDG175(rev2) HSE Books 2005 (single copy free or priced packs of 10 ISBN 978 0 7176 6117 6) www.hse.gov.uk/pubns/indg175.pdf

Getting to grips with manual handling: A short guide Leaflet INDG143(rev2) HSE Books 2004 (single copy free or priced packs of 10 ISBN 978 0 7176 2828 5) www.hse.gov.uk/pubns/indg143.pdf

Workplace transport safety: An overview Leaflet INDG199(rev1) HSE Books 2005 (single copy free or priced packs of 5 ISBN 978 0 7176 2821 6) www.hse.gov.uk/pubns/indg199.pdf

Safe use of petrol in garages Leaflet INDG331 HSE Books 2000 (single copy free or priced packs of 10 ISBN 978 0 7176 1836 1) www.hse.gov.uk/pubns/indg331.pdf

Electrical safety and you Leaflet INDG231 HSE Books 1996 (single copy free or priced packs of 15 ISBN 978 0 7176 1207 9) www.hse.gov.uk/pubns/indg231.pdf

Do you use a steam/water pressure cleaner? You could be in for a shock! Leaflet INDG68(rev) HSE Books 1997 (single copy free) www.hse.gov.uk/pubns/indg68.pdf

Preventing contact dermatitis at work Leaflet INDG233(rev1) HSE Books 2007 (single copy free or priced packs of 15 ISBN 978 0 7176 6183 1) www.hse.gov.uk/pubns/indg233.pdf

Safe working with vehicle air-conditioning systems: Guidance for employers, self-employed people, and supervisors Leaflet INDG349 HSE Books 2002 (single copy free or priced packs of 10 ISBN 978 0 7176 2278 8) www.hse.gov.uk/pubns/indg349.pdf

Safe working with LPG-fuelled motor vehicles Leaflet INDG387 HSE Books 2003 (single copy free or priced packs of 10 ISBN 978 0 7176 2755 4) www.hse.gov.uk/pubns/indg387.pdf

Advice on HSE's website

You can find extensive health and safety advice for the motor vehicle repair industries at: www.hse.gov.uk/mvr.

Further information on specific topics can be found at the web links below.

Slips and trips: www.hse.gov.uk/slips

Plant and equipment: www.hse.gov.uk/equipment

Manual handling: www.hse.gov.uk/msd

Falls: www.hse.gov.uk/falls

Transport: www.hse.gov.uk/workplacetransport

Fire and explosion: www.hse.gov.uk/fireandexplosion

Electrical safety: www.hse.gov.uk/electricity

Skin disease: www.hse.gov.uk/skin

Checklist for safe mechanical repair and servicing

Questions you should ask	Yes/No
Slips and trips Are workshops, walkways and showroom floors in good condition, and free from tripping and slipping hazards? Are all floors cleaned regularly? Are spillages cleared immediately and snow, ice and water from vehicles cleaned up? Is there non-slip flooring where appropriate? Are employees issued with non-slip footwear where necessary?	
Plant and equipment Is all equipment maintained and regularly inspected as recommended by the manufacturer? Are reduced-vibration tools used wherever possible? Is all machinery guarding in place and in good condition? Are all vehicles properly supported before anyone works underneath them? Are correct props used with HGV cabs, bodies and trailers? Are axle stands fitted with original specification pins? Do vehicle lifts have toe protection and hinged end-stops? Are arm-locking devices on two-post lifts checked daily and arms positioned carefully before each lift? Does all lifting equipment and the air compressor have a valid certificate of inspection and thorough examination from a competent person? Are vehicle supports inspected every year?	
Manual handling Are appropriate mechanical aids for heavy or bulky items such as tyres, gas cylinders, engine blocks etc used correctly? Is assistance for moving heavy or bulky items available when required?	

Questions you should ask	Yes/No
Falls Are there appropriate precautions for working areas such as pits, mezzanine floors, racking, on top of vehicles etc? Is there suitable, secured access from level and stable ground? Are ladders and other access equipment checked regularly and repaired or replaced if faulty?	
Transport Is there a plan of the work area with parking, loading and directions of travel marked out? Do vehicles and pedestrians have separate, clearly marked routes as far as possible? Has reversing been reduced to a minimum? Are vehicles always braked and chocked, particularly on lifts and sloping floors? Are vehicles started correctly (ie from the driver's seat with both feet inside and the gear disengaged)?	
Fire and explosion If petrol has to be drained, is a proprietary fuel retriever used and are the necessary precautions followed? Are ignition sources (eg smoking, welding, grinding) excluded when working with or near highly flammable substances? Are vulnerable items removed or shielded before hot work (welding, grinding, cutting etc)? Are flammable liquid containers kept closed? Are gas cylinders stored in a safe, well-ventilated place (preferably outdoors)? Is there an adequate flammable liquids store or storage in the open air? Are flash arresters fitted to both the fuel and oxygen gas cylinder regulators? Are less than 50 litres of highly flammable liquid stored in the workroom? Are waste fuel and flammable solvents stored and disposed of safely?	

Questions you should ask	Yes/No
Electrical safety Is the current (ie within the last five years) electrician's report available for the fixed electrical system? Are low-voltage tools used where possible? Are other portable electric tools visually checked before use and tested regularly by a competent person? Is there an RCD or earth-monitoring device fitted to the pressure washer supply that is tested daily?	
Skin disease Is the right type of disposable gloves used? Are there running hot and cold or warm water, soap and clean towels or similar? Are there dispensers for pre-work creams, cleansers and after-work creams? Do employees know who they should report early signs of dermatitis to?	

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This leaflet is available in priced packs of 10 from HSE Books,
ISBN 978 0 7176 6376 7. Single copies are free and a web version can be found at www.hse.gov.uk/pubns/indg356.pdf.

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