Guidance and Best Practice

February 2020

Risk Assessment
Safe Systems of Work and Safety Data Sheets

What's the difference?

Occupational Health & Safety Service

HSD125M (rev 5)

UNIVERSITY OF CAMBRIDGE

Risk Assessment

A risk assessment is a careful examination of what could cause harm and how that harm could occur, so that you can work out what you need to do to prevent anyone being hurt or becoming ill.

Hazard

A hazard is something with the potential to cause harm.

The first step in any risk assessment is for you to identify the hazards in what **you** propose to do. These may be related to the workplace, the nature of the work, or the working practices used. The following list is not a comprehensive but it illustrates the wide range of hazards, which may need to be taken into account.

- confined spaces*
- experimental rigs
- fire and explosion*
- use of lifting equipment*
- noise*
- pressure systems*
- work equipment*
- substances hazardous to health*
- exposure to extreme temperatures
- personal safety and violence, including lone working
- electricity*
- falls from height*
- ionising radiation*
- manual handling*
- non-ionising radiation*
- slips, trips and falls
- working environment*

* specific legislation applies

Risk

How likely is it that any particular hazard will cause harm? Defining how any harm might be caused in the work you and others are doing helps to identify how the risk might be controlled.

Useful questions to consider are:

- **What** could go wrong?
- **Where** is there likely to be a problem?
- **Who** might be hurt and how badly?
- **Why** might it happen?
- **When** could it happen and how often?
- **How** can harm be avoided, or at the very least minimised?

Evaluating the Risk

In undertaking a risk assessment a judgement must be made about whether the precautions that already exist (if any) are enough to prevent harm or reduce the likelihood of harm occurring. If not, then more must be done to control the risks.

The following questions might help:

- Can the hazard/risk be eliminated altogether? If not, how best can it be controlled?
- Do precautions comply with the law?
- Are the precautions at least as good as those found in similar workplaces / do they match industry standards?
- Is there anything else that would reduce the risk further?

Controlling the Risk

There is a useful hierarchy of control measures that can help to identify the best way to minimise risks:

1. Eliminate the hazard altogether.
2. Substitute with a less dangerous alternative.
3. Remove or control the hazards in a way that will protect everyone, for example by engineering design.
4. Control the hazards by safe working procedures.
5. Personal Protective Equipment (PPE) is a last resort because it only protects the individual wearer.

Types of Risk Assessment

There is a general requirement in health and safety law to undertake a risk assessment. There are two types of risk assessment which are not mutually exclusive:

- **Quantitative risk assessments** in which harm and risk are quantified using numbers and the outcome compared against acceptance criteria allowing decisions to be made.
- **Qualitative risk assessments** are subjective and are based on judgements backed by generalised safety data.

It should be noted that certain regulations place a specific duty to assess the risks and sometimes legislation quantifies the level of control e.g. noise and vibration threshold action levels.

Control Of Substances Hazardous to Health (COSHH)

One of the most common types of risk assessment are those required by the Control of Substances Hazardous to Health (COSHH) Regulations and the general risk assessment required by the Management of Health and Safety at Work (MHSW) Regulations.

The purpose of a COSHH assessment is to assess the **health** effects of **substances** and put into place control measures to prevent or reduce any exposure to as low a level as is reasonably practicable, or as an **absolute minimum** to below the legal Workplace Exposure Limit (WEL) where applicable. COSHH also requires information, instruction, training, maintenance, testing of control measures and health surveillance for some substances.

Risk assessment under MHSW is required to help us identify **all** significant risks to safety as well as health and reduce the likelihood of people coming to harm at work. During this general risk assessment process specific requirements under other regulations such as COSHH and the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) may be identified. Thus aspects of the use of substances other than direct health effects such as their potential for explosion or fire, or where they are used under pressure, could be addressed.

In some cases it is easier to integrate the requirements of all the legislation into a single assessment, in others it may not be.

Other common types of risk assessment include:

- Manual Handling
- Display Screen Equipment
- Genetic Modification
- Noise at Work
- Ionising Radiation
- Vibration at Work

Recording Assessments

The method of recording the risk assessment will depend on the circumstances – **one size does not fit all**. Whilst there is no prescribed way of recording an assessment, the University has a number of templates (http://www.safety.admin.cam.ac.uk/).

The Health and Safety Executive (HSE) publishes a general risk assessment template (http://www.hse.gov.uk/pubns/indg163.pdf) and recommends a 'task based' approach.

Other systematic approaches are for example location, equipment use, role profile.

Example

A grounds person is intending to mow the lawn of the Senate House.

Task	Mowing the lawn
Location	Senate House lawn
Person/s involved	Grounds Person
Equipment	Petrol Mower

The task based approach would consider where the task was occurring, who was doing it and the equipment being used. Hence, in practice, most 'task based' risk assessments are a mixture. Remember you are assessing the risk posed by a hazard in the way you work and not concept of the hazard.

Safe Systems of Work / Safe Operating Procedure

A safe system of work (SSW), also known as a safe/standard operating procedure (SOP) is a formal procedure which results from a systematic examination of a task. SOPs identify the preferred method of undertaking a process to ensure that the hazards are eliminated or the remaining risks minimised and that the process is well-defined and consistent with any risk assessments.

Permit to Work systems and Method Statements are other examples of safe systems of work as is the incorporation of a risk assessment into an experimental procedure.

Safety Data Sheets (SDS)

Historically, safety data sheets (SDS), have on occasion, been mistakenly confused with COSHH risk assessments and presented accordingly.

An SDS is designed to provide workers and emergency personnel with information on the hazards of a substance. SDSs include information such as physical data, toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment and spill / leak procedures.

An SDS contains information which will help in making a risk assessment as required by COSHH and DSEAR. The SDS itself is NOT an assessment but will describe the hazards, thereby enabling you to assess the risks and identify the control measures required for **your procedure(s),** i.e. how **you** use the substance, considering the physical nature, the quantity and concentration etc.

Historically SDSs were supplied the first time a chemical was ordered. Most are now available online and you should ensure you have an up to date copy and that they are readily accessible. However, some substances hazardous to health may not have an associated SDS e.g. novel synthesised chemicals, wood dust (a carcinogen), pigeon droppings, moulds etc.

It is good practice to include the SDS(s) with the completed risk assessment or at least a cross reference to the SDS(s) used.

In the event of an emergency requiring hospital treatment, the appropriate SDS(s) should, wherever possible, accompany the injured person(s) to hospital, but do NOT delay them going if the SDS is not immediately available.

It is also good practice to consult more than one SDS for a substance, since it is not unusual to find variations in the depth or even content of an SDS. A quick internet search will usually quickly produce a consensus for a pure substance, if not then further advice should be sought.

Further Information

A guide to controlling risks in the workplace INDG163(rev4) HSE 2014

Working with Substances Hazardous to Health: What you need to know about COSHH. INDG136(rev5) HSE 2012

Control of substances hazardous to health: The Control of Substances Hazardous to Health Regulations 2002 as amended (COSHH). ACoP L5 HSE 2013 (6th Ed)

Workplace Exposure Limits (WELs) EH4/2005 as amended 2020

Safe work in confined spaces: Confined Spaces Regulations 1997. ACoP, regulations and guidance L101 HSE 2014 (3rd Ed) 2014

Electricity at work: Safe working practices HSG85 HSE 2013 (3rd Ed)

Work with flammable and explosive substances: Dangerous Substances and Explosive Atmospheres Regulations 2002 ACoP and guidance L138 HSE 2013 (2nd Ed) as amended 2015.

Safe use of lifting equipment: Lifting Operations and Lifting Equipment Regulations 1998. ACoP and guidance L113 HSE (2nd Ed) 2014

Manual handling: Manual Handling Operations Regulations 1992. (as amended 2002) Guidance on Regulations L23 (4th Ed) HSE 2016

Noise at Work, Guidance for employers INDG362 (rev2) HSE 2012

Vibration at Work, Control the risks from hand-arm vibration INDG175 (rev2) HSE 2012

Safety of pressure systems: Pressure Systems Safety Regulations 2000. ACoP L122 2014

Workplace health, safety and welfare: Workplace (Health, Safety and Welfare) Regulations 1992. L24 (2nd Ed) HSE 2013

Safe use of work equipment: Provision and Use of Work Equipment Regulations 1998. Approved code of practice and guidance L22 (4th Ed) HSE 2014 as amended 2018

(Where ACoP is the Approved Code of Practice)

History:

Rev 5 contains minor amendments and updates to ‘Further Information’.

Key Points

A suitable and sufficient risk assessment allows the identified risks to be appropriately controlled only if those control measures are implemented !

The law says you must assess risk before you start work

Start assessing the risk at the planning stage

Safety Data Sheets are NOT risk assessments

If a risk assessment has already been done – read it and make sure that you understand it before you start work -

You should sign paperwork to this effect

Review assessments every year as a minimum and when work and people change or there has been an accident

Make a written record of the review, as minimum sign and date a simple statement of review on the assessment

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