

# NEBOSH National Diploma

## Unit ND1: Workplace health and safety principles

SAMPLE MATERIAL



SEVENTH  
EDITION

### **RMS Publishing Ltd**

Suite 3, Victoria House,  
Lower High Street, Stourbridge, West Midlands DY8 1TA  
Tel: +44 (0) 1384 447927  
Email: [sales@rmspublishing.co.uk](mailto:sales@rmspublishing.co.uk)



These **management decisions prejudice mutual trust and lead to mixed signals regarding commitment** to health and safety. This promotes a negative health and safety culture.

## Changing the culture

Most industries recognise the importance of a positive health and safety culture and the need to review and, when necessary, take steps to improve the culture. For progress to be made, careful **planning and communication** is essential. An unstructured approach is time consuming, can be costly and is usually ineffective. As the ACSNI Study Group said:

*“While the outcome of well-conceived plans to improve the safety culture of an organisation may be revolutionary, the plans themselves should be evolutionary. A gradualist (step-by-step) approach is essential.”*

Figure 2-20: A step approach to improvement of a health and safety culture.

Source: UK, ACSNI Human Factors Study Group.

The major steps of the plan should be:

- To review the existing health and safety culture.
- To decide the aspects that has the highest priority for change.
- To decide on actions that may change those aspects, and to launch those actions.
- To repeat the previous three steps indefinitely.

The fourth step implies that the effects of each step are checked and **performance is measured regularly**. The results may mean that new actions or new priorities are chosen. This means that the process of improvement is continuous and not just a momentary enthusiasm.

Achieving the long-term goal of developing a positive health and safety culture can be daunting, but a **step-by-step (gradualist) approach** can make it more manageable. The most urgent issues are addressed first and this process itself will generate a wider effect. At each of the steps, the methods chosen should be interactive and encourage open communication. A wide range of people must be involved, from different levels of the organisation and having different skills and backgrounds. All members of the organisation must feel a strong sense of ownership of the need and drive to improve safety standards.

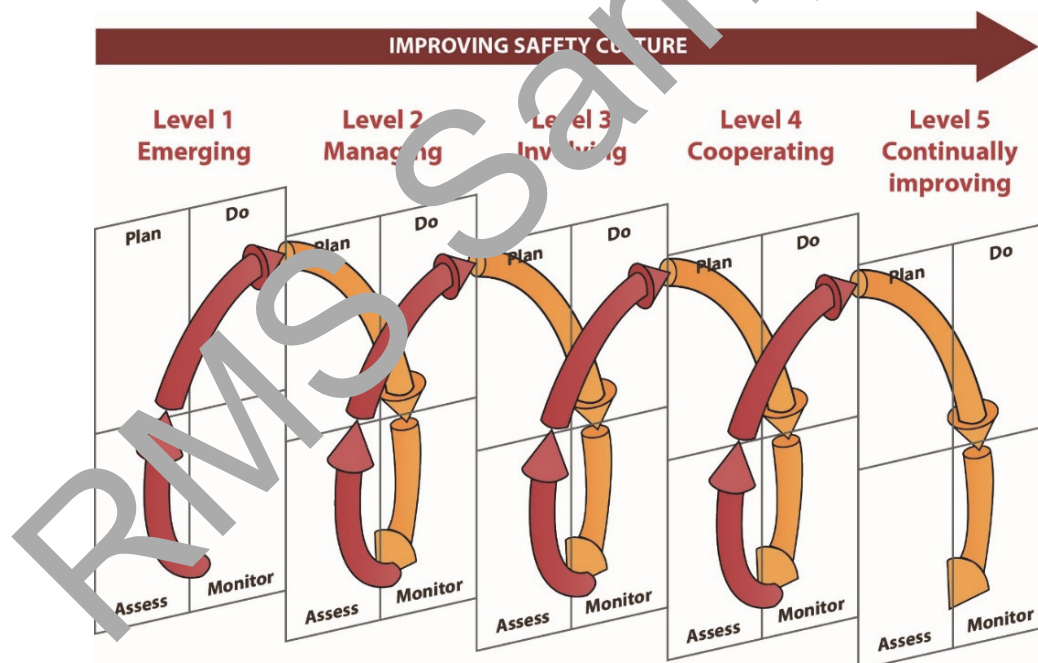


Figure 2-21: Safety culture improvement process.

Source: UK, Step Change in Safety, Changing Minds/RMS.

This **direct action** to promote change is likely to succeed in developing a positive health and safety culture, as the continuing process will show management’s interest in the activities and their willingness to support them in terms of time, trouble and finance. Sometimes a good place to start is by making **changes to the work environment**, identifying problems with hazard related to tidiness and good order, which can make a rapid positive impact. Each problem that is successfully dealt with will add to the positive development of the safety culture.

As the health and safety management plan unfolds, there will be change by **indirect action** through increased awareness of hazards/risks and the methods of controlling risk, which will come from, for example, **risk assessments and training**. This increased awareness, along with the knowledge that the company is carrying out its plans for health and safety, can reap **cultural dividends**.

This will require **strong leadership** and **strong worker engagement** and **ownership at all levels**. If it is also seen that everyone’s **performance is measured** to ensure health and safety remains a priority at all levels, then it will give credence to the general plan. The benefits of this is people at all levels of the organisation are working

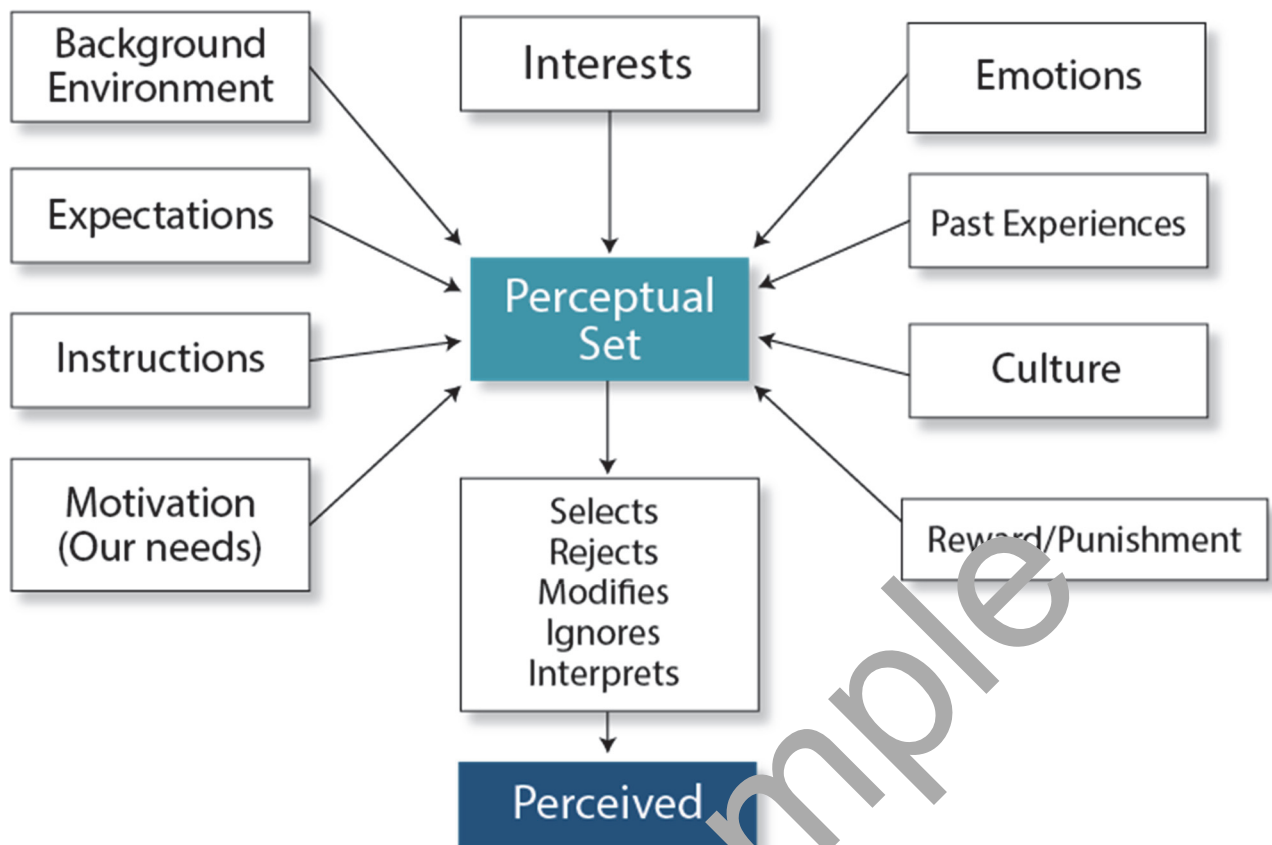


Figure 2-32: Factors that influence perceptual set.

Source: RMS.

Individuals often filter out background noise to listen to music and might therefore not perceive a quiet alarm, similarly car drivers might filter out the routine view of the car dashboard and not perceive the low fuel warning light. Alarms and warnings therefore need to be designed to get our attention, or, in this context, penetrate the perceptual set.

One of the strongest influences on the perceptual set of an individual is expectancy. If an individual is familiar with a work activity, they know what to expect and could tend to develop a perceptual set that reduces sensory inputs and allows them to 'operate on auto pilot'. They might say "I could do this job with my eyes closed". Expectancy may limit the ability of an individual to perceive things as they tend to perceive only what they expect. Over familiarity with something can create an expectancy and lead to a perceptual set. For example, a fork-lift truck driver may be very familiar with the route they take around a site and may not see a pedestrian step out from a doorway as no one has done so before and they were not expecting it. We therefore need strong sensory stimuli if expectancy is a strong influence on our perception. When considering perception, remember these three statements are often true:

- We do not see what is there.
- We see what we expect to be there.
- We do not see what we do not expect to be there.

### PERCEPTUAL DISTORTION

Perceptual distortion may be due to the lack of correspondence between the way a stimulus is generally perceived and the way an individual perceives it under given conditions.

Sometimes an individual is forced to categorise a specific stimulus in the absence of adequate information, perhaps because they have not experienced it previously or environmental factors make it difficult to understand the stimulus. This can lead an individual to perceive incorrectly or perceive something that is not there in order



Figure 2-33: Photograph showing the need to alert drivers to the changes made to a familiar road. Source: *Managing Safety During Change*, West Anglia Training Association 2010

## 5.1 - Loss causation and qualitative analysis of data

### Loss causation theories/models, tools and techniques

#### UNDERSTAND SOME OF THE UNDERLYING PRINCIPLES CONNECTING CAUSES AND OUTCOMES

##### Incidents with the same cause(s) usually have a range of possible outcomes

Incidents with the same cause(s) can have a **number of possible outcomes**, depending on the actual circumstances at the time of the incident. The outcomes from some incidents could range from a near miss, with no harm to people, through to minor and serious injuries or possibly death.

This is illustrated by the following example, where an unstable stack of bricks causes a brick to fall from height.

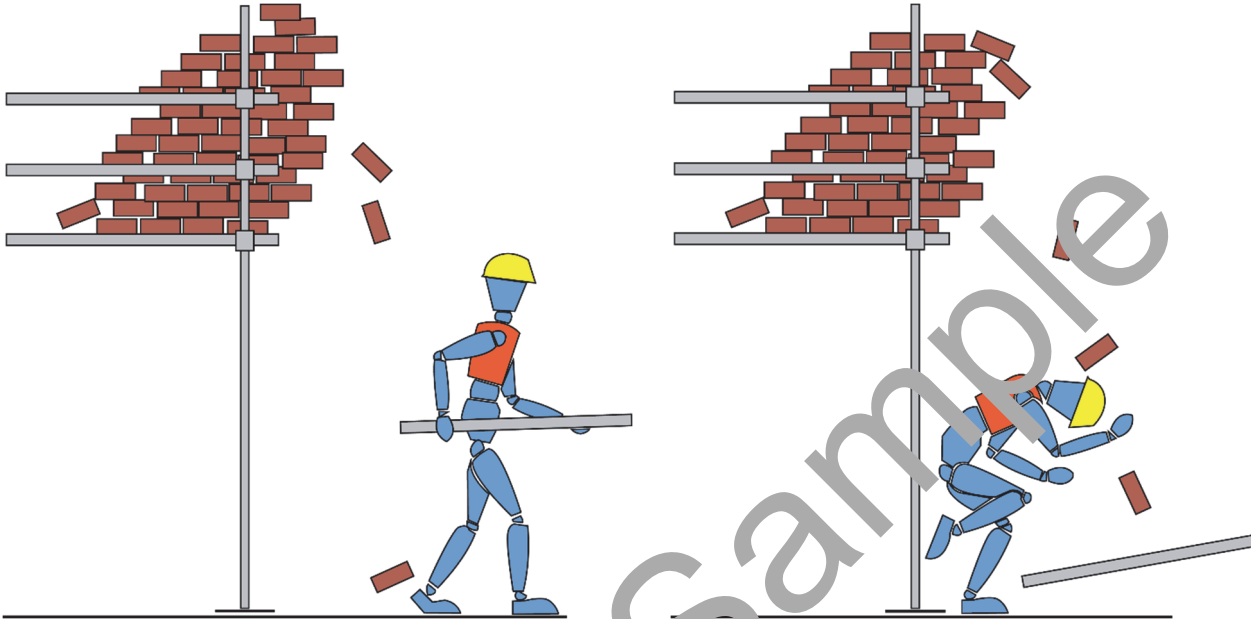


Figure 5-1: Near miss.

Source: HSG245.

Figure 5-2: Injury.

Source: HSG245.

The circumstances in this example could result in the following outcomes:

- 1) The brick falls to the ground near a worker, but there is no injury, the outcome is a near miss.
- 2) The brick falls and strikes a worker causing a minor injury, for example a cut and bruising to the hand.
- 3) The brick falls and strikes a worker working directly underneath causing a fatality.

*“incident - occurrence arising out of, or in the course of, work that could or does result in injury and ill health (3.18)*

*Note 1 to entry: An incident where injury and ill health occurs is sometimes referred to as an “accident”.*

*Note 2 to entry: An incident where no injury and ill health occurs but has the potential to do so may be referred to as a “near-miss”, “near-hit” or “close call”.*

Figure 5-3: Definition of incident.

Source: ISO 45001.

There is an **underlying randomness** to the occurrence of incidents and their outcomes. This makes it difficult to predict when and where incidents will happen and the severity of the outcomes. Whether the outcome of an incident is a near miss, minor injury or death can be a matter of chance. The difference between a near miss and a fatal injury in terms of time and distance can be very small and at the time of the incident there is often little influence on what the outcome is. If no action is taken following incidents that result in no or minor injury severe injury will occur sooner or later if it is left to chance.

Which means that whatever the outcome actually was we should **consider the potential outcome** that could have resulted from the incident and identify the cause(s). Although it is important to identify the cause(s) of incidents that actually result in a fatality, from this example, it can be seen that it is important to learn and take action following an incident that resulted in a near miss, which had the potential to cause a fatality. If we respond to such a near miss it is possible that the root cause(s) are identified and future fatalities prevented. A similar logic applies where an incident results in a minor injury, this provides an opportunity to identify the cause(s) before more serious harm is caused.

#### Use of incident ratio data studies

Incident ratio data studies have confirmed that for incidents with the same cause(s) their outcomes are generally more likely to result in a near miss or minor injury than a fatality. This is often portrayed by an incident ratio triangle, for example Bird's Triangle, which was developed by Frank B Bird in 1966 as an updated version of the original incident ratio triangle conceived by Herbert W Heinrich in 1931.

It is therefore important that health and safety professionals maintain as much involvement as possible with proposed organisational changes to enable them to understand and influence changes in a way that risks are minimised. This could mean them working closely with the senior manager taking the lead with the changes and being part of the team that is managing the organisational change. Health and safety professionals should help to identify where organisational change could affect such things as risk assessment, safety critical decision making, and assurance processes.

Where there are proposals to change the organisational structure from using employees to using contractors or outsources services, they should use their influence to ensure that health and safety standards are maintained and assurance methods are included in the change. It is often best to ensure that organisational change is phased to accommodate the complexity of change and ensures adequate resource for the extra work, training, establishing safe systems of work and supervision that accompanies organisational change.

## PLAN-DO-CHECK-ACT APPROACH TO CHANGE MANAGEMENT

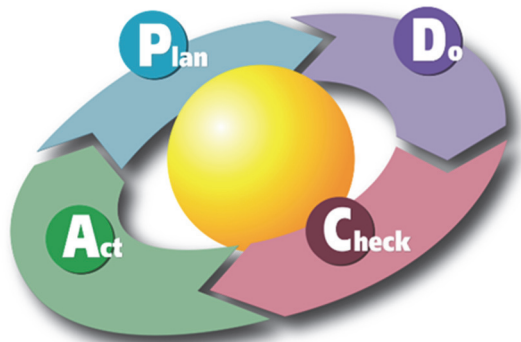


Figure 6-2: Plan-Do-Check-Act cycle. Source: Karn Bulsuk.

Many day-to-day activities involve some degree of change, such as worker re-assignment, maintenance schedules for downtime, as well as various policies, procedures, and protocols that must be modified. All change, regardless of size and scope should be managed.

Change management should be a methodical process that defines the proposed change, assesses the consequences/opportunities created by the change, enables the alignment of resources required, and ensures that the change is properly implemented. It is also important to learn what went well during the change process and what could have been improved. The Plan-Do-Check-Act Cycle, created by W. Edward Deming, is a useful way of summarising the stages of an effective change management process.

### Basic change management checklist

The following is a basic change management checklist that can be modified to meet specific scope and depth of the nature of the intend change being managed.

- Has the issue that identifies the need for change been clearly identified?
- Has a specific person been given the responsibility to ensure the change is properly managed?
- Has the current situation requiring change been identified and analysed?
- Is the desired final situation (vision of what is expected) clearly determined and stated?
- Have the consequences and opportunities created by the change been assessed and actions to manage risks been agreed?
- Have all affected managers, supervisors and workers have been identified, understand the need for change and are comfortable with the change?
- Has the process to achieve the change been defined, reviewed for health and safety implications, approved and communicated including consulting with the people affected by the change?
- Has the schedule for implementation been developed, approved and communicated?
- Do any new values, attitudes, and beliefs need to be introduced to minimise the effects of ingrained attitudes and habitual behaviour?
- Have positive behaviour reinforcement methods been developed for supervision and managers to use?
- Have follow-up actions to verify that the change has been successful and risks managed been planned and reporting lines agreed?

### Meaning of the term 'ethics'

The term ethics relates to:

**'Moral principles that control an individual's behaviour and how activities are conducted'.**

Ethics are established by society as a norm of expectation and by professional bodies by their consideration of what standards they would expect of their members. Ethics are therefore values and rules of conduct that society expects of an individual in relation to their position and role.

Health and safety professionals carry additional moral responsibilities to those held by the general public because they are acting in a professional capacity and are able to make informed decisions on health and safety that a member of the public would not. For example, if a health and safety professional were to ignore unsafe work practices to save an organisation money in difficult times, they would have failed in their moral duty to conduct themselves in a manner that ensured the best interests of health and safety and in so doing may have acted unethically.

## 7.1 – Societal factors

### Economic climate, government policy and initiatives

#### ECONOMIC CLIMATE

It has long been recognised that the economic cycle of good and bad economic times influences health and safety in the workplace. When times are good organisations expand and the need for more workers increases. The introduction of new workers places challenges on training, induction, and skill development. As a consequence of the introduction of new workers incident rates may increase, and these trends are reflected in statistics drawn from Reporting of Injuries Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013 reports. However, it should be noted that when the economic climate is good organisations are generally more willing to invest in long-term improvements that affect health and safety.

Conversely, when the economic cycle worsens and workers lose their jobs, those left in the workplace may take on more work, but become more focused, which can improve their attention on health and safety. Therefore, incident rates may fall. This effect was recognised in research undertaken by the HSE. However, longer working hours often results from economic downturn and the HSE has identified that working more than 60 hours in a week almost doubles the risk to physical health compared to a more normal 30 to 49-hour week.

*There is sufficient evidence for us to be concerned about the potentially negative effects of working long hours on physical health. The strongest evidence probably concerns the links with cardiovascular disorder.*

Figure 7-1: Working long hours.

Source: HSL/HSE.

When the economic climate is poor organisations are less willing to invest in long-term improvements that affect health and safety, also restricting any expenditure to that which is absolutely essential and delivers immediate benefit. Some organisations and workers may feel driven by a poor economic climate to take risks, allowing precautions to lapse. In addition, when income is affected by economic pressures there is the potential for workers to cut corners to achieve difficult deadlines.

#### GOVERNMENT POLICY AND INITIATIVES

Government policy to date concerning occupational health has been largely restricted to helping those in employment rather than supporting the health of all the working age population. A review by Dame Carol Black under the title of 'Working for a Healthier Tomorrow' was a major initiative reviewing the myriad of factors which influence health and well-being. The report concluded that "work is a key determinate of self-worth, family esteem, identity and standing within the community, besides, of course, material progress and a means of social participation and fulfilment". The report established a number of government initiatives to reduce the effects of work on worker health, encouraged a healthier lifestyle and pathways to return to work for those that had been out of work due to health reasons.

*"It remains critically important to improve health at work and to enable workers with health problems to stay at work, but occupational health must also become concerned with helping people who have not yet found work, or have become workless, to enter or return to work."*

Figure 7-2: Health and well-being.

Source: Dame Carol Black, Working for a Healthier Tomorrow.

Government health and safety initiatives have included focusing on specific industries, such as the construction industry through the 'safe site' campaign, or specific risks, such as stress or asbestos.

In 2010 Lord Young was commissioned to review the current position on health and safety, the results of which were published in the Common Sense, Common Safety report and led to the publication of Good Health and Safety, Good for Everyone by the government in 2011, which proposed far-reaching reforms focusing on the primary concerns expressed of 'too much red tape' and unhelpful advice from apparent health and safety professionals. Professor Löftstedt's review in 2011 determined that the overall framework for health and safety was essentially appropriate, but that the structure could be simplified to help compliance by businesses. The consequence of this, it would appear, was more far-reaching than Professor Löftstedt had envisaged. The HSE reduced the number of regulations by approximately 50%, although a large proportion of these were outdated and consequently unnecessary. The red tape associated with reporting of incidents was reduced by amending RIDDOR to require incidents resulting in 7-days absence to be reported instead of 3-days. While the Deregulation Act 2015 exempts up to 1.8 million self-employed occupations which do not present a risk from the requirements of health and safety law. The HSE has also reduced the number of Approved Codes of Practice, most noticeably the one for the Management of Health Safety at Work Regulations 1999, favouring guidance documents and a revamp of their website instead. The 'simplification initiative' has also led to the HSE's provision of sample risk assessments to reduce the time businesses spend on carrying out and recording risk assessments. In a similar way, an electronic template has been provided for those who need to prepare a written health and safety policy.

As a direct outcome of the report by Lord Young the Occupational Health and Safety Consultants Register (OHSCR) was created. Independent health and safety consultants are encouraged to register, but to remain listed the professional is required to demonstrate their ongoing professional development. This allows businesses to ensure that consultants they engage have the appropriate competence.