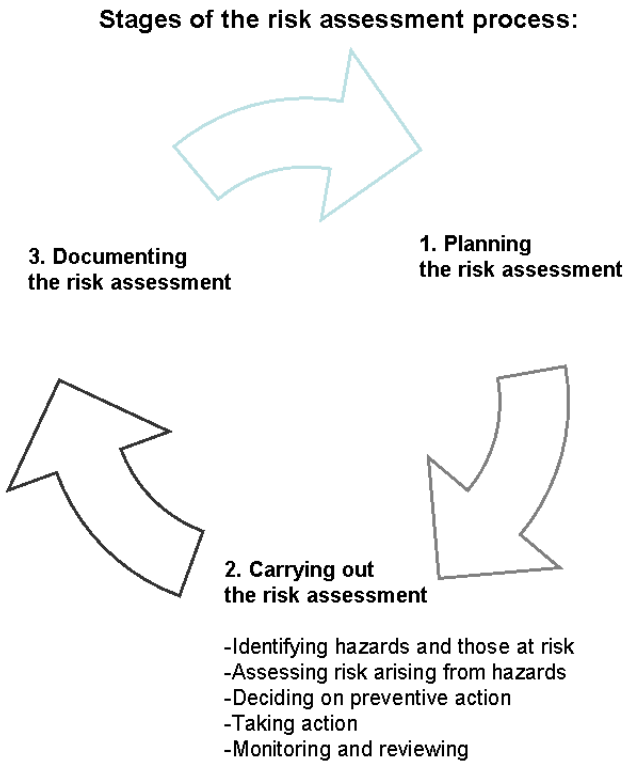
Common errors in the risk assessment process

Introduction

Prevention is the guiding principle for occupational health and safety legislation in the European Union. The key role played by risk assessment in prevention is emphasised in the EU Framework Directive [1]. In *Guidance on risk assessment at work*, the European Commission defined risk assessment as "the process of evaluating the risk to the health and safety of worker while at work arising from the circumstances of the occurrence of a hazard at the workplace".(…) "Risk assessment is a systematic examination of all aspects of work that identifies the hazards that could cause harm, assesses whether these hazards can be eliminated and, if not, suggests preventive or protective measures to control the risks". [2] The purpose of carrying out a risk assessment is to enable the employer to take effective measures that ensure the safety and health of workers.



When conducting the risk assessment common errors are made by all types of enterprises and organisations. Some of the most common errors *("☹")* during the process are presented here, in the order in which they generally occur.

Planning risk assessment

Employers should carefully prepare a risk assessment and take all measures necessary to ensure the safety and health protection of workers. The preparation stage includes:

- commissioning, organising and coordinating the assessment
- appointing competent people to make the assessment
- consulting workers' representatives on the arrangements for appointing the people who will carry out the assessments
- providing the necessary information, training, resources, time and support to assessors who are employed by the organisation

- ensuring, where relevant, there is adequate coordination between assessors
- involving management and encouraging the participation of the workforce.

☹ **Not involving a team of people in the assessment or not including employees with practical knowledge of the process/activity being assessed** [3]
A risk assessment should involve the employees or their representatives, not just the employer or the employer's representative working in isolation. All these people can contribute to the different stages of the process [2].

☹ **Not designating the risk assessment to a person who is competent**
It may be that the person designated to carry out the risk assessment is not competent to perform the whole range of tasks. Therefore, it is essential that those making the assessment and the employer recognise the limits of their assessment skills. Extra or more specialist expertise can then be brought into the process if it is needed. For example, a qualified electrical engineer may not have the knowledge to assess the risks arising from a complex chemical process [3].

☹ **Involving experts in the risk assessment process who are not familiar with the enterprise**
Whenever additional experts are brought into the risk assessment process, it is necessary to provide them with company information, a clear statement of the objectives and the resources available. Providing this essential information will enable a tailor-made approach to be followed.

Carrying out the risk assessment

Step 1: Identifying hazards and those at risk

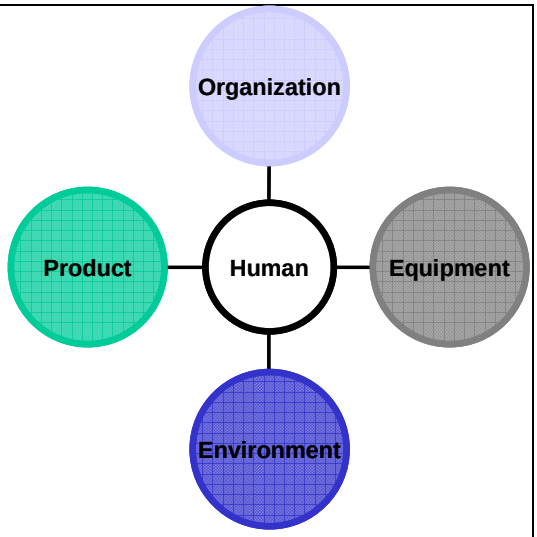
The first step of the risk assessment process is to identify hazards and those at risk. A hazard is anything that has the potential to cause harm [4]. It is the intrinsic property or ability of something — for example, work materials, equipment, work methods or practice — that has the potential to cause harm [2]. Hazards can affect people, property and processes; they can cause accidents and ill-heath, loss of output and damage to equipment and machinery.

☹ **Overlooking possible risk categories**
For instance, one of the points to be improved concerning the practical implementation of the provisions related to the risk assessment is to consider psychosocial risk and work organisational factors [5]. Significant changes in the world of work can lead to psychosocial risks. Such risks, which are linked to the way work is designed, organised and managed as well as to the

economic and social context of work, increase stress levels and can lead to a serious deterioration in mental and physical health [4]. These risk categories must be examined during the first step of the risk assessment.

To avoid omitting risk categories or focusing analysis one aspect at the expense of another, assessors can use the HEEPO concept [6] (see box).

HEEPO, which stands for human, equipment, environment, product and organisation, can help with a risk assessment or an analysis of an incident or accident. Risk factors or causes of accidents can often be put in different fields or categories. HEEPO can help avoid the omission of possible risk categories or an analysis that focuses too much on one aspect.



Hazards, risk factors and causes can be related to:

- human: lack of physical or mental capacity, lack of knowledge or skills, lack of right attitude or behavior
- equipment: workplace lay-out, machines, hand tools, software and hardware, tables or chairs
- environment: light, noise, climate, vibrations, air quality or dust
- product: dangerous substances, heavy loads and sharp or warm objects
- organisation: tasks, working hours, breaks, shift systems, training, communication, team work, contact with visitors, social support or autonomy.

☹ Not thinking about long-term hazards to health

In the course of conducting superficial risk assessments the focus is put on the more obvious risks. Long-term effects such as mental factors, as well as risks that are not easily observed or neglected such as those caused by chemical substances or high levels of noise exposures, can be ignored [5].

☹ Only looking to the works manual, not involving workers

Actual practice may differ from that laid out in the works manual. Therefore, it is necessary to look at what actually happens at work [2]. Generally, experienced workers know their workplace and its operations best. So, it is important to observe and question the employees.

☹ Strictly following a checklist

The concept of a hazard should be applied widely to take account not only of the various hazards mentioned in the checklist, but also how workers interact with them during their work. The amount and intensity of interaction will affect the level of risk [2].

In the simplest cases, hazards can be identified by observation and by comparing the circumstances in the workplace with the relevant information. In more complex cases, in addition to the simple analysis techniques outlined above, some measurements such as air sampling, or examining the method or methods of machine operation may be necessary to identify the presence of hazards from chemicals or machinery [3].

What is (and is not) a checklist and how to use it

- A checklist can help identify hazards and potential prevention measures and, used in the right way, forms part of a risk assessment.
- A checklist is not intended to cover all the risks of every workplace but to help you put the method into practice.
- A checklist is only a first step in carrying out a risk assessment. Further information may be needed to assess more complex risks and in some circumstances you may need an expert's help.
- For a checklist to be effective, you should adapt it to your particular sector or workplace. Some extra items may need to be covered, or some points omitted as irrelevant.
- For practical and analytical reasons, a checklist presents problems/hazards separately, but in workplaces they may be intertwined. Therefore, you have to take into account the interactions between the different problems or risk factors identified. At the same time, a preventive measure put in place to tackle a specific risk can also help to prevent another one; for example, air conditioning put in place to combat high temperatures can also prevent stress, given that high temperatures are a potential stress factor.
- It is equally important to check that any measure aimed at reducing exposure to one risk factor does not increase the risk of exposure to other factors; for example, reducing the amount of time a worker spends reaching above shoulder level may also increase the time spent working in a stooped posture, which may lead to back disorders.
- It is essential that checklists are used as a means of development support, not simply as a 'tick-the-box' formal checklist.

☹ Not recognising a significant hazards, thinking it trivial

All potential sources of hazards must be recorded, even if they are considered to be insignificant or protective measures are already in place [2].

The collection of information on workplaces, the jobs performed and the workers involved [4] may help to identify hazards and those at risk. Information should be organised on the principle that workplace conditions and jobs vary across an enterprise. Possible shortcomings in this process can influence the accuracy and quality of the risk assessment.

☹ **Overlooking second jobs**
One common mistake during the information collecting process is to overlook secondary jobs such as maintenance or cleaning work. Serious accidents can also occur in these types of jobs.

☹ **Not considering the possible presence of employees of other businesses or other persons such as subcontractors and visitors at the workplace**
They should be considered not only as persons at risk themselves, but also because their presence may introduce new risks into the workplace. Visitors such as students, members of the public or patients at hospitals are unlikely to be familiar with the risks that are present at a workplace or the precautions that need to be taken.

☹ **Not ensuring coordination between employers and subcontractors**
The employer and its subcontractors should coordinate their actions and inform one another and their respective workers and/or workers' representatives of any hazards and risks [1]. For example, subcontractors may bring their own transport on site, handle heavy equipment or move materials near to gangways. Such activities are potentially dangerous to the employees normally working there for whom such activities may be unfamiliar [2].

☹ **Not including groups of persons who may particularly be at risk**
This may include pregnant women, older workers or people with a disability. These vulnerable workers may be more at risk than others or exposed to additional risks. Therefore, it is important to consider their particular risks. Preventive measures must benefit all workers.

☹ **Not recording equipment only used on special occasions**
Old, redundant or rarely used equipment can be missed in a risk assessment. However, in certain circumstances it may present a hazard. Therefore, all equipment at the workplace should be recorded.

☹ **Not collecting records of accident and ill-health data**

Records of accident and ill-health are not always included during this stage of the risk assessment process. However, this data may reveal important information on hazards and hazardous areas, as well as the registration of sensitive workers such as those with allergies. If near-accident data or data on dangerous situations is recorded at the workplace, they should also be included.

Step 2: Evaluating risk arising from hazards

In this step of the process, risks are estimated, taking into account the probability and severity of harm that can be caused by a hazard [2]. A risk can be defined as the likelihood of harm being done and the potential extent of the harm.

☹ Not fully assessing the risks

Describe any consequences arising from the hazardous events. Consider both the immediate consequences and those that may arise after a certain time has elapsed (the consideration of delayed consequences is likely to be more appropriate when assessing ill-health rather than safety risks). Be realistic about the worst thing that could happen and work backwards to the minor risks. Everything else in the process flows from this assessment so it is important not to overlook anything [3].

☹ Creating a false feeling of safety

Assessing and evaluating risk can create a false feeling of safety, but detecting a risk does not eliminate it from the workplace. Revealing the hazards and associated risks is only the beginning: the real challenge is to take effective preventive measures.

☹ Moving from one scenario to another during the estimation of effect, exposure frequency and probability

Once the assessor has chosen to assess a scenario, it is important to stick with it through the whole assessment process. After all, different scenarios can give different results.

For example, if workers lift heavy boxes frequently, it will increase their risk of developing musculoskeletal disorders (MSDs).

- Scenario 1 involved a worker only lifting heavy boxes while working in the production area.
- Scenario 2 involved a worker also lifting heavy boxes while working in other areas.

The exposure frequency is higher for scenario 2 than 1. The probability that he or she will develop MSDs is also higher. So, depending on the actual situation, the assessor has to choose a consistent scenario to calculate both the exposure and probability figures.

Step 3: Deciding on preventive action

☹ Not taking into account the preventive hierarchy

When implementing preventive and protective measures, the following general principles of prevention need to be followed*:*

1. First considering whether risks are preventable or avoidable. Is it possible to get rid of the risk? This can be done, for instance, by:

- considering whether the task or job is necessary
- removing the hazard
- using different substances or work processes.

2. If risks are not avoidable or preventable, how risks could be reduced to a level at which the health and safety of those exposed is not compromised. When determining a strategy to reduce and control risks, employers should be made aware of the following additional general principles of prevention:

- combating the risk at source
- adapting the work to the individual, especially as regards the design of work places, the choice of work equipment and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate and to reducing their effect on health
- adapting to technical progress
- substituting the dangerous by the non-dangerous or the less dangerous (replacing the machine or material or other feature that introduces the hazard by an alternative)
- developing a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of factors related to the working environment
- giving collective protective measures priority over individual protective measures (e.g. controlling exposure to fumes through local exhaust ventilation rather than personal respirators)
- giving appropriate instruction to workers.

☹ Transferring the risk

In any risk assessment and the subsequent elimination of risk or application of control measures, it is essential that the risk is not transferred; ie that providing a solution to one problem does not create another problem elsewhere. For example, it would be of doubtful benefit to provide double-glazing in an office to reduce noise, unless provision was also made for adequate ventilation [2].

☹ Not consulting or involving workers in decisions about preventive action

Decisions on preventive action should be made with the involvement of employees or their representatives. Workers should be encouraged to contribute to this decision-making process and to share their experience. They may, for example, be able to point out where a preventive measure is difficult to use in practice, or suggest how the design of a tool or machine could be improved [2].

Step 4: Taking action

☹ Not prioritising the implementation of preventive measures

It is essential that any work done to eliminate or prevent risks is prioritised. Prioritisation should take account of the severity of the risk, the likely outcome of an incident, the number of workers who could be affected and the time needed to take preventive measures. Some problems cannot be resolved immediately; it may well be that a prioritisation programme will have to incorporate steps that can be taken in the short term as part of a process to eliminate or reduce risks in the longer term [2].

☹ Not involving the workers

Once prevention measures are introduced, staff and managers need to know where to go for support and advice. These issues need to be identified at the beginning of the assessment process and incorporated into a general well-being policy. Similarly, it is particularly important that workers participate in the selection and use of personnel protective equipment (PPE). The employer has to ensure that PPE provides the necessary protection and that appropriate training in maintaining and using it is given. Workers should assess whether the PPE is a suitable fit, interferes with their work, introduces other risks or whether it becomes difficult to use over time [2].

Step 5: Monitoring and reviewing

This stage includes:

- determining the arrangements to be made for reviewing and revising the risk assessment
- ensuring that the preventive and protective measures take account of the results of the assessment
- monitoring the protective and preventive measures to ensure that their effectiveness is maintained

☹ Considering the risk assessment as a one-time obligation

A risk assessment at work should be reviewed whenever a change that may alter the perception of risk is made at the workplace. Examples of changes include: the introduction of a new work process, new equipment or materials; a change in work organisation; and the introduction of new workshops [2].

☹ Not supervising sufficiently the efficiency of the measures

Once prevention measures are introduced, it is important to measure their efficiency. The effective application of protective measures should also be monitored through a risk assessment review.

Documenting risk assessment

Article 9 of the Framework Directive states that the employer shall be in possession of an assessment of the risks to safety and health at work, including those facing groups of workers exposed to particular risks. A risk assessment sheet with several appendices is a suitable form for documenting the results of a risk assessment. A general form can exist providing an overview of hazards, risks and subsequent measures, with extra forms for each department in the enterprise.

☹ Not recording the assessment

The risk assessment must be recorded. Such a record can be used as a basis for:

- information to be passed to the persons concerned
- monitoring to assess whether necessary measures have been introduced
- evidence to be produced for supervisory authorities
- any revision if circumstances change.

References:

[1] Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work, Article 5, § 4.

[2] Guidance on risk assessment at work, European Commission, Luxembourg: Office for Official Publications of the European Communities, 1996.

[3] Good practice and pitfalls in risk assessment, HSE, Research Report 151, Available at: http://www.hse.gov.uk/RESEARCH/rrhtm/rr151.htm

[4] European Agency for Safety and Health, Risk assessment tool, Available at: http://hwi.osha.europa.eu/ra_tools_generic/

[5] The Communication from the Commission to the European Parliament, the council, the European Economic and Social Committee and the Committee of Regions on the practical implementation of the provisions of the Health and Safety at Work Directives 89/391 (Framework Directive), 89/654 (Workplaces), 89/665 (Work Equipment), 89/656 (Personal Protective Equipment), 90/269 (Manual Handling of Loads) and 90/270 (Display Screen Equipment), COM (2004) 62 final available at: http://eur-lex.europa.eu/LexUriServ/site/en/com/2004/com2004_0062en01.pdf

[6] Based on the MUOPO concept (in Dutch): Mens, Uitrusting, Omgeving, Product, Organisatie Risico's onderkennen in de ontwerpfase, Preventactua 2001/9. Roger De Gruyter et al, Preventie zakboekje, Kluwer, 2006.