

Improving Health & Safety



Organisations of all types and sizes can benefit from effective safety performance. If a place of work is safe, costly accidents are avoided, insurance cover is less expensive and employee morale is higher—to name but a few benefits. It is, therefore, well worth the effort to create a safe working environment or to invest time in improving existing levels of safety performance.

Unfortunately, existing safety performance levels are not always visible. This is because many organisations only look for deaths, serious accidents or first aid cases as a measure of their performance in the safety area. However, it is often said that fatalities or accidents are only the tip of an iceberg. In this analogy, the majority of the iceberg cannot be seen, that is, there are literally thousands of serious incidents or close calls that have the potential for serious injury (even though, by luck, no serious accidents have yet occurred). Consequently, unless these many potential safety problems are addressed, it is almost inevitable that accidents at the tip of the iceberg will continue to occur.

1

Review

Perhaps more important than anything else, the vast majority of safety problems arise from a poor safety attitude and subsequent behaviours. In other words, with the right attitude and behaviour, even unsafe workplace conditions are much less likely to lead to safety incidents. As a result, individuals need to think extremely carefully about their own mental approach and the impact that this can have on themselves and others around them.

Once safety attitudes and behaviours have been given significant focus and attention (which takes considerable time and effort) it is extremely important to conduct a careful examination of what, in the workplace, could cause harm to people in order that an assessment of whether enough precautions have been taken to reduce the overall risks involved can be made. Risk assessment as a process that revolves around the formal appraisal of hazards in the workplace that have the potential for harm to life, health or property.

The following are general examples of common situations and their associated hazards:

Situation

- Travelling in a vehicle
- Drinking alcohol
- Smoking tobacco
- Using electrical equipment
- Standing in an electrical storm

Hazards

- Smash damages
- Liver damage
- Lung cancer
- Electrocution
- Lightning strike

Hazards only describe the potential situation, not how likely it is that a dangerous event will occur. Risk is the measure of how likely it is that injury or harm will occur in a given hazardous situation or the probability that the hazard eventuates.



The contribution to hazards and risk in the workplace are many and various: Poor design, poor construction and layout of a site or a facility, or lack of planning and forethought are the significant ones. However, the vast majority of accidents in the workplace arise from the inability of people to identify hazards. This is usually because of a lack of information and training. However people can only become more aware (and therefore seek the information or training that they need) by appreciating how to measure risk properly and then adopting the appropriate prevention or control strategies necessary.

2 Evaluate

Many organisations have a comprehensive safety system. Such systems often also have a major emphasis on prevention and therefore, a strong focus on effective risk assessment practices.

The dictionary defines risk as follows:

“The possibility of incurring misfortune or loss.”

Exposure to these “misfortunes” or occasions of “loss” generally comes from particular hazards. Some hazards are known and this may lead to considerable care or mitigation. Motorways are well fenced and have no footpaths to ensure that pedestrians do not easily “stray” into the path of speeding cars for example. Similarly, people know that it is not a good idea to take the risk of jumping into the lion enclosure at the zoo.

These more obvious hazards are rarely the major risk problem. It is the less obvious or even completely hidden hazards that often pose the greatest difficulties. Poorly constructed buildings, old machinery and homemade tools for example can all hide serious hazards that increase the likelihood that accidents can arise.

Before any risk assessment process can be fully understood, it is important to define a number of terms. The first of these terms is the whole concept of hazard. In basic terms, hazards are situations that have the potential to cause harm to individuals or property. The key word here is “potential”, many situations are therefore “hazardous”, but actually present little in the way of risk.

To take an everyday risk example, gambling at the casino is a hazard in that it can cause injury to our bank balance. However, to judge the level of risk (the likelihood and consequence of this occurring) we must consider the following:

- **How often do we gamble?**
- **Our level of expertise in the games we play**
- **The level of bias we perceive in the games**
- **The “health” of our current bank balance**

Risk is the calibration or measure of how likely it is that the hazard will actually lead to human or property harm. The measurement or level of risk can be determined in a number of different ways. However, the main methods used are to calculate how likely it is that the risk of harm will occur and then assess the severity of the harm caused. Once we have understood this, we can start to take appropriate action.



2 Evaluate

Risk assessment as a process (whether it is done as a small scale exercise with one or two people or an enterprise wide initiative with a team of risk assessors) has to start with identification of all the possible hazards, situations or events where plant, equipment or processes of work can harm people. This identification exercise is best done in a structured way (and ideally using a Risk Assessment Form). Hazard identification is fundamentally a common sense exercise when done carefully. The first step that anyone can take is to look specifically at plant or equipment or general conditions of work that have harm or damage potential. This is intended to focus assessment on known or visible hazards in the workplace for which people may be compensating.

It should be remembered that hazards don't just come from physical equipment or what individuals choose to do. Very often, the way that tasks or jobs are designed can be inherently unsafe or introduce a hazard or greater level of risk. These 'systems' of work are written into past records, current procedures, local work instructions and many other documented systems. It is critical to review all of these for the work area concerned and look for problems, trends or indicators that may indicate a change may be necessary.

Some of the workplace problems, trends or indicators may be very obvious (even if they are hard to remedy). However, others will only become known by talking to people that are familiar with their local workplace, and by evaluating the issues in a structured and logical way. Although evaluation approaches can vary, there are six key areas that should be assessed. These are chemicals, noise, temperature, light/radiation, work at height and general ergonomics. Although we can add many other factors to this list, we need to look at each of these in turn.



3

Assess

Environmental health is specifically concerned with the climate in which we work or the physical circumstances in which tasks are performed by people. To be safe, we therefore need to understand the conditions that prevail in a particular workplace and specifically assess the risks that we face. Although as we have already suggested there are a variety of environmental conditions that should be assessed, there are six major categories that need to be carefully considered as follows:

1. CHEMICALS

Chemicals are used widely in many workplace and home situations but are not always recognised for what they are – potential hazards.

Individuals need to understand what risks are associated with the chemicals that they are using and take appropriate steps to minimise them. This usually involves understanding what chemicals are in the workplace in the first place then taking the appropriate steps and actions.

Safe handling and use of chemicals is dependent on people working together to reduce the risks. This “open” regime is the best way to ensure that everyone’s safety is protected as much as possible (and making sure that clear and accurate labelling is in place).

2. NOISE

As life in the modern world seems to become ever faster and busier, so general noise also appears to be increasing. Sound is a form of mechanical energy, which originates from a vibrating source. Sound travels through the air in a wave motion, a bit like the ripples over a pond when a pebble is thrown into it. As the ripples spread out, they become weaker. In the same way, sound gets quieter the further you get from its source.

The sound ripples or ‘vibrations’ in the air is made up of two parts:

1. **Intensity (or loudness, volume)**
2. **Pitch (or frequency)**

By using both intensity and pitch, sound or noise can be measured. In most cases, noise is measured in decibels (dB). However, decibels are a measure of intensity or loudness not pitch or frequency. Pitch is measured in Hertz (which is a measure of vibration cycles per second). By measuring the intensity and pitch of particular noise sources, we can start to design ways in which to protect ourselves when it is likely to cause damage.



3

Assess

3. TEMPERATURE

Environmental work problems associated with temperature are rarely raised unless extremes are experienced. Extreme cold not only inhibits productivity, but carries the extra risks of injury to hands, fingers, feet and toes unless they are kept warm.

The effects of each source of heat are exactly the same and particular care needs to be taken when they occur in combination. For example, many people will have been in un-air-conditioned cars where a nice 85°F/28°C day in the fresh air feels unbearable sitting in the back of the car through the glass.

People must understand how to manage themselves and to assist others to remain safe and healthy in hot environments. To do this, individuals need to appreciate the physical effects of heat on the body, as well as understand the impact of prolonged exposure to an excessive source of heat.

4. LIGHT/RADIATION

It is important to distinguish between natural and man-made light. In most circumstances environmental concerns about man-made light are associated with work areas that are poorly lit or too dark (giving rise to the greater possibility of injury) or over bright (leading to eye strain etc.). However natural light from the sun potentially creates a much greater problem, particularly as a result of the UV rays which can quickly burn the skin (and even lead to skin cancer) if protection is not applied.

Outdoor workers are particularly susceptible to damage from sunlight and personal protective equipment (such as barrier creams, eye glasses, headwear and clothing) are often the only controls that are effective.



3

Assess

5. WORK AT HEIGHT

Our own personal safety is threatened by falling, bumping into things, slipping, colliding with unseen objects and electrocution, etc. For others below, they run the risk of having an individual or various objects fall on them, or hit them in some way.

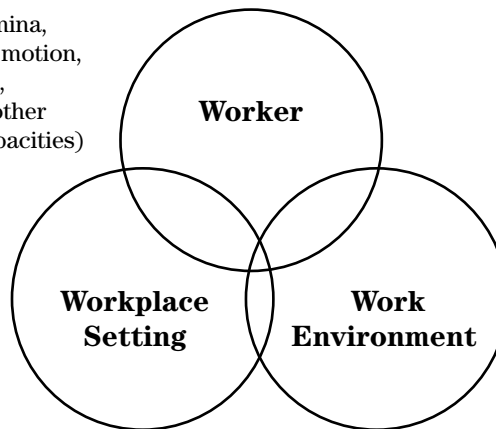
Because any work at height represents a greater risk than working at ground level, our first task in thinking about having to tackle any job that is off the ground should be to consider whether the work is necessary at all. If this is not possible, there are then a variety of protective steps that can be taken (all involving time and lots of planning).

6. ERGONOMICS

A good way to think about an ergonomic approach in general is to consider the inter relationship of the worker, the direct workplace setting, and the environment in which they work.

(size, strength, stamina, flexibility, range of motion, intellect, education, expectations, and other physical/mental capacities)

(parts, tools, furniture, control/display panels and other physical objects that are close at hand)



(climate, lighting, temperature, humidity, noise, vibration and other atmospheric qualities)

Every individual has a 'space' in which they perform the majority of their tasks. For some, (like farmers, warehouse people or members of the police for example), their workspace can be physically quite large areas or even in the open air. For others (like many office workers, assembly line people or computer programmers), their workspace can be quite small or confined, with many hours standing or sitting essentially in one or perhaps two positions. Whether our work area is large or small, our task in thinking about the value of an ergonomics approach is to ensure that the workspace is optimally designed. To do this well, we should review levels of task repetition, force and velocity of particular work, people's relative capacity to recover or rest when they need it and 'special' stresses that people may encounter including stretching, twisting, bending or other straining.

4

Control

However well hazards have been identified and assessed, it is worth nothing unless follow up action takes place to control the risk or eliminate the risk entirely. There are a number of different ways that risks can be controlled. However, whatever method is used, there is always a hierarchy of control that should be used. This hierarchy has 5 steps – these are:

- **eliminate the hazard**
- **substitute a different method**
- **minimise the risk**
- **redesign or re-engineer the process or the task**
- **use Personal Protective equipment**

The first and most powerful of the control measures that can be used is to eliminate the risk entirely. Although this isn't always possible, elimination is a real option in many more circumstances than many people might feel. If this is not possible, other controls may then be considered in turn.

Controlling a risk successfully is heavily based upon finding not only the right solution but also a lasting one. In other words, the immediate solution to a hazard of an uneven floor might be to modify the floor. However, good risk control looks at the root causes of why harm may be caused.

Once risk controls have been identified and put into practice, before it is assumed that the hazard has been successfully dealt with, it is critical to assess whether the controls implemented have been effective in practice.

Some controls can create new hazards and risks that were not foreseen. For example, a new machine to help reduce the risk of back injury may be poorly located or badly designed creating new hazards. As a result, a fresh review may

need to be undertaken to make sure that the new control measure is fit for purpose with careful follow up immediately after installation or within a reasonable period of time thereafter.



5

Train



Given that an organisation has made a serious commitment to improving safety performance, part of that commitment must include training. Even where there are several teams of people working on safety improvement projects, some people will not be directly involved. In addition, even safety project team members working on one particular issue may remain unaware of other safety problems or issues that they could eliminate or improve with the appropriate knowledge or with a more general awareness.

The ideal approach for an organisation wanting to substantially lift its safety performance is to commit itself to training every employee in risk assessment, safety issue identification and general safety awareness. Of course, this is not always a practical possibility and alternatively a specialist team of people and supervisors/managers can be trained instead. Of course, the nature and specific content of this training will vary from organisation to organisation.

Whatever the type of organisation, the number of safety training issues or factors will be common. These are:

1. That the safety training needs to be comprehensive (or cover all the situations that people and teams are likely to encounter).
2. That it should be offered in a way that is clear, fit for purpose and relevant to people.
3. That it is regularly reviewed for effectiveness and impact.

Many organisations fall a long way short in achieving any of these outcomes.

Safety training courses will often be provided to meet legislative requirements but fail to identify sometimes quite high risks in the workplace, for which awareness or skill training is a critical need in the absence of any potential to redesign the task. In the absence of formal training, individuals may often have to rely on more experienced people in the workplace – a notoriously haphazard solution at the best of times.

6

Systemise

Most organisations like to feel they are already doing reasonably well or operating quite effectively in carrying out their responsibilities. For this reason, basic safety is often seen as an area which is already well catered for and has sufficient attention from all concerned.

Even in the most effective and well managed organisations, there is always room for improvement. The aim should be to identify where this improvement needs to occur. There is no fixed formula for creating a better safety climate. The only approach is to identify the specific opportunities to improve safety for the particular organisation concerned.

A good way to plan for a safety improvement program or initiative is to review or audit the particular organisation in a systematic way, or to look at the entire administrative safety system that is in place. This entails a review of the nature of the operation: **the physical environment, the people, the prevailing work rules and procedures**, and perhaps most importantly, **the quality of the existing leadership, coaching and guidance on safety issues** (focussing once again on the behavioural side of safety). Don't forget it is unsafe acts that are performed by people that constitute the main problem in the general workplace (up to 85%) not the unsafe conditions (that may only make up 15% of the problem).

The whole purpose of reviewing existing safety system performance is to understand the prevailing base or platform upon which the organisation is looking to improve in the future. This improvement will usually build on past successes but also address past or present weaknesses.

One excellence place to start on a safety systems and administrative review is with the overall accident or incident reporting and investigation process. Because an accident or incident is always undesired, a systematic process needs to be in place to do as much as possible to prevent accidents occurring. This should be designed to describe an effective approach and methodology to ensure that all accidents and incidents are reported and investigated in a consistent manner.

If they want to go further, an organisation can introduce a comprehensive Occupational Health and Safety (OH&S) management systems. Such systems usually have a major emphasis on prevention and therefore, a strong focus on an effective and consistent accident/investigation approach.



6

Systemise

Many organisations make a decision to improve safety system performance and take on 20 or 30 suggestions as a priority for action. This approach is 'risky' as the commitment to spend time and money that it demands often cannot be met, or actions might remain unfinished because resources are spread too thinly. A better approach, therefore, is to develop a detailed action plan based on the top safety priority areas. Although this can vary, the top five is a good number of action projects to deal with at one time. Even when these can be satisfactorily dealt within a few days or weeks, the next five priorities can then be tackled, and so on.



A priority safety action plan will suggest how an idea is to be specifically tackled. For example, several individuals may have identified that contractors or casuals on a particular site are at risk of injury. In this instance, the safety action plan might identify that a standard contractor safety induction training program is developed and run for all existing contractors within a three month period (or the existing approach is modified or improved).

As safety is so much a part of every single person's responsibility (both to themselves and to others), it is important to 'enfranchise' every individual in the safety action plan in some way. In other words, an individual will be more personally committed to a plan in which they need to play a role (however small) than one where there are no requirements of them. A good way to do this is to give as many individuals as possible an involvement in at least one safety action plan item in the prioritised list.

In some situations, it is not possible to involve every single individual in an enterprise. However, it is worth remembering that people inevitably learn more from doing than from hearing or seeing others take action. Therefore, if the organisation wants the commitment of every person, every single individual needs to be designed into safety improvement plans in some way. Hence, through regular and systematic involvement in helping to make the enterprise a safer place to be, people will start to initiate safety improvement actions or suggestions of their own, without being prompted by others to do so.

Improving Occupational Health & Safety Template

Systemise
Policies
Procedures
Standards



HOW

Review
Attitude
Behaviours
Conditions



HOW

Train
Coaches/mentors
Managers/supervisors
Every individual



HOW

Evaluate
Risks/hazards
Likelihood
Consequences



HOW

Risk Table

Likelihood of risk occurring

Consequence of problem arising		Likelihood of risk occurring		
	LOW	MEDIUM	HIGH	
LOW	_____	_____	_____	_____
MEDIUM	_____	_____	_____	_____
HIGH	_____	_____	_____	_____

Control
Eliminate
Design out
Protect



HOW

Assess
Personal well-being
Environment
Ergonomics



HOW
