



Maintenance in the workplace

A guide for health and safety representatives

Maintenance work can be hazardous. Although it is estimated that 6% of the working population are involved in maintenance work (not always all the time), it is estimated that, throughout Europe, between 15 and 20% of injuries at work happen during maintenance work.

This is for three main reasons. Firstly maintenance work can often involve many of the most dangerous activities such as work at height, electricity, and dangerous equipment. Secondly, maintenance work is often not risk assessed before it is done, Thirdly, much of it is done by contractors who are unfamiliar with that workplace.

Maintenance workers are also far more likely to get occupational diseases such as mesothelioma, hearing loss, and musculoskeletal disorders.

But while maintenance activities can put workers at risk, not carrying out maintenance may put even more workers at risk, as people will have to work with dangerous equipment. A planned maintenance programme is therefore part of a good safety culture, but must be done safely.

What is maintenance?

All workplaces have some type of maintenance work in their premises. It includes maintaining all types of equipment, buildings, means of transport.

There are two types of maintenance work. These are routine or preventative maintenance work which is often planned and required to ensure that everything keep on working, and corrective maintenance, which takes place when things break down or go wrong.

Maintenance therefore covers a huge range of activities such as repair work, servicing, replacing, inspecting and testing.

The Law

The main regulations that require employers to undertake maintenance work are the Workplace (Health Safety and Welfare) Regulations 1992, which say employers must maintain their workplace and equipment in an efficient state, good working order and in good repair, and the Provision and Use of Work Equipment Regulations 1998, which state that employers must ensure that work equipment is maintained in an efficient state, in efficient working order and in good repair. They must also keep an up to date maintenance log. There are other regulations that cover some specific industries, but these two regulations apply to most workplaces and maintenance work.

The Management of Health and Safety at Work Regulations 1999, which require an employer to do a suitable risk assessment also applies to any maintenance work. This states that any work activities carried out, including maintenance work, must be risk assessed before it is undertaken. This covers not only routine maintenance activities, but also one-off.

A lot of maintenance work is done by outside contractors, both routine and one-off. Both the person that occupies the premises and the contractor have a duty to ensure that the work is done safely under the Health and Safety at Work Act. This means that they must know who is responsible for what aspect of the work. Under the Management Regulations, the person who operates the premises would normally be expected to ensure that the premises were safe, that

the contractor could move around and do their work safely and were told of any specific dangers (such as the presence of asbestos). The employer who operates the premises also has to ensure that their own staff are not put at risk while maintenance work is being done. The contractor, as an employer, must ensure that their staff are working safely, have the correct equipment and are properly trained.

Risks

Because maintenance work is so varied the types of hazards that can be created will always be unique which is why the individual risks always have to be assessed and controlled, however among the specific problems that workers are likely to face are the following:

- **Access** – both access to and around the building as well as access to the equipment that needs maintained can be a problem. Some maintenance activities will involve working in confined places where access can be a problem. There are also other specific risks from work in confined spaces, in particular asphyxiation, and separate regulations apply to this work.
- **Work at height** – a lot of maintenance work has to be done above ground level, such as windows or on roofs, often in very risky locations that were not designed to have someone working there.
- **Chemical and dust exposure** – often maintenance workers are exposed to chemicals that are toxic either because they are used in the process that is being maintained or because they are used to clean or maintain the equipment. This is not only an issue in factories but also in offices and schools where maintenance workers often use chemicals to repair or clean office equipment. In addition many maintenance workers are exposed to dust. Maintenance workers have higher rates of skin and breathing problems.
- **Asbestos** – this is present in over a million workplaces and often it is un-marked. Many employers do not know it is there or do not tell any contractors working on the premises. Maintenance workers, especially plumbers, fitters and carpenters are at greatly increased risk of asbestos related diseases.
- **Equipment and machinery** – If equipment has not been fully disconnected and isolated there will always be a risk it could be turned on by mistake. There is therefore the risk both of moving parts and also electrocution.
- **Musculoskeletal problems** – a lot of maintenance work can involve bending or repetitive work, often with a lot of force. In addition it may have to be carried out in a cramped space. This increases the likelihood of musculoskeletal problems.
- **Biological hazards** – some maintenance work, including plumbing and air conditioning maintenance puts the person at risk of contact with legionella. Maintenance workers are also at increased danger from a range of other diseases including tetanus and some lung disorders.
- **Noise** – some maintenance work has to be carried out close to noisy equipment, or can involve a lot of drilling or hammering. Hearing loss can be an issue.

Basic principles

Because maintenance work can be risky it needs to be planned and risk assessed. There also has to be a clear understanding of who is responsible for what.

Every organisation needs a maintenance schedule which should outline what routine tasks need to be done and how often. These also need to be good record keeping to confirm that it is done and checks to make sure it is carried out properly.

Good organisations will see maintenance as a process that needs to be managed systematically. However there will also be instances of “one-off” maintenance work when a fault develops or a piece of equipment fails.

According to the European Agency for Health and Safety there are five basic rules for safe maintenance. These are:

- Planning;
- Making the work area safe;
- Using appropriate equipment;
- Working as planned;
- Making final checks.

Planning

Maintenance should start with proper planning. Employers should carry out a risk assessment of the maintenance activities that they are proposing, and they should involve safety representatives in this process. Among the things that they should consider are:

- *The scope of the task – what needs to be done, and how it will affect other workers and activities in the workplace;*
 - *The appropriate risk assessment that needs to be carried out: potential hazards have to be identified (e.g. dangerous substances, confined spaces, moving parts of machinery, chemical substances or dust in the air), and measures need to be developed to eliminate or minimise the associated risks;*
 - *What is needed for the activity: who will be involved, what their individual roles and responsibilities will be, the tools that they will use, the personal protective equipment that may be needed;*
 - *The time and resources that the activity will require;*
 - *Communication between maintenance and production staff, and all other parties concerned. Consulting workers and keeping them informed is vital throughout the planning stage.*
- According to the European Agency, workers' participation in the planning process increases not only the safety of maintenance work, but also its quality.*

Making the work area safe

The procedures developed at the planning stage now have to be implemented. The work area needs to be secured (preventing unauthorised access, for example, by using barriers and signs). The area also needs to be kept clean and safe, with power locked-off, moving parts of machinery secured, temporary ventilation installed, and safe routes established for workers to enter and exit the work area. Warning cards should be attached to machinery, with the date and time of lock-off, as well as the name of the person authorised to remove the lock – this way, the safety of the worker performing the maintenance on the machine will not be jeopardised by another worker inadvertently starting it up. If possible, guards should be designed so as to allow minor maintenance on the machines without removing the safeguards. If the guard must be removed or deactivated, then lock-out procedures should be followed.

Using Appropriate Equipment

Workers involved in maintenance tasks should have the appropriate tools and equipment, which may be different from those that they normally use. Considering that they may be working in areas that are not designed to have people working in them, and that they may be exposed to a variety of hazards, they must also have appropriate personal protective equipment. Safe work practices developed in the planning stage have to be followed.

Working as planned

The work plan should be followed as shortcuts could be very costly and may lead to injuries, or damage. It may be necessary to notify supervisors and/or consult with other specialists

should anything unexpected happen

Making final checks

Checks have to take place to ensure that the task has been completed, the item maintained is in a safe condition, and all waste material generated has been cleaned away. When all is checked and declared safe, then the task can be signed off, the locks can be removed, supervisors and other workers notified. The final step is to complete a report for the management, describing the work done, including comments on difficulties encountered and recommendations for improvement. Ideally, this should also be discussed at a staff meeting where the workers involved in the process, as well as those working around them, can comment on the activity and come up with suitable suggestions to improve the process.

Although these rules are designed for major maintenance jobs, the basic principles apply to all maintenance work. They also apply to un-planned and emergency maintenance and repair work. This is often where there are the greatest risks simply because employers do not plan for them. Even where an urgent maintenance job arises the employer should follow the five steps above. If the work is being carried out by a contractor then they must work together on the plan.

Training

It is important that those workers involved in maintenance work, as well as those working around them, are properly trained. The competence of the people carrying out maintenance, including inspection and testing, is vital to safety. Injuries may result if workers try to carry out tasks when they do not have the competence or experience to do them. Employers need to ensure that workers have the skills that they need to carry out the necessary tasks, are informed about safe work procedures, and know what to do when a situation exceeds the scope of their training. Employers should think carefully about the 'chain of command' among those who are involved in a maintenance task, and any procedures that will be used for the duration of the activity, including reporting procedures if there should be a problem. This is especially important if the maintenance is carried out by contractors.

Inspecting the workplace – a checklist for health and safety representatives

When inspecting the workplace, health and safety representatives are encouraged to include the inspection regime as well. Often that will involve asking for the risk assessments and records. You should also check the accident book. Among the things you should be looking out for are:

- Does your employer have a maintenance programme for all buildings and equipment?
- Are all routine or standard maintenance tasks risk assessed and are the risk assessments up to date?
- Have all control measures that arise from the risk assessment been put in place and are they working?
- What procedures are in place to ensure that non-routine maintenance work is risk assessed?
- Is maintenance activity logged and monitored?
- Are all maintenance workers fully trained and provided with the appropriate equipment and PPE?
- Are other workers trained on how maintenance work can affect them?

- Are all potential hazards (such as asbestos) identified and clearly marked so that maintenance workers will be aware of them?
- What arrangements are in place to ensure that external contractors are competent and informed about any potential risks within the workplace?
- Have there been any injuries, illnesses or near misses reported relating to maintenance activities, or a lack of maintenance work, since your last inspection?

Advice on how to inspect your workplace and a general checklist for health and safety representatives to use are at:

<http://www.tuc.org.uk/extras/insbooklet30auglowres.pdf>

Further information.

HSE pages on safe maintenance are at <http://www.hse.gov.uk/safemaintenance/index.htm>
In addition they have a number of fact sheets on maintenance in specific sectors.

The European Health and Safety at Work Agency have a number of resources on maintenance work. These can be found at

<http://osha.europa.eu/en/campaigns/hw2010/>

They also have a useful factsheet on the statistics around maintenance and health and safety
http://osha.europa.eu/en/publications/factsheets/en_90.pdf