IGC 1 - NEBOSH International General Certificate

Study notes

© Free Safety Training

All rights reserved

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, electrostatic, mechanical, photocopied or otherwise, without the express permission in writing from *Free Safety Training*.

IGC1

List of Elements

	Page
Element 1 - Foundations in health and safety	3
Element 2 - Health and safety management systems - Plan	33
Element 3 - Health and safety management systems - Do	84
Element 4 - Health and safety management systems - Check	234
Element 5 - Health and safety management systems - Act	291

ELEMENT1 - Foundations in health and safety

The key learning points that we would be discussing in the element are:

- Outline the scope and nature of occupational health and safety
- Explain the moral, social and economic reasons for maintaining and promoting good standards of health and safety in the workplace
- Explain the role of national governments and international bodies in formulating a framework for the regulation of health and safety.

1.1 The scope and nature of occupational health and safety

Occupational health and safety is relevant to all branches of industry, business and commerce including traditional industries, information technology companies, hospitals, care homes, schools, universities, leisure facilities and offices.

The purpose of this chapter is to introduce the foundations on which appropriate health and safety management systems may be built. Occupational health and safety affects all aspects of work. In a low hazard organization, health and safety may be supervised by a single competent manager. In a high hazard manufacturing plant, many different specialists, such as engineers (electrical, mechanical and civil), lawyers, medical doctors and nurses, trainers, work planners and supervisors, may be required to assist the professional health and safety practitioner in ensuring that there are satisfactory health and safety standards within the organization.

The UK Health and Safety Executive's (HSE) mission is to ensure that the risks to health and safety of workers are properly controlled. In terms of corporate responsibility, it is working to encourage organizations to:

- improve health and safety management systems to reduce injuries and ill-health
- demonstrate the importance of health and safety issues at board level
- report publicly on health and safety issues within their organization, including their performance against targets.

The HSE believes that effective management of health and safety:

- is vital to employee well-being
- has a role to play in enhancing the reputation of businesses and helping them achieve high-performance teams

- is financially beneficial to business

Table 1.1 Numbers of global work-related adverse events		
Event	**Average (daily)**	**Annually**
Work-related deaths	5000	2 000 000
Work-related deaths of children	60	22 000
Work-related accidents	740 000	270 000 000
Work-related diseases	438 000	160 000 000
Hazardous substance deaths	1205	440 000
Asbestos-related deaths	274	100 000

1.1.1 The multi-disciplinary nature of health and safety; the barriers to good standards of health and safety

Workplace health and safety practice brings together knowledge from many different disciplines. Some health and safety topics are simple to understand; others are technical and require specialist knowledge. Sometimes the practical solution to a health and safety problem is straightforward; at other times the solution is complicated and demanding and requires the correct application of technical knowledge and thinking.

In order to fully understand a health and safety issue you need to be familiar with:

- The technical background to the issue and have the relevant knowledge.
- The standards that may apply to the workplace and to the specific health and safety issue under consideration.
- The possible strengths and weaknesses of the various options that is available to solve the problem.

The study of health and safety therefore involves many different subjects including the sciences (chemistry, physics and biology), engineering, psychology, sociology and the law.

The study of health and safety involves the study of many different subjects including the sciences (chemistry, physics and biology), engineering, psychology, sociology and the law.

New methods to deliver the competencies which employers and employees require need to be developed, taking into account the multidisciplinary nature of occupational health and safety provision and the considerable overlap which exists in the competencies of the professionals in the team.

Good management of the health of workpeople and workplaces requires the advice of competent occupational health professionals. For physicians, such training in occupational medicine should start with tuition at undergraduate level but various surveys have shown this aspect of their training to be either inadequate or non-existent. Therefore general practitioners and hospital doctors are ill equipped to deal with work related health issues seen in their patients.

For those who decide to train as occupational physicians, there is a need to ensure that the educational content of postgraduate teaching reflects the knowledge, skills and competencies needed to create a cadre of highly skilled doctors to aid good management in healthy enterprises for the 21st century. Although the professional bodies responsible for training here and in other European countries have drawn up lists of competencies for occupational physicians, the views of employers and employees on these competencies had not previously been canvassed. The results of the present study are an important contribution to that knowledge base and the findings need to be incorporated into future training programmes for occupational physicians.

The occupational physician is only one of the large multidisciplinary team required to provide advice and support. This study also confirms the low level of access to occupational health and safety support services particularly for smaller organizations. Expanding this provision as envisaged by Securing Health Together will require new approaches to the delivery of the wide range of competencies which workplaces and workpeople need.

The occupational physician may work as part of an integrated multidisciplinary occupational health and safety service, or may have access to multidisciplinary colleagues in such a way as to enable the giving of appropriate advice in related fields of health and safety. Thus the occupational physician

cooperates with many professionals inside and outside medicine, within the broad disciplines of health and safety, especially with senior management, legislators and government.

Benefits of good health and safety

Addressing health and safety should not be seen as a regulatory burden: it offers significant opportunities. Benefits can include:

- reduced costs;
- reduced risks;
- lower employee absence and turnover rates;
- fewer accidents;
- lessened threat of legal action;
- improved standing among suppliers and partners;
- better reputation for corporate responsibility among investors, customers and communities;
- increased productivity, because employees are healthier, happier and better motivated.

Costs of poor health and safety at work

HSE statistics reveal the human and financial cost of failing to address health and safety. Each year:

- Millions of working days are lost due to work-related illness and injury.
- Thousands of people die from occupational diseases.
- Around a million workers self-report suffering from a work-related illness.
- Several hundred thousand workers are injured at work.
- A worker is fatally injured almost every working day.

Organisations can incur further costs - such as uninsured losses and loss of reputation.

Barriers to good standards of health & safety

There are many barriers to good standards of health and safety in a workplace:

Complexity - workplaces can be complicated, involving the co-ordination of many people performing many different activities. Finding a solution to a specific health and safety problem or issue can be complex, requiring extensive background knowledge and an awareness of the possible consequences of the various courses of action that are available.

Conflicting demands - there are often competing and conflicting demands placed upon people and organisations. A common conflict of interest is that between the need to supply a product or a service at an appropriate speed so as to make a profit, and the need to do so safely and without risk to people's health. Another conflict can be created by the need to comply with different types of standards at the same time, e.g. health and safety law as well as environmental protection law.

Behavioural issues - good health and safety practice often relies on the perfect behaviour of individuals, and people sometimes do not behave in this ideal way. The solution to a health and safety problem usually requires a worker to carry out their job in a particular way. For example, a worker on a construction site should wear a hard hat to protect themselves from falling objects. But people are not robots; they do not behave as they are supposed to all the time. Workers sometimes make mistakes (they do the wrong thing thinking that it is the right thing to do). Sometimes they deliberately do the wrong thing (knowing that it is wrong, but doing it anyway). The fact that health and safety standards are affected by worker behaviour can be a significant barrier to maintaining good standards in a workplace.

1.1.2 Some Meanings and distinctions

Health - The protection of the bodies and minds of people from illness resulting from the materials, processes or procedures used in the workplace.

Safety - The protection of people from physical injury. The borderline between health and safety is ill-defined and the two words are normally used together to indicate concern for the physical and mental well-being of the individual at the place of work

Welfare - The provision of facilities to maintain the health and well-being of individuals at the workplace. Welfare facilities include washing and sanitation arrangements, the provision of drinking water, heating, lighting, accommodation for clothing, seating (when required by the work activity or for rest), eating and rest rooms. First-aid arrangements are also considered as welfare facilities.

Occupational or work related ill-health - This is concerned with those illnesses or physical and mental disorders that are either caused or triggered by workplace activities. Such conditions may be induced by the particular work activity of the individual or by activities of others in the workplace. They may be either physiological or psychological or a combination of both. The time interval between exposure and the onset of the illness may be short (e.g. asthma attacks) or long (e.g. deafness or cancer).

Environmental protection - These are the arrangements to cover those activities in the workplace which affect the environment (in the form of flora, fauna, water, air and soil) and, possibly, the health and safety of employees and others. Such activities include waste and effluent disposal and atmospheric pollution.

Accident - This is defined by the UK Health and Safety Executive (HSE) as 'any unplanned event that results in injury or ill-health of people, or damage or loss to property, plant, materials or the environment or a loss of a business opportunity'. Other authorities define an accident more narrowly by excluding events that do not involve injury or ill-health. This book will always use the HSE definition. It is important to note that work-related accidents

may not always occur at the place of work. *Commuting accidents* occur during work-related travel (usually by road).

Near Miss - This is any incident that could have resulted in an accident. Knowledge of near misses is very important as research has shown that, approximately, for every 10 'near miss' events at a particular location in the workplace, a minor accident will occur.

Dangerous occurrence - This is a 'near miss' which could have led to serious injury or loss of life. Specified dangerous occurrences are always reportable to the enforcement authorities. Examples include the collapse of a scaffold or a crane or the failure of any passenger carrying equipment.

Hazard and risk - A hazard is the *potential* of a substance, person, activity or process to cause harm. Hazards take many forms including, for example, chemicals, electricity and working from a ladder. A hazard can be ranked relative to other hazards or to a possible level of danger. A risk is the *likelihood of a* substance, activity or process to cause harm and its resulting severity. A risk can be reduced and the hazard can be eliminated or controlled by good management.

1.2 Moral, social and economic reasons for maintaining and promoting good standards of health and safety in the workplace

The reasons for establishing good occupational health and safety standards are frequently identified as moral, social (and/or legal) and economic. Each will be discussed in turn.

1.2.1 Moral reasons

The moral reasons are supported by the occupational accident and disease rates. The ILO estimates that globally some 2.2 million people have work-related accidents or contract work-related diseases every year. There are around 270 million occupational accidents and 160 million victims of work-related illnesses annually.

According to the ILO, deaths due to work-related accidents and illnesses represent 3.9 percent of all deaths and 15 percent of the world's population suffers a minor or major occupational accident or work-related disease in any one year. A large number of the unemployed - up to 30 percent - report that they suffer from an injury or disease dating

from the time at which they were employed. The number of fatal occupational accidents, especially in Asia and Latin America, is increasing.

1.2.1.1 Accident rates

An employee should not have to risk injury or death at work, nor should others associated with the work environment. Accidents at work can lead to serious injury and even death. Although accident rates are discussed in greater detail in later chapters. A major accident is a serious accident typically involving a fracture of a limb or a 24-hour stay in a hospital. An 'over 3-day accident' is an accident which leads to more than 3 days absence from the workplace. Statistics are collected on all people who are injured at places of work, not just employees. A certain amount of caution must be used when quoting global workplace accident/incident data due to the significant level of under-reporting in many countries.

1.2.1.1 Disease rates

Work-related ill-health and occupational disease can lead to absence from work and, in some cases, to death. Such occurrences may also lead to costs to the State (such as Industrial Injuries Schemes) and to individual employers (sick pay and, possibly, compensation payments).

Diseases related to work cause the most deaths among workers. Of the 2.2 million work-related deaths a year, 1.7 million - or nearly four-fifths - are due to work related disease. The ILO has estimated there to be 160 million incidents of work-related disease each year. This estimate is reasonable for the 2.8 billion global work force, if non-recorded, part-time, child and other informal sector workers are taken into account.

Hazardous substances kill about 438 000 workers annually; asbestos alone claims 100 000 lives. Most of the other deaths are due to various forms of cancer. Another major killer is silicosis, which affects 37 per cent of miners in Latin America.

Table 1.2 Estimates of work-related occupational accidents and diseases for several countries in 2002

Country	Labour Force	ILO Estimate of Fatal Accidents (2002)	Fatal accidents per 100 000 (2002;
Australia	9 796 300	236	2.40
Brazil	83 000 000	11 304	13.62
Canada	16 200 000	899	5.55
China	737 000 000	73 595	9.99
EU	224 050 000	11 369	5.07
Egypt	19 200 000	3 884	20.23
India	443 000 000	48 176	10.87
Korea (South)	22 100 000	3148	14.24
Malaysia	9 600 000	1578	16.44
Nigeria	51600 000	9631	18.66
Philippines	33 300 000	6019	18.08
Russian Federation	63 600 000	6974	10.97
Saudi Arabia	5 800 000	1096	18.90
South Africa	11 300 000	2643	23.39
Trinidad and Tobago	572 000	92	16.08
UK	27 200 000	225	0.83
USA	141800 000	6821	4.81
World 2001	2 848 000 000	351 000	12. 32
World 2003	2 941 000 000	358 000	12. 17

Table 1.3 Distribution of fatal occupational injuries and incidence rates around the world (2001)		
Region	**Percentage share of fatal injuries**	**Fatal accidents per 100 000 workers**
Established Market Economies	**5**	4.5
Former Socialist Economies	**5**	13.0
India	11	11.0
China	**26**	10.0
Other Asia and Islands	**22**	20.5
Sub-Saharan Africa	**15**	21.0
Latin-America and Caribbean	11	15.0
Middle Eastern Crescent	**5**	17.0
WORLD	100	

In the UK during 2007/08, there were an estimated 2.1 million people suffering from work-related illness, of whom 563 000 were new cases in that year. This led to 28 million working days lost, compared to 6 million due to workplace injury. Over the last 3 years, 5700 cases have been assessed for industrial injuries disablement benefit. The largest groups were vibration white finger, carpal tunnel syndrome and respiratory diseases. 8.8 million working days were lost due to musculoskeletal disorders causing each sufferer to have, on average, 21 days off work. 13.5 million working days were lost due to stress, depression and anxiety causing each sufferer to have, on average, 31 days off work. Recent research has shown that one in five people who are on sickness leave from work for 6 weeks will stay off work permanently, leaving paid employment. The WHO has estimated that 37% of low back

pain, 16% of hearing loss, 13% of chronic obstructive pulmonary disease, 11 % of asthma, and 8% of injuries are related to workplace activities.

1.2.2 Social reasons

In all countries, employers owe a duty of care to each of their employees and others that might be affected by their undertaking, such as contractors and members of the public. This duty must not be assigned to others, even if a consultant is employed to advise on health and safety matters or if the employees are sub-contracted to work with another employer. This duty may be sub-divided into five groups. Employers must:

1. provide a safe place of work, including access and egress;
2. provide safe plant and equipment;
3. provide a safe system of work;
4. provide safe and competent fellow employees; and
5. provide adequate levels of supervision, information, instruction and training.

Occupational health and safety requirements may be reinforced in national civil law and/or criminal law as many countries accept that without the extra 'encouragement' of potential regulatory action or litigation, many organizations would not act upon their implied moral obligations.

Table 1.4 Global estimates of work-related fatalities caused by occupational accidents and work-related diseases for 2001

Region	Economically active population	Fatal occupational accidents	Fatal work-related diseases	Total work-related fatalities
Established Market Economies	419 732 002	**15 879**	281 364	**297 243**
Former Socialist Economies	183 089 714	**17416**	148194	**165 610**
India	443 860 000	**40133**	261 891	**302 024**
China	740 703 800	**90 295**	386 645	**476 940**
Other Asia and Islands	415 527 598	**76 886**	178 786	**255 672**

Sub-Saharan Africa	279 680 390	**53 292**	211 262	**264 554**
Latin-America and Caribbean	219 083 179	**39 372**	108195	**147 567**
Middle Eastern Crescent	135 220 721	**17 977**	120 725	**138 702**
World	**2 836 897 404**	**351 251**	**1 697 061**	**2 048 312**

1.2.3 Economic reasons

Poor occupational health and safety performance results in additional costs to both public and private sectors of the economy of a country.

1.2.3.1 Cost of accidents

Any accident or incidence of ill-health will cause both direct and indirect costs and incur an insured and an uninsured cost. It is important that all of these costs are taken into account when the full cost of an accident is calculated. In a study undertaken by the UK HSE, it was shown that indirect costs or hidden costs could be 36 times greater than direct costs of an accident. In other words, the direct costs of an accident or disease represent the tip of the iceberg when compared to the overall costs.

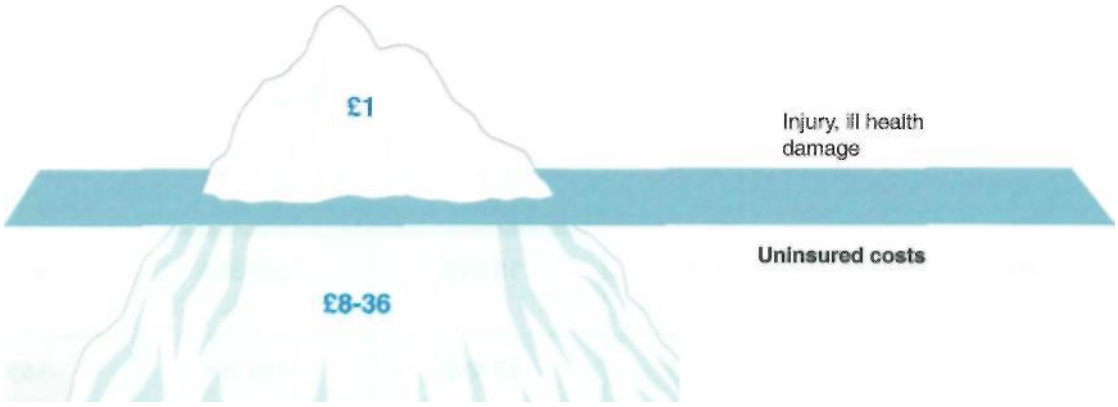


Figure - Insured and uninsured costs

1.2.3.2 Direct cost

These are costs which are directly related to the accident and may be insured or uninsured. Insured direct costs normally include:

- claims on employers and public liability insurance
- damage to buildings, equipment or vehicles
- any attributable production and/or general business loss
- the absence of employees

Uninsured direct costs include:

- fines resulting from prosecution by the enforcement authority
- sick pay
- some damage to product, equipment, vehicles or process not directly attributable to the accident (e.g. caused by replacement staff)
- increases in insurance premiums resulting from the accident
- any compensation not covered by the insurance policy due to an excess agreed between the employer and the insurance company
- legal representation following any compensation claim

1.2.3.3 Indirect cost

These are costs which may not be directly attributable to the accident but may result from a series of accidents.

Again these may be insured or uninsured. Insured indirect costs include:

- a cumulative business loss
- product or process liability claims
- recruitment of replacement staff

Uninsured indirect costs include:

- loss of goodwill and a poor corporate image
- accident investigation time and any subsequent remedial action required
- production delays
- extra overtime payments
- lost time for other employees, such as first-aid staff, who tend to the needs of the injured person
- the recruitment and training of replacement staff

- additional administration time incurred
- first-aid provision and training
- lower employee morale possibly leading to reduced productivity

Some of these items, such as business loss, may be uninsurable or too prohibitively expensive to insure. Therefore, insurance policies can never cover all of the costs of an accident or disease because either some items are not covered by the policy or the insurance excess is greater than the particular item cost.

1.2.3.4 Employers' liability insurance

In many countries, employers are required to take out employers' liability insurance to cover their liability in the event of accidents and work-related ill-health to employees and others who may be affected by their operations. This ensures that any employee, who successfully sues his/her employer following an accident, is assured of receiving compensation irrespective of the financial position of the employer.

Many countries have either fault or no-fault compensation schemes for workers involved in accidents. Knowledge of these schemes is important for those who work in more than one country.

1.2.3.5 Fault and no-fault injury compensation

In the UK, compensation for an injury following an accident is achieved by means of a successful legal action in a civil court. In such cases, injured employees sue their employer for negligence and the employer is found liable or at fault. This approach to compensation is adversarial, costly and can deter injured individuals of limited means from pursuing their claim. In a recent medical negligence claim in Ireland, costs were awarded against a couple who were acting on behalf of their disabled son, and they were faced with a bill for £3 million.

The spiralling cost of insurance premiums to cover the increasing level and number of compensation awards, despite the Woolfe reforms in the UK (see Chapter 8), has led to another debate on the introduction of a no-fault compensation system. It has been estimated that in medical negligence cases, it takes, on average, six years to settle a claim and only 10% of claimants ever see any compensation.

1.2.4 The need to provide a safe place of work, safe plant and equipment, safe system of work, training & supervision and competent workers.

As an employer, you are legally obliged to protect the health, safety and welfare of your workers and other people who could be adversely affected by work carried out by your business under the *Work Health and Safety Act 2012* (the OHSW Act).

You are responsible for providing:

- a safe and healthy working environment
- safe systems of work
- plant (eg, machinery and equipment) and substances in a safe condition
- adequate facilities
- adequate information, instruction and training.

The purpose of the OHSW Act is to prevent injuries and illness at work. Consult with your workers, particularly your injured workers, as they will be able to offer insight into workplace health and safety issues – and potential solutions.

As an employer, it is your responsibility to provide a safe work environment for all employees, free from any hazards and complying with all state and federal laws.

Health and safety in the workplace is about preventing work-related injury and disease, and designing an environment that promotes well-being for everyone at work.

Knowledge is the key ingredient in providing a safe work environment—if everyone knows the correct procedures then accidents and injuries can be kept to a minimum.

The following checklist is also available to help you provide a safe working environment:

- Have you developed, and do you have in place a work health and safety (WHS) policy with procedures that meet the work health and safety standards in your state or territory?
- Were your work health and safety policies developed in consultation with employees, both with and without disability?
- Did you organise a support person or interpreter for employees with disability if required?
- Have all employees been provided with information on your work health and safety policy and procedures, including new employees during their induction process?

- Have you provided access to information about safety procedures, including evacuation and other emergency procedures, to all employees, with regular information updates and training sessions?
- Do new employees receive training on all safety procedures, including evacuation and emergency procedures, and safe and correct work practices, including the use of tools, machinery and equipment?
- Do you conduct relevant training or refresher training on safe work practices, correct work methods and postures, use of tools, machinery and other equipment, including new equipment or machinery?
- Have you ensured that all safety information, including emergency procedures and your work health and safety policy, is available in appropriate formats for all employees, for example, enlarged font, audio and Braille?
- Are all reasonable adjustments implemented if required, for example, desk heights adjusted to accommodate a wheelchair, and screen reading software installed on computers for employees who are vision impaired?
- If you have an employee who is returning to work after an injury, have you reviewed the job procedures to see if modifications or adjustments are required?
- If you have an employee who is returning to work after an injury, have they been re-trained on all procedures, including safety and evacuation procedures?
- Do you have a process for consulting with all employees on work health and safety matters and enabling employees to report hazards?
- Is there adequate ventilation in each workspace and is the temperature in the workplace kept at a level that most people find comfortable, without making others particularly uncomfortable?
- Do you identify and control all foreseeable hazards that may cause injury to employees performing manual tasks (such as lifting, carrying, holding, pushing, pulling)?
- Are employees trained in keyboard skills and the use of ergonomic furniture to reduce the risk of occupational overuse syndrome?
- Do all of your workplaces provide access to First Aid facilities that meet the needs of that workplace, for example, First Aid kit, sick rooms and chemical showers?
- Has a qualified First Aid officer (that is, holds a current Senior First Aid Certificate) been designated for each workplace?

1.2.4.1 Safe plant and equipment

You will need to ensure that all plant and equipment (e.g. lift trucks, vehicles, gas appliances, machinery guarding, ladders, electrical equipment, lifting equipment, air

receivers, ventilation plant) that requires maintenance (e.g. pre-shift checks, servicing, thorough examinations) is identified and that the maintenance is done.

It may be worthwhile using a logbook to record the maintenance checks.

When buying new or second-hand plant and equipment, you must check it meets health and safety standards before buying it.

Maintenance on plant and equipment is carried out to prevent problems arising, to put faults right, and to ensure equipment is working effectively.

Maintenance may be part of a planned programme or may have to be carried out at short notice after a breakdown. It always involves non-routine activities and can expose those involved (and others) to a range of risks.

Why is maintenance of plant and equipment important?

An effective maintenance programme will make plant and equipment more reliable. Fewer breakdowns will mean less dangerous contact with machinery is required, as well as having the cost benefits of better productivity and efficiency.
Additional hazards can occur when machinery becomes unreliable and develops faults. Maintenance allows these faults to be diagnosed early to manage any risks. However, maintenance needs to be correctly planned and carried out. Unsafe maintenance has caused many fatalities and serious injuries either during the maintenance or to those using the badly maintained or wrongly maintained/repaired equipment.
The Provision and Use of Work Equipment Regulations 1998 (PUWER) require work equipment and plant to be maintained so it remains safe **and** the maintenance operation is carried out safely.

What do I have to do?

If you are an employer and you provide equipment for use, from hand tools and ladders to electrical power tools and larger plant, you need to demonstrate that you have arrangements in place to make sure they are maintained in a safe condition.
Think about what hazards can occur:

- if tools break during use
- machinery starts up unexpectedly
- there is contact with materials that are normally enclosed within the machine, ie caused by leaks/breakage/ejection etc

Failing to correctly plan and communicate clear instructions and information before starting maintenance can lead to confusion and can cause accidents. This can be a particular

problem if maintenance is during normal production work or where there are contractors who are unfamiliar with the site.

Plant and equipment must be made safe before maintenance starts.

Safe isolation

- Ensure moving plant has stopped and isolate electrical and other power supplies. Most maintenance should be carried out with the power off. If the work is near uninsulated, overhead electrical conductors, eg close to overhead travelling cranes, cut the power off first
- Lock off machines if there is a chance the power could be accidentally switched back on
- Isolate plant and pipelines containing pressured fluid, gas, steam or hazardous material. Lock off isolating valves

Other factors you need to consider

- Release any stored energy, such as compressed air or hydraulic pressure that could cause the machine to move or cycle.
- Support parts of plant that could fall, e.g. support the blades of down-stroking bale cutters and guillotines with blocks.
- Allow components that operate at high temperatures time to cool.
- Place mobile plant in neutral gear, apply the brake and chock the wheels.
- Safely clean out vessels containing flammable solids, liquids, gases or dusts, and check them before hot work is carried out to prevent explosions. You may need specialist help and advice to do this safely.
- Avoid entering tanks and vessels where possible. This can be very high-risk work. If required, get specialist help to ensure adequate precautions are taken.
- Clean and check vessels containing toxic materials before work starts.

Dos and don’ts of plant and equipment maintenance

Do…

- ensure maintenance is carried out by a competent person (someone who has the necessary skills, knowledge and experience to carry out the work safely)
- maintain plant and equipment regularly – use the manufacturer’s maintenance instructions as a guide, particularly if there are safety-critical features
- have a procedure that allows workers to report damaged or faulty equipment
- provide the proper tools for the maintenance person
- schedule maintenance to minimise the risk to other workers and the maintenance person wherever possible
- make sure maintenance is done safely, that machines and moving parts are isolated or locked and that flammable/explosive/toxic materials are dealt with properly

Don't…

- ignore maintenance
- ignore reports of damaged or unsafe equipment
- use faulty or damaged equipment

1.2.4.2 Safe system of work

Part of the employer's general duty is to provide systems of work that are, so far as is reasonably practicable, safe and without risks to health. Components of a system include:

- the organisation and co-ordination of the work of those involved;
- training, instruction and supervision;
- layout of plant and appliances;
- methods to be used, and;
- general conditions of work.

The essence of the present legislation is that employers are expected to manage hazards with the same degree of attention and with the same allocation of resources and priorities as they manage other subjects such as quality control, industrial relations and budgetary matters. Furthermore, as part of management commitment to the principles, employers have a duty to establish and maintain, so far as is reasonably practicable, safe systems of work. Safe systems of work must be identified through the risk assessment process.

The following components of a safe system are identified for guidance:

1. Co-ordination of the work of different departments and activities.
2. Layout of plant and appliances for special tasks.
3. The method of using particular machines.
4. The method of carrying out particular processes.
5. The instruction of trainees and inexperienced employees in particular tasks beyond their normal experience.
6. The sequence in which the work is to be carried out.
7. The provision of warnings, notices, and the issue of special instructions in particular cases.
8. The procedure for introducing changes into normally accepted routines and practices, including explanations of why the changes are necessary.
9. A contingency plan to deal with foreseeable emergencies.
10. An auditing or monitoring regime to ensure the system is working safely.

These points are illustrative of what goes to make a system safe. With the provision of safe plant and equipment; general competence of the staff involved, including the supervisors in charge of

the work; and; a safe place of work, including both the physical place of work, and its environments; attention to the ten components, listed above, will enable employers to meet their statutory duties.

The requirement to establish and maintain safe systems of work applies not only to routine activities, which are repeated every day; it also applies to tasks occurring infrequently at certain times such as during annual maintenance work. It also applies to single, one-off jobs, which happen only once in a lifetime. It will be clear that there is a different emphasis in each of the three categories given. In the first there may be problems of familiarity and the potentially hazardous complacency arising from it. In the last there needs to be emphasis on meticulous planning and constant close supervision by qualified, skilled and experienced staff.

In certain cases ensuring that systems of work are safe may be achieved with the help of permits-to-work. Such written permits formalise the progression through a particular operation. Most often the operations are those with a high risk. They require clearances at specific stages throughout the operation and a signed go-ahead that it is safe to continue from a named, specifically appointed person. Only when this is done is the next stage allowed to go ahead.

The principle of establishing and equally importantly, maintaining safe systems of work, is keenly regarded by enforcing authorities who see it as a direct reflection of managerial competence and commitment.

1.2.4.3 Training & supervision

Many young people are likely to be new to the workplace and in some cases will be facing unfamiliar risks from the job they will be doing and from their surroundings. They will need clear and sufficient instruction, training and supervision to enable them to work without putting themselves and other people at risk.

Young people are likely to need more supervision than adults. Good supervision will help an employer get a clear idea of the young person's capabilities and progress in the job and monitor the effectiveness of their training.

An employer will need to consider how much training is necessary. A proportionate approach is needed, for example a low-risk business would not be expected to have a need for lengthy technical training. Similarly, where a student is on a short-term work experience placement, induction and training needs should be tailored to the tasks they are going to be doing.

It is important that employers check young people have understood the instruction and training which will include, for example:

- the hazards and risks in the workplace
- the health and safety precautions that are in place

In workplaces where there are health and safety representatives, they can play a valuable role early on by:

- introducing the young person to the workplace
- helping with their ongoing training
- giving employers feedback about particular concerns

As employees, young people have a duty to take care of their own health and safety and that of others who may be affected by their actions.

This includes co-operating with their employer by listening carefully, following instructions, using any safety equipment that has been provided and taking part in relevant training.

1.2.4.4 Competent workers

A competent person is someone who has sufficient training and experience or knowledge and other qualities that allow them to assist you properly. The level of competence required will depend on the complexity of the situation and the particular help you need.

When getting help, you should give preference to those in your own organisation who have the appropriate level of competence (which can include the employer themselves) before looking for help from outside. You must consult health and safety representatives in good time on the arrangements for competent help.

1.3 The role of national governments and international bodies in formulating a framework for the regulation of health and safety

1.3.1 Employers' duties and responsibilities

The principal general duties of employers under the ILO Recommendation 164 are:

(a) to provide and maintain workplaces, machinery and equipment, and use work methods, which are as safe and without risk to health as is reasonably practicable.

(b) To give necessary instruction and training that takes into account the functions and capabilities of different categories of workers;

(c) to provide adequate supervision of work practices ensuring that proper use is made of relevant occupational health and safety measures;

(d) to institute suitable occupational health and safety management arrangements appropriate to the working environment, the size of the undertaking and the nature of its activities; and

(e) to provide, without any cost to the worker, adequate personal protective clothing and equipment which are reasonably necessary when workplace hazards cannot be otherwise prevented or controlled.

1.3.2 Workers' rights and responsibilities

1.3.2.1 Workers' rights

In 1998, ILO Member States adopted the *Declaration on Fundamental Principles and Rights at Work* and agreed to uphold a set of core labour standards. These are human rights and form basic workers' rights. The ILO is actively campaigning for improvements in the areas covered by the Declaration.

The Declaration covers four areas:

1. *Freedom of Association* - The right of workers and employers to form and join organizations of their choice is an integral part of a free and open society and is linked to the recognition of the right to collective bargaining.
   Forced Labour — The ILO is pressing for effective national laws and stronger enforcement mechanisms, such as legal sanctions and vigorous prosecution against those who exploit forced labourers.

3. *Discrimination* - Hundreds of millions of people suffer from discrimination in the world of work. Discrimination stifles opportunities, wasting the human talent needed for economic progress and accentuating social tensions and inequalities.
4. *Child Labour* - There are more than 200 million children working throughout the world, many full-time. They are deprived of adequate education, good health and basic freedoms. Of these, 126 million - or one in every 12 children worldwide - are exposed to hazardous forms of child labour, work that endangers their physical, mental or moral well-being.

The rights of workers are also contained in the ILO Code of Practice - *Ambient factors in the*

workplace. The code specifies that workers and their representatives should have the right to:

(a) be consulted regarding any hazards or risks to health and safety from hazardous factors at the workplace;
(b) enquire into and receive information from the employer regarding any hazards or risks to health and safety from hazardous factors in the workplace. This information should be provided in forms and languages easily understood by the workers;
(c) take adequate precautions, in co-operation with their employer, to protect themselves and other workers against hazards or risks to their health and safety;
(d) request and be involved in the assessment of hazards and risks to health and safety by the employer and/or the competent authority, and in any subsequent control measures and investigations.
(e) be involved in the inception and development of workers' health surveillance, and participate in its implementation.
(f) be informed in a timely, objective and comprehensible manner:
    (i) of the reasons for any examinations and investigations relating to the health hazards involved in their workplace;

    (ii) individually of the results of medical examinations, including pre-assignment medical examinations, and of the subsequent assessment of health.

In accordance with national laws and regulations, workers should have the right:

(a) to bring to the attention of their representatives, employer or competent authority any hazards or risks to health and safety at the workplace

(b) to appeal to the competent authority if they consider that the measures taken and the means employed by the employer are inadequate for the purposes of ensuring health and safety at work;
(c) to remove themselves from a hazardous situation when they have good reason to believe that there is an imminent and serious risk to their health and safety and inform their supervisor immediately;
(d) in the case of a health condition, such as sensitization, to be transferred to alternative work that does not expose them to that hazard, if such work is available and if the workers concerned have the qualifications or can reasonably be trained for such alternative work;
(e) to compensation if the case referred to in (d) above results in loss of employment;
(f) to adequate medical treatment and compensation for occupational injuries and diseases resulting from hazards at the workplace;
(g) to refrain from using any equipment or process or substance which can reasonably be expected to be hazardous, if relevant information is not available to assess the hazards or risks to health and safety.

1.3.2.2 Workers responsibilities

Employees or workers have specific responsibilities under the ILO Convention 187, which are to:

(a) take reasonable care for their own safety and that of other persons who may be affected by their acts or omissions at work;
(b) comply with instructions given for their own health and safety and those of others and with health and safety procedures;
(c) use safety devices and protective equipment correctly and not to render them inoperative;
(d) report forthwith to their immediate supervisor any situation which they have reason to believe could present a hazard and which they cannot themselves correct; and
(e) report any accident or injury to health which arises in the course of or in connection with work.

1.3.3 Role of enforcement agencies

1.3.3.1 The legal framework

The framework for regulating health and safety will vary across the world, for example European countries use the EU framework, the Pacific Rim countries tend to use the USA framework, whereas the Caribbean countries follow the UK framework. The course provider should be able to describe the legal and regulatory framework appertaining to any particular country.

Most legislation is driven by a framework of Acts, Regulations and support material including Codes of Practice and Standards. Within Europe there is another layer of legislation known as Directives, above the Member States' own legislation. These are legally binding on each Member State. The US system of federal and individual state legislation is very similar.

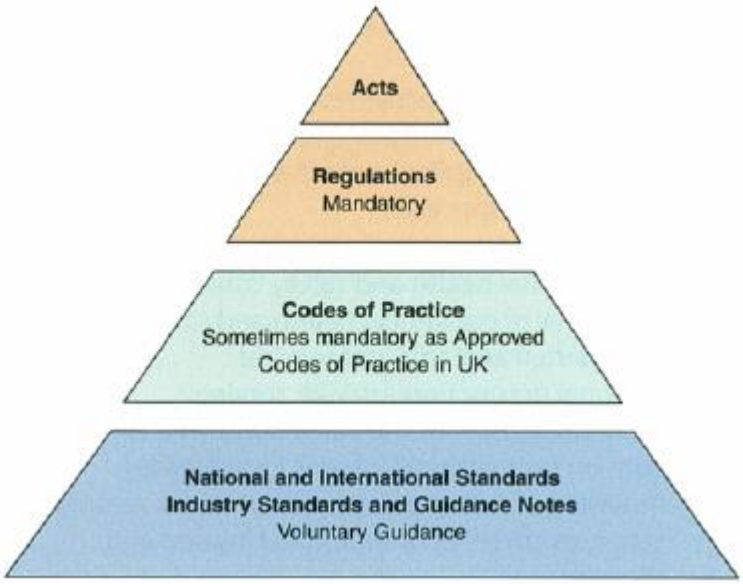


Figure - Typical health and safety legal framework

1.3.3.2 Regulatory authorities and safety management systems

The role of the national regulatory authority is crucial to the successful implementation of an occupational health and safety management system. In many parts of the world, such as south east Asia, formal adoption of a recognized management system is required with third party auditing by government-approved auditors. In the USA, organizations with approved management systems may be exempted from normal inspections by the Occupational Safety and Health Administration.

In the UK, there has been a movement from prescriptive legislation to risk assessment by the employer and this movement is now occurring in many parts of the world including the EU. A management system is an essential tool to achieve this movement and such a system is implied in the UK Management of Health and Safety at Work Regulations. Countries such as Canada, Australia, New Zealand and Norway have developed occupational health and safety management systems as an encouragement for such self-regulation. The ILO-OSH 2001 system has been adopted by Germany, Sweden, Japan, Finland, Korea, China, Mexico, Costa Rica, Brazil, Indonesia, Vietnam, Malaysia, India, Thailand, the Czech Republic, Poland and Russia.

1.3.4 International standards and conventions

The ILO is a specialized agency of the United Nations that seeks to promote social justice through establishing and safeguarding internationally recognized human and labour rights. It was founded in 1919 by the Treaty of Versailles at the end of the First World War.

The motivation behind the creation of such an organization was primarily humanitarian. Working conditions at the time were becoming unacceptable to a civilized society. Long hours, unsafe, unhygienic and dangerous conditions were common in low-paid manufacturing careers. Indeed, in the wake of the Russian Revolution, there was concern that such working conditions could lead to social unrest and even other revolutions. The ILO was created as a tripartite with governments, employers and workers represented on its governing body.

The main principles on which the ILO is based are:

1. labour is not a commodity;
2. freedom of expression and of association are essential to sustained progress;
3. poverty anywhere constitutes a danger to prosperity everywhere;
4. the 'war against want' is required to be carried out with unrelenting vigour within each nation, and by continuous and concerted international effort in which the representatives of workers and employers, enjoying equal status with those of governments, join with them in free discussion and democratic decision with a view to the promotion of the common welfare.

ILO Conventions and Recommendations

The international labour standards were developed for four reasons. The main motivation was to improve working conditions with respect to health and safety and career advancement. The second motivation was to reduce the potential for social unrest as industrialization progressed. Thirdly, the Member States want common standards so that no single country has a competitive advantage over another due to poor working conditions. Finally, the union of these countries creates the possibility of a lasting peace based on social justice.

International labour standards are adopted by the International Labour Conference. They take the form of Conventions and Recommendations. At the present time, there are 187 Conventions and 198 Recommendations, some of which date back to 1919. See Chapter 17 for more information on the background of the ILO Conventions and Recommendations.

International labour standards contain flexibility measures to take into account the different conditions and levels of development among Member States. However, a government that

ratifies a Convention must comply with all of its articles. Standards reflect the different cultural and historical backgrounds of the Member States as well as their diverse legal systems and levels of economic development.

ILO occupational safety and health standards can be divided into four groups, and an example is given in each case:

1. **Guiding policies for action** — The Occupational Safety and Health Convention, 1985 (No. 155) and its accompanying Recommendation (No. 164) emphasize the need for preventative measures and a coherent national policy on occupational safety and health. They also stress employers' responsibilities and the rights and duties of workers.
2. **Protection in given branches of economic activity** — The Safety and Health in Construction Convention, 1988 (No. 167) and its accompanying Recommendation (No. 175) stipulate the basic principles and measures to promote safety and health of workers in construction.
3. **Protection against specific risks** — The Asbestos Convention, 1986 (No. 162) and its accompanying Recommendation (No. 172) gives managerial, technical and medical measures to protect workers against asbestos dust.
4. **Measures of protection** — Migrant Workers (Supplementary Provisions) Convention, 1975 (No. 143) aims to protect the safety and health of migrant workers.

The ILO also publishes Codes of Practice, guidance and manuals on health and safety matters. These are often used as reference material by either those responsible for drafting detailed Regulations or those who have responsibility for health and safety within an organization. They are more detailed than either Conventions or Recommendations and suggest practical solutions for the application of ILO standards. Codes of Practice indicate 'what should be done'. They are developed by tripartite meetings of experts and the final publication is approved by the ILO Governing Body.

For example, the construction industry has a Safety and Health in Construction Convention, 1988 (No. 167) that obliges signatory ILO Member States to comply with the construction standards laid out in the Convention - the Convention is a relatively brief statement of those standards. The accompanying Recommendation (No. 175) gives additional information on the Convention statements. The Code of Practice gives more detailed information than the Recommendation.

The ILO Codes of Practice and guidelines on health and safety matters that are relevant to the International General Certificate are:

- Safety and Health in Construction (ILO Code of Practice)
- Ambient factors in the Workplace (ILO Code of Practice)
- Safety in the Use of Chemicals at Work (ILO Code of Practice)

- Recording and Notification of Occupational Accidents and Diseases
- Ergonomic Checkpoints
- Work Organization and Ergonomics
- Occupational safety and health management systems

Important ILO Conventions (C) and Recommendations (R) in the field of occupational safety and health include:

- C 115 Radiation Protection and (R 114), 1960
- C 120 Hygiene (Commerce and Offices) and (R 120), 1964
- C 139 Occupational Cancer and (R 147), 1974
- C 148 Working Environment (Air, Pollution, Noise and Vibration) and (R 156), 1977
- C 155 Occupational Safety and Health and (R 164), 1981
- C 161 Occupational Health Services and (R 171), 1985
- C 162 Asbestos and (R 172), 1986
- C 167 Safety and Health in Construction and (R 175), 1988
- C 170 Chemicals and (R 177), 1990
- C 174 Prevention of Major Industrial Accidents and (R 181), 1993
- C 176 Safety and Health in Mines and (R 176), 1995
- C 184 Safety and Health in Agriculture and (R 192), 2001
- C 187 Promotional Framework for Occupational Safety and Health and (R 197), 2006
- R 97 Protection of Workers' Health Recommendation, 1953
- R 102 Welfare Facilities Recommendation, 1956
- R 31 List of Occupational Diseases Recommendation, 2002

1.3.5 The nature and sources of information on health and safety

When anybody, whether a health and safety professional, a manager or an employee, is confronted with a health and safety problem, they will need to consult various items of published information to ascertain the scale of the problem and its possible remedies. The sources of this information may be internal to the organization and/or external to it.

Internal sources, which should be available within the organization include:

- accident and ill-health records and investigation reports
- absentee records
- inspection and audit reports undertaken by the organization and by external organizations such as the HSE
- maintenance, risk assessment (including COSHH) and training records
- documents which provide information to workers

- any equipment examination or test reports

***External sources**,* which are available outside the organization, are numerous and include:

- health and safety legislation
- HSE publications, such as Approved Codes of Practice, guidance documents, leaflets, journals, books and their website
- European and British Standards
- International Labour Organization (non- occupational Safety and Health Administration (USA)
- European Agency for Safety and Health (EU)
- WorkSafe (Western Australia)
- health and safety magazines and journals
- information published by trade associations, employer organizations and trade unions
- specialist technical and legal publications
- information and data from manufacturers and suppliers
- the internet and encyclopedias

Figure - Good standards prevent harm and save money

ELEMENT 2 - Health and safety management system – Plan

The key learning points that we would be discussing in the element are:

- Outline the key elements of a health and safety management system
- Explain the purpose and importance of setting policy for health and safety
- Describe the key features and appropriate content of an effective health and safety policy.

2.1 Introduction

Every organization should have a clear policy for the management of health and safety. This allows all persons associated with the organization to be aware of its health and safety aims and objectives and how they are to be achieved. For a policy to be effective, it must be honoured in the spirit as well as the letter. A good health and safety policy will also enhance the performance of the organization in areas other than health and safety, help with the personal development of the workforce and reduce financial losses.

2.1 Outline the key elements of health & safety management system

Most of the key elements required for effective health and safety management are very similar to those required for good quality, finance and general business management.

Table 1.1 Essential elements for any national occupational health and safety management system

- Relevant occupational health and safety
- legislation;
- One or more authorities responsible for
- occupational health and safety;
- Regulatory compliance mechanisms, including
- systems of inspection;
- A national advisory body to advise on
- occupational health and safety issues;
- A national occupational health and safety
- information and advisory service;
- National occupational health services;

- An organization for the collection and analysis of
- data on occupational injuries and diseases;
- Provision of relevant insurance or social security
- schemes covering occupational injuries and
- diseases;
- Research budgets for occupational health and
- safety topics; and
- Formal systems for the provision of occupational
- health and safety training;

Commercially successful organizations usually have good health and safety management systems in place. The principles of good and effective management provide a sound basis for the improvement of health and safety performance. All recognized occupational health and safety management systems have some basic and common elements. These are:

- a planning phase
- a performance phase
- a performance assessment phase
- a performance improvement phase

The planning phase

The planning phase always includes a *policy statement* which outlines the health and safety aims, objectives and commitment of the *organization* and lines of responsibility. Hazard *identification* and risk *assessment* takes place during this phase and the significant hazards may well be included in the policy statement. It is important to note that in some reference texts, in particular those in languages other than English, the whole process of hazard identification, risk determination and the selection of risk reduction or control measures is termed 'risk assessment'. However, all three occupational health and safety management systems described in this chapter refer to the individual elements of the process separately and use the term 'risk assessment' for the determination of risk only.

The performance phase

The performance phase will only be successful if there is good *communication* at and between all levels of the organization. This implies employee participation as both *worker representatives* and on *safety committees.* Effective communication with the workforce, for

example with clear *safe systems of work* and other health and safety procedures, will not only aid the implementation and operation of the plan but also produce continual improvement of performance - a key requirement of all occupational health and safety, quality and environmental management systems. There should also be effective communication with other stakeholders, such as regulators, contractors, customers and trade unions. The performance phase must be *monitored* on a regular basis since this will indicate whether there is an effective occupational health and safety management system and a good *health and safety culture* within the organization.

The performance assessment phase

The performance assessment phase may be either *active or reactive* or, ideally, a mixture of both. Active assessment includes work-based *inspections and audits,* regular health and safety committee meetings, feedback from training sessions and a constant review of risk assessments. Reactive assessment relies on records of accident, work-related injuries and ill-health as well as near miss and any enforcement notices. Any recommended remedial or preventative actions, following an investigation, must be implemented immediately and monitored regularly.

The performance improvement phase

The performance improvement phase involves a *review* of the effectiveness of the health and safety management system and the identification of any weaknesses. The review, which should be undertaken by the management of the organization, will assess whether targets have been met and the reasons for any underperformance. Issues such as the level of resources made available, the vigilance of supervisors and the level of co-operation of the workforce should be considered at the review stage. When recommendations are made, the review process must define a timescale by which any improvements are implemented and this part of the process must also be monitored. *Continual improvement* implies a commitment to improve performance on a proactive continuous basis without waiting for a formal review to take place. Most management systems include an *audit* requirement, which may be either internal or external. The audit process examines the effectiveness of the whole management process and may act as a control on the review process. Many inquiry reports into health and safety management issues have asserted that health and safety performance should be subject to audit in the same way that financial performance must be audited.

In the publication *Successful health and safety management - HSG 65,* the UK HSE recommend a similar four-step approach to occupational health and safety management known as:

- **Plan** - establish standards for health and safety management based on risk assessment and legal requirements
- **Do** - implement plans to achieve objectives and standards
- **Check-** measure progress with plans and compliance with standards
- **Act** - review against objectives and standards and take appropriate action

Major occupational health and safety management systems

There are three major occupational health and safety management systems that are in use globally:

- HSG65, which has been developed by the UK HSE. The syllabuses for the International General Certificate and the chapter headings in this textbook have followed the elements of HSG65
- OHSAS 18001:2007 has been developed in conjunction with the ISO 9000 series for quality management and the ISO 14000 series for environmental management
- ILO-OSH 2001 was developed by the ILO after an extensive study of many occupational health and safety management systems used across the world. It was established as an international system following the publication of *Guidelines on occupational safety and health management systems* in 2001. It is very similar to OHSAS 18001

2.1.1 With reference to ILO Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001)

These guidelines on OSH management systems have been developed by the International Labour organisation (ILO) according to internationally agreed principles defined by the ILO's tripartite constituents. This tripartite approach provides the strength, flexibility and appropriate basis for the development of a sustainable safety culture in the organization. The ILO has therefore developed voluntary guidelines on OSH management systems which reflect ILO values and instruments relevant to the protection of workers' safety and health.

The ILO has a considerable influence on the development of employment law in many countries throughout the world. As companies have become more international in terms of both markets and production bases, this influence of the ILO has increased and its working

standards have become accepted in many parts of the world. Many of the ILO standards cover health and safety issues and are used in the International General Certificate course. As mentioned earlier, the ILO-OSH 2001 guidelines offer a recommended occupational health and safety management system based on an ILO survey of several contemporary schemes including HSG65 and OHSAS 18001. There are, therefore, many common elements between the three schemes. The guidelines are not legally binding and are not intended to replace national laws, Regulations or accepted standards.

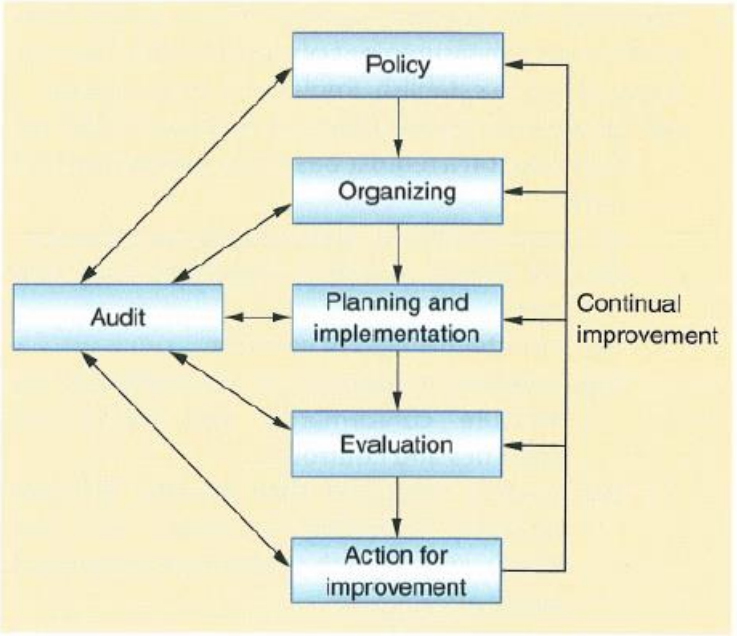


Figure – Key elements of ILO-OSH 2001

The ILO recommends in the ILO-OSH 2001 management system that the employer, in consultation with workers and their representatives, should set out in writing a health and safety policy, which should be:

(a) specific to the organization and appropriate to its size and the nature of its activities;
(b) concise, clearly written, dated and made effective by the signature or endorsement of the employer or the most senior accountable person in the organization;
(c) communicated and readily accessible to all persons at their place of work;
(d) reviewed for continuing suitability; and
(e) Made available to relevant external interested parties, as appropriate.

The ILO further recommends that the health and safety policy should include, as a minimum, the following key principles and objectives to which the organization is committed:

(a) protecting the safety and health of all members of the organization by preventing

work-related injuries, ill-health, diseases and incidents;

(b) complying with relevant Occupational Health and Safety national laws and regulations, voluntary programmes, collective agreements on Occupational Health and Safety and other requirements to which the organization subscribes;

(c) ensuring that workers and their representatives are consulted and encouraged to participate actively in all elements of the Occupational Health and Safety management system; and

(d) continually improving the performance of the Occupational Health and Safety management system.

2.1.1.1 Policy (Plan)

There is a more specific emphasis on worker participation, which is seen as an essential element of the management system and should be referenced in the policy statement. It is expected that workers and their health and safety representatives should have sufficient time and resources allocated to them so that they can participate actively in each element of the management system. The formation of a health and safety committee is also a recommended part of the system. The occupational health and safety management system should be compatible with or integrated with other management systems operating in the organization.

The health and safety policy statement of intent is often referred to as the health and safety policy statement or simply (and incorrectly) as the health and safety policy. It should contain the aims (which are not measurable) and objectives (which are measurable) of the organization or company. Aims will probably remain unchanged during policy revisions whereas objectives will be reviewed and modified or changed every year. The statement should be written in clear and simple language so that it is easily understandable. It should also be fairly brief and broken down into a series of smaller statements or bullet points.

The statement should be signed and dated by the most senior person in the organization. This will demonstrate management commitment to health and safety and give authority to the policy. It will indicate where ultimate responsibility lies and the frequency with which the policy statement is reviewed.

The most senior manager is normally the Chief Executive Officer (CEO) or the Managing Director. It is the responsibility of the CEO (or equivalent) to ensure that the health and safety policy is developed and communicated to all employees in the organization. He/she will need to ensure the following:

- key functions of health and safety management, such as monitoring and audit, accident investigation and training, are included in the organizational structure;
- adequate resources are available to manage health and safety effectively;

- the production of various health and safety arrangements in terms of rules and procedures;
- arrangements for the welfare of employees;
- the regular review and, if necessary, updating of the health and safety policy.

The policy statement should be written by the organization and not by external consultants, as it needs to address the specific health and safety issues and hazards within the organization. In large organizations, it may be necessary to have health and safety policies for each department and/ or site with an overarching general policy incorporating the individual policies. Such an approach is often used by local authorities and multinational companies.

The following points should be included or considered when a health and safety policy statement is being drafted:

- the aims, which should cover health and safety, welfare and relevant environmental issues;
- the position of the senior person in the organization or company who is responsible for health and safety (normally the Chief Executive Officer);
- the names of the Health and Safety Adviser and any safety representatives or other competent health and safety persons;
- a commitment to the basic requirements of access, egress, risk assessments, safe plant and systems of work, use, handling, transport and handling of articles and substances, information, training and supervision;
- a commitment to the additional requirements for emergency procedures, health surveillance and employment of competent persons;
- duties towards the wider general public and others (contractors, customers, students, etc.);
- the principal hazards in the organization;
- specific policies of the organization (e.g. smoking policy, violence to staff, etc.);
- a commitment to employee consultation possibly using a safety committee or plant council;
- duties and rights of employees;
- specific health and safety performance targets for the immediate and long-term future;
- a commitment to provide the necessary resources to achieve the objectives outlined in the policy statement.

Health and safety *performance targets* are an important part of the statement of intent because:

- they indicate that there is management commitment to improve health and safety performance;
- they motivate the workforce with tangible goals resulting, perhaps, in individual or collective rewards;
- they offer evidence during the monitoring, review and audit phases of the management system.

The type of target chosen depends very much on the areas that need the greatest improvement in the organization. The following list, which is not exhaustive, shows common health and safety performance targets:

- a specific reduction in the number of accidents, incidents (not involving injury) and cases of work-related ill-health (perhaps to zero);
- a reduction in the level of sickness absence;
- a specific increase in the number of employees trained in health and safety;
- an increase in the reporting of minor accidents and 'near miss' incidents
- a reduction in the number of civil claims
- no enforcement notices from the Enforcement Agency
- a specific improvement in health and safety audit scores
- the achievement of a nationally recognized health and safety management standard such as OHSAS 18001

In the ILO-OSH 2001 management system, the ILO recommends that measurable health and safety objectives, consistent with the health and safety policy and based on any initial or subsequent reviews, should be established, which are:

a) specific to the organization, and appropriate to and according to its size and nature of activity
b) consistent with the relevant and applicable national laws and regulations, and the technical and business obligations of the organization with regard to health and safety
c) focused towards continually improving workers' health and safety protection to achieve the best health and safety performance
d) realistic and achievable
e) documented, and communicated to all relevant functions and levels of the organization
f) and periodically evaluated and if necessary updated.

The policy statement of intent should be posted on prominent notice boards throughout the workplace and brought to the attention of all employees at induction and refresher training sessions. It can also be communicated to the workforce during team briefing sessions, at 'toolbox' talks which are conducted at the workplace or directly by email, intranet,

newsletters or booklets. It should be a permanent item on the agenda for health and safety committee meetings where it and its related targets should be reviewed at each meeting.

2.1.1.2 Organizing (Plan)

There is much in common with both HSG65 and OHSAS 18001, with responsibility, accountability, competence, training and communication being key parts of this element. There is a specific responsibility to provide effective supervision to ensure the protection of the health and safety of workers and to establish prevention and health promotion programmes. Workers should have access to any records, such as accident and monitoring records, which are relevant to their occupational health and safety while respecting the need for confidentially. Health and safety training must be available to all members of the organization and be provided during normal working hours at no cost to employees.

This section of the policy defines the names, positions and duties of those within the organization or company who have a specific responsibility for health and safety. Therefore, it identifies those health and safety responsibilities and the reporting lines through the management structure. This section will include the following groups together with their associated responsibilities:

- directors and senior managers (responsible for setting policy, objectives and targets);
- supervisors (responsible for checking day-to-day compliance with the policy);
- health and safety advisers (responsible for giving advice during accident investigations and on compliance issues);
- other specialists, such as an occupational nurse, chemical analyst and an electrician (responsible for giving specialist advice on particular health and safety issues);
- health and safety representatives (responsible for representing employees during consultation meetings on health and safety issues with the employers employees (responsible for taking reasonable care of the health and safety of themselves and others who may be affected by their acts or omissions);
- fire marshals (responsible for the safe evacuation of the building in an emergency);
- first aiders (responsible for administering first-aid to injured persons).

For smaller organizations, some of the specialists mentioned above may well be employed on a consultancy basis.

For the health and safety organization to work successfully, it must be supported from the top (preferably at Board level) and some financial resource made available.

It is also important that responsibility for certain key functions are included in the organization structure. These include:

- accident investigation and reporting;
- health and safety training and information;
- health and safety monitoring and audit;
- health surveillance;
- monitoring of plant and equipment, their maintenance and risk assessment;
- liaison with external agencies;
- management and/or employee safety committees -the management committee will monitor day-to-day problems and any concerns of the employee health and safety committee.

The role of the health and safety adviser is to provide specialist information to managers in the organization and to monitor the effectiveness of health and safety procedures. The adviser is not 'responsible' for health and safety or its implementation; that is the role of the line managers.

Finally the job descriptions, which define the duties of each person in the health and safety organizational structure, must not contain responsibility overlaps or blur chains of command. Each individual must be clear about his/her responsibilities and the limits of those responsibilities.

2.1.1.3 Planning and implementation (Do)

Unlike other systems, the ILO system combines planning and implementation. Following an initial review of any existing health and safety management system, a plan should be developed to remedy any deficiencies found. The plan should support compliance with national laws and Regulations and include continual improvement of health and safety performance. It should contain measurable objectives which are realistic and achievable and, as with the other occupational health and safety management systems, hazard identification and risk assessment. There should also be an adequate provision of resources and technical support. The plan must be capable of accommodating the impact on health and safety of any internal changes in the organization, such as new processes, new technologies and amalgamations with other organizations, or external changes due, for example, to changes in national laws or Regulations. As with OHSAS 18001, emergency and procurement arrangements and detailed arrangements for the selection and supervision of contractors must be included in the health and safety plan.

Initial review

The *organization's* existing OSH management system and relevant arrangements should be evaluated by an initial review, as appropriate. In the case where no OSH management system exists, or if the *organization* is newly established, the initial review should serve as a basis for establishing an OSH management system.

The initial review should be carried out by competent persons, in consultation with workers and/or their representatives, as appropriate. It should:

a) identify the current applicable national laws and regulations, national guidelines, tailored guidelines, voluntary programmes and other requirements to which the *organization* subscribes;
b) identify, anticipate and assess hazards and risks to safety and health arising from the existing or proposed work environment and work organization; and
c) determine whether planned or existing controls are adequate to eliminate hazards or control risks; and
d) analyse the data provided from workers' health surveillance.

The result of the initial review should:

a) be documented;
b) become the basis for making decisions regarding the implementation of the OSH management system; and
c) provide a baseline from which continual

System planning, development and implementation

The purpose of planning should be to create an OSH management system that supports:

(a) as the minimum, compliance with national laws and regulations;
(b) the elements of the *organization's* OSH management system; and
(c) continual improvement in OSH performance.

Arrangements should be made for adequate and appropriate OSH planning, based on the results of the initial review, subsequent reviews or other available data. These planning arrangements should contribute to the protection of safety and health at work, and should include:

a) a clear definition, priority setting and quantification, where appropriate, of the *organization's* OSH objectives;
b) the preparation of a plan for achieving each objective, with defined responsibility and clear performance criteria indicating what is to be done by whom and when;
c) the selection of measurement criteria for confirming that the objectives are achieved; and
d) the provision of adequate resources, including human and financial resources and technical support, as appropriate.

The OSH planning arrangements of the *organization* should cover the development and implementation of all the OSH management system elements.

Occupational safety and health objectives

Consistent with the OSH policy and based on the initial or subsequent reviews, measurable OSH objectives should be established, which are:

a) specific to the *organization*, and appropriate to and according to its size and nature of activity;
b) consistent with the relevant and applicable national laws and regulations, and the technical and business obligations of the *organization* with regard to OSH;
c) focused towards continually improving workers' OSH protection to achieve the best OSH performance;
d) realistic and achievable;
e) documented, and communicated to all relevant functions and levels of the *organization*; and
f) periodically evaluated and if necessary updated.

Hazard prevention

Prevention and control measures

Hazards and risks to workers' safety and health should be identified and assessed on an ongoing basis. Preventive and protective measures should be implemented in the following order of priority:

- eliminate the hazard/risk;
- control the hazard/risk at source, through the use of engineering controls or organizational measures;
- minimize the hazard/risk by the design of safe work systems, which include administrative control measures; and
- where residual hazards/risks cannot be controlled by collective measures, the employer should provide for appropriate personal protective equipment, including clothing, at no cost, and should implement measures to ensure its use and maintenance.

Hazard prevention and control procedures or arrangements should be established and should:

- be adapted to the hazards and risks encountered by the *organization*;
- be reviewed and modified if necessary on a regular basis;
- comply with national laws and regulations, and reflect good practice; and

- consider the current state of knowledge, including information or reports from *organizations*, such as labour inspectorates, occupational safety and health services, and other services as appropriate.

Management of change

The impact on OSH of internal changes (such as those in staffing or due to new processes, working procedures, organizational structures or acquisitions) and of external changes (for example, as a result of amendments of national laws and regulations, organizational mergers, and developments in OSH knowledge and technology) should be evaluated and appropriate preventive steps taken prior to the introduction of changes.

A workplace hazard identification and risk assessment should be carried out before any modification or introduction of new work methods, materials, processes or machinery. Such assessment should be done in consultation with and involving workers and their representatives, and the safety and health committee, where appropriate.

The implementation of a "decision to change" should ensure that all affected members of the *organization* are properly informed and trained.

Emergency prevention, preparedness and response

Emergency prevention, preparedness and response arrangements should be established and maintained. These arrangements should identify the potential for accidents and emergency situations, and address the prevention of OSH risks associated with them. The arrangements should be made according to the size and nature of activity of the *organization*. They should:

- ✓ ensure that the necessary information, internal communication and coordination are provided to protect all people in the event of an emergency at the worksite;
- ✓ provide information to, and communication with, the relevant competent authorities, and the neighbourhood and emergency response services;
- ✓ address first-aid and medical assistance, firefighting and evacuation of all people at the worksite; and
- ✓ provide relevant information and training to all members of the *organization*, at all levels, including regular exercises in emergency prevention, preparedness and response procedures.

Emergency prevention, preparedness and response arrangements should be established in cooperation with external emergency services and other bodies where applicable.

Procurement

Procedures should be established and maintained to ensure that:

- ✓ compliance with safety and health requirements for the *organization* is identified, evaluated and incorporated into purchasing and leasing specifications;
- ✓ national laws and regulations and the *organization's* own OSH requirements are identified prior to the procurement of goods and services; and
- ✓ arrangements are made to achieve conformance to the requirements prior to their use.

Contracting

Arrangements should be established and maintained for ensuring that the *organization's* safety and health requirements, or at least the equivalent, are applied to contractors and their workers.

Arrangements for contractors working on site should:

- ✓ include OSH criteria in procedures for evaluating and selecting contractors;
- ✓ establish effective ongoing communication and coordination between appropriate levels of the *organization* and the contractor prior to commencing work. This should include provisions for communicating hazards and the measures to prevent and control them;
- ✓ include arrangements for reporting of work-related injuries, ill health, diseases and incidents among the contractors' workers while performing work for the *organization*;
- ✓ provide relevant workplace safety and health hazard awareness and training to contractors or their workers prior to commencing work and as work progresses, as necessary;
- ✓ regularly monitor OSH performance of contractor activities on site; and
- ✓ ensure that on-site OSH procedures and arrangements are followed by the contractor(s).

2.1.1.4 Evaluation- monitoring, review, measurement, investigation (Check)

This is very similar to the performance measurement phase of HSG65 with a greater emphasis on the health and welfare of the worker. The recommendations concerning the investigation of work-related injuries, ill-health, diseases and incidents are identical to those for the management review element of OHSAS 18001.

Performance monitoring and measurement

Procedures to monitor, measure and record OSH performance on a regular basis should be developed, established and periodically reviewed. Responsibility, accountability and authority for monitoring at different levels in the management structure should be allocated.
The selection of performance indicators should be according to the size and nature of activity of the *organization* and the OSH objectives.

Both qualitative and quantitative measures appropriate to the needs of the *organization* should be considered. These should:

- be based on the *organization's* identified hazards and risks, the commitments in the OSH policy and the OSH objectives; and
- support the *organization's* evaluation process, including the management review.

Performance monitoring and measurement should:

- be used as a means of determining the extent to which OSH policy and objectives are being implemented and risks are controlled;
- include both active and reactive monitoring, and not be based only upon workrelated injury, ill health, disease and incident statistics; and
- be recorded.

Monitoring should provide:

- feedback on OSH performance;
- information to determine whether the day-to-day arrangements for hazard and risk identification, prevention and control are in place and operating effectively; and
- the basis for decisions about improvement in hazard identification and risk control, and the OSH management system.

Active monitoring should contain the elements necessary to have a proactive system and should include:

- monitoring of the achievement of specific plans, established performance criteria and objectives;
- the systematic inspection of work systems, premises, plant and equipment;
- surveillance of the working environment, including work organization;
- surveillance of workers' health, where appropriate, through suitable medical monitoring or follow-up of workers for early detection of signs and symptoms of harm to health in order to determine the effectiveness of prevention and control measures; and
- compliance with applicable national laws and regulations, collective agreements and other commitments on OSH to which the *organization* subscribes.

Reactive monitoring should include the identification, reporting and investigation of:

- work-related injuries, ill health (including monitoring of aggregate sickness absence records), diseases and incidents;
- other losses, such as damage to property;
- deficient safety and health performance, and OSH management system failures; and
- workers' rehabilitation and health-restoration programmes.

Investigation

The investigation of the origin and underlying causes of work-related injuries, ill health, diseases and incidents should identify any failures in the OSH management system and should be documented.

Such investigations should be carried out by competent persons, with the appropriate participation of workers and their representatives.

The results of such investigations should be communicated to the safety and health committee, where it exists, and the committee should make appropriate recommendations.

The results of investigations, in addition to any recommendations from the safety and health committee, should be communicated to appropriate persons for corrective action, included in the management review and considered for continual improvement activities.

The corrective action resulting from such investigations should be implemented in order to avoid repetition of work-related injuries, ill health, diseases and incidents.

Reports produced by external investigative agencies, such as inspectorates and social insurance institutions, should be acted upon in the same manner as internal investigations, taking into account issues of confidentiality.

Review

Management reviews should:

- evaluate the overall strategy of the OSH management system to determine whether it meets planned performance objectives;
- evaluate the OSH management system's ability to meet the overall needs of the *organization* and its stakeholders, including its workers and the regulatory authorities;
- evaluate the need for changes to the OSH management system, including OSH policy and objectives;
- identify what action is necessary to remedy any deficiencies in a timely manner, including adaptations of other aspects of the *organization's* management structure and performance measurement;
- provide the feedback direction, including the determination of priorities, for meaningful planning and continual improvement;

- evaluate progress towards the *organization's* OSH objectives and corrective action activities; and
- evaluate the effectiveness of follow-up actions from earlier management reviews.

The frequency and scope of periodic reviews of the OSH management system by the employer or the most senior accountable person should be defined according to the *organization's* needs and conditions.

The management review should consider:

- the results of work-related injuries, ill health, diseases and incident investigations; performance monitoring and measurement; and audit activities; and
- additional internal and external inputs as well as changes, including organizational changes, that could affect the OSH management system.

The findings of the management review should be recorded and formally communicated to:

- ✓ the persons responsible for the relevant element(s) of the OSH management system so that they may take appropriate action; and
- ✓ the safety and health committee, workers and their representatives.

2.1.1.5 Auditing (Check)

The ILO recommends that an audit should be performed by competent and trained personnel at agreed and regular intervals. It should cover all elements of the management system including worker participation, communication, procurement, contracting and continual improvement. The audit conclusions must state whether the health and safety management system is effective in meeting the organizational health and safety policy and objectives and promotes full worker participation. The audit should also check that there is compliance with national laws and regulations and that there has been a satisfactory response to earlier audit findings.
Arrangements to conduct periodic audits are to be established in order to determine whether the OSH management system and its elements are in place, adequate, and effective in protecting the safety and health of workers and preventing incidents.

An audit policy and programme should be developed, which includes a designation of auditor competency, the audit scope, the frequency of audits, audit methodology and reporting.

The audit includes an evaluation of the *organization's* OSH management system elements or a subset of these, as appropriate. The audit should cover:

- ✓ OSH policy;
- ✓ worker participation;
- ✓ responsibility and accountability;
- ✓ competence and training;
- ✓ OSH management system documentation;
- ✓ communication;
- ✓ system planning, development and implementation;
- ✓ prevention and control measures;
- ✓ management of change;
- ✓ emergency prevention, preparedness and response;
- ✓ procurement;
- ✓ contracting;
- ✓ performance monitoring and measurement;
- ✓ investigation of work-related injuries, ill health, diseases and incidents, and their impact on safety and health performance;
- ✓ audit;
- ✓ management review;
- ✓ preventive and corrective action;
- ✓ continual improvement; and
- ✓ any other audit criteria or elements that may be appropriate.

The audit conclusion should determine whether the implemented OSH management system elements or a subset of these:

a. are effective in meeting the *organization's* OSH policy and objectives;
b. are effective in promoting full worker participation;
c. respond to the results of OSH performance evaluation and previous audits;
d. enable the *organization* to achieve compliance with relevant national laws and regulations; and
e. fulfil the goals of continual improvement and best OSH practice.

Audits should be conducted by competent persons internal or external to the *organization* who are independent of the activity being audited.
The audit results and audit conclusions should be communicated to those responsible for corrective action.
Consultation on selection of the auditor and all stages of the workplace audit, including analysis of results, are subject to worker participation, as appropriate.

2.1.1.6 Action for improvement- preventative and corrective

action, continual improvement (Act)

Arrangements should be introduced and maintained for any preventative and corrective action to be undertaken identified by performance monitoring, audits and management reviews of the health and safety management system. Arrangements should also be in place for the continual improvement of the management system.

Preventive and corrective action

Arrangements should be established and maintained for preventive and corrective action resulting from OSH management system performance monitoring and measurement, OSH management system audits and management reviews. These arrangements should include:

- identifying and analysing the root causes of any non-conformities with relevant OSH regulations and/or OSH management systems arrangements; and
- initiating, planning, implementing, checking the effectiveness of and documenting corrective and preventive action, including changes to the OSH management system itself.

When the evaluation of the OSH management system or other sources show that preventive and protective measures for hazards and risks are inadequate or likely to become inadequate, the measures should be addressed according to the recognized hierarchy of prevention and control measures, and completed and documented, as appropriate and in a timely manner.

Continual improvement

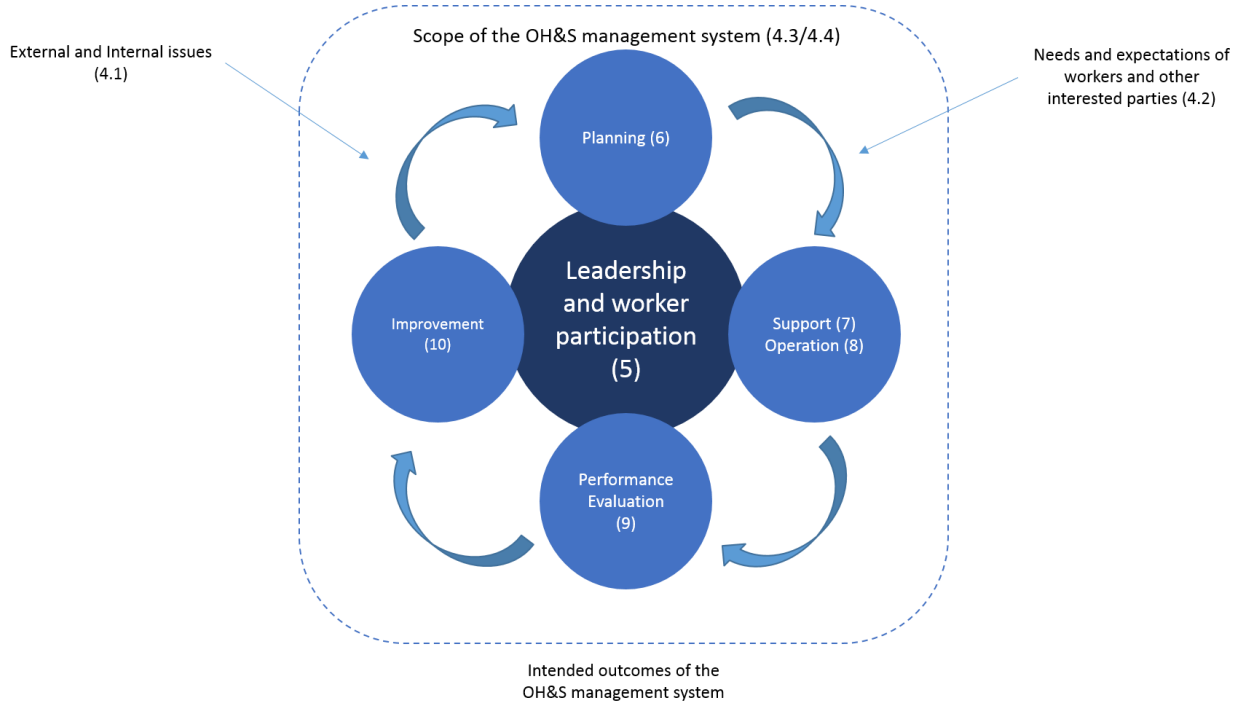
Arrangements should be established and maintained for the continual improvement of the relevant elements of the OSH management system and the system as a whole. These arrangements should take into account:

- the OSH objectives of the *organization*;
- the results of hazard and risk identifications and assessments;
- the results of performance monitoring and measurements;
- the investigation of work-related injuries, diseases, ill health and incidents, and the results and recommendations of audits;
- the outcomes of the management review;
- the recommendations for improvement from all members of the *organization*, including the safety and health committee, where it exists;
- changes in national laws and regulations, voluntary programmes and collective agreements;
- new relevant information; and
- the results of health protection and promotion programmes.

The safety and health processes and performance of the *organization* should be compared with others in order to improve health and safety performance.

2.1.2 With reference to ISO 45001:2018: Occupational health and safety management systems (H&SMS) context of the organisation (H&SMS framework)

ISO 45001 is an International Standard that specifies requirements for an occupational health and safety (OH&S) management system, with guidance for its use, to enable an organisation to proactively improve its OH&S performance in preventing injury and ill-health. ISO 45001 is intended to be applicable to any organisation regardless of its size, type and nature. ISO 45001 enables an organisation, through its OH&S management system, to integrate other aspects of health and safety, such as worker wellness/wellbeing; however, it should be noted that an organisation can be required by applicable legal requirements to also address such issues.

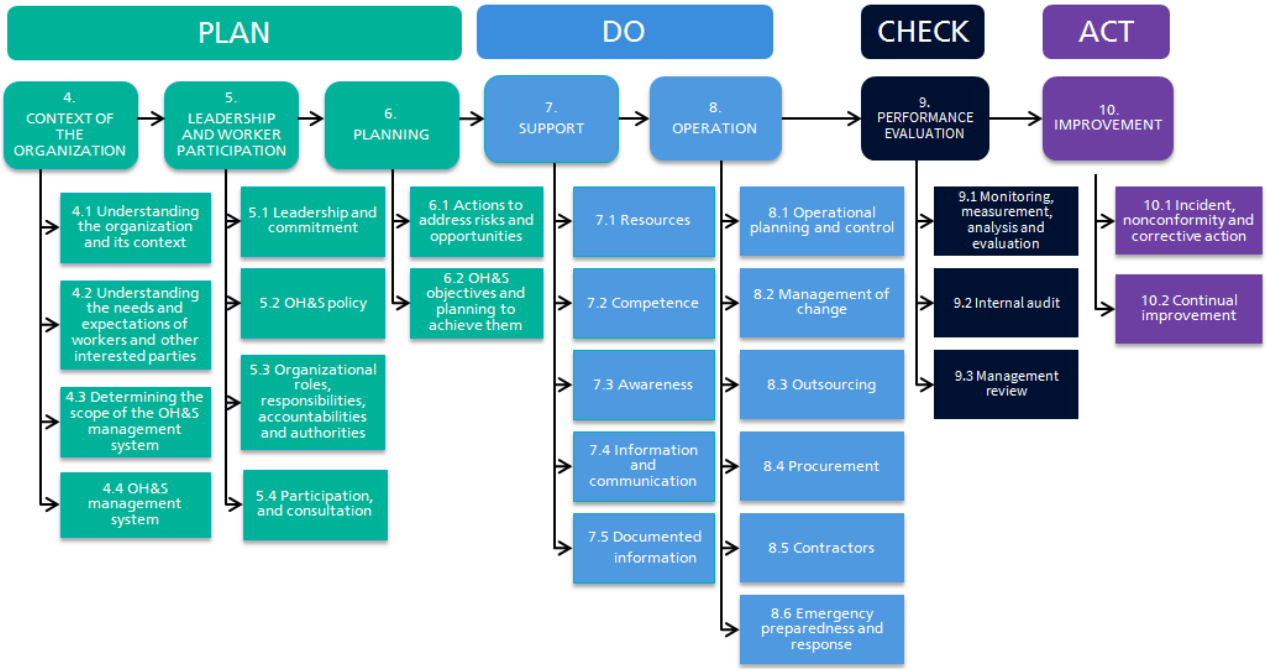


ISO 45001:2018 - Leadership and worker participation

This clause provides guidance on how the organization provides guidance on how to demonstrate leadership in relation to the OH&S management system and how it ensures adequate worker participation in its development, implementation and improvement.

This clause encompasses the following:

- Demonstrating leadership and commitment;
- Developing an OH&S policy;
- Outlining roles, responsibilities and authorities for the OH&S management system;
- Defining the processes necessary for consultation and participation of workers.



ISO 45001:2018 – Planning

When **planning** the OH&S management system, organization must:

- ✓ Consider issues
- ✓ Meet requirements
- ✓ Define the scope of its OH&S management system
- ✓ Determine risks and opportunities that need to be addressed

When **planning** how to achieve OH&S objectives, the organization must determine:

- ✓ What will be done
- ✓ What resources will be required

- ✓ Who will be responsible
- ✓ When they will be completed
- ✓ How they will be measured through indicators (if practicable) and monitored
- ✓ How results will be evaluated
- ✓ How the actions to achieve OH&S objectives will be integrated into the organization's business process

ISO 45001:2018 – Support (Do)

This clause provides guidance on the support required to ensure that the OH&S management system can function effectively.

This clause encompasses the following:

- Competence;
- Awareness;
- Communication;
- Documented information.

Resources

The organisation must initially determine and provide the resources necessary to establish, implement, maintain and continually improve its OH&S management system.

The identification, procurement and provision of resources are the prerogative of senior management and their absence or diminution can be a limitation on the effectiveness of the OH&SMS.

Examples of resources include: Human, Natural, Infrastructure, Technology

ISO 45001:2018 – Operation (Do)

This clause provides guidance on the operational planning and control requirements relating to the OH&S management system.

This clause encompasses the following:

- Operational planning and control;
- Eliminating hazards and reducing OH&S risks;

- Management of change;
- Procurement;
- Emergency preparedness and response.

ISO 45001:2018 – Performance Evaluation (Check)

This clause provides guidance on evaluating the performance of the OH&S management system.

This clause encompasses the following:

- Monitoring, measurement, analysis and performance evaluation;
- Internal audit;
- Management review.

ISO 45001:2018 – Improvement (Act)

This clause provides guidance on making improvements to the OH&S management system.

This clause encompasses the following:

- Incident, nonconformity and corrective action;
- Continual improvement.

ISO 45001:2018 – Improvement (Act)

Incident, nonconformity and corrective action

The organisation should have a process in place for reporting and investigating incidents and other nonconformities, and for taking action to correct them and deal with their consequences.

Examples:

Incidents: near misses, injuries and ill-health and damage to property or equipment that could lead to OH&S risks; such as a broken leg, asbestosis, hearing loss;

Nonconformities: protective equipment not functioning properly; failure to fulfil legal requirements; prescribed processes or procedures not being followed; contractor behaving in an unsafe manner on-site.

Continual improvement

Actions which an organisation might take with a view to achieving continual improvement in the suitability, adequacy and effectiveness of its OH&S management system include:

- ✓ Enhancing OH&S performance;
- ✓ Promoting a culture that provides support to the OHSMS;
- ✓ Promoting the participation of workers in the identification and implementation of actions for continual improvement of the OHSMS;
- ✓ Communicating the relevant results of continual improvement to workers, and where they exist, workers' representatives;
- ✓ Maintaining and retaining documented information as evidence of continual improvement

2.2 The purpose and importance of setting policy for health and safety

A health and safety policy ensures that the employer complies with the Occupational Safety and Health Act and relevant state legislation. It provides guidelines for establishing and implementing programs that will reduce workplace hazards, protect lives and promote employee health.

Significance

A well-defined policy on health and safety will help reduce the incidence and seriousness of work-related injuries. Fewer accidents mean lower workers' compensation costs, less down time and increased productivity.

Scope

A company policy identifies management and employee roles in health and safety. It provides for a work site analysis to determine the presence of hazards. It also specifies hazard prevention and control procedures, and outlines required employee training.

Responsibilities

Employers are responsible for keeping the workplace safe. Under the Occupational Safety and Health Act, employers must inform employees of safety standards, provide training, eliminate or reduce hazards, and supply protective equipment. They must perform tests in the workplace and maintain accurate records. Employees must take an active part in keeping the workplace safe by complying with safety standards, rules and regulations.

2.3 The key features and appropriate content of an effective health and safety policy

The four basic elements common to all occupational health and safety management systems, as described earlier in this chapter, contain the different activities of the system together with the detailed arrangements and activities required to deliver those activities. However, there are four key characteristics of a *successful* occupational health and safety management system:

- a positive health and safety culture
- the involvement of all stakeholders
- an effective audit
- continual improvement

2.3.1 Stating the overall aims of the organisation in terms of health and safety performance

In summary the essential elements for a successful health and safety culture are:

- leadership and commitment to health and safety throughout the organization
- an acceptance that high standards of health and safety are achievable
- the identification of all significant hazards facing the workforce and others
- a detailed assessment of health and safety risks in the organization and the development of appropriate control and monitoring systems
- a health and safety policy statement outlining short-and long-term health and safety objectives. Such a policy should also include national codes of practice and health and safety standards

- relevant communication and consultation procedures and training programmes for employees at all levels of the organization
- systems for monitoring equipment, processes and procedures and the prompt rectification of any defects found
- the prompt investigation of all incidents and accidents and reports made detailing any necessary remedial actions.

ILO-OSH 2001 identifies that the employer, in consultation with the workforce and their representatives, should set out in writing a health and safety policy:

- Specific to the organization and appropriate to its size and activities
- Concise, clearly written, dated and made effective by the signature of the most senior accountable person
- Communicated and readily accessible to all persons at their place of work
- Reviewed for continuing suitability
- Made available to relevant external interested parties.

The ILO further recommends:

- Protecting the safety and health of all members of the organization by preventing work-related injuries, ill health, disease and incidents
- Complying with relevant occupational health and safety national laws and regulations, voluntary programmes, etc.
- Ensuring that workers and their representatives are consulted and encouraged to participate actively in all areas of occupational health and safety management
- Continual improvement in the performance.

2.3.1.1 General Statement of Intent

The statement of intent should set out in clear and simple language the commitment of the organization to meeting its obligations for managing the health and safety risks arising from its normal operations.

This should include:

- A commitment to the effective management of health and safety risks arising from the normal operations of the organization
- The aims and objectives should be set and agreed by the health and safety committee, following consultation with safety representatives
- It should be signed by the most senior accountable person to signal senior management commitment to effectively managing health and safety.

The health and safety policy statement of intent is often referred to as the health and safety policy statement or simply (and incorrectly) as the health and safety policy. It should contain the aims (which are not measurable) and objectives (which are measurable) of the organization or company. Aims will probably remain unchanged during policy revisions whereas objectives will be reviewed and modified or changed every year. The statement should be written in clear and simple language so that it is easily understandable. It should also be fairly brief and broken down into a series of smaller statements or bullet points.

The statement should be signed and dated by the most senior person in the organization. This will demonstrate management commitment to health and safety and give authority to the policy. It will indicate where ultimate responsibility lies and the frequency with which the policy statement is reviewed.

The most senior manager is normally the Chief Executive Officer (CEO) or the Managing Director. It is the responsibility of the CEO (or equivalent) to ensure that the health and safety policy is developed and communicated to all employees in the organization. He/she will need to ensure the following:

- key functions of health and safety management, such as monitoring and audit, accident investigation and training, are included in the organizational structure; adequate resources are available to manage health and safety effectively;
- the production of various health and safety arrangements in terms of rules and procedures; arrangements for the welfare of employees; the regular review and, if necessary, updating of the health and safety policy.

The following points should be included or considered when a health and safety policy statement is being drafted:

- the aims, which should cover health and safety, welfare and relevant environmental issues;
- the position of the senior person in the organization or company who is responsible for health and safety (normally the Chief Executive Officer);
- the names of the Health and Safety Adviser and any safety representatives or other competent health and safety persons;
- a commitment to the basic requirements of access, risk assessments, safe plant and systems of work, use, handling, transport and handling of articles and substances, information, training and supervision;
- a commitment to the additional requirements for emergency procedures, health surveillance and employment of competent persons;
- duties towards the wider general public and others (contractors, customers, students, etc.);
- the principal hazards in the organization;

- specific policies of the organization (e.g. smoking policy, violence to staff, etc.);
- a commitment to employee consultation possibly using a safety committee or plant council;
- duties and rights of employees;
- specific health and safety performance targets for the immediate and long-term future;
- a commitment to provide the necessary resources to achieve the objectives outlined in the policy statement.

2.3.1.2 Setting overall objectives and quantifiable targets

Health and safety objectives provide an overall direction for health and safety goals.

Health and safety objectives need to consistent with the organisation's health and safety policies and other legal requirements.

Health and safety objectives may be to:

- Reduce or eliminate the number of accidents and injuries in a particular site
- Reduce hazards and risks in a particular site

Health and safety targets may be to:

- Reduce sprains in site A by 10% in the next 6 month period
- Increase incident and near miss reporting by 20% in the next 6 month period

Documenting and setting each functional level

Write it in your own words and make it fit your company's needs .

Divide it up into sections:

On one side, in simple terms, write down your overall health and safety objectives;

Next outline responsibilities (from director level down to the newest recruit);

Then outline the arrangements you have in place for achieving a safe and healthy working environment:

- carrying out risk assessments;
- providing necessary training and information;
- monitoring health and safety performance;
- accident/incident reporting;

- first aid;
- general fire safety;
- obtaining professional advice.

Now turn the sheet over and on the other side write down the results of your risk assessments, detailing hazards, what could happen and any rules or control measures that need to be in place and appendices giving other useful information.

Don't make the plan any longer than it needs to be. Keep it as simple as possible .

Remember, if it is to be of any value at all, it has to be a working document which your employees will actually refer to and read.

It is worth spending time to get your plan right for your business. Avoid copying other firm's policies.

When you have drafted your plan, check to see that it is signed and dated by the Director or Chief Executive as the person with overall responsibility for formulating, implementing and developing the policy. This is important to help communicates management's values, beliefs and commitment to health and safety and establish the importance of health and safety in relation to other business objectives so staff can see the contribution the plan can have to ensuring overall business success .

You need to set aside time to explain your plan to you staff explaining the contribution of managers and every member of the team to its successful development and the formulation and implementation of procedures.

You need to commit the company to:

- providing resources necessary to implement the policy; and to ensuring the competence of all employees;
- using professional advice and services where necessary;
- achieving continuous improvement in health and safety standards with legal requirements defining minimum standards which must be in place;
- regularly reviewing and developing the action plan;
- maintaining effective systems of communication on all health and safety matters; and
- providing a simple annual report on health and safety management performance .

Legal requirement

If you employ more than five people, by law you must have a health and safety policy statement which you must bring to their attention. You must also record the results of your risk assessments. Although relatively few words are required to satisfy these legal requirements, it is well worth spending a little time to combine your policy statement and assessment record into your own tailor made health and safety action plan .

Companies that consider environmental protection, occupational health and safety at work as important as providing quality products usually have managers and departments responsible for these issues. They are called **Environmental, Health and Safety (EHS)** departments, also **SHE** or **HSE** departments. EHS management has two general objectives: prevention of incidents or accidents that might result from abnormal operating conditions on the one hand and reduction of adverse effects that result from normal operating conditions on the other hand.

For example, fire, explosion and release of harmful substances into the environment or the work area must be prevented. Also action must be taken to reduce a company's environmental impact under normal operating conditions (like reducing the company's carbon footprint) and to prevent workers from developing work related diseases. Regulatory requirements play an important role in both approaches and consequently, EHS managers must identify and understand relevant EHS regulations, the implications of which must be communicated to top management (the board of directors) so the company can implement suitable measures. Organisations based in the United States are subject to EHS regulations in the Code of Federal Regulations, particularly CFR 29, 40, and 49. Still, EHS management is not limited to legal compliance and companies should be encouraged to do more than is required by law, if appropriate.

Hazards and risks

There should be a planned and systematic approach to implementing the safety and health policy through an effective safety and health management system. The aim is to minimise risks. Risk assessment methods should be used to determine priorities and set objectives for eliminating hazards and reducing risks. Wherever possible, risks should be eliminated through the selection and design of facilities, equipment and processes. If risks cannot be eliminated, they should be minimised by the use of physical controls and safe systems of work or, as a last resort, through the provision of PPE. Performance standards should be established and used for measuring achievement. Specific actions to promote a positive safety and health culture should be identified. There should be a shared common understanding of the organisation‘s vision, values and beliefs. The visible and active leadership of senior managers fosters a positive safety and health culture.

Targets need to be SMART:

- **Specific** – Related to a clearly defined outcome. It needs to be sufficiently detailed and focused to provide direction.
- **Measurable** – The results can be measured in terms of quality, quantity, time, cost etc., so that progress can be assessed.
- **Attainable** – Accomplishing the target needs to be challenging, but within reason for the person's ability and resource constraints.
- **Relevant** – The targets are appropriate to the needs of the organisation.
- **Time-bound** – Specific deadlines are set for accomplishing the target.

Example of a SMART target:

'Organisation A' will reduce the incident rate of sprains and strains by 10% by the end of the year.

2.3.1.3 Basic concept of benchmarking

Benchmarking is simply the comparison of one organization's practices and performance against those of others. It seeks to identify standards, or "best practices," to apply in measuring and improving performance.

Benchmarking is a quality improvement tool that identifies:

- What you're doing
- How you're doing it
- How others do it
- How well you're doing it in reference to measures
- What and how to improve

Advantages

- Identifies key performance indicators
- Ensures monitoring procedures are effective
- Feeds in to the continuous improvement cycle
- Identify normal practice amongst similar business
- Mistakes by learning from others
- Generate management focus
- Gains confidence of the stakeholders

Challenges of benchmarking

- Selecting a company with similar activities
- Assuring accuracy of data
- Using common definitions

- Accessing data
- Gaining commitment

Management issues to benchmark

- Health and safety policy
- Staff roles and responsibility
- Plans and strategies which can be measured
- Risk assessments
- Type of training
- Monitoring, Proactive and reactive

Tips on how to conduct the critical steps of the benchmarking process:

1. Identify issues and practices to benchmark

Look for practices with significant impacts on your organization's:

- Customers and other stakeholders
- Budget and the bottom line
- Problem and opportunity areas

Don't do everything; prioritize. Pick something significant to your organization that you have a good chance of changing and the resources to do.

Pick no more than 10 general, broad processes.

2. Select a benchmarking team

a. Select team members who have the commitment and time to serve; desirable team members:

- Are process owners or experts
- Are process stakeholders
- Have available resources
- Know benchmarking methods

b. Select team members to fill the following roles:

- Leader
- Facilitator or consultant

- Sponsor
- General members

3. Research and document the processes or practices you've selected and identify performance measures

a. Determine how the work is organized and flows through the organization
b. Examine internal documents such as budgets, procedures, and reports
c. Conduct internal interviews
d. Identify the procedures that have to be done well for the process or practice to succeed and look for measures of quality, cycle time, and cost
e. Identify problem areas
f. Create performance measures - look at your organization's data that may be a good basis for comparison. Look also at performance measurement practices in your industry; consider collecting new data that is likely to be comparable.

4. Select benchmarking partners

Decide what you want to find out and answer the question: What organizations are likely to have that information and what are their characteristics?

a. Look for

- Peer organizations or competitors and
- Best-practice organizations - the top 20 percent or so of performers.

This helps identify superior performance standards.

b. Find them through:

- Professional associations (find on the Internet)
- Interviews (ask people for leads, especially from people who are experts in the field)
- Research publications

Identify significant differences between your organization and your partner's: geography, climate, size, or market, for example. You will later need to adjust findings to take these differences into account. You will frequently compare operations or organizations that aren't quite like yours, and accounting for the differences is a key factor in comparing "apples to oranges."

5. Plan data collection; collect data

a. List what you want to find out about practices, processes, performance measures, and problem areas.
b. Formulate questions to uncover the information you want

- How do they handle customer problems?
- What level of performance is realistic?

c. Choose data collection methods and collect the data

- surveys
- interviews
- focus groups
- Internet
- publications
- site visits

6. Compare performance to identify superior performers and performance gaps between you and your partners; determine what enables some to do better

a. State your findings
b. Diagram comparisons in charts and tables, if possible
c. Correct and complete the data
d. Identify performance superior to yours
e. Research and analyze what enables some to do better

7. Select areas for improvement and set targets

a. Ask yourself:

- Which better practices are transferrable to your organization?
- Which show promise for the greatest impact?
- What changes would your organization have to make to adapt each different practice?
- How will your work environment affect changes that need to be made?
- What resources do you need to make the changes?
- Do you have the support to make the changes? How do you get it?

b. Set target performance

8. Develop and implement strategies for change

a. Ask the following questions

- What activities need to be performed for the changes to be successfully implemented?
- How and when will you get the resources you need?
- Who will perform the activities and when?
- Who will be responsible and accountable for the changes?
- Who will be affected by the changes?
- Who needs to be consulted or informed about the changes?

9. After implementing changes, re-measure performance and repeat Steps 5 through 8. This is a continuous improvement process

Where is more information available?

Management Analysis & Development can guide you through any of the essential steps to successful benchmarking. We offer a range of benchmarking services and can help you

- Plan your benchmarking effort and fit it into your organization's mission, vision, and strategies
- Decide what to benchmark so that you select the key ingredients that affect customer needs, your bottom line, or problem areas
- Set up a team: determine who should be on it, who should lead it, what resources it will need, what training it should have in benchmarking
- Incorporate customer input and concerns
- Determine what information you need to collect to improve your own performance or to develop performance measures
- Select benchmarking partners that will provide the information you need
- Plan your data collection and find other sources of benchmarking information
- Design and use surveys to best advantage
- Plan and conduct successful site visits or use in-depth telephone interviews if site visits are not practical
- Use data so you have apples-to-apples comparisons or can compare dissimilar data to give you useful information
- Analyze, adjust, and compare data to show performance gaps
- Determine the causes of different performance and how you can change to improve
- Select areas for improvement and develop targets and strategies
- Incorporate change into your organizational practices and processes
- Continue benchmarking on an ongoing basis

2.3.1.4 Financial, operational, and business requirements

1. Organisational needs: Everyone in the organisation should know about the organisation‘s safety and health policy and the philosophy underlying it and the structure and systems for delivering the policy. Employees should also know which parts of the systems are relevant to them, to understand the major risks in the organisation‘s activities and how they are controlled.

2. Job-related needs: These fall into two main types - management needs and non-management needs.

Management needs include:

- leadership skills
- communication skills
- techniques of safety and health management
- training, instruction, coaching and problem - solving skills relevant to safety and health
- understanding of the risks in a manager‘s area of responsibility
- knowledge of relevant legislation and appropriate methods of control, including risk assessment
- knowledge of the organisation‘s planning, measuring, reviewing and auditing arrangements
- awareness of the financial and economic benefits of good safety performance.

Non-management needs include:

- an overview of safety and health principles
- detailed knowledge of the safety and health arrangements relevant to an individual‘s job
- communication and problem-solving skills to encourage effective participation in safety and health activities.

3. Individual needs**:** Individual needs are generally identified through performance appraisal. They may also arise because an individual has not absorbed formal job training or information provided as part of their induction. Training needs vary over time, and assessments should cover:

- induction of new starters, including part-time and temporary workers
- maintaining or updating the performance of established employees, especially if they may be involved in critical emergency procedures
- job changes, promotion or when someone has to deputies
- introduction of new equipment or technology

2.3.2 Defining the health and safety roles and responsibilities of individuals within the organisation

There are a number of internal and external stakeholders of the organization who will have an interest and influence on the introduction and development of the occupational health and safety management system. The internal stakeholders include:

- **Directors and trustees of the organization** - Following several national and international reports on corporate governance in recent years (such as the UK's Combined Code of Corporate Governance 2003), the measurement of occupational health and safety performance and the attainment of health and safety targets have been recognized as being as important as other measures of business performance and targets. A report on health and safety performance should be presented at each board meeting and be a periodic agenda item for sub-committees of the board such as audit and risk management.
- **The workforce** - Without the full co-operation of the workforce, including contractors and temporary employees, the management of health and safety will not be successful. The workforce is best qualified to ensure and provide evidence that health and safety procedures and arrangements are actually being implemented at the workplace. So often this is not the case even though the occupational health and safety managements system is well designed and documented. Worker representatives can provide useful evidence on the effectiveness of the management system at shop floor level and they can also provide a useful channel of communication between the senior management and the workforce. One useful measure of the health and safety culture is the enthusiasm with which workers volunteer to become, and continue to be, Occupational Health and Safety worker representatives. For a representative to be really effective, some training is essential. Organizations which have a recognized trade union structure will have fewer problems with finding and training worker representatives.
- **Health and safety professionals** - Such professionals will often be appointed by the organization to manage the occupational health and safety management system and monitor its implementation. They will, therefore, have a particular interest in the development of the system, the design of objectives and the definition of targets or goals. Unless they have a direct-line management responsibility, which is not very common, they can only act as advisers, but still have a positive influence on the health and safety culture of the organization. The appointed health and safety professional also liaises with other associated competent persons, such as for electrical appliance and local exhaust ventilation testing.

The *external stakeholders* include:

- ***Insurance companies*** - As compensation claims increase, insurance companies are requiring more and more evidence that health and safety is being effectively managed. There is increasing evidence that insurance companies are becoming less prepared to offer cover to organizations with a poor health and safety record and/or occupational health and safety management system.
- **Investors** - Health and safety risks will, with other risks, have an effect on investment decisions. Increasingly, investment organizations require evidence that these risks are being addressed before investment decisions are made.
- **Regulators** - In many parts of the world, particularly in the Far East, national regulators and legislation require certification to a recognized international occupational health and safety management system standard. In many countries, regulators use such a standard to measure the awareness of a particular organization of health and safety issues.
- **Customers** - Customers and others within the supply chain are increasingly insisting on some form of formal occupational health and safety management system to exist within the organization. The construction industry is a good example of this trend. Much of this demand is linked to the need for corporate social responsibility and its associated guidelines on global best practice.
- **Neighbours**-The extent of the interest of neighbours will depend on the nature of the activities of the organization and the effect that these activities have on them. The control of noise, and dust and other atmospheric contaminants are examples of common problem areas which can only be addressed on a continuing basis using a health, safety and environmental
  management system.
- **International organizations** - The United Nations, the ILO, the International Monetary Fund, the World Bank and the World Health Organization are all examples of international bodies which have shown a direct or indirect interest in the management of occupational health and safety. In particular, the ILO is keen to see minimum standards of health and safety established around the world. The ILO works to ensure for every one the right to work in freedom, dignity and security - which includes the right to a safe and healthy work ing environment. More than 70 ILO Conventions and
  Recommendations relate to questions of safety and health. In addition, the ILO has issued more than 30 Codes of Practice on Occupational Health and Safety. For more information see their website www.ilo.org/safework.

'Organising for health and safety' is the collective label given to activities in four key areas that together promote positive health and safety outcomes:

1. **allocation of responsibilities**

The actions of leaders, line managers and supervisors are all important in delivering effective control of health and safety risks. Those actions are covered in Are you doing what you need to do?. This part of the site complements that by focusing on supervisors.

Organisations will decide their own approach to supervision. Whatever method of supervision is used, the role of a supervisor or team leader is important in implementing effective controls.

Because of the regular contact they have with workers, they can make an important contribution to making sure:

- everyone knows how to work safely and without risk to their health
- all workers follow the organisation's rules

A supervisor can coach, help or guide workers to become and remain competent in these areas as well as others.

2. Lines of communication

To achieve success in health and safety management, there needs to be effective communication up, down and across the organisation.

Organisations need to communicate information to their workers on the risk to their health and safety identified in their risk assessments, and the preventive and protective measures necessary to control risk.

The information provided should be communicated appropriately, taking into account:

- workers' levels of competence
- the size and structure of the organisation

How size and structure affect communication

A high-risk workplace, with a large unionised workforce spread over multiple sites, may have trade union representatives from different sites as members of a formal health and safety committee that meets regularly, and feeds into a corporate health and safety committee.

A non-unionised, smaller workplace, located on one small, low-risk site, is more likely to consult directly with employees on a day-to-day basis (eg through toolbox talks, or short safety briefings).

3. Feedback loops

One of the distinctive features of a systems approach is that it incorporates internal feedback loops and time delays that affect the behaviour of the entire system. A benefit of the approach is that it may be able to demonstrate why systems, such as the H&S system, can display non-linearity due to:

a) the process of feedback within the system and

b) the way they interact with their environment.

by allowing for feedback loops and the influence of extraneous factors as represented by the actions of other agents as well as contextual variables to do, for example, with the size and nature of the workplace. However, to build an aggregate picture of the link between HSE activities and H&S outcomes by this means would require the adoption of a reproducible and systematic research method, that currently may not be conceptually or practically possible.

4. The role of the line managers in influencing the health and safety policy and monitoring effectiveness

Experience of working with both large and small organisations has shown that line managers have a critical role in maintaining employee health and well-being and minimising the likelihood of stressful circumstances and situations arising for their staff.

The role you play as a line manager is crucial to the successful implementation of the Management Standards approach in your organisation. There are many areas where you can have a positive influence.

HSE has developed a number of useful aids to help you with these tasks, including a tool that line managers can use to assess their management competencies.

Key roles of the line managers are:

- Line managers play a critical role in specifying task and job requirements and allocating individual job roles for those in their immediate team. This is a key part of job design, so your actions and behaviour could have a very important impact on the quality of working life of your team.
- You play a pivotal role in communicating – for example about change – fostering both ‘upward’ and ‘downward’ communication flows.
- You are critical in ensuring interventions specified in action planning are promptly and properly implemented.

- You can encourage your team members to respond to calls for participation in surveys, data collection, focus groups and other activities linked to the Management Standards process.
- Line manager self-awareness and knowledge about the make-up of team members, is critical to the success of team interaction and performance – you can play to people's strengths and preferences.
- You will often be the first port of call for employees with problems.

2.3.3 Specifying the arrangements for achieving general and specific aims

Health and safety arrangements

These are the systems, procedures and other measures which are required in order to put the policy into effect. They should explain clearly how health and safety will be achieved in the organisation through the implementation, maintenance, monitoring and review of preventative and protective measures.

The arrangements section of your health and safety policy should say how you will meet the commitments you have made in your statement of general policy. You should include information on what you are going to do to eliminate or reduce the risks of the hazards in your workplace.

A **hazard** is anything in your business that could cause harm to people. A **risk** is the chance - however large or small - that a hazard could cause harm.

Your **risk assessment** should have highlighted the areas that may be a risk and any measures you currently have in place. See our guide on managing the risks in your business.

The additional arrangements you will make to control or minimise the risks you have identified should be set out in the arrangements section of your policy. They could include:

- staff training
- using signs to highlight risks
- improved safety equipment such as guards or additional personal protective equipment including goggles, safety boots or high-visibility clothing - see our guide on how to protect yourself and your workforce
- replacing hazardous chemicals with less harmful alternatives
- improved lighting or anti-slip flooring

Planning and Organising

The basis of planning health and safety measures is the risk assessment. This is a systematic analysis and evaluation of the hazards in the workplace and the risks that they present.

Only after a risk assessment may appropriate control measures be introduced to eliminate the hazard or reduce the risks to acceptable levels.

The policy statement will, therefore, identify the need for, and responsibility for carrying out, risk assessments as required by particular regulations (such as those in relation to fire or the use of display screen equipment) or in respect of any other identified hazards in the workplace. These will be specific to the nature of the work carried out.

Other aspects to planning and organising the operation of safety arrangements which the policy needs to address are:

- Systems for monitoring compliance with health and safety measures, including supervisory responsibilities and inspection.
- Systems for the routine maintenance of safety plant and equipment.
- Systems for reporting accidents and other incidents, including the level of detail required.
- Systems for recording and documenting all actions taken and procedures implemented.
- Systems for distributing information to those who need it, including training programmes.

The arrangements for planning and organising health and safety measures needs to spell out the involvement of health and safety specialists, managers and employee representatives.

Controlling the hazards

Recognition and assessment prepare the way for control or elimination of a hazard. Where an assessment finds that a hazard is likely to adversely affect a worker/student, some form of control is needed.

Procedural or behavioural controls:

- Provision of written safe systems of work and, when necessary, the more rigorous "permit to work" system.
- Provision of written instructions for fire safety and fire prevention, including evacuation procedures, escape routes and assembly points.
- Provision of written instructions for the control of contractors and supervision of visitors.

- Procedures involving the use of display screen equipment, including arrangements for eye tests and the provision of corrective lenses.
- Procedures for maintaining cleanliness and for waste disposal.
- Provision of instructions for the use and maintenance of machinery, including machine guarding and emergency procedures in the event of breakdown.
- Provision of suitable personal protective equipment and other safety equipment.
- Provision of instructions concerning handling of hazardous substances used in, or resulting from, the production process.

The policy itself is likely only to make general reference to the hazards faced and the types of control measures to be used. The detail will be contained in separate, highly detailed procedure manuals, guides and sets of instructions which will be held by those responsible for ensuring their implementation, maintenance and review (such as managers at different levels and safety specialists).

The principles of hazard control are often described by the location of the control as follows:

1. **Control at the Source**. The best control is the elimination of the hazard from the campus. If this is not feasible, the best alternative is substitution of a non-hazardous or less hazardous material or process. Where no acceptable substitute is available, enclosing or isolating the hazard can protect against exposure.
2. **Control Along the Path**. Some processes, by their nature, cannot be enclosed or isolated. It may be possible to remove a hazardous gas or dust with a local ventilation system. Alternatively, a general ventilation system can reduce exposure by diluting the concentration of the hazardous substance in the air. These are examples of the control along the path. Other examples of control along the path are screens to prevent welding flash from reaching the eyes of nearby workers/students, and energy lock-out procedures and devices.
3. **Control at the Worker**. Where neither control at the source nor control along the path is effective, control at the worker/student may be necessary. Control at the worker/student often consists of special protective equipment or clothing that must be worn during certain work functions. Gloves for hand protection are the most common example. Ear muffs or plugs for noise protection and respirators for breathing protection are other examples of control at the worker/student.

- Safety hazards can be controlled at the source of the hazard, along the path between the hazard and a person, or at a person. The first priority is to eliminate the hazard from the process entirely, or to control it at its source. Controlling the hazard before it reaches a person is the next most preferred method. Control at a person is used where the hazard cannot be eliminated or blocked. When listing preventative measures, be precise, and avoid statements such as 'use caution' or 'be careful'.

- The completed task hazard analysis should be written up as a safe tasks procedure. This way, every person can be given a standard set of instructions about how to avoid exposure to hazards and task in a safe manner. The use of written safe tasks procedures ensures that every person who performs a task gets the same instructions. Procedures should be reviewed regularly to take account of new factors that may have been introduced into the process. Written procedures can be useful in training programs and new employee orientation. They are also helpful during inspections or injury investigations.

Developing Standard Operating Procedures

The end result of a Job Hazard Analysis is to determine when and where Standard Operating Procedures (SOP) are necessary. Any operation or task that may result in a severe loss potential requires an SOP.

Consultation

It is a legal requirement to consult and co-operate with employees, and appropriate procedures must be in place to allow this to happen. There are two approaches to this:

- Where trade unions are recognised, consultation must take place via safety representatives appointed under the Safety Representatives and Safety Committees Regulations 1977. Where requested, employers must set up a safety committee to discuss regularly with all employee representatives issues relating to the health, safety and welfare of their members.
- All other employees not represented through trade unions must be consulted in accordance with the Health and Safety (Consultation with Employees) Regulations 1996.

Many organisations go a step further than their legal requirement and actively support and encourage consultation. Recent research shows that workplaces with safety representatives have half the accident rate of workplaces with no safety representative. Well-trained safety representatives should be encouraged to participate in development of health and safety policies, measuring performance, investigating accidents and other incidents and generally helping to improve safety performance.

Everyone in the organisation should be encouraged to participate in safety matters, not just the safety representatives. Employees at all levels can become involved, either individually or in groups, to help:

- Set safety standards and targets.
- Devise safe systems of work.

- Participate in risk assessments and safety inspections.

Good safety performance depends on everyone in the organisation co-operating on all safety aspects and taking “ownership” of safety policies.

Supervisors, team leaders and managers should also be encouraged to help set targets and standards for their own departments or functions. Forming ad hoc problem-solving teams to help solve departmental safety problems can greatly increase employee awareness of safety and can help considerably to gain the much-needed “ownership” aspect of health and safety.

Communication

The means of communicating health and safety information to staff need to be spelt out. They will include:

- Use of written procedures – particularly in respect of safe systems of work.
- Provision of instructions – both written and oral, including the siting of clear written instructions and the use of signs, etc.
- Provision of appropriate training – both general training relating to safe conduct at the workplace and specific task-related training for safe working practices.

Monitoring Compliance and Assessing Effectiveness

All arrangements need to be monitored to ensure that they are operating, and being operated, as intended and that they are achieving their objectives. This process of monitoring, review, assessment and, when necessary, amendment applies to the systems for planning and organising controls as much as to the actual procedures and measures taken to control hazards.

The policy would need to spell out the general methods of monitoring:

- **Proactive systems** – involving testing, inspections and consultation procedures which look at how arrangements are operating in practice, and management control systems which ensure compliance with those arrangements.
- **Reactive controls** – involving the investigation and analysis of accidents and other incidents with a view to identifying the problems which caused them.

Proactive systems are clearly superior since they aim to identify deficiencies in current arrangements before any resulting accident, with its likely outcome of personal injury and/or financial loss.

The effectiveness of the arrangements should be assessed against the stated objectives of the policy statement - for example, in relation to accident rates, degree of compliance, numbers of safety failures identified on inspection, etc.

Review of Health and Safety Policy

An organisation's health and safety policy should not be considered as set in tablets of stone once it has been developed and agreed. Rather, it should, as a whole and in respect of individual parts, be the subject of regular review as part of the arrangements for planning and organising.

There are particular circumstances which should give rise to reviews, focused on either the general policy or specific aspects of it depending on the issues involved. Such circumstances include:

- Changes in the structure of the organisation, and/or changes in key personnel.
- A change in premises.
- When work arrangements change, or new processes are introduced.
- When indicated by an audit or a risk assessment.
- Following enforcement action or as a consequence of the findings from accident investigations.
- Following a change in legislation.
- If consultation with employees or their representatives highlights deficiencies.
- If requested by third party – for example, insurance companies, customers or clients.

The object of review should be to identify and resolve any deficiencies in the existing overall philosophy, the organisation of health and safety management and/or the arrangements made to ensure safe working conditions. The HSC leaflet “Writing a Safety Policy. Advice to Employers” sets out a checklist to help employers write health and safety policies, and this can be used to provide a focus for any review. The key questions raised are:

- Does the statement express a commitment to health and safety and explain clearly the organisation’s obligations towards employees?
- Does it say which senior officer is responsible for seeing that it is implemented and for keeping it under review and how this will be done?
- Have the views of managers and supervisors, safety representatives and the safety committee been taken into account?

- Were the duties set out in the statement discussed with the people concerned in advance and accepted by them, and do they understand how their performance is to be assessed and what resources they have at their disposal?
- Does the statement make clear that cooperation on the part of all employees is vital to the success of the health and safety policy?
- Does it say how employees are to be involved in health and safety matters – for example, by direct consultation, involvement in inspections and participation in the safety committee?
- Does it show clearly how the duties for health and safety are allocated and are the responsibilities at different levels described?
- Does it say who is responsible for the following matters (including deputies where appropriate)?
- Reporting investigations and recording accidents.
- Fire precautions, fire drills, evacuation procedures.
- First aid.
- Safety inspections.
- The training programme.
- Ensuring that the legal requirements are met, e.g. regular testing of lifts and notifying accidents to the health and safety inspector.
- Does it clearly identify the safety procedures, systems and measures required in respect of each workplace activity and are those arrangements effective?

2.3.4 The circumstances that may lead to a need to review the health and safety policy

An organisation's health and safety policy should not be considered as rigid and unchanging once it has been developed and agreed. Instead, it should be subject to regular review, both as a whole and in its individual parts, as part of the arrangements for planning and organising.

There are particular circumstances which should give rise to reviews, focused either on the general policy or specific aspects of it, depending on the issues involved. Such circumstances include:

- Changes in the structure of the organisation, and/or changes in key personnel

- A change in the buildings or workplace
- When work arrangements change, or new processes are introduced
- When indicated by a safety audit or a risk assessment
- Following a government enforcement action or as the result of the findings from an accident investigation
- Following a change in legislation
- If consultation with workers or their representatives highlights deficiencies
- If requested by third party – for example, insurance companies, customers or clients.

The aim of the review should be to identify and resolve any deficiencies in the existing overall philosophy, the organisation of health and safety management and/or the arrangements made to ensure safe working conditions. The following checklist is useful to help write health and safety policies. The key questions to ask are:

- Does the statement express a commitment to health and safety and explain clearly the organisation's obligations towards workers?
- Does it say which senior officer is responsible for seeing that it is implemented and for keeping it under review and how this will be done?
- Have the views of managers and supervisors, safety representatives and the safety committee been taken into account?
- Were the duties set out in the statement discussed with the people concerned in advance and accepted by them, and do they understand how their performance is to be assessed and what resources they have at their disposal?
- Does the statement make clear that co-operation on the part of all workers is vital to the success of the health and safety policy?
- Does it say how workers are to be involved in health and safety matters – for example, by direct consultation or involvement in inspections?
- Does it show clearly how the duties for health and safety are allocated and are the responsibilities at different levels described?
- Does it say who is responsible for the following matters (including deputies where appropriate)?

2.3.5 Standards and guidance relating to health and safety policy.

The Occupational Health and Safety Act, Act 85 of 1993, requires the employer to provide and maintain as far as reasonable and practical a work environment that is safe and without risk to the health of employees.

According to this section the employer will be obligated to have a health and safety policy once the chief inspector has directed him to do so. It would therefore not be compulsory for all organisations to formulate and implement a health and safety policy but the employer is still duty-bound to inform employees of work related risks and dangers. According to legal prescription the employer must inform employees how work related risks and dangers could be prevented.

A health and safety policy could prove to be a valuable tool in this regard, in fact the importance of work related policies and procedures cannot be over emphasised. In a home there are usually rules that the family abides by which brings order to the home. The same applies to the workplace; rules and regulations bring order to the workplace**.**

A health and safety policy is a written statement of principles and goals embodying the company's commitment to workplace health and safety. There are no hard and fast rules about what to include in a policy. The employer should create a policy that is suitable and sufficient in order to address the health and safety need of the company.

A good policy will indicate how the organisation protects those who could be affected by its activities and be broad enough to cover all aspects of the company's activities.

The policy should be of an appropriate length and relevance to the activities and size of the organisation.

The health and safety policy statement can be brief, but it should mention:

- a description of the organisation
- recognize the need to comply with minimum standard legislation of the Occupational Health and Safety Act
- recognize the priority of safety in relation to other organizational goals and policies
- acknowledge the right of every employee to work in a safe and healthy environment
- stipulates that management is accountable for occupational health and safety programs and management's commitment to providing a safe and healthy work

environment by eliminating or minimizing the hazards that can cause accidents and injuries

- the organisation's basic health and safety philosophy (statement of health and safety principles and goals)
- the general responsibilities of all employees
- that health and safety shall not be sacrificed for expediency
- that unacceptable performance of health and safety duties will not be tolerated
- encourage co-operation with unions and workers to involve all employees in implementing the health and safety policy into practice
- the policy date
- be signed by the chief executive officer
- be visibly displayed for all workers to see
- review date of the policy

The policy basically demonstrates how seriously an organisation takes its health and safety responsibilities. It is important to note that the employers are bound by the prescriptions of their specific policy and could be held legally liable for not complying with it.

Monitoring that the policy is still effective is also very important; a policy will only be effective if it is reviewed on a regular basis.

The drafting; implementation and monitoring of the organisations health and safety policy is a clear demonstration of management commitment in this regard. Senior management must be committed to carrying out and review that policy consistently and completely.

Health and safety should enjoy the same priority as the organization's other major objectives. Senior management must be committed to ensure that the policy is carried out with no exceptions.

References:

- http://www.ilo.org/safework/normative/codes/lang--en/docName--WCMS_107727/index.htm
- ILOLEX (ILO database of International Law) http://www.ilo.org/ilolex/index.htm
- Occupational Health and Safety Assessment Series (OHSAS 18000): Occupational Health and Safety Management Systems
- Occupational Safety and Health Convention (C155), ILO http://www.ilo.org/ilolex/cgi-lex/convde.pl7C155
- Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001) ISBN-0-580-37805-5
- Occupational Health and Safety Assessment Series (OHSAS 18000): Occupational Health and Safety Management Systems OHSAS 18001:2007 (ISBN-0-580-50802-8), OHSAS 18002:2008 (ISBN 9780-580-61674-7)

Element 3 - Health and safety management systems – Do

Learning outcome:

- Outline the health and safety roles and responsibilities of employers, directors, managers, supervisors, workers and other relevant parties
- Explain the concept of health and safety culture and its significance in the management of health and safety in an organisation
- Outline the human factors which influence behaviour at work in a way that can affect health and safety
- Explain how health and safety behaviour at work can be improved
- Explain the principles and practice of risk assessment
- Explain the preventive and protective measures
- Identify the key sources of health and safety information
- Explain what factors should be considered when developing and implementing a safe system of work for general activities
- Explain the role and function of a permit-to-work system.
- Outline the need for emergency procedures and the arrangements for contacting emergency services
- Outline the requirements for, and effective provision of, first aid in the workplace.

Introduction

This chapter is about managers in businesses, or other organizations, setting out clear responsibilities and lines of communications for everyone in the enterprise. The chapter also covers the ILO Conventions and Recommendations, advises legal responsibilities that exist between people who control premises and those who use them, and between contractors and those who hire them; and the duties of suppliers, manufacturers and designers of articles and substances for use at work. Chapter 2 was concerned with policy, which is an essential first step. The policy will only remain as words on paper, however good the intentions, until there is an effective organization set up to implement and monitor its requirements. Occupational Health and Safety management systems such as ILO- OSH2001 and OHSAS18001:2007 also require that an effective organization is established to implement the policy.

The policy sets the direction for health and safety within the enterprise and forms the written intentions of the principals or directors of the business. The Occupational Health and Safety policy of any organization needs to be clearly communicated and staff need to know what they are responsible for in the day-to-day operations. A vague statement that 'everyone' is responsible for health and safety' is misleading and fudges the real issues.

Everyone is responsible, but management in particular. There is generally no equality of responsibility under law between those who provide direction and create policy and those who are employed to follow. Principals or employers generally, have substantially more responsibility than employees.

Some policies are written so that most of the wording concerns strict requirements laid on employees and only a few vague words cover managers' responsibilities. Generally, such policies do not meet the ILO recommendations and many countries' local OH&S law, which usually require an effective policy with a robust organization and arrangements to be set up.

3.1 Organisational health and safety roles and responsibilities of employers, directors, managers, supervisors, workers and other relevant parties

3.1.1 Employers responsibilities

The ILO Convention 155 and Recommendations 164 place primary responsibilities on. This concept has been followed by many countries although a few still put responsibilities on factory occupiers. The general duties of employers under the ILO Recommendations 164 are:

A. to provide and maintain workplaces, machinery and equipment, and use work methods, which are as safe and without risk to health as is reasonably practicable.
B. to give necessary instructions and training, taking account of the functions and capacities of different categories of workers.
C. to provide adequate supervision of work, of work practices and of application and use of occupational safety and health measures.
D. to institute organizational arrangements regarding occupational safety and health and the working environment adapted to the size of the undertaking and the nature of its activities.
E. to provide, without any cost to the worker, adequate personal protective clothing and equipment which are reasonably necessary when hazards cannot be otherwise prevented or controlled.
F. to ensure that work organization, particularly with respect to hours of work and rest breaks, does not adversely affect occupational safety and health.
G. to take all reasonably practicable measures with a view to eliminating excessive physical and mental fatigue.
H. to undertake studies and research or otherwise keep abreast of the scientific and technical knowledge necessary to comply with the foregoing clauses.
I. to consult with workers or their representatives and form Occupational Health and Safety committees.
J. to set out their Occupational Health and Safety policy in writing (where the size and nature of the organization makes this appropriate).
K. to keep records (such as incidences of accidents and ill-health at work) as required by local legislation, and report these as required to the authorities concerned.
L. to verify implementation of applicable standards, e.g. by environmental monitoring and systematic safety audits.

Employers should also, having regard to the size and activities of the undertaking, make provision for:

(a) the availability of an occupational health service and a safety service, within the undertaking, jointly with other undertakings, or under arrangements with an outside body;
(b) recourse to specialists to advise on particular occupational safety or health problems or supervise the application of measures to meet them.

Employers are also often required to take out insurance to cover their liability in the event of accidents and work-related ill-health to employees and others who may be affected by their operations.

Recent extensions of employers' duties

Current management science theories suggest that performance is better in all areas of business, including Occupational Health and Safety, if it is measured and continuous improvement sought in an organized fashion. Drawing from the principles defined in the ILO Guidelines on Occupational Safety and Health Management Systems 2001, the latest Convention 187 (2003) and its accompanying Recommendation 197 (in 2006) applies a similar approach to the management of national Occupational Health and Safety systems to ensure they are improved through a continuous cycle of policy review, evaluation and action for improvement.

The principles are based on two fundamental concepts, namely to:

- develop a preventative safety and health culture
- apply a systems approach to managing Occupational Health and Safety nationally.

A national preventative safety and health culture is one in which the right to a safe and healthy working environment is respected at all levels. It is also one where governments, employers, workers and other interested stakeholders actively participate in securing a safe and healthy working environment through a system of defined rights, responsibilities and duties, and where the principle of prevention is accorded the highest priority. Building and maintaining such a culture requires a permanent mobilization of all available means of action, particularly education and training, to increase general awareness, knowledge and understanding of the concepts of hazards and risks and how they may be prevented and controlled. Educational systems need to recognize the concepts of workplace hazards, risks and prevention, including them within national curricula as appropriate, thereby promoting greater continuity between public and workplace safety and health issues.

Employers' duties have therefore often been extended in modern Occupational Health and Safety legislation to include:

(a) the need to conduct and record risk assessments;

(b) requirements to include continual improvement and develop a preventative Occupational Health and Safety culture;
(c) setting up a systems approach to Occupational Health and Safety management by following the ILO-OSH 2001 or the OHSAS 18001:2007 approaches which are largely identical.

Visitors and general public

Organizations usually have a duty to ensure the health and safety of the public while on their premises, even if the individuals concerned, like children, are not supposed to be there. Two cases in the UK reported in the Autumn of 2008 have highlighted how far this liability can extend. Misunderstandings regarding who is responsible for monitoring and protecting contractors and sub contractors - leading to the failure to carry out responsibilities - is often at the heart of high-profile health and safety cases. But situations such as these could be avoided with a clearer understanding of employers' and contractors' responsibilities.

UK Case studies

Two companies pleaded guilty to charges of breaching the HSW Act 1974 following the drowning of a 9-year-old girl, who was playing with other children in the company car park when they strayed onto nearby reservoirs. At the time of the accident, in 2004, the main gates to the factory were off their hinges because work was being carried out on the site and a second gate, which led to the reservoir, was only secured with a nylon rope.

In a separate case, a construction company has been found guilty of failing to prevent unauthorized persons, including children, from gaining access to an area where construction material and equipment were stored. A child was seriously injured by falling paving stones while playing on a partly -built housing estate where materials were being stored during construction work.

Visitors to a site whether authorized or not are often more at risk than employees because:

- they are unfamiliar with the workplace processes, the hazards and associated risks they present
- they may not have the appropriate personal protective equipment (PPE)
- they will have a lack of knowledge of the site or premises layout
- walkways are often inadequate, unsigned or poorly lit
- they are not familiar with the emergency procedures or means of escape

- they may be particularly vulnerable if they suffer from a disability or are very young

Many of these problems with visitors can be overcome by, for example:

- visitors signing in and being provided with a site escort
- providing appropriate PPE and identity badges
- providing simple induction procedures with a short video and information on site rules, hazards and emergency procedures
- clear marking of walkways and areas where unauthorized people are not permitted

Night working

Night working is usually provided with additional restrictions and employers should ascertain whether they employ people who would be classified as night workers. If so, they should check:

(a) whether there are specific local restrictions on night working;
(b) who may work at night, some vulnerable people like young people under 18 years of age and pregnant women are excluded;
(c) how much working time night workers normally work;
(d) if night workers work more than say eight hours per day on average, whether the number of hours can be reduced and if any exceptions apply;
(e) how to conduct a health assessment and how often health checks should be carried out;
(f) that proper records of night workers are maintained, including details of health assessments (where required);
(g) that night workers are not involved in work which is particularly hazardous.

Ensuring availability of resources so the occupational health and safety management system is established, implemented and maintained.

ensuring availability of resources is fundamental to the achievement of all other requirements. So the top management is required to ensure availability of resources for
1) maintenance (day to day business needs)
2) improvement (to meet the policy commitments) &
3) contingency

In addition to providing the required resources (financial, physical and human both in terms of quantity & quality), top management must also ensure that the resources are properly deployed, maintained, monitored (that they are focused on meeting the process objectives) and disposed off (though it's a part of environment management).

In order to demonstrate that, the top management needs to ensure that:

- appropriate processes are established within the organization for resource need identification, acquisition, deployment, monitoring, maintenance etc.
- policies are in place and clear objectives are established to enable the managers/staff to know what requirements they have to meet.
- people have access to business plan, sales/marketing targets, production plans, new product development plans, customer requirements, policies, procedures, documents & objectives
- adequate provision has been made to meet any contingencies during the budgeted period.

In addition, in order to achieve the organizational objectives, it's also necessary that people in the organization make effective use of their time. Time is one of the most important intangible resource but often overlooked. It's not only about making availability of time to people but to identify and put checks on the 'time wasters' for improving the staff efficiency. Typical time wasters are; phone calls, visitors (personal), meetings, functions, firefighting, unclear communication, untidy workplace, insufficient information, excessive work leading to stress & fatigue, organizational politics etc. etc. If the lack of time management is on the part of people, they need to be properly trained to effectively manage this resource.

3.1.2 Role of the CEO/HSE Management Team

It is the responsibility of the CEO and the HSE Management team:

- To ensure that the HSE is compliant with Part 9 of the Health Act 2004.
- To ensure that all HSE Service Managers and staff are aware of and comply with the complaints management policy and procedures.
- To ensure that there is effective monitoring and evaluation of the complaints system on an agreed routine basis.

- To ensure that organisational improvements are implemented in response to complaints received as far as is reasonably practicable and in line with the requirements of Part 9 of the Health Act 2004.

Role of Head of Consumer Affairs

The role of the Head of Consumer Affairs is outlined under the following headings:

Development

- Ensure that a comprehensive system for the management of complaints is in place and being implemented in the HSE and relevant Service Providers.
- Ensure that appropriate personnel are appointed throughout the HSE to effectively manage complaints including the appointing of Complaints Officers and Review Officers in accordance with Section 45 the Health Act 2004 and the Health Act 2004 (Complaints) Regulations 2006.

Communication

- Ensure an effective communication process is in place to inform the consumer/service user of the HSE complaints management processes.

Monitoring, evaluation and reporting

- Ensure an effective process for the monitoring and evaluation of complaints in the HSE and to ensure this information is communicated throughout the HSE.
- Ensure that appropriate reporting systems are in place between the HSE and the relevant Service Provider in accordance with Part 9, section 55(2) of the Health Act 2004.
- Prepare a general report on complaints and reviews for inclusion in the HSE's annual report.

Organisational improvements

- Inform the CEO and the Senior Management Team, on an ongoing basis, of trends and issues arising as a result of complaints.
- Ensure that there is effective communication with the Head of Quality and Risk to quality assure the complaints management process and to ensure that quality improvements are implemented where possible as a results of complaints.

Role of Head of Quality and Risk (in relation to complaints)

It is the role of the Head of Quality and Risk to:

- Maintain continuous links with the Head of Consumer Affairs to ensure that effective quality assurance/improvement systems to support the management of complaints in the HSE are established.
- Provide Quality and Risk personnel for participation in the review process as required.
- Ensure that quality improvements are implemented wherever possible as a result of complaints and to raise issues in relation to non-implementation of quality improvements to the Senior Management Team.
- To ensure enhanced management of complaints and incident investigations through collaboration between complaints management and risk management personnel.

Area Manager for Consumer Affairs

For the purpose of the implementation of this procedure, the role of the Area Manager for Consumer Affairs is to:

- Ensure that the HSE complaints management process is effectively implemented throughout their Administrative Area.
- To ensure that staff within their Administrative Area receive appropriate training in complaints handling.
- Ensure that standardised consumer friendly information, templates, forms etc. are available for distribution by Complaints Officers in all locations of their Administrative Area.
- To inform the Head of Consumer Affairs of any major and catastrophic complaints as they arise.
- To act as Review Officers as appointed by the Head of Consumer Affairs.
- Ensure that the rights and the legitimate interests of consumers and health service staff are being protected in the implementation of the HSE Complaints Management Policy and associated procedures.
- Ensure that there is routine collection, analysis and communication of trends in complaints received within that Administrative Area.
- To compile a report and submit this report to the Head of Consumer Affairs at an interval determined by the Head of Consumer Affairs.
- Evaluate the complaints data for the Administrative Area to ensure the correct and effective management of complaints.
- Audit the quality of recommendations for actions as a result of complaints in their Administrative Area and to audit the implementation of these recommendations.

- Ensure that relevant Service Providers (non-HSE) in their Administrative Area have an appropriate complaints management system in place as defined in the Health Act 2004.
- Provide a routine report on complaints to the Head of Consumer Affairs as required.
- Liaise with the appropriate Quality and Risk personnel in their Administrative Area, to ensure that complaints management is linked with sustainable quality improvement.
- Participate in the evaluation of consumer perception of the complaints management process in their Administrative Area.

Role of Consumer Affairs Area Office Staff

- Consumer affairs staff must keep themselves appraised and fully briefed in the latest developments, guidelines, policies and procedures in relation to complaints management
- Consumer Affairs staff shall assist and advise service users / complainants and HSE staff on the complaints management procedure.
- Consumer Affairs Area Office staff must ensure that a database and tracking system of all complaints is created and maintained.
- Consumer Affairs Area Office staff must ensure that all written complaints received in the Consumer Affairs Area Office are logged, administratively acknowledged and forwarded to an appropriate Complaints Officer. In exceptional circumstances the complaint may need to be sent to the relevant service manager.
- It is the responsibility of the Area Officer to collect complaints statistics from Complaints Officers and forward them to the Area Manager on a monthly basis.
- It is the responsibility of the Area Manager to ensure that a quarterly status report is prepared and presented to the Head of Consumer Affairs.

Role of Complaints Officers

Statutory roles and responsibilities

- Identify non-excluded matter of complaint and investigate
- Inform relevant parties of decision to extend or not extend time frame
- To find resolution of the complaint using any necessary tools such as mediation. Where appropriate and practicable, endeavour to resolve the complaint with the consent of both parties, using approaches such as mediation.
- Investigate and conclude within 30 working days or inform complainant of delay and update every 20 days

- Request documents and communicate with such persons to assist with investigation of the complaint
- If findings in the report adverse to a person - provide the opportunity for their response
- May make recommendations
- Provide Complainant and CEO/delegate with a report of the complaint
- Where complaint is withdrawn Complaints Officer may bring to attention of Head of Consumer Affairs to determine of investigation should continue.

Best practice

- Ensure timeliness, quality and consistency in complaints management
- Acknowledge a complaint being received by or assigned to him/her within 5 working days.
- Conduct a pre-investigation of the complaint to determine the validity of the complaint in accordance with section 50 of the Health Act, 2004.
- Determine if a complaint falls within the scope of this Standard Operating Procedure or if it requires management under alternative processes.
- Alert senior management and Consumer Affairs Area Manager to possible major and catastrophic complaints as they arise.
- Prepare a report on the investigation at the conclusion of the investigation or at any time during the investigation if requested by the Head of Consumer Affairs or Service Provider as appropriate.

Communication

- Ensure that consumer-friendly information on how to make a complaint is widely available throughout health service locations.

Development

- Ensure that the standardised HSE procedures for complaint management are being implemented and adhered to in their area of responsibility.
- Monitor the implementation of the complaints management procedures
- Ensure that the rights and the legitimate interests of consumers and health service staff are being protected in the implementation of the HSE Complaints Management Policy and associated procedures.

Supporting staff and service providers

- Ensure that all Service Managers and staff within the HSE and relevant Service Providers are supported to effectively manage complaints at the first point of contact.
- Support the implementation of the HSE complaints management process by non-HSE Service Providers.
- Co-ordinate education and training for staff in complaints handling

Monitoring, evaluation and reporting

- Ensure that standardised letters, forms etc., developed nationally for complaints management and data collection, are being used locally.
- Determine the overall effectiveness of the complaints management procedures within their area of responsibility
- Participate in the evaluation of consumer perception of the complaints management process.
- Co-ordinate the collection of complaints data and to disseminate this information as appropriate
- Submit reports to the Consumer Affairs Area Officer for their respective area.

Organisational learning

- Facilitate organisational improvement and learning through strong linkages with Quality and Risk Personnel and the availability of robust data systems.

Role of Review Officers

Review Officers will be appointed by the Head of Consumer Affairs in line with the Health Act 2004 (Complaints) Regulations 2006.
Upon an application for review being made, the Head of Consumer Affairs will appoint a Review Officer to review the recommendations made by Complaints Officers after the investigation of a complaint. It is the role of the Review Officer to:

- Determine the appropriateness of the recommendations by reviewing the processes used to investigate the complaint and having regard to all aspects of the complaint and its investigation.
- Accept the original recommendation or make another recommendation if he or she determines it appropriate to do so.
- Prepare a report on the review at the conclusion of the review, forward it to the complainant, the complaints officer who investigated the complaint, Local Health Manager or Hospital Network Manager (as appropriate), Head of Department or Service Provider (as appropriate) and send a copy of the report to the Head of

Consumer Affairs. The Head of Consumer Affairs may request a report on the review at any time during the review

Role of Service Managers

It is the role of all HSE Service Managers to:

- Be aware of and to implement the procedures outlined in this document.
- Report on the complaints management process within their area to Complaints Officers.
- Hold responsibility for, and have an understanding of, effective complaints management and to effectively communicate these processes to their staff.
- Ensure that staff receive training, education and support in the complaints handling processes.
- To co-operate with and take a pro-active approach in the local resolution/investigation of complaints that involves their service.
- Liaise with Complaints Officers in the resolution/investigation and reporting of complaints
- Provide evidence that lessons have been learned and improvements have been made to their service as a result of complaints.
- Ensure that they delegate the above functions to a named staff member who will fulfil these roles in their absence.

Role of Staff

All HSE and relevant Service Provider staff (as defined in Section 4.0) have an obligation to effectively deal with complaints made to them, either through dealing with the complaint at the point of contact in line with the local complaints management systems where appropriate or forwarding the complaint to the Complaints Officer for their area for management.
In addition, it is the role of staff to:

- Participate in Complaints Management Training.
- Partake in any investigation of a complaint where necessary.
- Be involved in improvement initiatives within their service.
- Provide data relevant to complaints to service managers.

3.1.3 Top management Role in reviewing health and safety performance

The management system approach, informed by risk assessment and characterised by multiple feed-back loops from monitoring and review, has been promoted in HSE's guidance 'Successful Health and Safety Management' HSG65 which stresses the potential of a 'systems' approach to enhance standards of health and safety.

Despite the success of publications such as HSG65, there is evidence that many organisations are failing to understand the position of OS&H in relation to total quality management (TQM) and business excellence models or the potential of such models to inform and improve their approach to OS&H management. Leadership and continuous improvement with respect to OS&H is often far behind that for product or service quality and a key influencing factor is insufficient appreciation of the 'business case' for OS&H at director level.

In part this may be because many directors, particularly those in smaller firms, have not fully understood or responded to contemporary OS&H concepts:

For example, they may:

- perceive OS&H as a technical and regulatory compliance issue; but
- fail to understand the goal setting approach to OS&H law;
- see health and safety requirements as over-restrictive or 'burdensome'; and
- wrongly interpret HSE guidance as having prescriptive regulatory force;
- see regulations as being too vague and/or impossible to comply with; and
- fail to fully appreciate the 'business case' for OS&H.

Strengthening director involvement

Greater uptake of pro-active risk management is unlikely unless there is increased commitment to OS&H from senior business leaders. Factors which are likely to stimulate greater director involvement in OS&H include:

- ethical considerations;
- official guidance on directors' OS&H roles;
- the 'business case' for OS&H (including loss of corporate credibility following accidents etc.);
- OS&H law and enforcement;
- client pressure;

- trades union and workforce involvement;
- the impact of common law claims;
- shareholder, public and political expectations;
- legislative reform to enhance corporate and director liability; and
- higher standards of corporate governance.

Measuring OS&H Performance

RoSPA suggests that one of the reasons why OS&H receives less board level attention than other business priorities is because of the difficulty in measuring effectiveness in responding to what is a complex, multi-dimensional challenge. Find out more about measuring OS&H performance.

Reporting on Corporate Health and Safety Performance

In order to manage health and safety effectively, it is essential that, periodically, organisations should set out a clear and concise account of their performance against strategy for the whole workforce, but especially for managers, safety representatives and health and safety professionals. This is to enable all employees to understand progress in achieving corporate health and safety objectives and for those with management responsibilities to communicate such information to key internal and external audiences.

3.1.4 Roles & responsibilities of workers of themselves & others who may be affected by their acts or omissions.

Employees or workers have specific responsibilities under the ILO Convention, which are to:

(a) take reasonable care for their own safety and that of other persons who may be affected by their acts or omissions at work;
(b) comply with instructions given for their own safety and health and those of others and with safety and health procedures;
(c) use safety devices and protective equipment correctly and do not render them inoperative;
(d) report forthwith to their immediate supervisor any situation which they have reason to believe could present a hazard and which they cannot themselves correct;
(e) report any accident or injury to health which arises in the course of or in connection with work.

Where a worker complains, in good faith, about what they consider is a breach of statutory requirements or a serious inadequacy in measures taken by the employer on OSH or the

working environment, no measures prejudicial to the worker should be taken. See also Chapters 1 and 17 for further discussion.

It is important that workers participate in the risk assessment. They know the problems and the details of what really happens when they perform their tasks or activities, so they should be involved in the assessment. Their practical knowledge or competence is also often needed to develop workable preventive measures.

Workers' participation is not only a right, it is fundamental to make the employers' occupational health and safety management effective and efficient.

Workers and/or their representatives have the right/duty to:

- be consulted on arrangements for the organisation of the risk assessment and for the appointment of those undertaking the task
- participate in the risk assessment
- alert their supervisors or employers regarding perceived risks
- report any changes in the workplace
- be informed of the risks to their safety and health and of the measures necessary to eliminate or reduce these risks
- be involved in the process of deciding on the preventive and protective measures to be put in place
- ask the employer to put in place appropriate measures and to submit proposals to minimise hazards or to remove the danger at source
- cooperate to help the employer to ensure that the working environment is safe
- be trained/receive instructions on the measures to be put in place
- take care as far as possible of their safety and health and that of others persons affected by their acts in accordance with the training and the instructions given by the employer

In addition, it is important workers representatives are trained so that they understand risk assessment and their role in it.

3.1.5 Shared responsibilities in the case of joint occupation of premises: co-operation & co-ordination

It clarifies the general health and safety responsibilities of clients and contractors to protect each other, their workforce and anyone else (eg visitors, people living nearby and other members of the public). These responsibilities, if not properly managed, can lead to events that could prove costly to all parties. The leaflet includes case studies showing what can happen when things go wrong. As well as the immediate effects, further consequences can arise from delays to the work and claims for damages. All parties must co-operate to ensure that health and safety is properly managed – this will avoid things going wrong in the first place.

Work undertaken for a client by a contractor is usually covered by a civil contract. It is good practice for health and safety requirements to be written in to such a contract. However, health and safety responsibilities are defined by the criminal law

and cannot be passed on from one party to another by a contract. In any client/contractor relationship, both parties will have duties under health and safety law. Similarly, if the contractor employs sub-contractors to carry out some or all of the work, all parties will have some health and safety responsibilities. The extent of the responsibilities of each party will depend on the circumstances.

Clients, contractors and sub-contractors should monitor their health and safety performance. This means checking whether the risk assessment is up to date and that control measures are working. The level of monitoring depends on the risks – the greater the risks, the greater the monitoring. Clients should make periodic checks on the contractor's performance to see if the work is being done as agreed. Contractors and sub-contractors should carry out day-to-day checks to see that what should be done is being done. Some work-related accidents, diseases and dangerous occurrences have to be reported to the enforcing authorities. It is good practice to investigate all injuries, cases of work-related ill health and 'near misses' to find out what went wrong and why they were not prevented. Clients, contractors and subcontractors should share the lessons learnt from monitoring and investigations with each other and with all the workforce.

Where health and safety requirements are not being met, the first step is for the client and the contractor to find out why and put matters right. If health and safety performance is not brought up to requirements, the client will need to stop the contractor working on the job until requirements can be met.

Co-operation and co-ordination

In any client/contractor relationship, there must be co-operation and co-ordination between all the parties involved, to ensure the health and safety of all at the workplace and anyone else likely to be affected. The client should set up liaison arrangements

with all parties. This could take the form of regular meetings or briefings. Liaison is particularly important where variations of the work are proposed or where more than one contractor or sub-contractor is engaged.

3.2 Organisational health and safety responsibilities - directors

In addition to the legal responsibilities on management, there are many specific responsibilities imposed by each organization's health and safety policy. Section 3.6 gives a typical summary of the health and safety responsibilities and accountability of each level of the line organization. More details are given in Appendix 3.1. Many organizations will not fit this exact structure but most will have those who direct, those who manage or supervise and those who have no line responsibility, but have responsibilities to themselves and fellow workers.

Effective health and safety performance comes from the top; members of the board have both collective and individual responsibility for health and safety.

Directors and board members need to act because:

- protecting the health and safety of employees or members of the public who may be affected by their activities is an essential part of risk management and must be led by the board

- failure to include health and safety as a key business risk in board decisions can have catastrophic results. Many high-profile safety cases over the years have been rooted in failures of leadership
- health and safety law usually places duties on organizations and employers, and directors can be personally liable when these duties are breached. Members of the board have both collective and individual responsibility for health and safety.

3.2.1 Plan and direction of health and safety

The Board should set the direction for effective health and safety management. Board members need to establish a health and safety policy that is much more than a document - it should be an integral part of the organization's culture, its values and performance standards.

All board members should take the lead in ensuring the communication of health and safety duties and benefits throughout the organization. Executive directors must develop policies to avoid health and safety problems and must respond quickly where difficulties arise or new risks are introduced; non-executives must make sure that health and safety is properly addressed.

Core actions

To agree a policy, Boards will need to ensure they are aware of the significant risks faced by their organization. The policy should set out the Board's own role and that of individual board members in leading the health and safety of its organization. It should require the board to:

- 'own' and understand the key issues involved
- decide how best to communicate, promote and champion health and safety.

The health and safety policy is a 'living' document and it should evolve over time, for example, in the light of major organizational changes such as restructuring or a significant acquisition.

Good practice

- Health and safety should appear regularly on the agenda for board meetings
- The Chief Executive can give the clearest visibility of leadership, but some Boards find it useful to name one of their members as the health and safety 'champion'
- The presence of a Health and Safety Director on the Board can be a strong signal that the issue is being taken seriously and that its strategic importance is understood
- Setting targets helps define what the board is seeking to achieve
- A non-executive director can act as a scrutinizer -ensuring that the processes to support boards facing significant health and safety risks are robust

3.2.2 Deliver health and safety

Delivery depends on an effective management system to ensure, so far as is reasonably practicable, the health and safety of employees, customers and members of the public.

Organizations should aim to protect people by introducing management systems and practices that ensure risks are dealt with sensibly, responsibly and proportionately.

Core actions

To take responsibility and 'ownership' of health and safety, members of the board must ensure that:

(a) health and safety arrangements are adequately resourced;
(b) they obtain competent health and safety advice;
(c) risk assessments are carried out;
(d) employees or their representatives are involved in decisions that affect their health and safety.

The board should consider the health and safety implications of introducing new processes, new working practices or new personnel, dedicating adequate resources to the task and seeking advice where necessary.

Boardroom decisions must be made in the context of the organization's health and safety policy; it is important to 'design-in' health and safety when implementing change.

Good Practice

- Leadership is more effective if visible - Board members can reinforce health and safety policy by being seen on the 'shop floor', following all safety measures themselves and addressing any breaches immediately
- Consider health and safety when deciding senior management appointments
- Having procurement standards for goods, equipment and services can help prevent the introduction of expensive health and safety hazards
- The health and safety arrangements of partners, key suppliers and contractors should be assessed; their performance could adversely affect director's own performance
- Setting up a separate risk management or health and safety committee as a subset of the board, chaired by a senior executive, can make sure the key issues are addressed and guard against time and effort being wasted on trivial risks and unnecessary bureaucracy
- Providing health and safety training to some or all of the Board can promote understanding and knowledge of the key issues in the organization
- Supporting worker involvement in health and safety, above the legal duty to consult worker representatives, can improve participation and help prove senior management commitment.

3.2.3 Monitor health and safety

Monitoring and reporting are vital parts of a health and safety system. Management systems must allow the board to receive both specific (e.g. incident-led) and routine reports on the performance of health and safety policy.

Much day-to-day health and safety information need be reported only at the time of a formal review. But only a strong system of monitoring can ensure that the formal review can proceed as planned - and that relevant events in the interim are brought to the board's attention.

Core actions

The Board should ensure that:

(a) appropriate weight is given to reporting both preventive information (such as progress of training and maintenance programmes) and incident data (such as accident and sickness absence rates);
(b) periodic audits of the effectiveness of management structures and risk controls for

health and safety are carried out;

(c) the impact of changes such as the introduction of new procedures, work processes or products, or any major health and safety failure, is reported as soon as possible to the board;

(d) there are procedures to implement new and changed legal requirements and to consider other external developments and events.

Good practice

- Effective monitoring of sickness absence and workplace health can alert the board to underlying problems that could seriously damage performance or result in accidents and long-term illness.
- The collection of workplace health and safety data can allow the board to benchmark the organization's performance against others in its sector.
- Appraisals of senior managers can include an assessment of their contribution to health and safety performance.
- Boards can receive regular reports on the health and safety performance and actions of contractors.
- Some organizations have found they win greater support for health and safety by involving workers in monitoring.

3.2.4 Review health and safety

A formal boardroom review of health and safety performance is essential. It allows the Board to establish whether the essential health and safety principles - strong and active leadership, worker involvement, and assessment and review - have been embedded in the organization. It tells senior managers whether their system is effective in managing risk and protecting people.

Core actions

The board should review health and safety performance at least once a year. The review process should:

(a) examine whether the health and safety policy reflects the organization's current priorities, plans and targets;

(b) examine whether risk management and other health and safety systems have been effectively reported to the board;

(c) report health and safety shortcomings, and the effect of all relevant board and management decisions;

(d) decide actions to address any weaknesses and a system to monitor their implementation;

(e) consider immediate reviews in the light of major shortcomings or events.

Good practice

- Performance on health and safety and well-being is increasingly being recorded in organizations' annual reports to investors and stakeholders.
- Board members can make extra 'shop floor' visits to gather information for the formal review.
- Good health and safety performance can be celebrated at central and local level.

3.3 Managing directors/Chief executives

Managing Directors/Chief Executives are responsible for the health, safety and welfare of all those who work or visit the organization. In particular, they:

1. are responsible and accountable for health and safety performance within the organization;
2. must ensure that adequate resources are available for the health and safety requirements within the organization;
3. establish, implement and maintain a formal, written health and safety programme for the organization that encompasses all areas of significant health and safety risk;
4. approve, introduce and monitor all site health and safety policies, rules and procedures;
5. review annually the effectiveness and, if necessary, require revision of the health and safety programme.

3.4 Departmental managers

The principal departmental managers may report to the Site Manager, Managing Director or Chief Executive. In particular, they:

1. are responsible and accountable for the health and safety performance of their department.
2. must ensure that any machinery, equipment or vehicles used within the department are maintained, correctly guarded and meet agreed health and safety standards. Copies of records of all maintenance, statutory and other necessary inspections (e.g. by insurance companies or other officials) must be kept by the Departmental Manager.
3. develop a training plan that includes specific job instructions for new or transferred employees and follow up on the training by supervisors. Copies of records of all training must be kept by the Departmental Manager.
4. personally investigate all lost workday cases and dangerous occurrences and report to their line manager. Progress any required corrective action.

3.5 Supervisors responsibilities

The supervisors are responsible to and report to their Departmental Manager. In particular, they:

1. are responsible and accountable for their team's health and safety performance
2. enforce all safe systems of work procedures that have been issued by the Departmental Manager
3. instruct employees in relevant health and safety rules, make records of this instruction and enforce all health and safety rules and procedures.
4. enforce PPE requirements, make spot checks to determine that protective equipment is being used and periodically appraise condition of equipment. Record any infringements of the PPE policy.

3.6 Workers responsibilities

It is important that workers participate in the risk assessment. They know the problems and the details of what really happens when they perform their tasks or activities, so they should be involved in the assessment. Their practical knowledge or competence is also often needed to develop workable preventive measures.

Workers' participation is not only a right, it is fundamental to make the employers' occupational health and safety management effective and efficient.

Workers and/or their representatives have the right/duty to:

- be consulted on arrangements for the organisation of the risk assessment and for the appointment of those undertaking the task
- participate in the risk assessment
- alert their supervisors or employers regarding perceived risks
- report any changes in the workplace
- be informed of the risks to their safety and health and of the measures necessary to eliminate or reduce these risks
- be involved in the process of deciding on the preventive and protective measures to be put in place
- ask the employer to put in place appropriate measures and to submit proposals to minimise hazards or to remove the danger at source
- cooperate to help the employer to ensure that the working environment is safe
- be trained/receive instructions on the measures to be put in place
- take care as far as possible of their safety and health and that of others persons affected by their acts in accordance with the training and the instructions given by the employer

In addition, it is important workers representatives are trained so that they understand risk assessment and their role in it.

3.7 Role and functions of health and safety practitioners and other advisers

3.7.1 Appointing one or more competent persons and adequate resources to provide assistance in meeting the organisation's health and safety obligations (including specialist help where necessary)

The ILO Convention requires that there should be an occupational health service and a safety service available within the organization, jointly with other organizations or from an outside body. Some countries require this by law; others are not specific on the issue. In

Europe a person must be appointed to assist managers to implement the legislation. The essential point is that managers should have access to expertise to help them fulfill their legal requirements and achieve an acceptable standard of health and safety at those workplaces for which they are responsible. However, the appointed person(s) or outside body will generally remain as advisers and not assume responsibility in law for health and safety matters. This responsibility usually remains with line managers and cannot be delegated to an adviser, whether inside or outside the organization.
Many health and safety issues can be tackled by people with an understanding of current best practice and an ability to judge and solve problems. Some specialist help may be needed for the long term, while other help may only be needed for a one-off short period. There is a wide range of specialists available for different types of health and safety problems. For example:

- engineers for specialist ventilation or chemical processes;
- occupational hygienists for assessment and practical advice on exposure to chemical (dust, gases, fumes, etc.), biological (viruses, fungi, etc.) and physical (noise, vibration, etc.) agents;

- occupational health professionals for medical examinations and diagnosis of work-related disease, pre-employment and sickness advice, health education
- ergonomists for advice on suitability of equipment, comfort, physical work environment, work organization
- physiotherapists for treatment and prevention of musculoskeletal disorders
- radiation protection advisers (for advice on compliance with the Ionizing Radiation Regulations 1999 UK)
- health and safety practitioners for general advice on implementation of legislation, health and safety management, risk assessment, control measures and monitoring performance

3.7.2 Health and safety practitioner

Status and *competence* are essential to the role of health and safety practitioners and other advisers. They must be able to advise management and employees or their representatives with authority and independence . They need to be able to advise on:

- creating and developing health and safety policies. These will be for existing activities in addition to new acquisitions or processes
- the promotion of a positive health and safety culture. This includes helping managers to ensure that an effective health and safety policy is implemented

- health and safety planning. This will include goal-setting, deciding priorities and establishing adequate systems and performance standards. Short- and long-term objectives need to be realistic
- day-to-day implementation and monitoring of policy and plans. This will include accident and incident investigation, reporting and analysis
- performance reviews and audit of the whole health and safety management system.

To do this properly, health and safety practitioners need to:

- have correct training and be suitably qualified - for example NEBOSH Diploma or competence-based IOSH (or other national Professional Association) Membership, relevant degree and, where appropriate, a Chartered Safety and Health Practitioner. NEBOSH certificate in small- to medium-sized low-hazard premises, like offices, call centers, warehouses and retail stores
- keep up-to-date information systems on such topics as civil and criminal law, health and safety management and technical advances
- know how to interpret the law as it applies to their own organization
- actively participate in the establishment of organizational arrangements, systems and risk control standards relating to hardware and human performance. Health and safety practitioners will need to work with management on matters such as legal and technical standards
- undertake the development and maintenance of procedures for reporting, investigating, recording and analyzing accidents and incidents
- develop and maintain procedures to ensure that senior managers get a true picture of how well health and safety is being managed (where a benchmarking role may be especially valuable). This will include monitoring, review and auditing
- be able to present their advice independently and effectively

Relationships within the organization

Health and safety practitioners:

- support the provision of authoritative and independent advice;
- report directly to directors or senior managers on matters of policy and often have the authority to stop work if it contravenes agreed standards and puts people at risk of injury;
- are responsible for professional standards and systems.

They may also have line management responsibility for other health and safety practitioners, in a large group of companies or on a large and/or high-hazard site.

Relationships outside the organization

Health and safety practitioners also have a function outside their own organization. They provide the point of liaison with a number of other agencies including the following:

- local OSH enforcement officers and licensing officials
- architects and consultants
- local fire and rescue authorities;
- local police authorities;
- local authorities;
- insurance companies;
- contractors;
- clients and customers;
- public;
- equipment suppliers;
- professional OH&S associations;
- other OH&S specialists and services.

3.8 Persons in control of premises

In some situations the employer is not the only person responsible for the safety of people in a workplace. Certain duties are placed on, for example, 'Persons in control of [usually *non-domestic]* premises', to take such steps as are reasonable in their position to ensure that there are no risks to the health and safety of people who are not employees but use the premises. Examples would be where there are several workplaces or companies occupying a large building owned and controlled by a landlord. This duty may extend to:

- people entering the premises to work;
- people entering the premises to use machinery or equipment, for example a launderette;
- access to and exit from the premises;
- corridors, stairs, lifts and storage areas.

Those in control of premises need to take a range of steps depending on the likely use of the premises and the extent of their control and knowledge of the actual use of the premises. For example they may need to provide fire alarms and escape routes which are common to all occupiers of the premises.

3.9 Self employed

The duties imposed on the self-employed are often non-existent or fairly limited. Because the work of self-employed people can affect the safety of others they should be responsible:

- for their own health and safety
- to ensure that others who may be affected are not exposed to risks to their health and safety
- to carry out risk assessment
- to co-operate with other people who work in the premises and, where necessary, in the appointment of a health and safety coordinator
- to provide comprehensible information to other peoples' employees working in their undertaking.

3.10 The supply chain

3.10.1 Introduction

Market leaders in every industry throughout the world are increasing their grip on the chain of supply. They do so by monitoring rather than managing, and also by working more closely with suppliers. The result of this may be that suppliers or contractors are absorbed into the culture of the dominant firm, while avoiding the costs and liabilities of actual management. Powerful procurement departments emerge to define and impose the necessary quality standards and guard the lists of preferred suppliers.

The trend in many countries and manufacturing businesses is to involve suppliers in a greater part of the manufacturing process so that much of the final production is the assembly of pre-fabricated subassemblies. This is particularly true of the automotive and aircraft industries. This is good practice as it:

- involves the supplier in the design process
- reduces the number of items being managed within the business
- reduces the number of suppliers
- improves quality management by placing the onus on suppliers to deliver fully checked and tested components and systems

In retail, suppliers are even given access to daily sales and forecasts of demand which would normally be considered as highly confidential information. In the process, the freedom of local operating managers to pick and choose suppliers is reduced. Even though the

responsibility to do so is often retained, it is strongly qualified by centrally imposed rules and lists, and assistance or oversight.
Suppliers have to be:

- trusted
- treated with fairness in a partnership
- given full information to meet the demands being placed on them.

Under these conditions, suppliers and contractors looking for business with major firms need greater flexibility and wider competence than earlier. This often implies increased size and perhaps mergers, though in principle bids could be, and perhaps are, made by loose partnerships of smaller firms organized to secure such business.

3.10.2 Advantages of good supply chain management

Reduction of waste

This is an important objective of any business and involves not only waste of materials but also that of time. Examples of waste are:

- unwanted materials due to over ordering, damage or incorrect specifications
- extraneous activities like double handling, for example between manufacturer, builder's merchant and the site
- re-working and re-fitting due to poor quality, design, storage or manufacture
- waste of time such as waiting for supplies due to excessive time from ordering to delivery or early delivery long before they are needed.

Faster reaction

A well-managed supply chain should be able to respond rapidly to changing requirements (Figure 3.4). Cold conditions require very different materials than during hot or drier seasons. A contractor may have to modify plans rapidly and suppliers may need to ramp up or change production at short notice.

Reduction in accidents

A closer relationship between client, designers, principal contractors and suppliers of services and products can result not only in a safer finished product but, in construction, a safer method of erection. If more products are pre-assembled in ideal factory conditions and then fixed in place on site, it is often safer than utilizing a full assembly approach in poor weather conditions on temporary work platforms. Examples are made-up roof trusses and prefabricated doors and windows already fitted to their frames

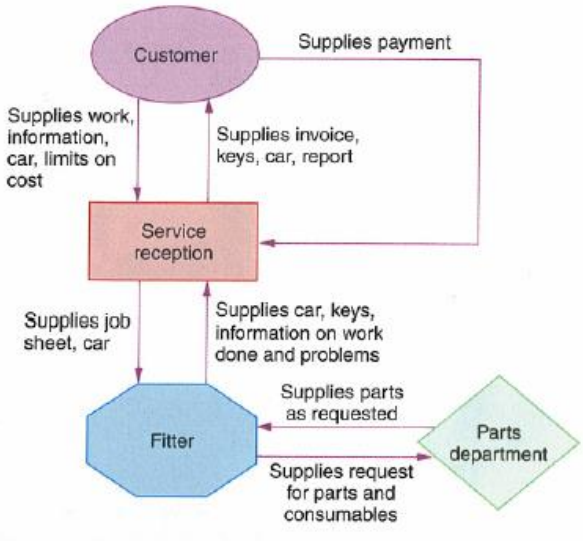


Figure - Typical supply chain

3.10.3 Legislation and standards

Legislation in a number of countries places a duty on everyone in the supply chain, from the designer to the final installer, of articles of plant or equipment for use at work. However, supply side legislation often has two purposes and is separate from much of the workplace Occupational Safety and Health law. First, it provides a quality standard to protect users and consumers which includes their health and safety. Second, it can provide a barrier to trade by insisting that all imported goods must comply with a particular country's unique set of supply requirements.

Within the 27 countries of the European Union much of the agreed standards for plant and equipment has been promulgated to remove barriers to trade between Member States. A piece of equipment with a CE mark must be accepted as complying with all requirements across the EU and can be sold throughout the EU.

There are global examples of standards which are primarily designed to protect the health and safety of users. The best example of this is the ILO sponsored Globally Harmonized System of Classification and labeling of Chemicals, which is due to be fully operational by June 2015. This is an international agreement and requires local legislation in all trading blocs/countries to implement it globally. See Chapter 6 for more information.

ILO-OSH 2001 requires that procedures should be established and maintained to ensure that:

(a) compliance with safety and health requirements for the organization is identified,

evaluated and incorporated into purchasing and leasing specifications;

(b) national laws and regulations and the organization's own OSH requirements are identified prior to the procurement of goods and services; and

(c) arrangements are made to achieve conformity to the requirements prior to their use.

Good practice in local legislation should:

- ensure that the article will be safe and without risk to health at all times when it is being set, used, cleaned or maintained;
- carry out any necessary testing and examination to ensure that it will be safe;
- provide adequate information about its safe setting, use, cleaning, maintenance, dismantling and disposal;
- ensure that there is an obligation on designers or manufacturers to do any research necessary to prove safety in use. Erectors or installers have special responsibilities to make sure, when handed over, that the plant or equipment is safe to use;
- place similar duties on manufacturers and suppliers of substances for use at work to ensure that the substance is safe when properly used, handled, processed, stored or transported and to provide adequate information and do any necessary research, testing or examining.

Where articles or substances are imported, the suppliers' obligations outlined above should attach to the importer, whether they are a separate importing business or the user personally who does the importing.

Often items are obtained through hire purchase, leasing or other financing arrangements with the ownership of the items being vested with the financing organization. Where the financing organization's only function is to provide the money to pay for the goods, the supplier's obligations often do not attach to them.

3.10.4 Information for customers

The quality movement has drawn attention to the need to ensure that there are processes in place that ensure quality, rather than just inspecting and removing defects when it is too late. In much the same way, organizations need to manage health and safety proactively rather than acting after incidents, when it is too late.

Customers need information and specifications from the manufacturer or supplier-especially where there isa potential risk involved for them. When deciding what the supplier needs to pass on, careful consideration is required about the health and safety factors associated with any product or service.

This means focusing on four key questions and then framing the information supplied so

that it deals with each one. The questions are as follows:

- Are there any inherent dangers in the product or service being passed on - what could go wrong?
- What can the manufacturer or supplier do while working on the product or service to reduce the chance of anything going wrong at a later point?
- What can be done at the point of handover to limit the chances of anything going wrong?
- What steps should customers take to reduce the chances of something going wrong? What precisely would they need to know?

3.10.5 Information for customers

Examples of problems that may arise when purchasing include:

- Secondhand equipment which does not conform to current safety standards such as an office chair which does not provide adequate back support or have five feet/castors.
- starting to use new substances which do not have safety data sheets
- machinery which, while well-guarded for operators, may pose risks for a maintenance engineer

A risk assessment should be done on any new product, taking into account the likely life expectancy (delivery, installation, use, cleaning, maintenance, disposal, etc.). The supplier should be able to provide the information needed to do this. This will help the purchaser make an informed decision on the total costs because the risks will have been identified as will the precautions needed to control those risks.

Employers have key duties when buying plant and equipment:

- they must ensure that work equipment is safe and suitable for its purpose and complies with the relevant legislation. This applies equally to equipment which is adapted to be used in ways for which it was not originally designed.
- when selecting work equipment, they must consider existing working conditions and health and safety issues.
- they must provide adequate health and safety information, instructions, training and supervision for operators. Manufacturers and suppliers are often required by law to provide information that will enable safe use of the equipment, substances, etc. and without risk to health.

Some of the issues that will need to be considered when buying in a product or plant include:

- ergonomics - risk of work-related upper limb disorders (WRULD)
- manual handling needs
- access/egress
- storage, for example of chemicals
- risk to contractors when decommissioning old plant or installing new plant- hazardous materials - provision of extraction equipment or PPE
- waste disposal
- safe systems of work
- training
- machinery guarding
- emissions from equipment/plant, such as noise, heat or vibration.

3.11 The relationship between client and contractor

3.11.1 Introduction

The use of contractors is increasing as many companies turn to outside resources to supplement their own staff and expertise. A contractor is anyone who is brought in to work and is not an employee. People on work experience or on labour-only contracts or temporary staff are normally considered to be employees. Contractors are used for maintenance, repairs, installation, construction, demolition, computer work, cleaning, security, health and safety and many other tasks. Sometimes there are several contractors on site at any one time. Clients need to think about how their work may affect each other and how they interact with the normal site occupier.

3.11.2 Legal consideration

All parties to a contract normally have specific responsibilities under local health and safety law, and these cannot be passed on to someone else. For example:

- employers are responsible for protecting people from harm caused by work activities. This includes the responsibility not to harm contractors and sub-contractors on site
- employees and contractors have to take care not to endanger themselves, their

colleagues or others affected by their work

- contractors also have to comply with local health and safety legislation. Clearly, when contractors are engaged, the activities of different employers do interact. So co-operation and communication are needed to make sure all parties can meet their obligations
- employees have to co-operate with their employer on health and safety matters, and not do anything that puts them or others at risk
- employees must be trained and clearly instructed in their duties
- self-employed people must not put themselves in danger, or others who may be affected by what they do
- suppliers of chemicals, machinery and equipment have to make sure their products or imports are safe, and provide information on this.

Good practice encourages employers to take a more systematic approach to dealing with health and safety by:

- assessing the risks which affect employees and anyone who might be affected by the site occupier's work, including contractors
- setting up emergency procedures
- providing training
- co-operating with others on health and safety matters, for example contractors who share the site with an occupier
- providing temporary workers, such as contractors, with health and safety information.

The principles of co-operation, coordination and communication between organizations in a construction project are explained next.

ILO-OSH 2001 requires that arrangements should be established and maintained for ensuring that the organization's safety and health requirements, or at least the equivalent, are applied to contractors and their workers.

Arrangements for contractors working on site should:

(a) include OH&S criteria in procedures for evaluating and selecting contractors;

(b) establish effective ongoing communication and coordination between appropriate levels of the organization and the contractor prior to commencing work. This should include provisions for communicating hazards and the measures to prevent and control them;

(c) include arrangements for reporting of work-related injuries, ill-health, diseases and incidents among the contractors' workers while performing work for the organization;

(d) provide relevant workplace safety and health hazard awareness and training to

contractors or their workers prior to commencing work and as work progresses, as necessary;

(e) regularly monitor OH&S performance of contractor activities on site; and

(f) ensure that on-site OH&S procedures and arrangements are followed by the contractor(s).

3.11.3 Construction projects

Businesses often engage contractors for construction projects to build plant, convert or extend premises and demolish buildings. Good practice on construction projects require the following details.

Non-domestic clients to:

- check the competence of all their appointees
- ensure there are suitable management arrangements for the project
- allow sufficient time and resources for all stages
- provide pre-construction information to designers and contractors

Designers to:

- eliminate hazards and reduce risks during design
- provide information about remaining risks

Contractors to:

- plan, manage and monitor their own work and that of employees
- check the competence of all their appointees and employees
- train their own employees
- provide information to their employees
- comply with the requirements for health and safety on site detailed in local legislation

Everyone to:

- assure their own competence
- co-operate with others and co-ordinate work so as to ensure the health and safety of construction workers and others who may be affected by the work
- report obvious risks
- take account of the general principles of prevention in planning or carrying out construction work
- and comply with the requirements of local legislation for any work under their control

For even small projects, clients should ensure that contractors provide:

(a) information regarding the contractor's health and safety policy;
(b) information on the contractor's health and safety organization detailing the responsibilities of individuals;
(c) information on the contractor's procedures and standards of safe working;
(e) the method statements for the project in hand
(f) details on how the contractor will audit and implement its health and safety procedure;
(d) procedures for investigating incidents and learning the lessons from them

Smaller contractors may need some guidance to help them produce suitable method statements. While they do not need to be lengthy, they should set out those features essential to safe working, for example, access arrangements, PPE, control of chemical risks, etc.

Copies of relevant risk assessments for the work to be undertaken should be requested. These need not be very detailed but should indicate the risk and the control methods to be used.

3.11.4 Contractor section

The selection of the right contractor for a particular job is probably the most important element in ensuring that the risks to the health and safety of all involved in the activity and people in the vicinity, are reduced as far as possible. Ideally, selection should be made from a list of approved contractors who have demonstrated that they are able to meet the client's requirements.

The selection of a contractor has to be a balanced judgment with a number of factors taken into account. Fortunately, a contractor who works well and meets the client's requirements in terms of the quality and timeliness of the work is also likely to have a better-than-average health and safety performance. Cost, of course, will have to be part of the judgment but may not provide any indication of which contractor is likely to give the best performance in health and safety terms. In deciding which contractor should be chosen for a task, the following should be considered:

- Do they have an adequate health and safety policy?
- Can they demonstrate that the person responsible for the work is competent?

- Can they demonstrate that competent safety advice will be available?
- Do they monitor the level of accidents at their work site(s)?
- Do they have a system to assess the hazards of a job and implement appropriate control measures?
- Will they produce a method statement which sets out how they will deal with all significant risks?
- Do they have guidance on health and safety arrangements and procedures to be followed?
- Do they have effective monitoring arrangements?
- Do they use trained and skilled staff who are qualified where appropriate?
- Can the company demonstrate that the employees or other workers used for the job have had the appropriate training and are properly experienced and, where appropriate, qualified?
- Can they produce good references indicating satisfactory performance?

3.11.5 Contractor authorisation

Contractors, their employees, sub-contractors and their employees, should not be allowed to commence work on any client's site without authorization signed by the company contact. The authorization should clearly define the range of work that the contractor can carry out and set down any special requirements, for example, protective clothing, fire exits to be left clear, and isolation arrangements.

Permits will be required for operations such as hot work. All contractors should keep a copy of their authorization at the place of work. A second copy of the authorization should be kept at the site and be available for inspection.

The company contact signing the authorization will be responsible for all aspects of the work of the contractor. At a minimum, the contact will need to check the following:

- that the correct contractor for the work has been selected
- that the contractor has made appropriate arrangements for supervision of staff
- that the contractor has received and signed a copy of the contractor's safety rules
- that the contractor is clear what is required, the limits of the work and any special precautions that need to betaken
- that the contractor's personnel are properly qualified for the work to be undertaken

The company contact should check whether subcontractors will be used. They will also require authorization, if deemed acceptable. It will be the responsibility of the company contact to ensure that sub-contractors *are* properly supervised.

Appropriate supervision will depend on a number of factors, including the risk associated with the job, experience of the contractor and the amount of supervision the contractor will provide. The responsibility for ensuring there is proper supervision lies with the person signing the contractor's authorization.

The company contact will be responsible for ensuring that there is adequate and clear communication between different contractors and company personnel where this is appropriate.

3.11.6 Safety rules for contractor

In the conditions of contract, there should be a stipulation that the contractor and all of their employees adhere to the contractor's safety rules. Contractors' safety rules should contain as a minimum the following points:

- **Health and safety** - that the contractor operates to at least the minimum legal standard and conforms to accepted industry good practice;
- **Supervision** - that the contractor provides a good standard of supervision of their own employees;
- **Sub-contractors** - that they may not use subcontractors without prior written agreement from the organization;
- **Authorization** - that each employee must carry an authorization card issued by the organization at all times while on site.

3.11.8 Example of rules for contractor

Contractors engaged by the organization to carry out work on its premises will:

1. familiarize themselves with so much of the organization's health and safety policy as affects them and will ensure that appropriate parts of the policy are communicated to their employees, and any subcontractors and employees of sub-contractors who will do work on the premises

2. co-operate with the organization in its fulfillment of its health and safety duties to contractors and take the necessary steps to ensure the like co-operation of their employees;

3. comply with their legal and moral health, safety and food hygiene duties;
4. ensure that the carrying out of their work on the organization's premises is in such a manner as not to put either themselves or any other persons on or about the premises at risk;
5. ensure that where they wish to avail themselves of the organization's first-aid arrangements/facilities while on the premises, written agreement to this effect is obtained prior to first commencement of work on the premises;
6. supply a copy of its statement of policy, organization and arrangements for health and safety where applicable and requested by the organization;
7. abide by all relevant provisions of the organization's safety policy, including compliance with health and safety rules;
8. ensure that upon arrival at the premises, they and any other persons who are to do work under the contract, report to reception or their designated organization contact

Without prejudice to the requirements stated above, contractors, sub-contractors and employees of contractors and sub-contractors will, to the extent that such matters are within their control, ensure:

1. the safe handling, storage and disposal of materials brought onto the premises;
2. that the organization is informed of any hazardous substances brought onto the premises;
3. that fire prevention and fire precaution measures are taken in the use of equipment which could cause fires;
4. that steps are taken to minimize noise and vibration produced by their equipment and activities;
5. that scaffolds, ladders and other such means of access, where required, are erected and used in accordance with legislation and good working practice;
6. that any welding or burning equipment brought onto the premises is in safe operating condition and used in accordance with all safety requirements;
7. that any lifting equipment brought onto the premises is adequate for the task and has been properly tested/ certified
8. that any plant and equipment brought onto the premises is in safe condition and used/operated by competent persons;
9. that for vehicles brought onto the premises, any speed, condition or parking restrictions are observed;
10. that compliance is made with the relevant requirements for electricity on site;
11. that connection(s) to the organization's electricity supply is from a point specified by its management and is by proper connectors and cables;
12. that they are familiar with emergency procedures existing on the premises;
13. that welfare facilities provided by the organization are treated with care and

respect;

14. that access to restricted parts of the premises is observed and the requirements of food safety legislation are complied with;
15. that any major or lost-time accident or dangerous occurrence on the organization's premises is reported as soon as possible to their site contact;
16. that where any doubt exists regarding health and safety requirements, advice is sought from the site contact

The foregoing requirements *do not* exempt contractors from their statutory duties in relation to health and safety, but are intended to assist them in attaining a high standard of compliance with those duties.

3.11.8 Principles of assessing and managing contractors

Work performed for a client by a contractor is normally covered by a civil contract, and it is good practice to include health and safety requirements in it. Both client and contractor have duties under health and safety law. Likewise, if a contractor employs subcontractors to carry out some or all of the work, all parties will have some health and safety responsibilities.

Clients should clearly identify all aspects of the work they want the contractor to do, including work that falls within the preparation and completion phases. The level of risk will depend on the nature of the job. In any case, a client needs to consider the health and safety implications of the job they want done. This will involve:

- selecting someone suitable for the job
- assessing the risks
- deciding what information, instruction and training is needed
- addressing how co-operation and coordination between all parties is achieved
- addressing how the workforce are to be consulted
- establishing the level of management and supervision required.

A client must be satisfied that the contractor is competent (that is, they have sufficient skills and knowledge) to do the job safely and without risks to health and safety. Contractors should be made aware of the level of performance expected of them and health and safety arrangements should be explained.

Who counts as a contractor?

A contractor is anyone you get in to work for you who is not an employee. Using contractors - for maintenance, repairs, installation, construction, demolition and many other jobs - may be routine in your company. But many accidents involve contractors working on site. Sometimes you may have more than one contractor on site. You need to think about how their work may affect each other and how they interact with your activities. Clearly, in these circumstances there is more chance of something being overlooked?

The costs of getting it wrong

No one plans to have an accident. No one wants to become ill as a result of their work. Yet there is no shortage of examples - some major, or fatal - all serious and costly.
You may have heard the saying: *"If you think safety is expensive, try an accident!"*
Among the losses - sometimes uninsured - are:

- production time;
- key workers;
- products;
- equipment.

Communicate with contractors

Accidents happen more easily when the contractor's job is excluded from your usual methods of safe working, if:

- the hazards of their job haven't been identified and steps have not been taken to minimise risks;
- no one is around to make sure the contractor follows health and safety rules on site.

Accidents with contractors can be caused by poor communication - when staff don't know there is a contractor working nearby and when contractors don't know the dangers on site.

Include contractors

Bring contractors into your health and safety procedures. They may be strangers to your site and won't know:

- about the hazards on your site;
- your site rules and safety procedures;
- what to wear;
- about special equipment they need to use;
- what to do in an emergency;
- the sound of the alarm, and how and when to raise it.

You may take good practice for granted in-house, but don't assume the same applies to contractors. Even regular contractors may need reminding. Do you need to improve your

procedures for work with contractors? Are you sure they cover all contractors, every time? Maybe you've never had an accident involving a contractor – yet!

Delegation

If you delegate the task of managing contractors, decide who will take responsibility for the details. Use Section 4 of this guide to help make contractor arrangements a practical reality for you.

ACTION PLAN: Managing contractors

What needs to be done	By whom	When	Resources

Managing contractors: 5 steps

STEP 1: PLANNING

- Define the job
- Identify hazards
- Assess risks
- Eliminate and reduce the risks
- Specify health and safety conditions
- Discuss with contractor (if selected)

STEP 2: CHOOSING A CONTRACTOR

- What safety and technical competence is needed?
- Ask questions
- Get evidence

- Go through information about
    - the job
    - the site, including site rules
- Ask for a safety method statement
- Decide whether subcontracting is acceptable. If so, how will health and safety be ensured?

STEP 3: CONTRACTORS WORKING ON SITE

- All contractors sign in and out
- Name a site contact
- Reinforce health and safety information and site rules
- Check the job and allow work to begin

STEP 4: KEEPING A CHECK

- Assess the degree of contact needed
- How is the job going:
    - as planned?
    - is the contractor working safely and as agreed?
    - any incidents?
    - any changes in personnel?
- Are any special arrangements required?

STEP 5: REVIEWING THE WORK

- Review the job and contractor
    - how effective was your planning?
    - how did the contractor perform?
    - how did the job go?
- Record the lessons

3.12 Shared responsibilities in the case of joint occupation of premises

Many countries' Occupational Safety and Health legislation covers the co-operation between two or more employers who share a workplace, whether on a temporary or a permanent basis. In this situation, each employer should:

- co-operate with other employers

- take reasonable steps to co-ordinate between other employers to comply with legal requirements
- take reasonable steps to inform other employers where there are risks to health and safety.

The measures taken to facilitate the co-operation referred to in Article 20 of the Convention should include, where appropriate and necessary, the appointment, in accordance with national practice, of workers' safety delegates, of workers' safety and health committees, and/or of joint safety and health committees; in joint safety and health committees workers should have at least equal representation with employers' representatives.

Workers' safety delegates, workers' safety and health committees, and joint safety and health committees or, as appropriate, other workers' representatives should:

(a) be given adequate information on safety and health matters, enabled to examine factors affecting safety and health, and encouraged to propose measures on the subject.
(b) be consulted when major new safety and health measures are envisaged and before they are carried out, and seek to obtain the support of the workers for such measures.
(c) be consulted in planning alterations of work processes, work content or organization of work, which may have safety or health implications for the workers.
(d) be given protection from dismissal and other measures prejudicial to them while exercising their functions in the field of occupational safety and health as workers' representatives or as members of safety and health committees.
(e) be able to contribute to the decision-making process at the level of the undertaking regarding matters of safety and health.
(f) have recourse to specialists to advise on particular safety and health problems.

All employers and self-employed people involved should satisfy themselves that the arrangements adopted are adequate. Where a particular employer controls the premises, the other employers should help to assess the shared risks and co-ordinate any necessary control procedures. Where there is no controlling employer, the organizations present should agree joint arrangements to meet regulatory obligations, such as appointing a health and safety coordinator.

3.13 Consultation with workforce

3.13.1 General

It is important to gain the co-operation of all employees if a successful health and safety culture is to become established. This co-operation is best achieved by consultation. Joint consultation can help businesses be more efficient and effective by reducing the number of accidents and work-related ill-health and also to motivate staff by making them aware of health and safety problems. The ILO Recommendations R164 require that:

3.13.2 Safety committees

In medium and large organizations, the easiest and often the most effective method of consultation is the safety and health committee. It will realize its full potential if its recommendations are seen to be implemented and both management and employee concerns are freely discussed. It will not be so successful if it is seen as a talking shop.

The committee should have stated objectives which mirror the objectives in the organization's safety and health policy statement, and its own terms of reference. Terms of reference should include the following:

- the study of accident and notifiable disease statistics to enable reports to be made of recommended remedial actions
- the examination of Occupational Health and Safety audits and statutory inspection reports
- the consideration of reports from the external enforcement agency
- the review of new legislation and guidance and their effect on the organization
- the monitoring and review of all Occupational Health and Safety training and instruction activities in the organization

- reviewing risk assessments

In some countries there are fixed rules on the composition of the safety and health committee, which must be followed. Good practice would require that:

- it should be representative of the whole organization
- It should have representation from the workforce and the management (probably in equal numbers) including at least one senior manager (other than the Health and Safety Advisor)
- managers and workers safety delegates should agree who should chair the meetings, how often meetings should be held and what they hope to achieve.

3.13.3 Accident and ill-health investigations

Properly investigated accidents and cases of ill-health can reveal weaknesses that need to be remedied. A joint investigation with safety delegates is more likely to inspire confidence with workers so that they co-operate fully with the investigation, as in many cases, those involved may be concerned about being blamed for the accident. Safety delegates are entitled to contact labour inspectors. If this is just for information, they can be contacted directly. If it is a formal complaint against the employer, the labour inspector will need to know if the employer has been informed. The inspectors can be contacted anonymously. They will normally keep the person's identity secret in such circumstances.

3.14 Concept of health and safety culture and its significance in the management of health and safety in an organization

In the United Kingdom in 1972, a Government Inquiry Report (known as the Robens Report) recognized that the introduction of health and safety management systems was essential if the ideal of self-regulation of health and safety by industry was to be realized. It further recognized that a more active involvement of the workforce in such systems was essential if self-regulation was to work. Self-regulation and the implicit need for health and safety management systems and employee involvement were incorporated into the UK Health and Safety at Work (HSW) Act.

Since the introduction of the HSW Act, health and safety standards have improved considerably in the UK but there have been some catastrophic failures. One of the worst

was the fire on the off-shore oil platform, Piper Alpha, in 1988 when 167 people died. At the subsequent enquiry, the concept of a safety culture was defined by the Director General of the Health and Safety Executive (HSE) at that time, J. R. Rimington. This definition has remained as one of the key points for a successful health and safety management system.

3.14.1 Relationship between health and safety culture and health and safety performance

HSE culture is recognized today as one of the key ingredients to delivering world-class HSE performance in E&P operations as well as numerous other industries. Quantitative relationships have been established between HSE culture and HSE performance based on workforce cultural surveys. In this example, high favourability based on a workforce survey is indicative of a mature HSE culture, which has a statistically significant relationship with lower incident rates.

HSE culture must be consciously developed, monitored, and have continual improvement. This paper builds on the current body of work on HSE culture. Provision of methods and techniques for creating the enabling culture and mind-set required to sustain and maintain continual improvement of HSE results are given.

Creating a strong HSE culture with E&P company employees only is not adequate to produce world-class HSE performance. Today, HSE performance and culture for E&P operations is measured on a total workforce basis. Contractors typically comprise a significant proportion of the workforce, which can be from 50% to 90% of the workforce. In addition to employees, the definition of workforce members includes contractors, service providers, and suppliers. These members are either dedicated, co-located, or take the majority of work directions from a specific E&P operation. One of the challenges the E&P operator faces is the integration of diverse cultures from the different organizations that comprise the workforce. Specific experience and recommendations are provided to address this challenge.

3.14.2 Indicators which could be used to assess the effectiveness of an organisation's health and safety culture

There are both negative and positive types of indicators both for employees and management

Negative indicators that are above the average for the particular industry:

- Numbers of accidents
- Absenteeism from works
- Sickness rates
- Staff turnover
- Non-compliances to safety management systems
- Complaints about working conditions
- Poor industrial relations

Negative indicators within management activities:

- Constant reorganisation
- Changes in management personnel and style of management
- Different approaches and types of managers
- Critical management with no recognition of effort or achievement
- Uncertainty and fear of downsizing or redundancy
- Unrealistic goal setting or goal-posts constantly moved
- Poor industrial relations

Positive indicators that are above the average for the particular industry:

- A clean, pleasant, safe and well designed place of work
- Excellent housekeeping standards
- A good safety culture throughout the workforce
- Ongoing risk assessments as an integral part of work activity management
- Quality management throughout all areas
- Good industrial and personal relationships
- A profitable organisation with a sound market base where everyone shares in the benefits
- A workplace where accidents are alien

These are all examples of safety culture climatic indicators.

Where everyone; staff, contractors, customers and the local community are proud to be associated with the organisation and have a commitment to the organisation
Where the health and safety policy is to do the maximum that is reasonably practicable to achieve and not the minimum so far as legal standards are concerned.
A safety culture must be observed as a commitment from the top management. The further up within a management structure we find pockets of low culture the more serious the problem.
Positive leadership and leading by example will determine health and safety standards in any workplace.
Effects of human and ·organisational factors on health and safety culture
Human factors
There are two main factors to be considered with regards to humans. These are physiological issues and psychological issues.
Physiological issues relate to the physical ability and limitations of humans and psychological issues relate to the strengths and weaknesses of the human mind along with the things that stimulate and debilitate people's minds.

3.14.3 Meaning and extent of the term 'health and safety culture'

Definition of health and safety culture

The health and safety culture of an organization may be described as the development stage of the organization in health and safety management at a particular time. HSG65 gives the following definition of a health and safety culture:
The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization's health and safety management. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures.

3.14.3.1 The relationship between health and safety culture and health and safety performance

The following elements are the important components of a positive health and safety culture:

- leadership and commitment to health and safety throughout and at all levels of the organization
- acceptance that high standards of health and safety are achievable as part of a long-term strategy formulated by the organization;
- a detailed assessment of health and safety risks in the organization and the development of appropriate control and monitoring systems;
- a health and safety policy statement outlining short-and long-term health and safety objectives. Such a policy should also include codes of practice and required health and safety standards;
- relevant employee training programmes and communication and consultation procedures;
- systems for monitoring equipment, processes and procedures and the prompt rectification of any defects
- the prompt investigation of all incidents and accidents and reports made detailing any necessary remedial actions

If the organization adheres to these elements, then a basis for a good performance in health and safety will have been established. However, to achieve this level of performance, sufficient financial and human resources must be made available for the health and safety function at all levels of the organization.

All managers, supervisors and members of the governing body (e.g. directors) should receive training in health and safety and be made familiar during training sessions with the health and safety targets of the organization. The depth of training undertaken will depend on the level of competence required of the particular manager. Managers should be accountable for health and safety within their departments and be rewarded for significant improvements in health and safety performance. They should also be expected to discipline employees within their departments who infringe health and safety policies or procedures.

3.14.3.2 Important indicators of a health and safety culture

There are several outputs or indicators of the state of the health and safety culture of an organization. The most important are the numbers of accidents, near misses and occupational ill-health cases occurring within the organization.

Although the number of accidents may give a general indication of the health and safety culture, a more detailed examination of accidents and accident statistics is normally required. A calculation of the rate of accidents enables health and safety performance to be

compared between years and organizations.

The simplest measure of accident rate is called the incidence rate and is defined as:
Total number of accidents / Number of persons employed X 1000

or the total number of accidents per 1000 employees.

A similar measure (per 100 000) is used by the UK HSE in its annual report on national accident statistics and enables comparisons to be made within an organization between time periods when employee numbers may change. It also allows comparisons to be made with the national occupational or industrial group relevant to the organization.

- There are four main problems with this measure which must be borne in mind when it is used. These are:
- there may be a considerable variation over a time period in the ratio of part-time to full-time employees;
- the measure does not differentiate between major and minor accidents and takes no account of other incidents, such as those involving damage but no injury (although it is possible to calculate an incidence rate for a particular type or cause of accident);
- there may be significant variations in work activity during the periods being compared;
- under-reporting of accidents will affect the accuracy of the data

Subject to the above limitations, an organization with a high accident incidence rate is likely to have a negative or poor health and safety culture.
There are other indications of a poor health and safety culture or climate. These include:

- a high sickness, ill-health and absentee rate among the workforce;
- the perception of a blame culture;
- high staff turnover leading to a loss of momentum in making health and safety improvements;
- no resources (in terms of budget, people or facilities) made available for the effective management of health and safety;
- a lack of compliance with relevant health and safety law and the safety rules and procedures of the organization;
- poor selection procedures and management of contractors;
- poor levels of communication, co-operation and control;
- a weak health and safety management structure;
- either a lack or poor levels of health and safety competence;
- high insurance premiums.

3.14.3.3 Factors affecting a health and safety culture

The most important factor affecting the health and safety culture of an organization is the commitment to health and safety from the top of an organization. This commitment may be shown in many different ways. It needs to have a formal aspect in terms of an organizational structure, job descriptions and a health and safety policy, but it also needs to be apparent during crises or other stressful times. The health and safety procedures may be circumvented or simply forgotten when production or other performance targets are threatened.

Structural reorganization or changes in market conditions will produce feelings of uncertainty among the workforce which, in turn, will affect the health and safety culture.

Poor levels of supervision, health and safety information and training are very significant factors in reducing health and safety awareness and, therefore, the culture.

Finally, the degree of consultation and involvement with the workforce in health and safety matters is crucial for a positive health and safety culture. Most of these factors may be summed up as human factors.

3.14.4 Influence of peers

3.14.4.1 Internal influence.

There are many influences on health and safety standards, some are positive and others negative. No business, in particular a small business is totally divorced from its suppliers, customers and neighbours. This section considers the internal influences on a business, including management commitment, production demands, communication, competence and employee relations.

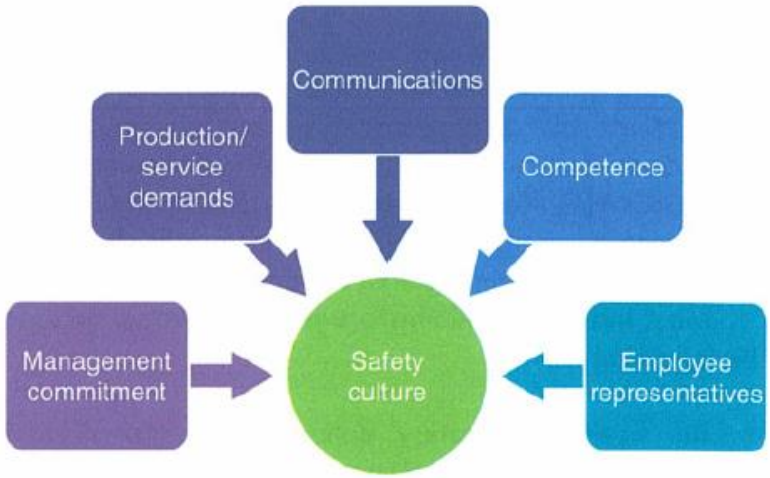


Figure - Internal influences on safety culture.

Management commitment

Managers, particularly senior managers, can give powerful messages to the workforce by what they do for health and safety. Managers can achieve the level of health and safety performance that they demonstrate they want to achieve. Employees soon get the negative message if directors disregard safety rules and ignore written policies to get urgent production to the customer or to avoid personal inconvenience. It is what they do that counts not what they say. In Chapter 3, managers' organizational roles were listed showing the ideal level of involvement for senior managers. Depending on the size and geography of the organization, senior managers should be personally involved in:

- health and safety inspections or audits;
- meetings of the central health and safety or joint consultation committees;
- involvement in the investigation of accidents, ill-health and incidents. The more serious the incident, the more senior the manager who takes an active part in the investigation.

Production/service demands

Managers need to balance the demands placed by customers with the action required to protect the health and safety of their employees. How this is achieved has a strong influence on the standards adopted by the organization. The delivery driver operating to near-impossible delivery schedules and the manager agreeing to the strident demands of a large customer regardless of the risks to employees involved, are typical dilemmas facing workers and managers alike. The only way to deal with these issues is to be well organized and agree with the client/ employees ahead of the crisis as to how they should be prioritized.

Rules and procedures should be intelligible, sensible and reasonable. They should be designed to be followed under normal production or service delivery conditions. If following the rules involves very long delays or impossible production schedules, they should be revised rather than ignored by workers and managers alike, until it is too late and an accident occurs. Sometimes the safety rules are simply used in a court of law, in an attempt to defend the company concerned, following an accident.

Managers who plan the impossible schedule or ignore a safety rule to achieve production or service demands are held responsible for the outcomes. It is acceptable to balance the cost of the action against the level of risk being addressed but it is never acceptable to ignore safety rules or standards simply to get the work done. Courts do not condone the action of managers who put profit considerations ahead of safety requirements.

Communication

Communication was covered in depth earlier in the chapter and clearly will have significant influence on health and safety issues. This will include:

- poorly communicated procedures that will not be understood or followed;
- poor verbal communication which will be misunderstood and will demonstrate a lack of interest by senior managers;
- missing or incorrect signs that may cause accidents rather than prevent them;
- managers who are nervous about face-to-face discussions with the workforce on health and safety issues, which will have a negative effect.

Managers and supervisors should plan to have regular discussions to learn about the problems faced by employees and discuss possible solutions. Some meetings, like that of the safety committee, are specifically planned for safety matters, but this should be reinforced by discussing health and safety issues at all routine management meetings. Regular one-to-one talks should also take place in the workplace, preferably to a planned theme or safety topic, to get specific messages across and get feedback from employees.

Competence

Competent people, who know what they are doing and have the necessary skills to do the task correctly and safely, will make the organization effective. Competence can be brought in through recruitment or consultancy but it is often much more effective to develop it among employees. It demonstrates commitment to health and safety and a sense of security for the workforce. The loyalty that it creates in the workforce can be a significant benefit to safety standards. Refer back to earlier in this chapter for more details on achieving competence.

Employee representation

Given the resources and freedom to fulfil their function effectively, enthusiastic, competent employee safety representatives can make a major contribution to good health and safety standards. They can provide the essential bridge between managers and employees. People are more willing to accept the restrictions that some precautions bring if they are consulted and feel involved, either directly in small workforces or through their safety representatives.

3.14.4.2 External influence.

In this section, the influence of external organizations is briefly discussed, including societal expectations, legislation and enforcement, insurance companies, trade unions, economics, commercial stakeholders.

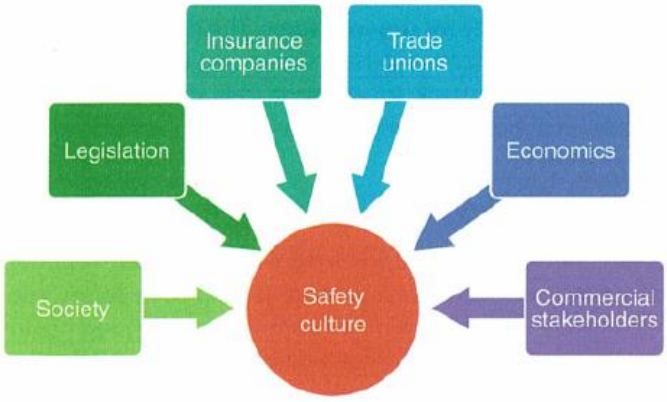


Figure - External influences on safety culture.

Societal expectations

Societal expectations are not static and tend to rise over time. For example, the standards of safety accepted in a motor car 50 years ago would be considered to be totally inadequate at the beginning of the 21st century. We expect safe, quiet, comfortable cars that do not break down and which retain their appearance for many thousands of miles. Industry should strive to deliver these same high standards for the health and safety of employees or service providers. The question is whether societal expectations are as great an influence on workplace safety standards as they are on product safety standards. Society can influence standards through:

- people only working for good employers. This is effective in times of low unemployment;
- national and local news media highlighting good and bad employment practices;
- schools teaching good standards of health and safety;

- the purchase of fashionable and desirable safety equipment, such as trendy crash helmets for mountain bikes;
- buying products only from responsible companies. The difficulty of defining what is responsible has been partly overcome through ethical investment criteria but this is possibly not widely enough understood to be a major influence;
- watching TV and other programmes which improve safety knowledge and encourage safe behaviour from an early age.

Legislation and enforcement

Good comprehensible legislation should have a positive effect on health and safety standards. Taken together, legislation and enforcement can affect standards by:

- providing a level to which every employer has to conform;
- insisting on minimum standards which also enhances peoples' ability to operate and perform welt-providing a tough, visible threat of getting shut down or a heavy fine;
- stifling development by being too prescriptive-providing well presented and easily read guidance for specific industries at reasonable cost or free.

On the other hand, a weak enforcement regime can have a powerful negative effect on standards

Insurance companies

Insurance companies can influence health and safety standards mainly through financial incentives. Employers' liability insurance is a legal requirement in the UK and therefore all employers have to obtain this type of insurance cover. Insurance companies can influence standards through:

- discounting premiums to those in the safest sectors or best individual companies;
- insisting on risk reduction improvements to remain insured. This is not very effective where competition for business is fierce;
- encouraging risk reduction improvements by bundling services into the insurance premium; providing guidance on standards at reasonable cost or free.

Trade unions

Trade unions can influence standards by:

- providing training and education for members;
- providing guidance and advice cheaply or free to members;

- influencing governments to regulate, enhance enforcement activities and provide guidance;
- influencing employers to provide high standards for their members. This is sometimes confused with financial improvements, with health and safety getting a lower priority;
- encouraging members to work for safer employers;
- helping members to get proper compensation for injury and;
- ill-health if it is caused through their work.

Economics

Economics can play a major role in influencing health and safety standards. The following ways are the most common:

- lack of orders and/or money can cause employers to try to ignore health and safety requirements;
- if employers were really aware of the actual and potential cost of accidents and fires, they would be more concerned about prevention. The UK HSE believes that the ratio between insured and uninsured costs of accidents is between 1:8 and 1:36;
- perversely, when the economy is booming activity increases and, particularly in the building industry, accidents can sharply increase. The pressures to perform and deliver for customers can be safety averse;
- businesses that are only managed on short-term performance indicators seldom see the advantage of the long-term gains that are possible with a happy, safe and fit workforce.

The cost of accidents and ill-health, in both human and financial terms, needs to be visible throughout the organization so that all levels of employee are encouraged to take preventative measures.

Commercial stakeholders

A lot can be done by commercial stakeholders' to influence standards. This includes:

- insisting on proper arrangements for health and safety management at supplier companies before they tender for work or contracts;
- checking on suppliers to see if the workplace standards are satisfactory; encouraging ethical investments;
- considering ethical standards as well as financial when banks provide funding;
- providing high-quality information for customers;
- insisting on high standards to obtain detailed planning permission (where this is

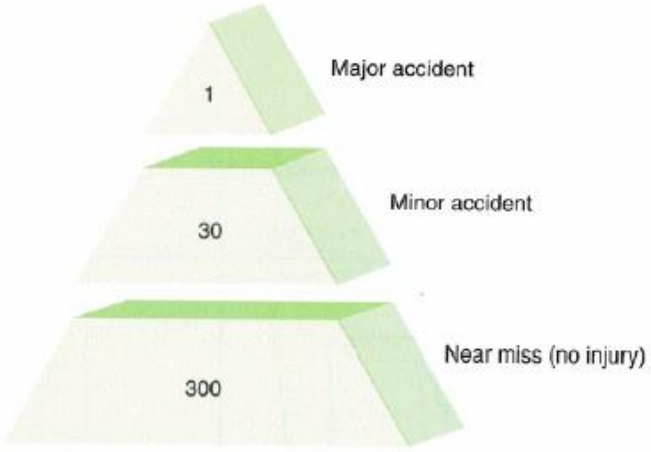
possible providing low-cost guidance and advice.

3.15 Human factors which influence behaviour at work

3.15.1 Human factors

Over the years, there have been several studies undertaken to examine the link between various accident types, graded in terms of their severity, and near misses. One of the most interesting was conducted in the USA by H. W. Heinrich in 1950. He looked at over 300 accidents/incidents and produced the ratios.

This study indicated that for every 10 near misses, there will be an accident. Although the accuracy of this study may be debated and other studies have produced different ratios, it is clear that if near misses are continually ignored, an accident will result. Further, the UK HSE Accident Prevention Unit has suggested that 90% of all accidents are due to human error and 70% of all accidents could have been avoided by earlier (proactive) action by management. It is clear from many research projects that the major factors in most accidents are human factors.



The HSE has defined human factors as, 'environmental, organizational and job factors, and human and individual characteristics which influence behaviour at work in a way which can affect health and safety'.

In simple terms in addition to the environment, the health and safety of people at work are influenced by:

- the organization;
- the job;
- personal factors.

These are known as human factors as they each have a human involvement. The personal factors which differentiate one person from another are only one part of those factors - and not always the most important.

Each of these elements will be considered in turn.

3.15.2 The organization

The organization is the company or corporate body and has the major influence on health and safety. It must have its own positive health and safety culture and produce an environment in which it:

- manages health and safety throughout the organization, including the setting and publication of a health and safety policy and the establishment of a health and safety organizational structure;
- measures the health and safety performance of the organization at all levels and in all departments. The performance of individuals should also be measured. There should be clear health and safety targets and standards and an effective reporting procedure for accidents and other incidents so that remedial actions may be taken;
- motivates managers within the organization to improve health and safety performance in the workplace in a proactive rather than reactive manner.

An organization needs to provide the following elements within its management system so that a positive health and safety culture may be developed:

- a clear and evident commitment from the most senior manager downwards, which provides a climate for safety in which management's objectives and the need for appropriate standards are communicated and in which constructive exchange of information at all levels is positively encouraged;
- an analytical and imaginative approach identifying possible routes to human factor failure. This may well require access to specialist advice-procedures and standards for all aspects of critical work and mechanisms for reviewing them;
- effective monitoring systems to check the implementation of the procedures and standards;

- incident investigation and the effective use of information drawn from such investigations;
- adequate and effective supervision with the power to remedy deficiencies when found.

It is important to recognize that there are often reasons for these elements not being present, resulting in weak management of health and safety. The most common reason is that individuals within the management organization do not understand their roles - or their roles have never been fully explained to them. The higher a person is within the structure, the less likely it is that he has received any health and safety training. Such training at Board level is rare.

Objectives and priorities may vary across and between different levels in the structure, leading to disputes which affect attitudes to health and safety. For example, a warehouse manager may be pressured to block walkways so that a large order can be stored prior to dispatch.

Motivations can also vary across the organization, which may cause health and safety to be compromised. The production controller will require that components of a product are produced as near simultaneously as possible so that their final assembly is performed as quickly as possible. However, the health and safety adviser will not want to see safe systems of work compromised.

To address some of these problems, it is important to define the safety duties of company directors. Each director and the Board, acting collectively must provide health and safety leadership in the organization. The Board needs to ensure that all its decisions reflect its health and safety intentions and that it engages the workforce actively in the improvement of health and safety. The Board will also be expected to keep itself informed of changes in health and safety risks. (See Chapter 3 for more details on directors' responsibilities.)

The following simple checklist may be used to check any organizational health and safety management structure. Does the structure have:

- an effective health and safety management system?
- a positive health and safety culture?
- arrangements for the setting and monitoring of
- standards?
- adequate supervision?
- effective incident reporting and analysis?
- learning from experience?
- clearly visible health and safety leadership?
- suitable team structures?
- efficient communication systems and practices?

- adequate staffing levels?
- suitable work patterns?

HSG48 Reducing Error and Influencing Behaviour gives the following causes for failures in organizational and management structures:

- poor work planning leading to high work pressure; lack of safety systems and barriers;
- inadequate responses to previous incidents;
- management based on one-way communications;
- deficient co-ordination and responsibilities;
- poor management of health and safety;
- poor health and safety culture.

Organizational factors play a significant role in the health and safety of the workplace. However, this role is often forgotten when health and safety is being reviewed after an accident or when a new process or piece of equipment is introduced.

3.15.3 The job

Jobs may be highly dangerous or present only negligible risk of injury. Health and safety is an important element during the design stage of the job and any equipment, machinery or procedures associated with the job. Method study helps to design the job in the most cost-effective way and ergonomics helps to design the job with health and safety in mind. Ergonomics is the science of matching equipment, machines and processes to people rather than the other way round. An ergonomically-designed machine will ensure that control levers, dials, meters and switches are sited in a convenient and comfortable position for the machine operator. Similarly, an ergonomically-designed workstation will be designed for the comfort and health of the operator. Chairs, for example, will be designed to support the back properly throughout the working day.

Physically matching the job and any associated equipment to the person will ensure that the possibility of human error is minimized. It is also important to ensure that there is mental matching of the person's information and decision-making requirements. A person must be capable, either through past experience or through specific training, of performing the job with the minimum potential for human error.

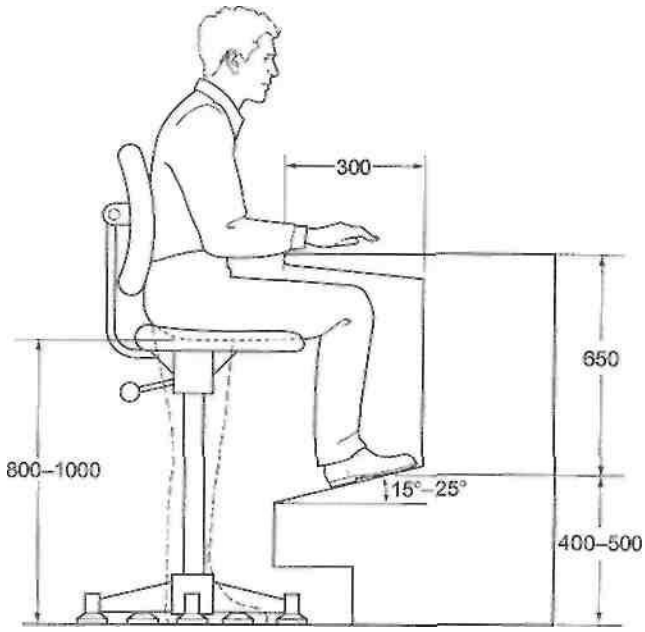


Figure- Well designed workstation for sitting or standing.

The major considerations in the design of the job, which would be undertaken by a specialist, are as follows:

- the identification and detailed analysis of the critical tasks expected of individuals and the appraisal of any likely errors associated with those tasks;
- evaluation of the required operator decision making and the optimum (best) balance between the human and automatic contributions to safety actions (with the emphasis on automatic whenever possible);
- application of ergonomic principles to the design of man-machine interfaces, including displays of plant and process information, control devices and panel layout;
- design and presentation of procedures and operating instructions in the simplest terms possible;
- organization and control of the working environment, including the workspace, access for maintenance, lighting, noise and heating conditions;
- provision of the correct tools and equipment;
- scheduling of work patterns, including shift organization, control of fatigue and stress and arrangements for emergency operations
- efficient communications, both immediate and over a period of time.

The following simple checklist may be used to check that the principal health and safety considerations of the job have been taken into account:

- Have the critical parts of the job been identified and analysed?
- Have the employee's decision-making needs been evaluated?

- Has the best balance between human and automatic systems been evaluated?
- Have ergonomic principles been applied to the design of equipment displays, including displays of plant and process information, control information and panel layouts?
- Has the design and presentation of procedures and instructions been considered?
- Has the guidance available for the design and control of the working environment, including the workspace, access for maintenance, lighting, noise and heating conditions, been considered?
- Have the correct tools and equipment been provided?
- Have the work patterns and shift organization been scheduled to minimize their impact on health and safety?
- Has consideration been given to the achievement of efficient communications and shift handover?

3.15.4 Individual factors

Personal factors, which affect health and safety, may be defined as any condition or characteristic of an individual which could cause or influence him/her to act in an unsafe manner. They may be physical, mental or psychological in nature. Personal factors, therefore, include issues such as attitude, motivation, training and human error and their interaction with the physical, mental and perceptual capability of the individual.

These factors have a significant effect on health and safety. Some of them, normally involving the personality of the individual, are unchangeable but others, involving skills, attitude, perception and motivation can be changed, modified or improved by suitable training or other measures. In summary, the person needs to be matched to the job.

Studies have shown that the most common personal factors which contribute to accidents are low skill and competence levels, tiredness, boredom, low morale and individual medical problems.

It is difficult to separate all the physical, mental or psychological factors because they are interlinked. However, the three most common factors are psychological factors: attitude, motivation and perception.

Attitude is the tendency to behave in a particular way in a certain situation. Attitudes are influenced by the prevailing health and safety culture within the organization, the commitment of the management, the experience of the individual and the influence of the peer group. Peer group pressure is a particularly important factor among young people and health and safety training must be designed with this in mind by using examples or case

studies that are relevant to them. Behaviour may be changed by training, the formulation and enforcement of safety rules and meaningful consultation - attitude change often follows. *Motivation* is the driving force behind the way a person acts or the way in which people are stimulated to act. Involvement in the decision-making process in a meaningful way will improve motivation as will the use of incentive schemes. However, there are other important influences on motivation such as recognition and promotion opportunities, job security and job satisfaction. Self-interest, in all its forms, is a significant motivator and personal factor.

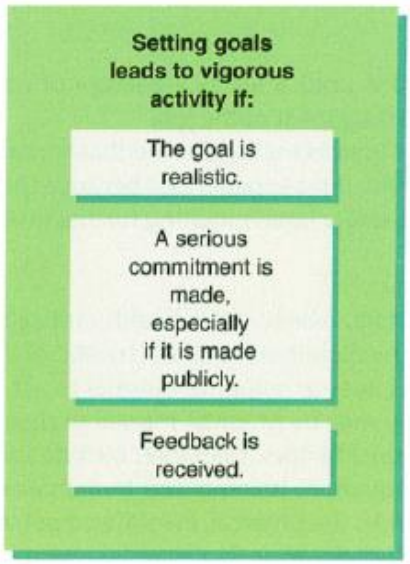


Figure – Motivation and activity.

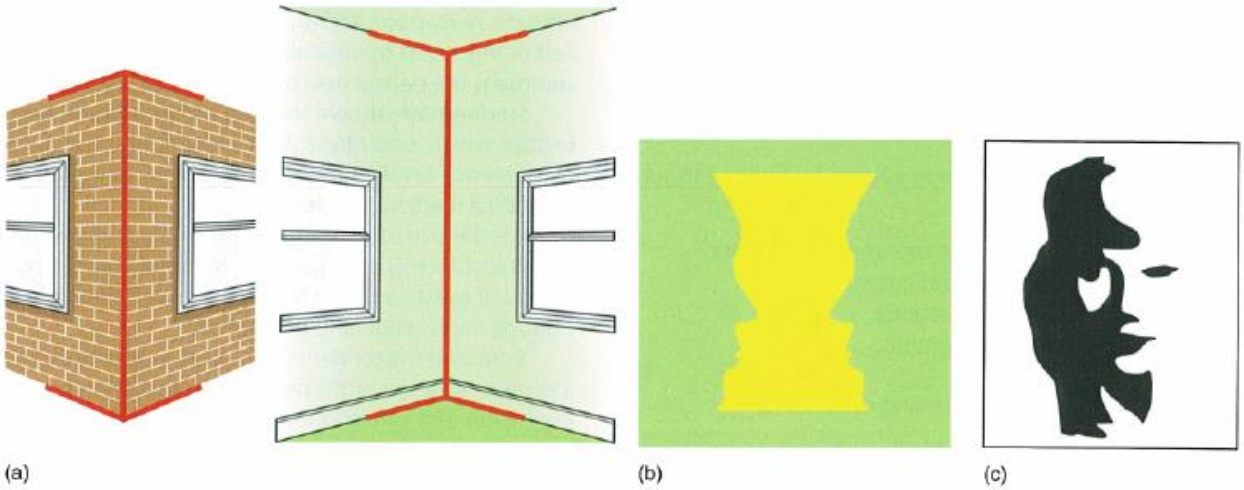


Figure - Visual perception, (a) Are the lines of the same length? (b) Faces or vase? (c) Faces or saxophone player?

Perception is the way in which people interpret the environment or the way in which a person believes or understands a situation. In health and safety, the perception of hazards is an important concern. Many accidents occur because people do not perceive that there is a

risk. There are many common examples of this, including the use of personal protective equipment (such as hard hats) and guards on drilling machines and the washing of hands before meals. It is important to understand that when perception leads to an increased health and safety risk, it is not always caused by a conscious decision of the individual concerned. The stroboscopic effect caused by the rotation of a drill at certain speeds under fluorescent lighting will make the drill appear stationary. It is a well-known phenomenon, especially among illusionists, that people will often see what they expect to see rather than reality. Routine or repetitive tasks will reduce attention levels, leading to the possibility of accidents.

Other personal factors which can affect health and safety include physical stature, age, experience, health, hearing, intelligence, language, skills, level of competence and qualifications.

Memory is an important personal factor, as it is influenced by training and experience. The efficiency of memory varies considerably between people and during the lifetime of an individual. The overall health of a person can affect memory as can personal crises. Owing to these possible problems with memory, important safety instructions should be available in written as well as verbal form.

Finally, it must be recognized that some employees do not follow safety procedures either due to peer pressure or a wilful disregard of those procedures.

The following checklist, given in HSG48, may be used to check that the relevant personal factors have been covered to help minimize human error:

- Has the job specification been drawn up and included age, physique, skill, qualifications, experience, aptitude, knowledge, intelligence and personality?
- Have the skills and aptitudes been matched to the job requirements?
- Have the personnel selection policies and procedures been set up to select appropriate individuals?
- Has an effective training system been implemented?
- Have the needs of special groups of employees been considered?
- Have the monitoring procedures been developed for the personal safety performance of safety critical staff?
- Have fitness for work and health surveillance been provided where it is needed?
- Have counseling and support for ill-health and stress been provided?

Personal factors are the attributes that employees bring to their jobs and may be strengths or weaknesses. Negative personal factors cannot always be neutralized by improved job design. It is, therefore, important to ensure that personnel selection procedures should match people to the job. This will reduce the possibility of accidents or other incidents.

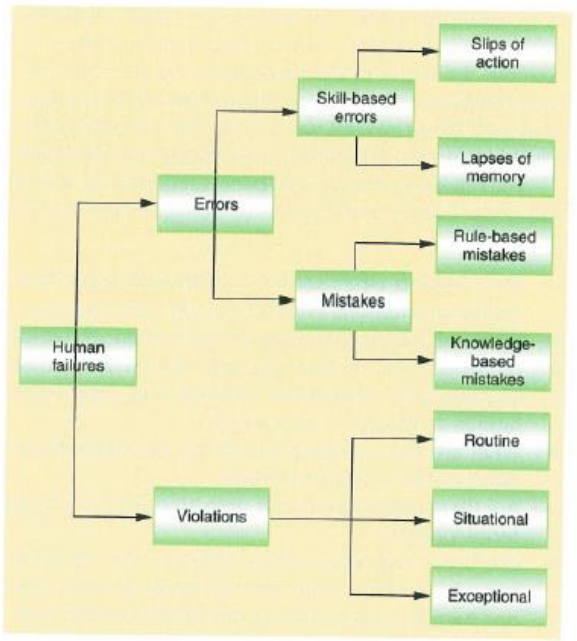


Figure – Types of human failure.

3.16 How health and safety behaviour at work can be improved

No single section or department of an organization can develop a positive health and safety culture on its own. There needs to be commitment by the management, the promotion of health and safety standards, effective communication within the organization, co-operation from and with the workforce and an effective and developing training programme. Each of these topics will be examined in turn to show their effect on improving the health and safety culture in the organization.

3.16.1 Securing Commitment of management

As mentioned earlier, there needs to be a commitment from the very top of the organization and this commitment will, in turn, produce higher levels of motivation and commitment throughout the organization. Probably, the best indication of this concern for health and safety is shown by the status given to health and safety and the amount of resources (money, time and people) allocated accordingly. The management of health and safety should form an essential part of a manager's responsibility and they should be held to account for their performance on health and safety issues. Specialist expertise should be made available when required (e.g. for noise assessment), either from within the workforce or by the employment of external contractors or consultants. Health and safety should be

discussed on a regular basis at management meetings at all levels of the organization. If the organization employs sufficient people to make direct consultation with all employees difficult, there should be a health and safety committee at which there is employee representation. In addition, there should be recognized routes for anybody within the organization to receive health and safety information or have their health and safety concerns addressed. The health and safety culture is enhanced considerably when senior managers appear regularly at all levels of an organization, whether it be the shop floor, the hospital ward or the general office, and are willing to discuss health and safety issues with staff. A visible management is very important for a positive health and safety culture.

Finally, the positive results of management commitment to health and safety will be the active involvement of all employees in health and safety, the continuing improvement in health and safety standards and the subsequent reduction in accident and occupational ill-health rates. This will lead, ultimately, to a reduction in the number and size of compensation claims.

HSG48 makes some interesting suggestions to managers on the improvements that may be made to health and safety which will be seen by the workforce as a clear indication of their commitment. The suggestions are:

- review the status of the health and safety committees and health and safety practitioners. Ensure that any recommendations are acted upon or implemented;
- ensure that senior managers receive regular reports on health and safety performance and act on them;
- ensure that any appropriate health and safety actions are taken quickly and are seen to have been taken;
- any action plans should be developed in consultation with employees, based on a shared perception of hazards and risks, be workable and continually reviewed.

3.16.2 Promoting health and safety standards by leadership and example and appropriate use of disciplinary procedures

For a positive health and safety culture to be developed, everyone within the organization needs to understand the standards of health and safety expected by the organization and the role of the individual in achieving and maintaining those standards. Such standards are required to control and minimize health and safety risks.

Standards should clearly identify the actions required of people to promote health and safety. They should also specify the competencies needed by employees and should form the basis for measuring health and safety performance.

Health and safety standards cover all aspects of the organization. Typical examples include:

- the design and selection of premises;
- the design and selection of plant and substances
- (including those used on site by contractors);
- the recruitment of employees and contractors;
- the control of work activities, including issues such as
- risk assessment;
- competence, maintenance and supervision;
- emergency planning and training;
- the transportation of the product and its subsequent maintenance and servicing.

Having established relevant health and safety standards, it is important that they are actively promoted within the organization by all levels of management. The most effective method of promotion is by leadership and example. There are many ways to do this such as:

- the involvement of managers in workplace inspections and accident investigations;
- the use of PPE (e.g. goggles and hard hats) by all managers and their visitors in designated areas;
- ensuring that employees attend specialist refresher training courses when required (e.g. first-aid and fork-lift truck driving);
- full co-operation with fire drills and other emergency training exercises;
- comprehensive accident reporting and prompt follow-up on recommended remedial actions.

The benefit of good standards of health and safety will be shown directly in less lost production, accidents and compensation claims, and lower insurance premiums. It may also be shown in higher product quality and better resource allocation.

An important and central necessity for the promotion of high health and safety standards is health and safety competence. What is meant by 'competence'?

Competence

The word 'competence' is often used in health and safety literature. One definition, made during a civil case in 1962 in the UK, stated that a competent person is:

a person with practical and theoretical knowledge as well as sufficient experi¬ence of the particular machinery, plant or procedure involved to enable them to identify defects or weaknesses during plant and machinery examinations, and to assess their importance in relation to the strength and function of that plant and machinery.

The ILO has defined competence more broadly in the ILO-OSH 2001 management system in terms of an authority, an institution and a person as follows:

Competent institution: A government department or other body with the responsibility to establish a national policy and develop a national framework for health and safety management systems in organizations and to provide relevant guidance. *Competent authority:* A minister, government department, or other public authority having the power to issue regulations, orders or other instructions having the force of law.

Competent person: A person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skill for the safe performance of the specific work. The competent authorities may define appropriate criteria for the designation of such persons and may determine the duties to be assigned to them.

The ILO further recommends that the necessary health and safety competence requirements should be defined by the employer, and arrangements established and maintained to ensure that all persons are competent to carry out the health and safety aspects of their duties and responsibilities. The employer should have, or have access to, sufficient health and safety competence to identify and eliminate or control work-related hazards and risks, and to implement the health and safety management system. Competence training programmes should:

(a) cover all members of the organization, as appropriate;
(b) be conducted by competent persons;
(c) provide effective and timely initial and refresher training at appropriate intervals;
(d) include participants' evaluation of their comprehension and retention of the training;
(e) be reviewed periodically. The review should include the safety and health committee, where it exists, and the training programmes, modified as necessary to ensure their relevance and effectiveness; and
(f) be documented, as appropriate and according to the size and nature of activity of the organization.

Finally the ILO recommends that training should be provided to all participants at no cost and should take place during working hours, if possible.

Competent persons are required to assist the employer in meeting their obligations under the particular national health and safety law. This may mean a health and safety adviser in addition to, say, an electrical engineer, an occupational nurse and a noise assessment

specialist. The number and range of competent persons will depend on the nature of the business of the organization.

It is recommended that competent employees are used for advice on health and safety matters rather than external specialists (consultants). However if employees, competent in health and safety, are not available in the organization, then an external service may be enlisted to help. The key is that management and employees need access to health and safety expertise.

Employers should appoint health and safety advisers who should have:

- a knowledge and understanding of the work involved, the principles of risk assessment and prevention and current health and safety applications;
- the capacity to apply this to the task required by the employer in the form of problem and solution identification, monitoring and evaluating the effectiveness of solutions and the promotion and communication of health and safety and welfare advances and practices.

Such competence does not necessarily depend on the possession of particular skills or qualifications. It may only be required to understand relevant current best practice, be aware of one's own limitations in terms of experience and knowledge and be willing to supplement existing experience and knowledge. However, in more complex or technical situations, membership of a relevant professional body and/or the possession of an appropriate qualification in health and safety may be necessary. It is important that any competent person employed to help with health and safety has evidence of relevant knowledge, skills and experience for the tasks involved. The appointment of a competent person as an adviser to an employer does not normally absolve the employer from his responsibilities under relevant national statutory health and safety legislation.

Finally, it is worth noting that the requirement to employ competent workers is not restricted to those having a health and safety function but covers the whole workforce.

Competent workers must have sufficient training, experience, knowledge and other qualities to enable them to properly undertake the duties assigned to them

3.16.3 Identifying and keeping up to date with legal requirements

The organization must establish, implement and maintain a procedure for identifying and accessing the legal and other OH&S requirements that are applicable. This information must be communicated and kept up-to-date.

The organization must establish, implement and maintain OH&S objectives which must be measurable (where practicable) and consistent with the policy and legal requirements. An effective programme and action plan for achieving the objectives must be established and implemented. Implementing and operation - As with HSG65, there is emphasis on the responsibility of top management for the effective implementation and operation of the system.

Top management must demonstrate their commitment:

(a) To provide adequate resources.
(b) To define roles, allocate responsibilities and accountabilities, and delegate authorities.
(c) To appoint a member of top management with specific responsibilities for OH&S irrespective of their other responsibilities to ensure:
(i) OH&S management system is established, implemented and maintained;

(ii) reports on performance are presented to top management for review and used for improvement.

(d) The organization must ensure that all people under its control who perform tasks that could affect OH&S are competent on the basis of appropriate education, training or experience and must keep records.
(e) The organization must establish, implement and maintain procedures for effective internal communication with employees, contractors and other visitors.They must receive and appropriately respond to relevant external communications.
(f) The organization must establish, implement and maintain procedures for involvement of and consultation with employees and, as necessary, contractors, relating to hazard identification, risk assessment determination of suitable controls, incident investigation and the development and review of policies and procedures.
(g) Documents proportional to the risks and scale of the organization must be prepared and maintained with a proper system of control.

Setting health & safety objectives

Health and safety objectives provide an overall direction for health and safety goals.

Health and safety objectives need to consistent with the organisation's health and safety policies and other legal requirements.

Health and safety objectives may be to:

- Reduce or eliminate the number of accidents and injuries in a particular site
- Reduce hazards and risks in a particular site

Health and safety targets may be to:

- Reduce sprains in site A by 10% in the next 6 month period
- Increase incident and near miss reporting by 20% in the next 6 month period

Documenting and setting each functional level

Write it in your own words and make it fit your company's needs .

Divide it up into sections:

- On one side, in simple terms, write down your overall health and safety objectives;
- Next outline responsibilities (from director level down to the newest recruit);

Then outline the arrangements you have in place for achieving a safe and healthy working environment:

- carrying out risk assessments;
- providing necessary training and information;
- monitoring health and safety performance;
- accident/incident reporting;
- first aid;
- general fire safety;
- obtaining professional advice.

Now turn the sheet over and on the other side write down the results of your risk assessments, detailing hazards, what could happen and any rules or control measures that need to be in place and appendices giving other useful information.

Don't make the plan any longer than it needs to be. Keep it as simple as possible .

Remember, if it is to be of any value at all, it has to be a working document which your employees will actually refer to and read.

It is worth spending time to get your plan right for your business. Avoid copying other firm's policies.

When you have drafted your plan, check to see that it is signed and dated by the Director or Chief Executive as the person with overall responsibility for formulating, implementing and developing the policy. This is important to help communicates management's values, beliefs and commitment to health and safety and establish the importance of health and safety in relation to other business objectives so staff can see the contribution the plan can have to ensuring overall business success .

You need to set aside time to explain your plan to you staff explaining the contribution of managers and every member of the team to its successful development and the formulation and implementation of procedures.

You need to commit the company to:

- providing resources necessary to implement the policy; and to ensuring the competence of all employees;
- using professional advice and services where necessary;
- achieving continuous improvement in health and safety standards with legal requirements defining minimum standards which must be in place;
- regularly reviewing and developing the action plan;
- maintaining effective systems of communication on all health and safety matters; and
- providing a simple annual report on health and safety management performance .

Legal requirement

If you employ more than five people, by law you must have a health and safety policy statement which you must bring to their attention. You must also record the results of your risk assessments. Although relatively few words are required to satisfy these legal requirements, it is well worth spending a little time to combine your policy statement and assessment record into your own tailor made health and safety action plan .

Companies that consider environmental protection, occupational health and safety at work as important as providing quality products usually have managers and departments responsible for these issues. They are called **Environmental, Health and Safety (EHS)** departments, also **SHE** or **HSE** departments. EHS management has two general objectives: prevention of incidents or accidents that might result from abnormal operating conditions on the one hand and reduction of adverse effects that result from normal operating conditions on the other hand.

For example, fire, explosion and release of harmful substances into the environment or the work area must be prevented. Also action must be taken to reduce a company's environmental impact under normal operating conditions (like reducing the company's carbon footprint) and to prevent workers from developing work related diseases. Regulatory requirements play an important role in both approaches and consequently, EHS managers must identify and understand relevant EHS regulations, the implications of which must be communicated to top management (the board of directors) so the company can implement suitable measures. Organisations based in the United States are subject to EHS regulations in the Code of Federal Regulations, particularly CFR 29, 40, and 49. Still, EHS management is not limited to legal compliance and companies should be encouraged to do more than is required by law, if appropriate.

3.16.4 Effective communication

Many problems in health and safety arise due to poor communication. It is not just a problem between management and workforce; it is often a problem the other way or indeed at the same level within an organization. It can arise from ambiguities or, even, accidental distortion of a message.

There are three basic methods of communication in health and safety: verbal, written and graphic.

Verbal communication is the most common. It is communication by speech or word of mouth. Verbal communication should only be used for relatively simple pieces of information or instruction. It is most commonly used in the workplace, during training sessions or at meetings.

There are several potential problems associated with verbal communication. The speaker needs to prepare the communication carefully so that there is no confusion about the message. It is very important that the recipient is encouraged to indicate their understanding of the communication. There have been many cases of accidents occurring because a verbal instruction has not been clearly understood. There are several barriers to this understanding from the point of view of the recipient, including language and dialect, the use of technical language and abbreviations, background noise and distractions, hearing limitations, ambiguities in the message, mental weaknesses and learning disabilities, and lack of interest and attention.

Having described some of the limitations of verbal communication, it does have some merits. It is less formal, enables an exchange of information to take place quickly and the message to be conveyed as near to the workplace as possible. Training or instructions that are delivered in this way are called toolbox talks and can be very effective.

Written communication takes many forms from a simple memo to a detailed report.

A memo should contain one simple message and be written in straightforward and clear language.The title should accurately describe the contents of the memo. In recent years, e-mails have largely replaced memos, as it has become a much quicker method to ensure that the message gets to all concerned (although a recent report has suggested that many people are becoming overwhelmed by the number of e-mails which they receive!). The advantage of memos and e-mails is that there is a record of the message after it has been delivered. The disadvantage is that they can be ambiguous or difficult to understand or, indeed, lost within the system.

Reports are more substantial documents and cover a topic in greater detail. The report should contain a detailed account of the topic and any conclusions or recommendations. The main problem with reports is that they are often not read properly due to the time constraints on managers. It is important that all reports have a summary attached so that the reader can decide whether it needs to be read in detail.

The most common way in which written communication is used in the workplace is the *noticeboard.* For a notice-board to be effective it needs to be well positioned within the workplace and there needs to be a regular review of the notices to ensure that they are up-to-date and relevant.

In addition to the health and safety poster, mentioned earlier, the following types of health and safety information could be displayed on a workplace noticeboard:

- a copy of the Employer's Liability Insurance Certificate;
- details of first-aid arrangements;
- emergency evacuation and fire procedures;
- minutes of the last health and safety committee
- meeting;
- details of health and safety targets and performance
- against them;
- health and safety posters and campaign details.

There are many other examples of written communications in health and safety, such as employee handbooks, company codes of practice, minutes of safety committee meetings and health and safety procedures.

Graphic communication is communication by the use of drawings, photographs or DVDs. It is used to impart either health and safety information (e.g. fire exits) or health and safety propaganda. The most common forms of health and safety propaganda are the poster and the DVD. Both can be used very effectively as training aids, as they can retain interest and

impart a simple message. Their main limitation is that they can become out of date fairly quickly or, in the case of posters, become largely ignored.

The ILO in the ILO-OSH 2001 management system recommends that arrangements and procedures should be established and maintained for:

(a) receiving, documenting and responding appropriately to internal and external communications related to health and safety;
(b) ensuring the internal communication of health and safety information between relevant levels and functions of the organization; and
(c) ensuring that the concerns, ideas and inputs of workers and their representatives on health and safety matters are received, considered and responded to.

There are many sources of health and safety information which may need to be consulted before an accurate communication can be made. These include national legislation, Codes of Practice, guidance, ILO and European standards, periodicals, case studies and publications (for example, from the ILO and the UK HSE).

3.16.5 Health and safety training

The provision of information and training for employees will develop their awareness and understanding of the specific hazards and risks associated with their jobs and working environment. It will inform them of the control measures that are in place and any related safe procedures that must be followed. Apart from satisfying legal obligations, several benefits will accrue to the employer by the provision of sound information and training to employees. These benefits include:

- a reduction in accident severity and frequency;
- a reduction in injury and ill-health related absence;
- a reduction in compensation claims and, possibly,
- insurance premiums;
- an improvement in the health and safety culture of
- the organization;
- improved staff morale and retention.

Health and safety training is a very important part of the health and safety culture and it is often a legal requirement for an employer to provide such training. Training should be provided on recruitment, at induction or on being exposed to new or increased risks due to:

- being transferred to another job or given a change in responsibilities;
- the introduction of new work equipment or a change of use in existing work equipment; the introduction of new technology;
- the introduction of a new system of work or the revision of an existing system of work;
- an increase in the employment of more vulnerable employees (young or disabled persons);
- particular training required by the organization's insurance company (e.g. specific fire and emergency training).

Additional training may well be needed following a single or series of accidents or near misses, the introduction of new legislation, the issuing of an enforcement notice or as a result of a risk assessment or safety audit.

It is important during the development of a training course that the target audience is taken into account. If the audience are young persons, the chosen approach must be capable of retaining their interest and any illustrative examples used must be within their experience. The trainer must also be aware of external influences, such as peer pressure, and use them to their advantage. For example, if everybody wears PPE then it will be seen as the thing to do. Levels of literacy and numeracy are other important factors.

The way in which the training session is presented by the use of DVDs, PowerPoint slides, case studies, lectures or small discussion groups needs to be related to the material to be covered and the backgrounds of the trainees. Supplementary information in the form of copies of slides and additional background reading is often useful.

Figure - Health and safety training needs and opportunities.

The environment used for the training sessions is also important in terms of room layout and size, lighting and heating.

Attempts should be made to measure the effectiveness of the training by course evaluation forms issued at the time of the session, by a subsequent refresher session and by checking for improvements in health and safety performance (such as a reduction in specific accidents).

There are several different types of training; these include induction, job specific, supervisory and management, and specialist. Informal sessions held at the place of work are known as toolbox talks. Such sessions should only be used to cover a limited number of issues. They can become a useful route for employee consultation.

Induction training

Induction training should always be provided to new employees, trainees and contractors. While such training covers items such as pay, conditions and quality, it must also include health and safety. It is useful if the employee signs a record to the effect that training has been received. This record may be required as evidence should there be a subsequent legal claim against the organization.

Most induction training programmes would include the following topics:

- the health and safety policy of the organization including a summary of the organization and arrangements including employee consultation a brief summary of the health and safety management system including the name of the employee's direct supervisor, safety representative and source of health and safety information;
- the employee responsibility for health and safety including any general health and safety rules (e.g. smoking prohibitions);
- the accident reporting procedure of the organization, the location of the accident book and the location of the nearest first aider;
- the fire and other emergency procedures including the location of the assembly point;
- the hazards that are specific to the workplace;
- a summary of any relevant risk assessments and safe systems of work;
- the location of welfare, canteen facilities and rest rooms;
- procedures for reporting defects or possible hazards and the name of the responsible person to whom the report should be made;
- details of the possible disciplinary measures that may be enacted for non-compliance with health and safety rules and procedures.

Additional items which are specific to the organization may need to be included such as:

- internal transport routes and pedestrian walkways (e.g. forklift truck operations);
- the correct use of PPE and maintenance procedures; manual handling techniques and procedures;
- details of any hazardous substances in use and any procedures relating to them (e.g. health surveillance).

There should be some form of follow-up with each new employee after 3 months to check that the important messages have been retained. This is sometimes called a refresher course, although it is often better done on a one-to-one basis.

It is very important to stress that the content of the induction course should be subject to constant review and updated following an accident investigation, new legislation, changes in the findings of a risk assessment or the introduction of new plant or processes.

Job specific training

Job-specific training ensures that employees undertake their job in a safe manner. Such training, therefore, is a form of skill training and is often best done 'on the job' sometimes known as 'toolbox training'. Details of the safe system of work or, in more hazardous jobs, a permit-to-work system, should be covered. In addition to normal safety procedures, emergency procedures and the correct use of PPE also need to be included. The results of risk assessments are very useful in the development of this type of training. It is important

that any common causes of human errors (e.g. discovered as a result of an accident investigation), any standard safety checks or maintenance requirements, are addressed.

It is common for this type of training to follow an operational procedure in the form of a checklist which the employee can sign on completion of the training. The new employee will still need close supervision for some time after the training has been completed.

Supervisory and management training

Supervisory and management health and safety training follows similar topics to those contained in an induction training course but will be covered in more depth. There will also be a more detailed treatment of health and safety law. There has been considerable research over the years into the failures of managers that have resulted in accidents and other dangerous incidents. These failures have included:

- lack of health and safety awareness, enforcement and promotion (in some cases, there has been encouragement to circumvent health and safety rules);
- lack of consistent supervision of and communication with employees;
- lack of understanding of the extent of the responsibility of the supervisor.

It is important that all levels of management, including the Board, receive health and safety training. This will not only keep everybody informed of health and safety legal requirements, accident prevention techniques and changes in the law, but also encourage everybody to monitor health and safety standards during visits or tours of the organization.

Specialist training

Specialist health and safety training is normally needed for activities that are not related to a specific job but more to an activity. Examples include first-aid, fire prevention, forklift truck driving, overhead crane operation, scaffold inspection and statutory health and safety inspections. These training courses are often provided by specialist organizations and successful participants are awarded certificates. Details of two of these courses will be given here by way of illustration. Details of other types of specialist training appear elsewhere in the text.

Fire prevention training courses include the causes of fire and fire spread, fire and smoke alarm systems, emergency lighting, the selection and use of fire extinguishers and sprinkler systems, evacuation procedures, high-risk operations and good housekeeping principles.

A forklift truck drivers' course would include the general use of the controls, loading and unloading procedures, driving up or down an incline, speed limits, pedestrian awareness (particularly in areas where pedestrians and vehicles are not segregated), security of the

vehicle when not in use, daily safety checks and defect reporting, refuelling and/or battery charging and emergency procedures.

Training is a vital part of any health and safety programme and needs to be constantly reviewed and updated. In many countries, health and safety legislation requires specific training (e.g. manual handling, PPE and display screens). Additional training courses may be needed when there is a major reorganization, a series of similar accidents or incidents, or a change in equipment or a process. Finally, the methods used to deliver training must be continually monitored to ensure that they remain effective.

3.17 Principles and practice of risk assessment

3.17.1 Meaning of hazard, risk and risk assessment

In the Code of Practice 'Ambient factors in the workplace', the ILO recommends that employers should make periodic assessments of the hazards and risks to health and safety from hazardous ambient and other factors at each permanent or temporary workplace, and implement the control measures required to prevent those hazards and risks, or to reduce them to the lowest reasonable and practicable level. If a new source of hazard is introduced, the assessment should be made before workers are exposed to the hazard. The assessment should gather information on the hazards present at the workplace, the degree of exposure and risk, appropriate control measures, health surveillance, and training and information.

In its guidance document *Guidance on risk assessment at work* published in 1996, the European Commission advises that**:**

1. The employer at each workplace has a general duty to ensure the health and safety of workers in every aspect related to work. The purpose of carrying out a risk assessment is to enable the employer to effectively take the measures necessary for the health and
   safety protection of workers. These measures include
   a. prevention of occupational risks
   b. provision of information to workers
   c. provision of training to workers
   d. organization and means to implement the necessary measures
2. Where elimination of risk is not realised, then the risks should be reduced and the residual risk controlled. At a later stage, as part of the review programme, such residual risks should be reassessed and reduced further.

3. A flow chart outlining the risk assessment procedure recommended by the European Union is and incorporates the elements of risk management

The general duties of employers to their employees in Section 2 of the UK, HSW Act 1974 imply the need for risk assessment. This duty was also extended by Section 3 of the Act to anybody else affected by activities of the employer - contractors, visitors, customers or members of the public. However, the UK Management of Health and Safety at Work Regulations are much more specific concerning the need for risk assessment.

> The risk assessment shall be 'suitable and sufficient' and cover both employees and non-employees affected by the employer's undertaking (e.g. contractors, members of the public, students, patients, customers); every self-employed person shall make a 'suitable and sufficient' assessment of the risks to which they or those affected by the undertaking may be exposed;
>
> Any risk assessment shall be reviewed if there is reason to suspect that it is no longer valid or if a significant change has taken place;
>
> Where there are five or more employees, the significant findings of the assessment shall be recorded and any specially at risk group of employees identified. (This does not mean that employers with four or less employees need not undertake risk assessments.)

In the UK, the following requirements are specified in the Management of Health and Safety at Work Regulations:

- identify the significant risks and ignore the trivial ones
- identify and prioritize the measures required to comply with any relevant statutory provisions
- remain appropriate to the nature of the work and valid over a reasonable period of time
- identify the risk arising from or in connection with the work. The level of detail should be proportionate to the risk

Distinction between different types of incident:

ill-health

This is concerned with those illnesses or physical and mental disorders that are either caused or triggered by workplace activities. Such conditions may be induced by the particular work activity of the individual or by activities of others in the workplace. The time interval between exposure and the onset of the illness may be short (e.g. asthma attacks) or long (e.g. deafness or cancer).

injury accident

This is defined by the UK HSE as 'any unplanned event that results in injury or ill-health of people, or damage or loss to property, plant, materials or the environment or a loss of a business opportunity'. Other authorities define an accident more narrowly by excluding events that do not involve injury or ill-health. This book will always use the HSE definition.

dangerous occurrence

This is a near miss which could have led to serious injury or loss of life. Specified dangerous occurrences are reportable to the national Health and Safety Enforcement Authorities. Examples include the collapse of a scaffold or a crane or the failure of any passenger-carrying equipment.

In 1969, F. E. Bird collected a large quantity of accident data and produced a well-known triangle to represent it.

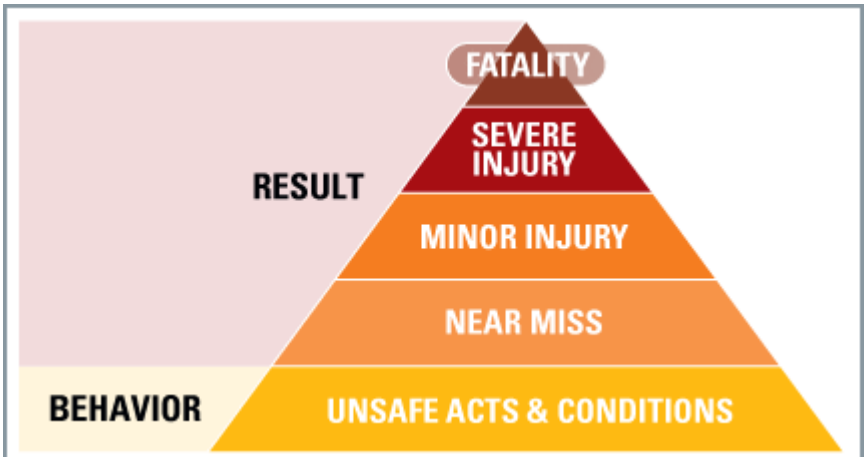
It can be seen that damage and near miss accidents occur much more frequently than injury accidents and are, therefore, a good indicator of risks. The study also shows that most accidents are predictable and avoidable.

near-miss

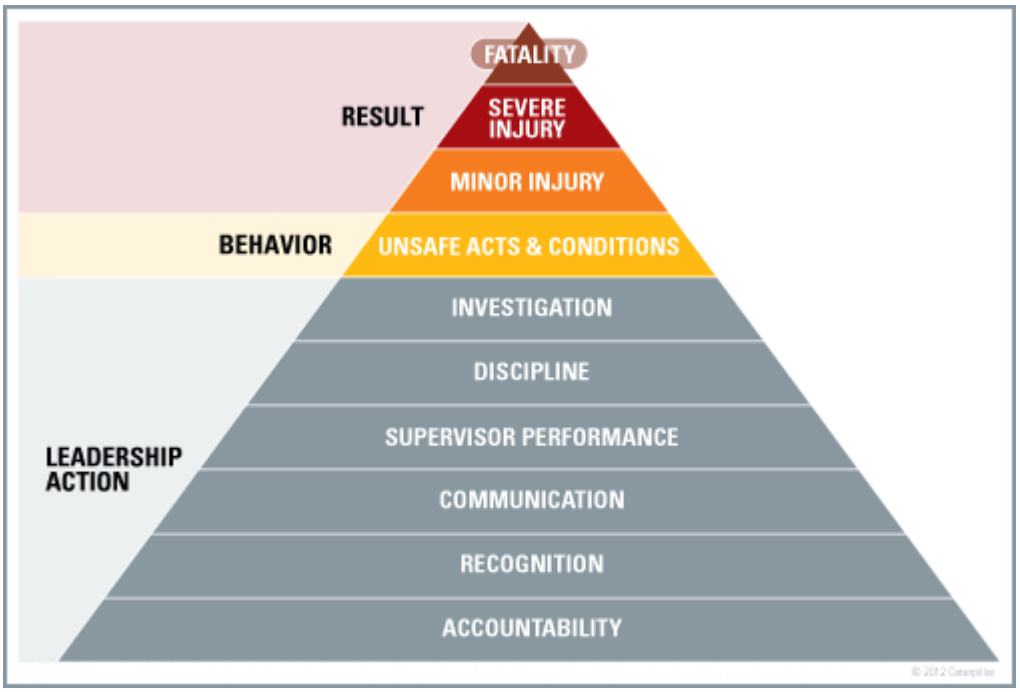
This is any incident that could have resulted in an accident. Knowledge of near misses is very important as research has shown that, approximately, for every 10 near miss events at a particular location in the workplace, a minor accident will occur.

Typical ratios of incident utility and limitations

H. W. Heinrich changed the world of safety fundamentals forever with his pioneering work in the 1930's. One of his concepts that continues to make me think is his accident triangle (pyramid), a concept that we all are familiar with.



So many near misses lead to a lesser number of first-aid injuries and thence onward through the logic to recordable and ending in the inevitability of a fatality. This inevitability of disaster has always bothered me. If I cross the railroad tracks too many times I will die, or drive to work, or something else like that. I am not a fatalist, and thus my pondering is on what exists that will enable the industrial work place to overcome this fatalistic teaching. My work with companies and individuals that have done both well and poorly in safety always leads to individual behaviors as a foundational key, after workplace conditions, training and safety standards are addressed. In many cases, the "behavior foundation" appears to be made of sand. It is not a firm foundation on which to build a zero-injury culture. So how does one attack this foundation of the triangle? Years of thought and effort in this area have led to a whole different level of sub-foundation as shown below.



If our new safety triangle (pyramid) is built on the “stone foundation” of excellent fundamentals that modify behaviors and actions, can we limit (reduce) the base of improper activities that lead to 90+ percent of the injuries in Heinrich’s pyramid? Each time I have rebuilt the foundation, the results have been similarly excellent. The following sub-foundation fundamentals significantly reduced injuries.

- Visible upper management leadership in safety
- Noticeable involvement of middle management
- Focused supervisory performance
- Active participation of hourly employees
- Training that both teaches and reinforces this type of foundational excellence

The above principles tie in very well with the quality function’s 6-sigma initiative for significant improvement; DMAIC (define, measure, act, improve, control). Only in our safety case it is:

- Define the correct behaviors that eliminate unsafe acts and injuries
- Train all personnel in these behaviors
- Measure that they are indeed doing these correct behaviors
- Reward their accomplishments of these correct behaviors

The key then is not to focus on compliance, or reward “acceptable injury levels/goals,” or on any other single tactic approach. The key is to concentrate on the foundational fundamentals that eliminate the activities/behaviors that in turn move us out of the chance probability of the Heinrich inevitability triangle. We must error proof the fundamental safety processes and deliver safety accountabilities at each level of the organization. We then engage in a daily practice of the upstream activities that deliver downstream performance.

3.17.2 Forms of risk assessment

There are two basic forms of risk assessment:

1. A **quantitative risk assessment** attempts to measure the risk by relating the probability of the risk occurring to the possible severity of the outcome and then giving the risk a numerical value. This method of risk assessment is used in situations where a malfunction could be very serious (e.g. aircraft design and maintenance or the petrochemical industry).
2. The term **'generic' risk assessment** is sometimes used and describes a risk assessment which covers similar activities or work equipment in different departments, sites or companies. Such assessments are often produced by specialist

bodies, such as trade associations. If used, they must be appropriate to the particular job and they will need to be extended to cover additional hazards or risks.

Health and Risk

A hazard is the **potential** of a substance, activity or process to cause harm. Hazards take many forms including, for example, chemicals, electricity and the use of a ladder. A hazard can be ranked relative to other hazards or to a possible level of danger.

A risk is the **likelihood** of a substance, activity or process to cause harm. Risk (or strictly the level of risk) is also linked to the severity of its consequences. A risk can be reduced and the hazard eliminated or controlled by good management.

It is very important to distinguish between a hazard and a risk - the two terms are often confused and activities often called high risk are in fact high hazard. There should only be high residual risk where there is poor health and safety management and inadequate control measures.

Electricity is an example of a high hazard as it has the potential to kill a person. The risk associated with electricity - the likelihood of being killed on coming into contact with an electrical device - is, hopefully, low.

Occupational or work-related ill-health

This is concerned with those illnesses or physical and mental disorders that are either caused or triggered by workplace activities. Such conditions may be induced by the particular work activity of the individual or by activities of others in the workplace. The time interval between exposure and the onset of the illness may be short (e.g. asthma attacks) or long (e.g. deafness or cancer)

Accident

This is defined by the UK HSE as 'any unplanned event that results in injury or ill-health of people, or damage or loss to property, plant, materials or the environment or a loss of a business opportunity'. Other authorities define an accident more narrowly by excluding events that do not involve injury or ill-health. This book will always use the HSE definition.

Dangerous occurrence

This is a near miss which could have led to serious injury or loss of life. Specified dangerous occurrences are reportable to the national Health and Safety Enforcement Authorities.

Examples include the collapse of a scaffold or a crane or the failure of any passenger-carrying equipment.

In 1969, F. E. Bird collected a large quantity of accident data and produced a well-known triangle to represent it.

It can be seen that damage and near miss accidents occur much more frequently than injury accidents and are, therefore, a good indicator of risks. The study also shows that most accidents are predictable and avoidable.

3.17.3 The objective of risk assessment

The main objective of risk assessment is to determine the measures required by the organization to comply with relevant health and safety legislation and, thereby, reduce the level of occupational injuries and ill-health. The purpose is to help the employer or self-employed person to determine the measures required to comply with their national legal obligations. The risk assessment will need to cover all those who may be at risk, such as customers, contractors and members of the public. In the case of shared workplaces, an overall risk assessment may be needed in partnership with other employers.

In Chapter 1, the moral, legal and financial arguments for health and safety management were discussed in detail. The important distinction between the direct and indirect costs of accidents is reiterated here.

Any accident or incidence of ill-health will cause both direct and indirect costs and incur an insured and an uninsured cost. It is important that all of these costs are taken into account when the full cost of an accident is calculated. In a study undertaken by the UK HSE, it was shown that indirect costs or hidden costs could be 36 times greater than direct costs of an accident. In other words, the direct costs of an accident or disease represent the tip of the iceberg when compared with the overall costs.

Direct costs are costs that are directly related to the accident. They may be insured (claims on employers' and public liability insurance, damage to buildings, equipment or vehicles) or uninsured (fines, sick pay, damage to product, equipment or process).

Indirect costs may be insured (business loss, product or process liability) or uninsured (loss of goodwill, extra overtime payments, accident investigation time, production delays).

There are many reasons for the seriousness of a hazard not to be obvious to the person exposed to it. It may be that the hazard is not visible (radiation, certain gases and biological agents) or have no short-term effect (work-related upper limb disorders). The common

reasons include lack of attention, lack of experience, the wearing of personal protective equipment, sensory impairment and inadequate information, instruction and training.

3.17.4 The management of risk assessment

3.17.4.1 The approach to risk assessment in the United Kingdom

Risk assessment is part of the planning and implementation stage of the health and safety management system recommended by the UK HSE in its publication HSG65. All aspects of the organization, including health and safety management, need to be covered by the risk assessment process. This will involve the assessment of risk in areas such as maintenance procedures, training programmes and supervisory arrangements. A general risk assessment of the organization should reveal the significant hazards present and the general control measures that are in place. Such a risk assessment should be completed first and then followed by more specific risk assessments that examine individual work activities.

The UK HSE has produced a free leaflet entitled *Five Steps to Risk Assessment* INDG163 (Figure 5.4). It gives practical advice on assessing risks and recording the findings and is aimed at small- and medium-sized companies in the service and manufacturing sectors. The five steps are:

1. look for the hazards;
2. decide who might be harmed, and how;
3. evaluate the risks and decide whether existing precautions are adequate or more should be done;
4. record the significant findings;
5. review the assessment and revise it if necessary.

It is important that the risk assessment team is selected on the basis of its competence to assess risks in the particular areas under examination in the organization. The Team Leader or Manager should have health and safety experience and relevant training in risk assessment. It is sensible to involve the appropriate line manager, who has responsibility for the area or activity being assessed, as a team member. Other members of the team will be selected on the basis of their experience, their technical and/or design knowledge and any relevant standards or Regulations relating to the activity or process. At least one team member must have communication and report writing skills. A positive attitude and commitment to the risk assessment task are also important factors. It is likely that team members will require some basic training in risk assessment.

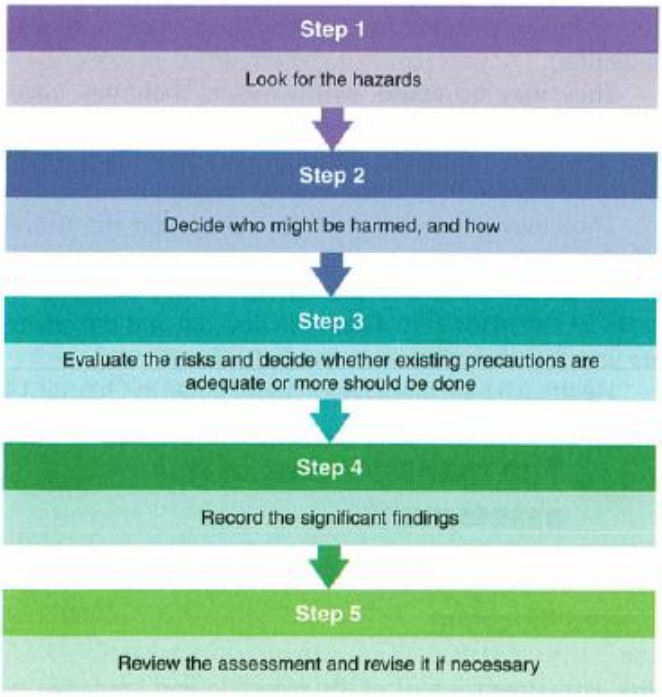


Figure - Five steps to risk assessment

3.17.4.2 The approach of the ILO to risk assessment

Guidance on the approach of the ILO to risk assessment is given in its guidelines on occupational safety and health management systems ILO-OSH 2001 and in the Code of Practice *Ambient factors in the workplace.* The assessment should be carried out in consultation with workers and/ or their representatives by the employers or by persons acting on their behalf who are competent and have the necessary information, instruction and training.

Where the outcome of the assessment indicates a potential injury or risk to health and safety, the results of the assessment should be recorded and made available for inspection by the competent authority, and to workers exposed to the hazards and the workers' representatives. The record of the assessment should be retained for a period of time as may be specified by the competent authority.

The ***first stage*** *of the assessment* should include inspection of the workplace in order to identify:

(a) the hazards that are present or likely to occur, including chemical, biological, physical and psychological hazards and those associated with the work organization;

(b) the activities that are likely to expose workers and others to the hazards identified, including those using maintenance, cleaning and emergency procedures.

The ***second stage*** *of the assessment* should consist of the collection of information about the hazards that are present or likely to occur so that the magnitude and significance for health and safety of any hazard or risk may be determined. This information should include that provided by suppliers and that available to the public. The relevance of work organization and the practicability of various methods of control should be considered at this stage. Determining the magnitude of the hazard or risk should include determining the exposure of the workers to the hazard, unless other information is adequate for quantification of the risk. The exposure levels should be compared, when possible, with those exposure limits or standards prescribed by the competent authority. Where there are no such limits or standards, other national or internationally recognized standards should be used for comparison. In either case, account should be taken of the criteria on which those limits have been based.

The ***third stage*** *of the assessment* should establish whether hazards or risks to health and safety can be eliminated. If they cannot be eliminated, the employer should plan how they can be reduced to the lowest reasonable level, or to a level which, in the light of currently available national and international knowledge and data, would not lead to injury if exposure continued for a working lifetime.

As part of the assessment, the employer should:

(a) determine what instructions, training and information need to be given to the workers and, where appropriate, to their representatives, and others likely to be exposed to the hazards;
(b) determine what measures are needed to ensure that the information is kept up-to-date;
(c) plan for necessary training to be given to new or transferred workers;
(d) ensure that a programme for review of the assessment, including future monitoring of exposure levels, is established.

The assessment should be reviewed whenever there has been a significant change in the work processes to which it relates or when there is reason to suspect that it is no longer valid. The review should be incorporated into a system of management accountability which ensures that control action shown to be necessary by the initial assessment is in fact taken.

The reasons indicating that an assessment might no longer be valid include:

(a) complaints by workers of adverse health effects or the detection of health impairment by health surveillance;
(b) an accident, dangerous occurrence or incident leading to exposure to a level of hazard or risk that is different from that quantified in the initial assessment;

(c) subsequent measurement of exposure levels to hazardous substances;
(d) availability of updated or new information on the particular hazards described in the assessment;
(e) plant modification, including engineering control measures, changes in the process or methods of work and in the volume or rate of production which lead to a change in the hazards present in the workplace.

The review should reconsider all parts of the initial assessment, and in particular whether it is now:

(a) practicable to eliminate any hazards;
(b) possible to control at source and minimize hazards or risks which had previously required personal protective equipment.

The review should also consider the results of the programme for monitoring of exposure level, and whether:

(a) exposure levels previously considered to be acceptable should now be regarded as too high in the light of available and updated information on the hazards and risks;
(b) any control action needs to be taken;
(c) the frequency and type of monitoring previously decided is still appropriate.

The results of the review should be recorded and made available in the same way as the initial assessment.

3.17.5 The risk assessment process

The UK HSE approach to risk assessment (five steps) will be used to discuss the process of risk assessment. It is, however, easier to divide the process into six elements:

- hazard identification;
- persons at risk;
- evaluation of risk level;
- risk controls (existing and additional);
- record of risk assessment findings;
- monitoring and review.

Each element will be discussed in turn.

3.17.5.1 Hazard identification

Hazard identification is the crucial first step of risk assessment. Only significant hazards, which could result in serious harm to people, should be identified. Trivial hazards should be ignored.

A tour of the area under consideration by the risk assessment team is an essential part of hazard identification as is consultation with the relevant section of the workforce.

A review of accident, incident and ill-health records will also help with the identification. Other sources of information include safety inspection, survey and audit reports, job or task analysis reports, manufacturers' handbooks or data sheets and Approved Codes of Practice and other forms of guidance.

Hazards will vary from workplace to workplace but the checklist in Appendix 5.2 shows the common hazards that are significant in many workplaces. Many questions in the NEBOSH examinations involve several common hazards found in most workplaces.

It is important that unsafe conditions are not confused with hazards, during hazard identification. Unsafe conditions should be rectified as soon as possible after observation. Examples of unsafe conditions include missing machine guards, faulty warning systems and oil spillage on the workplace floor.

3.17.5.2 Persons at risk

Employees and contractors who work full time at the workplace are the most obvious groups at risk and it will be a necessary check that they are competent to perform their particular tasks. However, there may be other groups who spend time in or around the workplace. These include young workers, trainees, new and expectant mothers, cleaners, contractor and maintenance workers and members of the public. Members of the public will include visitors, patients, students or customers as well as passers-by.

The risk assessment must include any additional controls required due to the vulnerability of any of these groups, perhaps caused by inexperience or disability. It must also give an indication of the numbers of people from the different groups who come into contact with the hazard and the frequency of these contacts.

3.17.5.3 Evaluation of risk level - Risk assessor

During most risk assessment it will be noted that some of the risks posed by the hazard have already been addressed or controlled. The purpose of the risk assessment, therefore, is to reduce the remaining risk. This is called the *residual risk.*

The goal of risk assessment is to reduce all residual risks to as low a level as reasonably practicable. In a relatively complex workplace, this will take time so that a system of ranking risk is required - the higher the risk level the sooner it must be addressed and controlled.

For most situations, a *qualitative* risk assessment will be perfectly adequate. (This is certainly the case for NEBOSH Certificate candidates and is suitable for use during the practical assessment.) During the risk assessment, a judgment is made as to whether the risk level is high, medium or low in terms of the risk of somebody being injured. This designation defines a timetable for remedial actions to be taken thereby reducing the risk. High-risk activities should normally be addressed in days, medium risks in weeks and low risks in months or in some cases no action will be required. It will usually be necessary for risk assessors to receive some training in risk level designation.

A **quantitative** risk assessment attempts to quantify the risk level in terms of the likelihood of an incident and its subsequent severity. Clearly the higher the likelihood and severity, the higher the risk will be. The likelihood depends on such factors as the control measures in place, the frequency and duration of exposure to the hazard and the category/competency of person exposed to the hazard/level of supervision. The severity will depend on the magnitude of the hazard (voltage, toxicity, etc.). The UK HSE suggests in HSG65 a simple 3x3 matrix to determine risk levels.

Likelihood of occurrence	Likelihood level
Harm is certain or near certain to occur	High 3
Harm will often occur	Medium 2
Harm will seldom occur	Low 1

Severity of harm	Severity level
Death or major injury (as defined by RIDDOR)	Major 3
3-day injury or illness (as defined by RIDDOR.)	Serious 2
All other injuries or illnesses	Slight 1

Risk = Severity x Likelihood

Likelihood	Severity		
	Slight 1	Serious 2	Major 3
Low 1	Low 1	Low 2	Medium 3
Medium 2	Low 2	Medium 4	High 6
High 3	Medium 3	High 6	High 9

Thus:

- 6-9 High risk
- 3-4 Medium risk
- 1-2 Low risk

It is possible to apply such methods to organizational risk or to the risk that the management system for health and safety will not deliver in the way in which it was expected or required. Such risks will add to the activity or occupational risk level. In simple terms, poor supervision of an activity will increase its overall level of risk. A risk management matrix has been developed.

Whichever type of risk evaluation method is used, the level of risk simply enables a timetable of risk reduction to an acceptable and tolerable level to be formulated. The legal duty requires that all risks should be reduced to as low as is reasonably practicable.

3.17.5.4 Risk control measures

The next stage in the risk assessment process is the control of the risk. In established workplaces, some control of risk will be in place already. The effectiveness of these controls needs to be assessed so that an estimate of the residual risk may be made. Many hazards have had national legislation or other recognized standards developed to reduce associated risks. Examples of such hazards are fire, electricity, lead and asbestos. The relevant legislation and any accompanying codes of practice or guidance should be consulted first and any recommendations implemented. Advice on control measures may also be available from trade associations, trade unions or employers' organizations.

Where there are existing preventative measures in place, it is important to check that they are working properly and that everybody affected has a clear understanding of the measures. It may be necessary to strengthen existing procedures, for example by the introduction of a permit-to-work system. More details on the principles of control are contained in Chapter 6.

Hierarchy of risk control

When assessing the adequacy of existing controls or introducing new controls, a hierarchy of risk controls should be considered. The European Council Framework Directive 89/391/EEC specifies the general principles of prevention which are:

1. avoiding risks;
2. evaluating the risks which cannot be avoided;
3. combating the risks at source;
4. adapting the work to the individual, especially as regards the design of the workplace, 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 effects on health
5. adapting to technical progress
6. replacing the dangerous by the non-dangerous or the less dangerous
7. developing a coherent overall prevention policy which covers technology, organization of work, working conditions, social relationships and the influence of factors relating to the working environment-giving collective protective measures priority over individual protective measures.
8. giving appropriate instruction to employees

These principles are not exactly a hierarchy but must be considered alongside the usual hierarchy of risk control, which is as follows:

- elimination
- substitution:
- changing work methods/patterns;
- reduced or limited time exposure;
- engineering controls (e.g. isolation, insulation and
- ventilation);
- good housekeeping;
- safe systems of work;
- training and information;
- personal protective equipment-
- welfare;

- monitoring and supervision;
- review.

Prioritization of risk control

The prioritization of the implementation of risk control measures will depend on the risk rating (high, medium and low) but the timescale in which the measures are introduced will not always follow the ratings. It may be convenient to deal with a low-level risk at the same time as a high-level risk or before a medium-level risk. It may also be that work on a high-risk control system is delayed due to a late delivery of an essential component -this should not halt the overall risk reduction work. It is important to maintain a continuous programme of risk improvement rather than slavishly following a predetermined priority list.

3.17.5.5 Record of risk assessment findings

As mentioned earlier, it is very useful to keep a written record of the risk assessment. For an assessment to be 'suitable and sufficient', only the significant hazards and conclusions need be recorded. The record should also include details of the groups of people affected by the hazards and the existing control measures and their effectiveness. The conclusions should identify any new controls required and a review date. The UK HSE booklet *Five Steps to Risk Assessment* provides a very useful guide and examples of the detail required for most risk assessments.

There are many possible layouts which can be used for the risk assessment record. Examples are given in Appendices 5.3-5.5. It should be noted that in Appendices 5.4 and 5.5, the initial qualitative risk level at the time of the risk assessment is given - the residual risk level when all the additional controls have been implemented will be 'low'. This should mean that an annual review will be sufficient.

The written record provides excellent evidence to a health and safety enforcement officer of compliance with national health and safety law. The record should be accessible to employees and a copy kept with the safety manual containing the safety policy and arrangements.

3.17.5.6 Monitoring and review

As mentioned earlier, the risk controls should be reviewed periodically. This is equally true for the risk assessment as a whole. Review and revision may be necessary when conditions

change as a result of the introduction of new machinery, processes or hazards. There may be new information on hazardous substances or new legislation. There could also be changes in the workforce, for example the introduction of trainees. The risk assessment needs to be revised only if significant changes have taken place since the last assessment was done. An accident or incident or a series of minor ones provides a good reason for a review of the risk assessment. This is known as the post-accident risk assessment.

3.17.6 General principals of prevention

The general principles of prevention cover technical, behavioural and procedural controls. They are set out in Article 6(2) of the European Council Directive 89/391/EEC but are just as relevant outside the EU. These general principles require that where an employer implements any preventative measures they shall do so on the basis of these principles which are not a hierarchy or order of priority.

The general principles of prevention are as follows:

- **Avoiding risks** This means, for example, trying to stop doing the task or using different processes or doing the work in a different, safer way.
- **Evaluating the risks which cannot be avoided** This requires a risk assessment to be carried out.
- **Combating the risks at source** This means that risks, such as a dusty work atmosphere, are controlled by removing the cause of the dust rather than providing special protection; or that slippery floors are treated or replaced rather than putting up a sign.
- **Adapting the work to the individual** This involves the design of the workplace, 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** It is important to take advantage of technological and technical progress, which often gives designers and employers the chance to improve both safety and working methods. With the Internet and other international information sources available, very wide knowledge, going beyond what is happening in a particular nation state or region, is likely to be expected by the enforcing authorities and the courts.

- **Replacing the dangerous by the non-dangerous or the less dangerous** This involves substituting, for example, equipment or substances with non-hazardous or less hazardous substances.
- **Developing a coherent overall prevention policy** This covers technology, organization of work, working conditions, social relationships and the influence of factors relating to the working environment.
- **Giving collective protective measures priority over individual protective measures** This means giving priority to control measures which make the workplace safe for everyone working there, giving the greatest benefit, for example removing hazardous dust by exhaust ventilation rather than providing a filtering respirator to an individual worker. This is sometimes known as a 'Safe Place' approach to controlling risks.
- **Giving appropriate instruction to employees** This involves making sure that employees are fully aware of company policy, safety procedures,
  good practice, official guidance, any test results and legal requirements. This is sometimes known as a 'Safe Person' approach to controlling risks where the focus is on individuals. A properly set up health and safety management system should cover and balance both a 'Safe Place and Safe Person approach'.

3.17.6.1 Avoidance of risks by elimination or substitution

The best and most effective way of reducing risks is by avoiding a hazard and its associated risks. For example avoid working at height by using a long-handled tool to clean windows; avoid entry into a confined space by, for example, using a sump pump in a pit which is removed by a lanyard for maintenance; eliminate the fire risks from tar boilers by using bitumen which can be applied cold.

Substitution describes the use of a less hazardous form of a substance or process. There are many examples of substitution such as the use of water-based rather than solvent-based paints; the use of asbestos substitutes and the use of compressed air as a power source rather than electricity to reduce both electrical and fire risks; and the use of mechanical excavators instead of hand digging.

Table 6.1 Hierarchies of control – Comparisons

NEBOSH International General Certificate	UK-HSE-HSG65 Summary of Risk Control Principles	ILO-OSH 2001 Guidelines on OSH management systems
Avoidance of risks	Eliminate risk by substituting the dangerous by the inherently less dangerous, for example: • use less hazardous substances. • substitute a type of machine which is better guarded to make the same product. • avoid the use of certain processes.	Eliminate the hazard/risk.
Elimination of hazards or substitution for something less hazardous		
Reducing or limiting the duration of exposure to the hazard	Combat risks at source by engineering controls and giving collective protective measures priority, for example: • Separate the operator from the risk of exposure to a known hazardous substance by enclosing the process. • Protect the dangerous parts of a machine by guarding. • Design process machinery and work activities to minimize the release of, or to suppress or contain, airborne hazards. • Design machinery which is remotely operated and to which materials are fed automatically, thus separating the operator from danger areas.	Control the hazard/risk at source, through the use of engineering controls or organizational measures.
Isolation/segregation		
Engineering controls		
Safe systems of work	Minimize risk by: • designing suitable systems of working. • using personal protective clothing and equipment; this should only be used as a last resort.	Minimize the hazard/risk by the design of safe work systems, which include administrative control measures.
Training and information		
PPE		Where residual hazards/risks cannot be controlled by collective measures, the employer should provide for appropriate PPE, including clothing, at no cost, and should implement measures to ensure its use and maintenance.
Welfare		
Monitoring and supervision		

In some cases it is possible to change the method of working so that risks are reduced. For example use rods to clear drains instead of strong chemicals; use a long-handled water hose brush to clean windows instead of climbing on ladders. Sometimes the pattern of work can be changed so that people can do things in a more natural way, for example when placing components for packing consider whether people are right- or left-handed; encourage people in offices to take breaks from computer screens by getting up to photocopy, fetch files or print documents.

3.17.6.2 Reduced time exposure

This involves reducing the time during the working day that the employee is exposed to the hazard, by giving the employee either other work or rest periods. It is normally only suitable for the control of health hazards associated with, for example, noise, vibration, excessive heat or cold, display screens and hazardous substances. However, it is important to note that for many hazards, there are short-term exposure limits as well as normal workplace

exposure limits over an 8-hour period (see Chapter 14). Short-term limits must not be exceeded during the reduced time exposure intervals.

It cannot be argued that a short time of exposure to a dangerous part of a machine is acceptable. However, it is possible to consider short bouts of intensive work with rest periods when employees are engaged in heavy labour such as manual digging when machines are not permitted due to the confines of the space or buried services.

3.17.6.3 Isolation/segregation

Controlling risks by isolating them or segregating people and the hazard is an effective control measure and used in many instances; for example separating vehicles and pedestrians on factory sites, providing separate walkways for the public on road repairs, providing warm rooms on sites or noise refuges in noisy processes.

The principle of isolation is usually followed with the storage of highly flammable liquids or gases which are put into open, air ventilated compounds away from other hazards such as sources of ignition or from people who may be at risk from fire or explosion.

3.17.6.4 Safe system of work

Operating procedures or safe systems of work are probably the most common form of control measure used in industry today and may be the most economical and, in some cases, the only practical way of managing a particular risk. They should allow for methodical execution of tasks. The development of safe operating procedures should address the hazards that have been identified in the risk assessment. The system of work describes the safe method of performing the job or activity. A safe system of work is often a requirement of national legislation and is dealt with in detail later.

If the risks involved in the task are high or medium, the details of the system should be in writing and should be communicated to the employee formally in a training session. Details of systems for low-risk activities may be conveyed verbally. There should be records that the employee (or contractor) has been trained or instructed in the safe system of work and that they understand it and will abide by it.

Preparation of safe systems

A checklist for use in the preparation of safe systems of work is set out as follows:

- What is the work to be done?
- What are the potential hazards
- Is the work covered by any existing instructions or procedures? If so, to what extent (if any) do these need to be modified?
- Who is to do the work?
- What are their skills and abilities - is any special training needed?
- Under whose control and supervision will the work be done?
- Will any special tools, protective clothing or equipment (e.g. breathing apparatus) be needed? Are they ready and available for use?
- Are the people who are to do the work adequately trained to use the above?
- What isolations and locking-off will be needed for the work to be done safely?
- Is a permit-to-work required for any aspect of the work?
- Will the work interfere with other activities? Will other activities create a hazard to the people doing the work?
- Have other departments been informed about the work to be done, where appropriate?
- How will the people doing the work communicate with each other?
- Have possible emergencies and the action to be taken been considered?
- Should the emergency services be notified?
- What are the arrangements for handover of the plant/ equipment at the end of the work? (For maintenance/ project work, etc.)
- Do the planned precautions take account of all foreseeable hazards?
- Who needs to be informed about or receive copies of the safe system of work?

3.17.6.5 Information

Organizations need to ensure that they have effective arrangements for identifying and receiving relevant health and safety information from outside the organization including:

- ensuring that pertinent health and safety information is communicated to all people in the organization who need it
- ensuring that relevant information is communicated to people outside the organization who require it
- encouraging feedback and suggestions from employees on health and safety matters

Anyone who is affected by what is happening in the workplace will need to be given safety information. This does not only apply to staff. It can also apply to visitors, members of the public and contractors. Information to be provided for people in a workplace includes:

- who is at risk and why
- how to carry out specific tasks safely
- correct operation of equipment
- emergency action arrangements
- accident and hazard reporting procedures
- the safety responsibilities of individual people

Information can be provided in a variety of ways. These include safety signs, posters, newsletters, memos, emails, personal briefings, meetings, toolbox talks, formal training, written safe systems of work and written health and safety arrangements.

Documentation

Safe systems of work should be properly documented.

Wherever possible, they should be incorporated into normal process operating procedures. This is so that:

- health and safety are seen as an integral part of, and not add-on to, normal production procedures
- the need for operators and supervisors to refer to separate manuals is minimized

Whatever method is used, all written systems of work should be signed by the relevant managers to indicate approval or authorization. Version numbers should be included so that it can quickly be verified that the most up-to-date version is in use. Records should be kept of copies of the documentation, so that all sets are amended when updates and other revisions are issued.

As far as possible, systems should be written in a nontechnical style and should specifically be designed to be as intelligible and user-friendly as possible. It may be necessary to produce simple summary sheets which contain all the key points in an easy-to-read format.

3.17.6.6 Safety signs

All general health and safety signs used in the workplace should include a pictorial symbol categorized by shape, colour and graphic image. A picture may be worth a thousand words, but when it comes to graphical symbols for safety-related information, misunderstanding the message may have serious consequences. An International Standard aims to improve understanding and proper application of safety signs designed to reduce accidents and injury in workplaces and public areas worldwide (Figures 6.3 and 6.4).

Published by ISO (International Organization for Standardization), ISO 7010:2003, *Graphical symbols - Safety colours and safety signs - Safety signs used in workplaces and public areas,* provides a method of communicating safety information through a collection of signs designed for use in any workplace, location and sector where safety-related questions may be posed. ISO 7010 sets out to guarantee that, wherever in the world, a manufacturer of safety signs for workplaces and public areas uses exactly the same pattern. The standard seeks, moreover, to give guidance to the designers of safety signs and get them to use ISO 7010 with a view to obtaining greater overall consistency and, thereby, better universal public recognition.

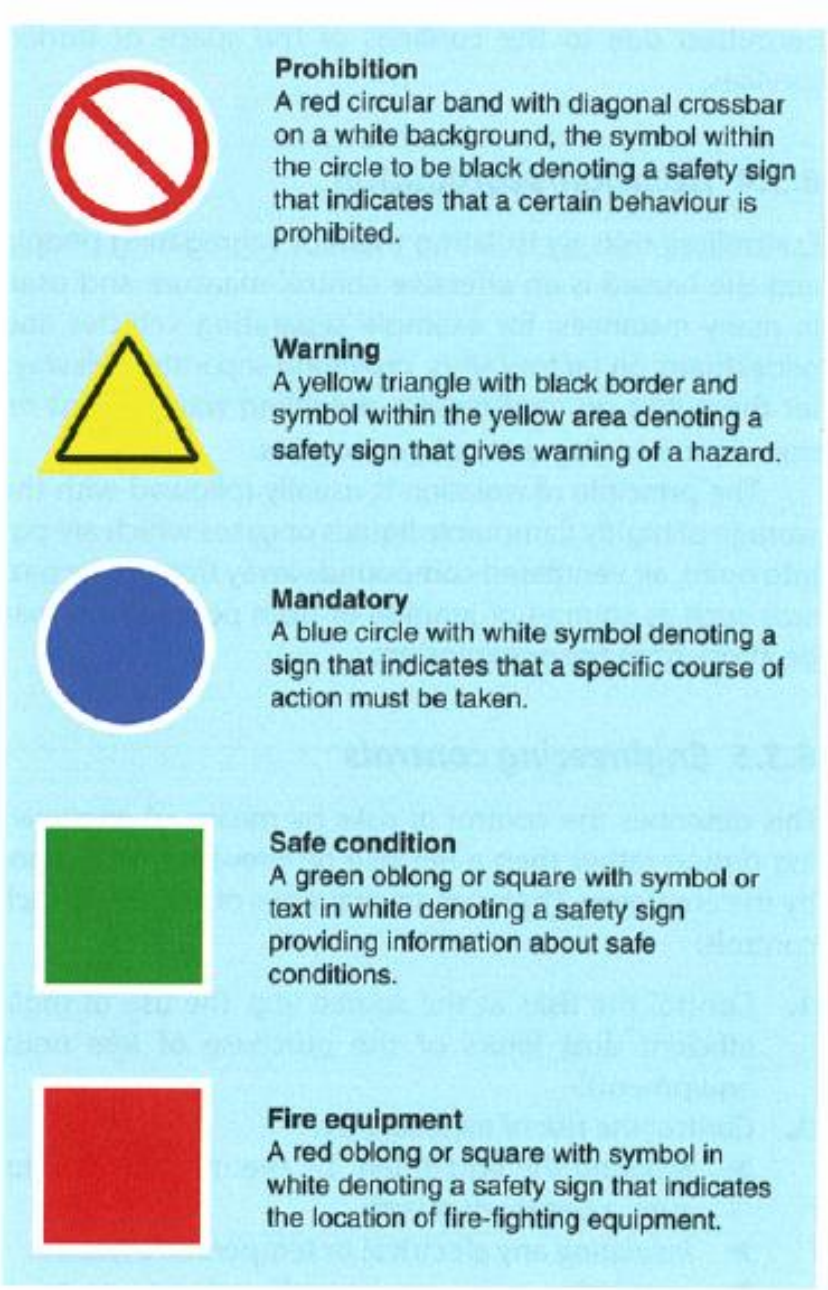


Figure - Colour categories and shapes of signs

The collection of safety signs contained in ISO 7010 is not a mere "collection" of more or less randomly sampled proposals. The signs included have given evidence, after year-long use in different countries, that they will also be globally understood.

The standard covers 32 safety signs designed for use in accident prevention, fire protection and emergency evacuation. Each is displayed by a visual illustration together with the image content, function, field and format of application. Geometric shape and colour are also indicated as prescribed by ISO 3864-1:2002, Graphical symbol – Safety colors and signs – Part 1: Design principles for safety signs in workplace and public areas.

Figure – Examples of pictorial designs.

Figure – Falling object and construction site entrance signs

Figure – Example of chemical warning signs

All workplaces need to display safety signs of some kind but deciding what is required can be confusing. Here are the basic suggestions for the majority of small premises or sites like

small construction sites, canteens, shops, small workshop units and offices. This does not cover any signs which food hygiene law may require.

Many national regulatory regimes require signs to be displayed where a risk has not been controlled by other means. For example if a wet area of floor is cordoned off, a warning sign will be needed, because the barrier will keep people out of the danger area. Signs are generally not needed where the sign would not reduce the risk or the risk is insignificant.

The following signs are typical of some of the ones most likely to be needed in these premises. Others may be necessary, depending on the hazards and risks present. The wording will of course be in the relevant local language.

- Overhead obstacles, construction site and Prohibition notices
- Wet floors - These need to be used wherever a slippery area is not cordoned off. Lightweight stands holding double-sided signs are readily available
- Chemical storage - Where hazardous cleaning chemicals are stored, apart from keeping the store locked, a suitable warning notice should be posted if it is considered this would help to reduce the risk of injury
- Fire safety signs - These are needed to indicate emergency routes and emergency exits
- Fire action signs -These are needed to show actions necessary in an emergency such as sounding a fire alarm, location of fire extinguishers or hose reels
- First-aid - Signs showing the location of first-aid facilities will be needed. Advice on the action to take in the case of electric shock is no longer a legal requirement but is recommended
- Gas pipes and LPG cylinder stores - LPG cylinder stores should have the sign shown in Figure
- No smoking - Where smoking is not permitted the no-smoking sign is required. In many EU member states areas substantially enclosed areas should have the sign
- Fragile roofs - Signs should be erected at roof access points and at the top of outside walls where ladders may be placed
- Obstacles or dangerous locations - For example low head height, tripping hazard, etc. - alternating yellow and black stripes.

Figure – Example fire safety signs

Fire exit

Hose reel Fire extinguisher Fire alarm call point

Figure – Example fire action signs

First-aid post First-aid stretcher Eye wash

Figure – Example of first-aid signs

Figure – LPG signs

Figure – (a) No Smoking sign (b) Smoke free - no-smoking sign

Figure – Fragile roof sign

- Other signs and posters - There may be other specific signs or posters required by national legislation; here are examples from the UK:
    - UK Health and Safety Law - What you should know (there is a legal requirement to display this poster or distribute equivalent leaflet)
    - Certificate of Employer's Liability Insurance (there is a legal requirement to display this)
    - Scalds and burns are common in kitchens. A poster showing recommended action is advisable, for example 'First-Aid for Burns'.
- Sign checklist - Existing signs should be checked to ensure that:
    - they are correct and up-to-date;
    - they carry the correct warning symbol where appropriate;
    - they are relevant to the hazard;
    - they are easily understood;
    - they are suitably located and not obscured;

- they are clean, durable and weatherproof where necessary;
- illuminated signs have regular lamp checks;
- they are used when required (e.g. 'Caution: wet floor' signs);
- they are obeyed and effective

3.17.6.7 Personal protective equipments

Personal protective equipment (PPE) should only be used as a last resort. There are many reasons for this (Figure 6.14).The most important limitations are that PPE:

- only protects the person wearing the equipment, not others nearby
- relies on people wearing the equipment at all times
- must be used properly
- must be replaced when it no longer offers the correct level of protection. This last point is particularly relevant when respiratory protection is used

The benefits of PPE are:

- it gives immediate protection to allow a job to continue while engineering controls are put in place
- in an emergency it can be the only practicable way of effecting rescue or shutting down plant in hazardous atmospheres
- it can be used to carry out work in confined spaces where alternatives are impracticable. But it should never be used to allow people to work in dangerous atmospheres, which are, for example, enriched with oxygen or potentially explosive.

3.17.6.8 Personal protective equipments

Welfare facilities include general workplace ventilation, lighting and heating and the provision of drinking water, sanitation and washing facilities. There is also a requirement to provide eating and rest rooms. Risk control may be enhanced by the provision of eye washing and shower facilities for use after certain accidents.

Good housekeeping is a very cheap and effective means of controlling risks. It involves keeping the workplace clean and tidy at all times and maintaining good storage systems for hazardous substances and other potentially dangerous items. The risks most likely to be influenced by good housekeeping are fire and slips, trips and falls.

3.17.6.9 Monitoring and supervision

All risk control measures, whether they rely on engineered or human behavioural controls, must be monitored for their effectiveness with supervision to ensure that they have been applied correctly. Competent people who have a sound knowledge of the equipment or process should undertake monitoring. Checklists are useful to ensure that no significant factor is forgotten. Any statutory inspection or insurance company reports should be checked to see whether any areas of concern were highlighted and if any recommendations were implemented. Details of any accidents, illnesses or other incidents will give an indication on the effectiveness of the risk control measures. Any emergency arrangements should be tested during the monitoring phase including first-aid provision.

It is crucial that the operator should be monitored to ascertain that all relevant procedures have been understood and followed. The operator may also be able to suggest improvements to the equipment or system of work. The supervisor is an important source of information during the monitoring process.

Where the organization is involved with shift work, it is essential that the risk controls are monitored on all shifts to ensure the uniformity of application.

The effectiveness and relevance of any training or instruction given should be monitored.

Periodically the risk control measures should be reviewed. Monitoring and other reports are crucial for the review to be useful. Reviews often take place at safety committee and/or at management meetings. A serious accident or incident should lead to an immediate review of the risk control measures in place.

3.17.7 Controlling health risk

The principles of control for health risks are the same as those for safety. However, the nature of health risks can make the link between work activities and employee ill-health less obvious than in the case of injury from an accident.

The general principles of good practice for the control of exposure are set out in the following box.

(a) Design and operate processes and activities to minimize emission, release and spread of substances hazardous to health.
(b) Take into account all relevant routes of exposure -inhalation, skin absorption and ingestion - when developing control measures.

(c) Control exposure by measures that are proportionate to the health risk.
(d) Choose the most effective and reliable control options which minimize the escape and spread of substances hazardous to health.
(e) Where adequate control of exposure cannot be achieved by other means, provide, in combination with other control measures, suitable PPE.
(f) Check and review regularly all elements of control measures for their continuing effectiveness.
(g) Inform and train all employees on the hazards and risks from the substances with which they work and the use of control measures developed to minimize the risks.
(h) Ensure that the introduction of control measures does not increase the overall risk to health and safety.

Unlike safety risks, which can lead to immediate injury, the result of daily exposure to health risks may not manifest itself for months, years and, in some cases, decades. Irreversible health damage may occur before any symptoms are apparent. It is, therefore, essential to develop a preventive strategy to identify and control risks before anyone is exposed to them.

Risks to health from work activities include:

- skin contact with irritant substances, leading to dermatitis, etc.
- inhalation of respiratory sensitizers, triggering immune responses such as asthma.
- badly designed workstations requiring awkward body postures or repetitive movements, resulting in upper limb disorders, repetitive strain injury and other musculoskeletal conditions
- noise levels which are too high, causing deafness and conditions such as tinnitus
- too much vibration, for example from hand-held tools leading to hand-arm vibration syndrome and circulatory problems
- exposure to ionizing and non-ionizing radiation including ultraviolet in the sun's rays, causing burns, sickness and skin cancer
- infections ranging from minor sickness to life-threatening conditions, caused by inhaling or being contaminated with microbiological organisms
- stress causing mental and physical disorders

Some illnesses or conditions, such as asthma and back pain, have both occupational and non-occupational causes and it may be difficult to establish a definite causal link with a person's work activity or their exposure to particular agents or substances. But, if there is evidence that shows the illness or condition is prevalent among the type of workers to which the person belongs or among workers exposed to similar agents or substances, it is likely that their work and exposure has contributed in some way.

3.17.8 Factors that should be considered when developing and implementing a safe system of work for general work activities

3.17.8.1 What is safe system of work?

A safe system of work has been defined as:

> The integration of personnel, articles and substances in a laid out and considered method of working which takes proper account of the risks to employees and others who may be affected, such as visitors and contractors, and provides a formal framework to ensure that all of the steps necessary for safe working have been anticipated and implemented.

In simple terms, a safe system of work is a defined method for doing a job in a safe way. It takes account of all foreseeable hazards to health and safety and seeks to eliminate or minimize these. Safe systems of work are normally formal and documented, for example in written operating procedures but, in some cases, they may be verbal.

The particular importance of safe systems of work stems from the recognition that most accidents are caused by a combination of factors (plant, substances, lack of training and/or supervision, etc.). Hence prevention must be based on an integral approach and not one which only deals with each factor in isolation. The adoption of a safe system of work provides this integral approach because an effective safe system:

- is based on looking at the job as a whole
- starts from an analysis of all foreseeable hazards, for example physical, chemical, health
- brings together all the necessary precautions, including design, physical precautions, training, monitoring, procedures and PPE.

It follows from this that the use of safe systems of work is in no way a replacement for other precautions, such as good equipment design, safe construction and the use of physical safeguards. However, there are many situations where these will not give adequate protection in themselves, and then a carefully thought-out and properly implemented safe system of work is especially important. The best example is maintenance and repair work, which will often involve, as a first-stage, dismantling the guard or breaking through the containment, which exists for the protection of the ordinary process operator. In some of

these operations, a permit-to-work procedure will be the most appropriate type of safe system of work.

The operations covered may be simple or complex, routine or unusual.

Whether the system is verbal or written, and whether the operation it covers is simple or complex, routine or unusual, the essential features are forethought and planning - to ensure that all foreseeable hazards are identified and controlled. In particular, this will involve scrutiny of:

- the sequence of operations to be carried out
- the equipment, plant, machinery and tools involved; chemicals and other substances to which people might be exposed in the course of the work.
- the people doing the work - their skill and experience

3.17.8.2 Employer's responsibility to provide safe systems of work

As an employer you must provide a safe and healthy workplace for your workers and contractors. This includes:

- providing and maintaining safe plant (such as machinery and equipment) and safe systems of work (such as controlling entry to high risk areas, controlling work pace and frequency and providing systems to prevent falls from heights)
- implementing arrangements for the safe use, handling, storage and transport of chemicals (such as dangerous goods and other harmful materials)
- maintaining the workplace in a safe condition (such as ensuring fire exits are not blocked, emergency equipment is serviceable, and the worksite is generally tidy)
- providing workers and contractors with adequate facilities (such as clean toilets, cool and clean drinking water, and hygienic eating areas)
- making sure workers have adequate information, instruction, training and supervision to work in a safe and healthy manner.

You must also:

- adequately monitor your workers' health (such as providing hearing tests for workers exposed to high noise levels, providing blood tests for workers exposed to lead and monitoring fatigue levels of transport and other workers)
- keep information and records relevant to your workers' health and safety (such as records of biological monitoring, asbestos assessments, first aid records and relevant medical information)

- employ or engage people with the necessary qualifications or expertise to advise you on health and safety issues affecting your workers
- Consult with employees on matters that may directly affect their health, safety or welfare. Where the employees are represented by a health and safety representative (HSR), the HSR must also be involved in the consultation
- nominate a senior management representative (or yourself) to deal with workers and their health and safety representatives in resolving health and safety issues at the workplace
- provide your workers with information in the appropriate languages about your workplace health and safety arrangements, including the names of those to whom the workers can make an inquiry or complaint.

Previous injuries

- When hiring new employees you should inform them, in writing, of the nature of the work and ask if they have any pre-existing injury or illness that may be affected by the work.
- You should also inform them, in writing, that failing to notify or hiding a pre-existing injury or illness which might be affected by the nature of the proposed employment, could result in that injury or illness being ineligible for future compensation claims.

Other health and safety obligations

You must ensure that **other people** (such as your customers, visitors and the general public) are not endangered by the conduct of your business (for example, by providing protection from falling debris around construction sites, controlling traffic access to your workplace and limiting public access within your workplace).

You have additional specific obligations if your business involves the:

- manufacture, importation, transportation, supply, storage, handling or use of dangerous goods
- design, manufacture, importation, supply, erection or installation of plant
- manufacture, importation, or supply of substances.

You also have obligations to:

- meet particular licensing, registration and certification requirements
- immediately notify WorkSafe of certain dangerous incidents
- co-operate with WorkSafe Inspectors

3.17.8.3 Role of competent persons in the development of safe systems

A competent person or safety adviser may be required to be appointed under national legislation. Article 13 of ILO-R164 requires that:

> As necessary in regard to the activities of the undertaking and practicable in regard to size, provision should be made for:
>
> - the availability of an occupational health service and a safety service, within the undertaking, jointly with other undertakings, or under arrangements with an outside body
> - recourse to specialists to advise on particular occupational safety or health problems or supervise the application of measures to meet them.

Appointed competent persons should assist managers to draw up guidelines for safe systems of work. This will include, where necessary, particularly in construction work, method statements. The competent person should prepare suitable forms and should advise management on the adequacy of the safe systems produced.

3.17.8.4 Importance of worker involvement in the development of safe systems

Worker participation is an important part of managing health and safety. Managers do not have the solutions to all health and safety problems, while workers and their representatives have the detailed knowledge and experience of how the job is done and how it affects them. Therefore workers and managers need to work together closely to find joint solutions to common problems.

For employers it is about obtaining help to identify the real problems and finding the right solutions and having a motivated workforce. **For workers it is about preventing themselves** from being harmed by their work.

According to the law, workers must be informed, instructed, trained and consulted on health and safety. **Full participation** goes beyond consultation - workers and their representatives are also involved in making decisions. **Worker participation on health and**

safety is a simple two-way process where employers and their workers/ worker representatives:

Talk to one another	**Listen to each other's concerns**
Trust and respect each other	**Discuss issues in good time**
Consider what everyone has to say	**Make decisions together**
Look for and share views and information	

Benefits of worker participation

Worker consultation is enshrined in health and safety law because of its importance in preventing risks and finding effective solutions. Workplaces in which employees actively contribute to health and safety often have a **lower occupational risk level and accident rates**.

The **main reasons** why workers should actively influence management decisions include:

- worker participation helps in **developing realistic and effective ways of protecting** workers
- by getting involved in an issue at the planning stage, workers are more likely to identify problems and their causes, help find practical solutions, and comply with the end result
- if workers are given the opportunity to participate in shaping safe work systems, then they can **advise, suggest, and request improvements** - helping to develop measures to prevent occupational accidents and ill-health in a timely and cost effective manner
- where workers are involved from an early stage they will feel **commitment** to the solution
- **communication and motivation in general** will be improved

3.17.8.5 Importance and relevance of written procedures

The objective of policies and procedures is to document an organization's policy for operation and the procedures necessary to fulfill that policy. Policies and Procedures answer the "what" and "how" questions for individuals within an organization. For example,

"What is the company's policy regarding working from home?" and "How do I get permission to work at home?" Written documentation will allow for consistent treatment across the company.

While it is not currently required by law that private companies adhere to these same laws, it is certainly in the best interest of all companies, regardless of their size, to have formal, documented policies and procedures and to periodically verify that they are operating effectively.

Policies and Procedures also help to create an internal control framework. It is this internal control framework that management will rely upon and that will ensure the company's objectives are being met.

3.17.8.6 The distinction between technical, procedural and behavioural controls

When selecting control options from these general principles of prevention you should be aware that preventive measures can be categorised as:

- Technical,
- Procedural or
- Behavioural.

You will remember that human factors have a part to play in effective health and safety management so it might be expected that a technical control will be more effective than a procedural one, and that a procedural control will in turn be more effective than one that relies on behaviour. In this way we can think of the various control options as a hierarchy, where controls at the top of the hierarchy are the most effective and those at the bottom are the least effective.

We can expand the simple technical, procedural, behavioural hierarchy to give a more detailed hierarchy, which can then be used as a tool to select the most appropriate control measures. Sometimes one control measure is effective in reducing the risk to an acceptable standard; in other instances a combination of different types is needed.
Technical, or engineering, controls – applied directly to the hazard in order to minimise the risk. This may involve fencing or barriers of different kinds to isolate workers from the hazard as far as possible, or failsafe devices designed into equipment to stop its operation if there is a fault.

Procedural controls - the way in which work should be carried out in relation to the hazard. They will specify the exact tasks involved, their sequence and the safety actions and checks

which have to be taken. Often procedures will relate to the correct operation of technical controls.

Behavioural controls - how the individual worker acts in relation to the hazard. They include general points of good practice in the workplace, e.g. good housekeeping, and to specific measures such as the use of PPE.

3.17.8.7 Development of safe system of work

Role of managers

Primarily management is responsible for providing safe systems of work, as they will know the detailed way in which the task should be carried out.

Management is responsible to ensure that employees are adequately trained in a specific safe system of work and are competent to carry out the work safely. Managers need to provide sufficient supervision to ensure that the system of work is followed and the work is carried out safely. The level of supervision will depend on the experience of the particular employees concerned and the complexity and risks of the task.

When construction work is involved, principal or main contractors will need to monitor sub-contractors to check that they are providing suitable safe systems of work, have trained their employees and are carrying out the tasks in accordance with the safe systems.

Role of employees/consultation

Many people actually operating a piece of machinery or a manufacturing process are in the best position to help with the preparation of safe systems of work. Consultation with those employees who will be exposed to the risks, either directly or through their representatives, is also a legal requirement. The importance of discussing the proposed system with those who will have to work under it, and those who will have to supervise its operation, cannot be emphasized enough.

Employees have a responsibility to follow the safe system of work.

Analysis

The safe system of work should be based on a thorough analysis of the job or operation to be covered by the system. The way this analysis is done will depend on the nature of the job/operation.

If the operation being considered is a new one involving high loss potential, the use of formal hazard analysis techniques such as hazard and operability (HAZOP) study, fault tree analysis (FTA) or failure modes and effects analysis should be considered.

However, where the potential for loss is lower, a more simple approach, such as job safety analysis (JSA), will be sufficient. This will involve three key stages:

- identification of the key steps in the job/operation -what activities will the work involve?
- analysis and assessment of the risks associated with each stage - what could go wrong?
- definition of the precautions or controls to be taken -what steps need to be taken to ensure the operation proceeds without danger, either to the people doing the work, or to anyone else?

Introducing controls

There are a variety of controls that can be adopted in safe systems of work. They can be split into the following three basic categories:

- Technical - these are engineering or process type controls which engineer out or contain the hazard so that the risks are acceptable. For example exhaust ventilation, a machine guard, dust respirator or locking off a valve.
- Procedural - these are ways of doing things to ensure that the work is done according to the procedure, legislation or cultural requirements of the organization. For example a supervisor must be involved, the induction course must be taken before the work commences, a particular type of form or a person's signature must be obtained before proceeding; the names of the workforce must be recorded.
- Behavioural - these are controls which require a certain standard of behaviour from individuals or groups of individuals. For example, no smoking is permitted during the task, hard hats must be worn, all lifts are to be in tandem between two workers.

3.17.8.8 Analysing tasks, identifying hazards and assessing risks

A valuable part of a health and safety program is an effective method or system of identifying and controlling hazards in the workplace. A workplace hazard can be any activity, condition or substance that has the potential to harm a worker. Hazards are generally divided into two categories: safety hazards and; health hazards.

Tasks that expose workers to a high degree of personal risk require special planning. For these tasks, management, the Joint Health and Safety Committee, Health and Safety Representative, and affected workers, as applicable, should complete a job or task hazard analysis. The analysis and precautions to control or reduce the hazard must be communicated to workers prior to performing the tasks.

Analysing tasks

If workers rotate to other repetitive tasks in their job, you should assess all of their tasks that involve repetitive movements of the upper limbs and consider their overall exposure.

One method is to use ART to make an assessment of each repetitive task in the rotation. Then compare the risk factor colours and scores across the different tasks.

The table below shows one example of how to present the information so that you can make a quick visual check of the colours and scores across the different tasks. In this example, a worker rotates between three different tasks (Tasks A, B and C). A quick visual check shows that each task in the rotation involves very frequent and repetitive movements of the arm and hand and between two and three hours of work without a break. More than one of the tasks also involves awkward postures of the arm, wrist and hand.

Risk factor	Task A	Task B	Task C
Arm movements	6	6	7
Repetition	6	6	6
Force	0	0	0
Head / neck posture	0	2	0
Back posture	0	0	0
Arm posture	3	0	2
Wrist posture	1	1	0
Hand / finger grip	2	3	0
Breaks	4	4	2
Work pace	1	1	0
Other factors	0	0	0
Task score	23	23	17

If you find that workers rotate to tasks with similar red scores or high task scores, the task rotation may not provide enough variability or recovery in the work. In this case, examine the task rotation system further.

Identifying hazards

Recognizing a workplace hazard is the first step in overcoming it. But health and safety hazards are not always obvious. Hazard recognition means:

1. identifying potential hazards in the workplace;
2. identifying the adverse effects that may be associated with these hazards;
3. determining whether there is a possibility of people being exposed or affected.

If a potential hazard is recognized using these three steps, the hazard must then be assessed. Hazard assessment is a process of evaluating an identified workplace hazard. The assessment covers equipment, process and work procedures. An assessment considers which workers/students, if any, are exposed -- or likely to be exposed -- to an identified hazard and for how long.

Types of workplace hazards include:

- Safety hazards, for example inadequate machine guards, unsafe workplace conditions or practices.
- Biological hazards
- Chemical hazards
- Ergonomic hazards caused by anatomical, physiological, and psychological demands on the worker, such as repetitive and forceful movements, vibration, temperature extremes, and awkward postures arising from improper work methods and improperly designed workstations, tools, and equipment.
- Physical hazards caused by noise, vibration, energy, weather, heat, cold, electricity, radiation and pressure.

To identify hazards at each step of the task you identified in step 2 above you should:

- Observe the task again, paying attention only to potential hazards, not on their solutions (this comes later).
- Ask yourself questions such as:
    - Can any body part get caught in or between objects?
    - Do tools, machines or equipment present any hazards?
    - Can a person make harmful contact with objects?
    - Can a person slip, trip or fall?
    - Can a person suffer strain from lifting, pushing or pulling? (refer to webpage: Musculoskeletal Disorders in Material Handling
    - Is a person exposed to extreme heat or cold?
    - Is excessive noise or vibration a problem?
    - Is there a danger from falling objects?
    - Is lighting a problem?
    - Can weather conditions affect safety?

- Is harmful radiation a possibility?
- Can contact be made with hot, toxic or caustic substances?
- Is air quality a concern?

All participants in the task hazard analysis should review these hazards.

Assessing risk

This is not the only way to do a risk assessment, there are other methods that work well, particularly for more complex risks and circumstances. However, we believe this method is the most straightforward for most organisations.

How to assess the risks in your workplace

Follow the five steps in our leaflet: Five steps to risk assessment.

1. Identify the hazards
2. Decide who might be harmed and how
3. Evaluate the risks and decide on precaution
4. Record your findings and implement them
5. Review your assessment and update if necessary

Don't overcomplicate the process. In many organisations, the risks are well known and the necessary control measures are easy to apply. You probably already know whether, for example, you have employees who move heavy loads and so could harm their backs, or where people are most likely to slip or trip. If so, check that you have taken reasonable precautions to avoid injury.

If you run a small organisation and you are confident you understand what's involved, you can do the assessment yourself. You don't have to be a health and safety expert.

3.17.8.9 Introducing controls and formulating procedures

Recognition and assessment prepare the way for control or elimination of a hazard. Where an assessment finds that a hazard is likely to adversely affect a worker/student, some form of control is needed.

The principles of hazard control are often described by the location of the control as follows:

4. **Control at the Source**. The best control is the elimination of the hazard from the campus. If this is not feasible, the best alternative is substitution of a non-hazardous or less hazardous material or process. Where no acceptable substitute is available, enclosing or isolating the hazard can protect against exposure.
5. **Control Along the Path**. Some processes, by their nature, cannot be enclosed or isolated. It may be possible to remove a hazardous gas or dust with a local ventilation system. Alternatively, a general ventilation system can reduce exposure by diluting the concentration of the hazardous substance in the air. These are examples of the control along the path. Other examples of control along the path are screens to prevent welding flash from reaching the eyes of nearby workers/students, and energy lock-out procedures and devices.
6. **Control at the Worker**. Where neither control at the source nor control along the path is effective, control at the worker/student may be necessary. Control at the worker/student often consists of special protective equipment or clothing that must be worn during certain work functions. Gloves for hand protection are the most common example. Ear muffs or plugs for noise protection and respirators for breathing protection are other examples of control at the worker/student.

- Safety hazards can be controlled at the source of the hazard, along the path between the hazard and a person, or at a person. The first priority is to eliminate the hazard from the process entirely, or to control it at its source. Controlling the hazard before it reaches a person is the next most preferred method. Control at a person is used where the hazard cannot be eliminated or blocked. When listing preventative measures, be precise, and avoid statements such as 'use caution' or 'be careful'.
- The completed task hazard analysis should be written up as a safe tasks procedure. This way, every person can be given a standard set of instructions about how to avoid exposure to hazards and task in a safe manner. The use of written safe tasks procedures ensures that every person who performs a task gets the same instructions. Procedures should be reviewed regularly to take account of new factors that may have been introduced into the process. Written procedures can be useful in training programs and new employee orientation. They are also helpful during inspections or injury investigations.

Developing Standard Operating Procedures

The end result of a Job Hazard Analysis is to determine when and where Standard Operating Procedures (SOP) are necessary. Any operation or task that may result in a severe loss potential requires an SOP.

3.17.8.10 Instruction and training in the operation of the system

All people using equipment at work must be adequately trained to ensure health and safety in its use, supervision or management. Some work activities require detailed formal training but, for most everyday activities involving work equipment, adequate training can be delivered in-house using the manufacturer's instructions and the background knowledge / skills of more experienced workers and managers.

People should be competent for the work they undertake. Training – along with knowledge, experience and skill – helps develop such competence. However, competence may (in some cases) necessarily include medical fitness and physical / mental aptitude for the activity.

Employers must 'ensure that all persons who use work equipment have received adequate training for the purposes of health and safety, including training in the methods which may be adopted when using work equipment, and risks which such use may entail and the precautions to be taken.' (PUWER regulation 9). There is a similar duty to ensure adequate training in relation to supervisory and managerial staff.

It is not possible to detail here what constitutes 'adequate training', as requirements will vary according to:

- the job or activity
- the existing competence of workers
- the circumstances of the work (eg degree of supervision)
- the work equipment etc

The training standard required should be adequate in ensuring the health and safety of your workers and any people who may be affected by the work, so far as reasonably practicable.

3.17.8.11 Monitoring the system

Monitoring and reporting are vital parts of a health and safety culture. Management systems must allow the board to receive both specific (e.g. incident-led) and routine reports on the performance of health and safety policy.

Much day-to-day health and safety information need be reported only at the time of a formal review. But only a strong system of monitoring can ensure that the formal review can proceed as planned – and that relevant events in the interim are brought to the board's attention.

The board should ensure that:

- appropriate weight is given to reporting both preventive information (such as progress of training and maintenance programmes) and incident data (such as accident and sickness absence rates);
- periodic audits of the effectiveness of management structures and risk controls for health and safety are carried out;
- the impact of changes such as the introduction of new procedures, work processes or products, or any major health and safety failure, is reported as soon as possible to the board;
- there are procedures to implement new and changed legal requirements and to consider other external developments and events

Good practice

- Effective monitoring of sickness absence and workplace health can alert the board to underlying problems that could seriously damage performance or result in accidents and long-term illness.
- The collection of workplace health and safety data can allow the board to benchmark the organisation's performance against others in its sector.
- Appraisals of senior managers can include an assessment of their contribution to health and safety performance.
- Boards can receive regular reports on the health and safety performance and actions of contractors.
- Some organisations have found they win greater support for health and safety by involving workers in monitoring.

- Case study: The directors of a fire and rescue service were able to significantly reduce insurance premiums, injuries and the amount of sickness absence.

3.17.8.12 Legal requirements

Article 10(a) of the ILO recommendation R164 requires employers, 'fo *provide and maintain workplaces, machinery and equipment, and use work methods, which are as safe and without risk to health as is reasonably practicable'.*

In addition 10(b) requires employers, *'to give necessary instructions and training, taking account of the functions and capacities of different categories of workers'.*

Many national regulations require information and instruction to be provided to employees and others. In effect, this is also a more specific requirement to provide safe systems of work. Many of these safe systems, information and instructions will need to be in writing.

There may also a need for employers to provide a safe system of work to fulfil their civil law/common law duty of care.

3.17.8.13 Definition of and specific examples of confined spaces and lone working and working and travelling abroad in relation to safe systems of work

Lone working and confined space

People who work by themselves without close or direct supervision are found in many work situations. In some cases they are the sole occupant of small workshops or warehouses; they may work in remote sections of a large site; they may work out of normal hours, like cleaners or security personnel; they may be working away from their main base as installers, or maintenance people; they could be people giving a service, like domiciliary care workers, drivers and estate agents.

There is generally no legal reason why people should not work alone. However, there may be special risks which require two or more people to be present, for example, during entry into a confined space in order to effect a rescue. It is important to ensure that a lone worker is not put at any higher risk than other workers. This is achieved by carrying out a specific risk assessment and introducing special protection arrangements for their safety. People particularly at risk, like young people or women, should also be considered. People's overall health and suitability to work alone should be taken into account.

Procedures may include:

- periodic visits from the supervisor to observe what is happening
- regular voice contact between the lone worker and the supervisor
- automatic warning devices to alert others if a specific signal is not received from the lone worker
- other devices to raise the alarm, which are activated by the absence of some specific action
- checks that the lone worker has returned safely home or to their base
- special arrangements for first-aid to deal with minor injuries - this may include mobile first-aid kits
- arrangements for emergencies - these should be established and employees trained

Working abroad

Introduction

Staff may travel and work abroad in the course of the organization's business. Most of this work is no more risky than the equivalent activity in their home country and takes place in countries that are considered safe for travelers. Increasingly though, work takes place in countries or parts of countries where the relevant government office advises against travel. The notes in the following box outline the steps needed for safe management of these activities. It applies to work carried out by staff (working alone or with colleagues)

General safety advice

Safety begins when you pack. To help avoid becoming a target, do not dress so as to mark yourself as an affluent tourist. Expensive-looking jewellery, for instance, can draw the wrong attention.

Always try to travel light. You can move more quickly and will be more likely to have a free hand. You will also be less tired and less likely to set your luggage down, leaving it unattended.

Carry the minimum number of valuables, and plan places to conceal them. Your passport, cash and credit cards are most secure when locked in a hotel safe. When you have to carry them on your person, you may wish to put them in various places rather than all in one wallet or pouch. Avoid handbags and outside pockets that are easy targets for thieves. Inside pockets and a sturdy shoulder bag with the strap worn across your chest are somewhat safer. One of the safest places to carry valuables is in a pouch or money belt worn under your clothing.

If you wear glasses, pack an extra pair. Bring them and any medicines you need in your carry-on luggage.

To avoid problems when passing through customs, keep medicines in their original, labelled containers. Bring copies of your prescriptions and the generic names for the drugs. If a medication is unusual or contains narcotics, carry a letter from your doctor attesting to your need to take the drug. If you have any doubt about the legality of carrying a certain drug into a country, consult the embassy or consulate of that country before you travel.

Bring one or two major credit cards (keep them separate), and traveller's cheques if they are still accepted at your destination. Only have enough cash for immediate needs.

Pack an extra set of passport photos along with a photocopy of your passport's information page to make replacement of your passport easier in the event it is lost or stolen.

Put your name, and organization's address and telephone numbers inside and outside of each piece of luggage. Use covered luggage tags to avoid casual observation ofyour identity or nationality. If possible, lock your luggage.

Risks involved in overseas work

Risks to health and safety that arise from overseas work can be

1. work-related (e.g. physical risks from the fieldwork itself;
2. health related (e.g. exposure to tropical diseases);
3. related to personal security (e.g. associated with local criminal or political activity, or civil unrest).

These notes concentrate on (3) as the health and safety aspects of the work itself are covered throughout this book.

Risk assessment

Risk assessments must be made for all work abroad. This need not necessarily be onerous - the nature and complexity of the assessment should reflect the risks involved in the work. In many cases the work itself is not hazardous but it takes place in hazardous surroundings. In these cases the risk assessment should concentrate on the travel-associated risks. For instance, no written risk assessment would be needed for low risk activities such as attending conferences or visiting colleagues in Australia or the European Union, but similar activities in more dangerous locations would require one.

Travel advice

Many national foreign office departments or consulates will have information about safe travel. The UK's Foreign and Commonwealth Office (FCO) has a website (www.fco.gov.uk/travel) which carries up-to-date travel advice for over 200 countries. It could be used as the basis for informing all those travelling on business or leisure of the risks that they might face. Although the advice pertains to the safety of British travellers, it is relevant to other nationalities as British insurance companies use it to determine the extent or validity of insurance cover.

Health matters

Staff travelling on business should take advice on the potential health risk associated with travel. This should be sought in good time so that any recommended immunisations can be given and/or prophylactic drugs prescribed.

3.17.9 Role and function of a permit-to-work system

3.17.9.1 Introduction

Safe systems of work are crucial in work such as the maintenance of chemical plant where the potential risks are high and the careful coordination of activities and precautions is essential to safe working. In this situation and others of similar risk potential, the safe system of work is likely to take the form of a permit-to-work procedure.

The permit-to-work procedure is a specialized type of safe system of work for ensuring that potentially very dangerous work (e.g. entry into process plant and other confined spaces) is done safely.

Although this procedure has been developed and refined by the chemical industry, the principles of the permit-to-work procedure are equally applicable to the management of complex risks in other industries.

The fundamental principle is that certain defined operations are prohibited without the specific permission of a responsible manager, this permission only being granted once stringent checks have been made to ensure that all necessary precautions have been taken and that it is safe for work to go ahead.

The people doing the work take on responsibility for following and maintaining the safeguards set out in the permit, which will define the work to be done (no other work being permitted) and the timescale in which it must be carried out.

To be effective, the permit system requires the training needs of those involved to be identified and met, and that monitoring procedures ensure that the system is operating as intended.

3.17.9.2 Permit-to-work procedures

The permit-to-work procedure is a specialized type of safe system of work under which certain categories of high risk-potential work may only be done with the specific permission

of an authorized manager. This permission (in the form of the permit-to-work) will be given only if the laid-down precautions are in force and have been checked.

The permit document will typically specify:

- what work is to be done;
- the plant/equipment involved, and how it is identified;
- who is authorized to do the work;
- the steps which have already been taken to make the plant safe;
- potential hazards which remain, or which may arise as the work proceeds;
- the precautions to be taken against these hazards;
- for how long the permit is valid;
- that the equipment is released to those who are to carry out the work.

In accepting the permit, the person in charge of doing the authorized work normally undertakes to take/maintain whatever precautions are outlined in the permit. The permit will also include spaces for:

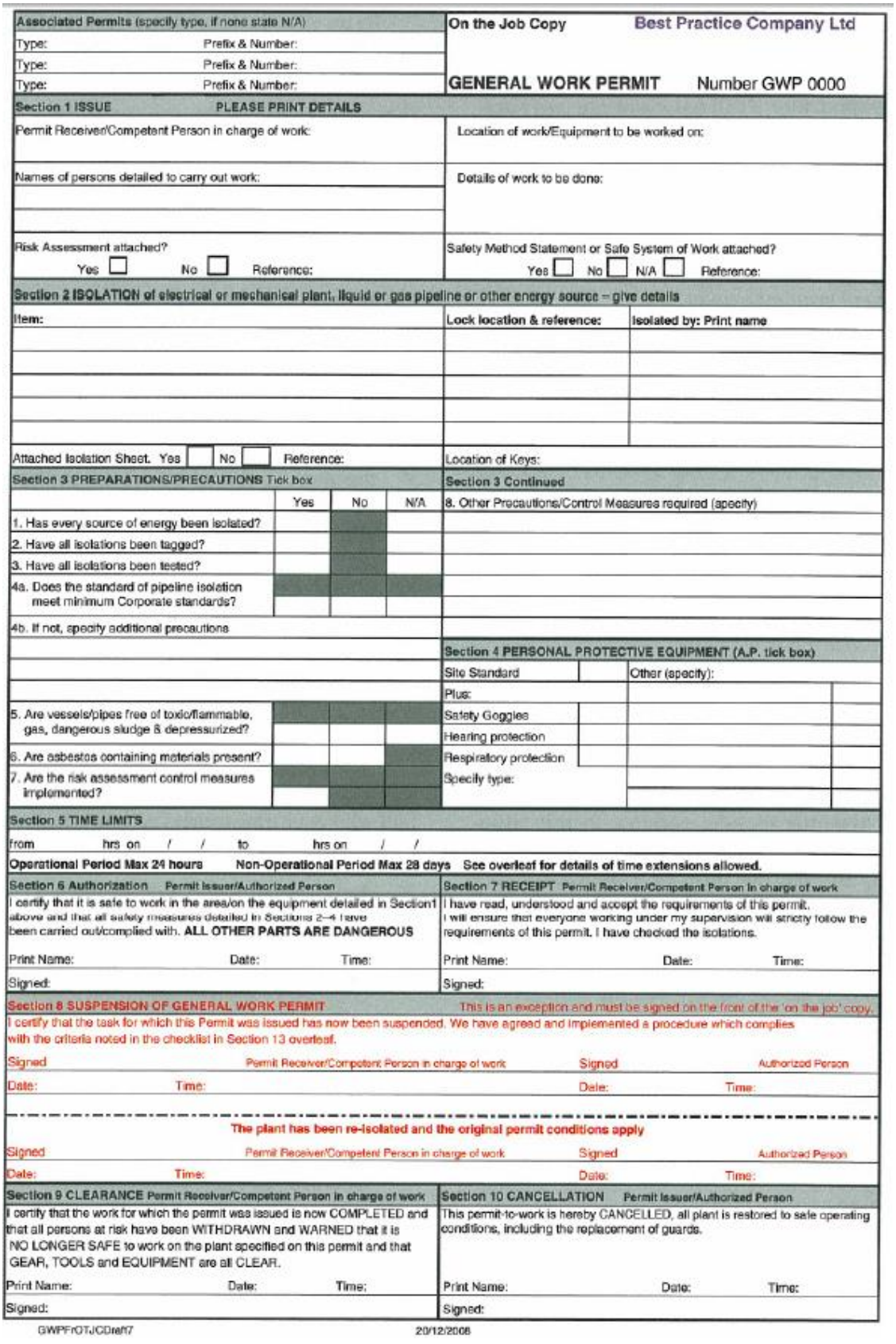
- signature certifying that the work is complete
- signature confirming re-acceptance of the plant/ equipment

3.17.9.3 Principals

Permit systems must adhere to the following eight principles:

- Wherever possible, and especially with routine jobs, hazards should be eliminated so that the work can be done safely without requiring a permit-to-work. Although the Site Manager may delegate the responsibility for the operation of the permit system, the overall responsibility for ensuring safe operation rests with him/her.
- The permit must be recognized as the master instruction which, until it is cancelled, overrides all other instructions.
- The permit applies to everyone on site, including contractors.
- Information given in a permit must be detailed and accurate. It must state:
    - which plant/equipment has been made safe and the steps by which this has been achieved;
    - what work may be done;
    - the time at which the permit comes into effect.

- The permit remains in force until the work has been completed and the permit is cancelled by the person who issued it or by the person nominated by management to take over the responsibility (e.g. at the end of a shift or during absence).
- No work other than that specified is authorized. If it is found that the planned work has to be changed, the existing permit should be cancelled and a new one issued.
- Responsibility for the plant must be clearly defined at all stages.



Associated Permits (specify type, if none state N/A)	On the Job Copy — Best Practice Company Ltd
Type: Prefix & Number:	
Type: Prefix & Number:	
Type: Prefix & Number:	GENERAL WORK PERMIT — Number GWP 0000

Section 1 ISSUE — PLEASE PRINT DETAILS

Permit Receiver/Competent Person in charge of work:	Location of work/Equipment to be worked on:
Names of persons detailed to carry out work:	Details of work to be done:
Risk Assessment attached? Yes ☐ No ☐ Reference:	Safety Method Statement or Safe System of Work attached? Yes ☐ No ☐ N/A ☐ Reference:

Section 2 ISOLATION of electrical or mechanical plant, liquid or gas pipeline or other energy source – give details

Item:	Lock location & reference:	Isolated by: Print name

Attached Isolation Sheet. Yes ☐ No ☐ Reference: — Location of Keys:

Section 3 PREPARATIONS/PRECAUTIONS Tick box

	Yes	No	N/A
1. Has every source of energy been isolated?			
2. Have all isolations been tagged?			
3. Have all isolations been tested?			
4a. Does the standard of pipeline isolation meet minimum Corporate standards?			
4b. If not, specify additional precautions			
5. Are vessels/pipes free of toxic/flammable, gas, dangerous sludge & depressurized?			
6. Are asbestos containing materials present?			
7. Are the risk assessment control measures implemented?			

Section 3 Continued

8. Other Precautions/Control Measures required (specify)

Section 4 PERSONAL PROTECTIVE EQUIPMENT (A.P. tick box)

Site Standard		Other (specify):	
Plus:			
Safety Goggles			
Hearing protection			
Respiratory protection			
Specify type:			

Section 5 TIME LIMITS

from hrs on / / to hrs on / /

Operational Period Max 24 hours **Non-Operational Period Max 28 days** **See overleaf for details of time extensions allowed.**

Section 6 Authorization — Permit Issuer/Authorized Person	Section 7 RECEIPT — Permit Receiver/Competent Person in charge of work
I certify that it is safe to work in the area/on the equipment detailed in Section1 above and that all safety measures detailed in Sections 2–4 have been carried out/complied with. **ALL OTHER PARTS ARE DANGEROUS**	I have read, understood and accept the requirements of this permit. I will ensure that everyone working under my supervision will strictly follow the requirements of this permit. I have checked the isolations.
Print Name: Date: Time:	Print Name: Date: Time:
Signed:	Signed:

Section 8 SUSPENSION OF GENERAL WORK PERMIT — This is an exception and must be signed on the front of the 'on the job' copy.

I certify that the task for which this Permit was issued has now been suspended. We have agreed and implemented a procedure which complies with the criteria noted in the checklist in Section 13 overleaf.

Signed — Permit Receiver/Competent Person in charge of work — Signed — Authorized Person

Date: Time: — Date: Time:

The plant has been re-isolated and the original permit conditions apply

Signed — Permit Receiver/Competent Person in charge of work — Signed — Authorized Person

Date: Time: — Date: Time:

Section 9 CLEARANCE — Permit Receiver/Competent Person in charge of work	Section 10 CANCELLATION — Permit Issuer/Authorized Person
I certify that the work for which the permit was issued is now COMPLETED and that all persons at risk have been WITHDRAWN and WARNED that it is NO LONGER SAFE to work on the plant specified on this permit and that GEAR, TOOLS and EQUIPMENT are all CLEAR.	This permit-to-work is hereby CANCELLED, all plant is restored to safe operating conditions, including the replacement of guards.
Print Name: Date: Time:	Print Name: Date: Time:
Signed:	Signed:

GWPFrOTJCDref7 — 20/12/2006

Figure – Example of general work permit

The nature of permit-to-work procedures will vary in their scope depending on the job and the risks involved. However, a permit-to-work system is unlikely to be needed where, for example:

(a) the assessed risks are low and can be controlled easily;
(b) the system of work is very simple;
(c) other work being done nearby cannot affect the work concerned in say a confined space entry, or a welding operation.

However, where there are high risks and the system of work is complex and other operations may interfere, a formal permit-to-work should be used.

The main types of permit and the work covered by each are identified below. Appendix 6.2 illustrates the essential elements of a permit-to-work form with supporting notes on its operation.

General permit

The general permit should be used for work such as:

- alterations to or overhaul of plant or machinery where mechanical, toxic or electrical hazards may arise;
- work on or near overhead crane tracks;
- work on pipelines with hazardous contents;
- repairs to railway tracks, tippers, conveyors;
- work with asbestos-based materials;
- work involving ionizing radiation;
- roof work;
- excavations to avoid underground services.

Confined space permit

Confined spaces include chambers, tanks (sealed and open-top), vessels, furnaces, ducts, sewers, manholes, pits, flues, excavations, boilers, reactors and ovens.

Many fatal accidents have occurred where inadequate precautions were taken before and during work involving entry into confined spaces. The two main hazards are:

- the potential presence of toxic or other dangerous substances; and
- the absence of adequate oxygen.

In addition, there may be:

- mechanical hazards (entanglement on agitators);
- ingress of fluids;
- risk of engulfment in a free flowing solid like grain or sugar; and
- raised temperatures

Figure – Engineering a confined space

The work to be carried out may itself be especially hazardous when done in a confined space, for example cleaning using solvents, cutting/welding work. Should the person working in a confined space get into difficulties for whatever reason, getting help in, and getting the individual out, may prove difficult and dangerous.

Stringent preparation, isolation, air testing and other precautions are therefore essential and experience shows that the use of a confined space entry permit is essential to confirm that all the appropriate precautions have been taken.

There may be specific national regulations for entry into confined spaces which detail the controls that are necessary when people enter confined spaces.

Work on high-voltage apparatus (including testing)

Work on high-voltage apparatus (over about 600 V) is potentially high risk. Hazards include:

- possibly fatal electric shock/burns to the people doing the work;
- electrical fires/explosions;
- consequential danger from disruption of power supply to safety-critical plant and equipment.

In view of the risk, this work must only be done by suitably trained and competent people acting under the terms of a high-voltage permit.

Hot work

Hot work is potentially hazardous as:

- a source of ignition in any plant in which highly flammable materials are handled;
- a cause of fires in all processes, regardless of whether highly flammable materials are present.

Hot work includes cutting, welding, brazing, soldering and any process involving the application of a naked flame. Drilling and grinding should also be included where a flammable atmosphere is potentially present.

Hot work should therefore be done under the terms of a hot work permit, the only exception being where hot work is done in a designated maintenance area suitable for the purpose.

Machinery maintenance

This Technical Measure Document refers to permit to work systems required to control work such as maintenance activities on chemical plant and so prevent a major accident.

The following aspects should be considered with respect to Permit to Work Systems:

- Human factors;
- Management of the work permit systems;
- Poorly skilled work force;
- Unconscious and conscious incompetence;
- Objectives of the work permit system;
- Types of work permits required; and
- Contents of the work permits.

The following issues may contribute towards a major accident or hazard:

- Failing of the site safety management system;
- Failure to recognise a hazard before and during maintenance;
- Failure to comply with the work permit system in hazardous environments; and
- Communication failure during the use of a work permit system.

3.18 Emergency procedures and the arrangements for

contacting emergency services

Emergency procedures, however, are about control procedures and equipment to limit the damage to people and property caused by an incident. Local fire and rescue authorities will often be involved and are normally prepared to give advice to employers.

Under ILO-R164 Article 3(q) there is a requirement to establish emergency plans. This requirement is also reflected in many national OSH legislation. Procedures should be established and set in motion when necessary to deal with serious and imminent danger to persons at work. Necessary links should be maintained with local authorities, particularly with regard to first-aid, emergency medical care and rescue work.

Under the *ILO Ambient Factors Code of Practice* emergency prevention, preparedness and response arrangements should be established and maintained. These arrangements should identify the potential for accidents and emergency situations, and address the prevention of occupational health and safety risks associated with them. The arrangements should be made according to the size and nature of activity of the organization. They should:

(a) ensure that the necessary information, internal communication and coordination are provided to protect all people in the event of an emergency at the worksite;
(b) provide information to, and communication with, the relevant competent authorities, and the neighbourhood and emergency response services;
(c) address first-aid and medical assistance, firefighting and evacuation of all people at the worksite; and
(d) provide relevant information and training to all members of the organization, at all levels, including regular exercises in emergency prevention, preparedness and response procedures.

Emergency prevention, preparedness and response arrangements should be established in co-operation with external emergency services and other bodies where applicable.

Although fire is the most common emergency likely to be faced, there are many other possibilities, which should be considered including:

- gas explosion
- electrical burn or electrocution
- escape of toxic gases or fumes
- discovery of dangerous dusts like asbestos in the atmosphere
- terrorist threat
- large vehicle crashing into the premises
- aircraft crash if near a flight path
- spread of highly infectious disease
- severe weather with high winds and flooding

Supervisory duties

A member of the site staff should be nominated to supervise and co-ordinate all emergency arrangements. This person should be in a senior position or at least have direct access to a senior manager. Senior members of the staff should be appointed as departmental fire/emergency procedure wardens, with deputies for every occasion of absence, however brief. They should ensure that the following precautions are taken:

- everyone on site can be alerted to an emergency;
- everyone on site knows what signal will be given for an emergency and knows what to do;
- someone who has been trained in what to do is **on** site and ready to co-ordinate activities;
- emergency routes are kept clear, signed and adequately lit;
- there are arrangements for calling the fire and rescue services and to give them special information about high-risk work, for example, in tunnels or confined spaces;
- there is adequate access to the site for the emergency services and this is always kept clear;
- suitable arrangements for treating and recovering injured people are set up;
- someone is posted to the site entrance to receive and direct the emergency services.

3.18.1 Why an emergency procedure is required?

Workplaces need a plan for emergencies that can have a wider impact. Special procedures are needed for emergencies such as serious injuries, explosion, flood, poisoning, electrocution, fire, release of radioactivity and chemical spills.

Quick and effective action may help to ease the situation and reduce the consequences. However, in emergencies people are more likely to respond reliably if they:

- are well trained and competent
- take part in regular and realistic practice
- have clearly agreed, recorded and rehearsed plans, actions and responsibilities

Write an emergency plan if a major incident at your workplace could involve risks to the public, rescuing employees or
co-ordinating emergency services.

Where you share your workplace with another employer you should consider whether your emergency plans and procedures should be co-ordinated.

The Law:

The Management of Health and Safety at Work Regulations 1999 cover emergencies.

The Dangerous Substances (Notification and Marking of Sites) Regulations 1990 cover sites where at least 25 tonnes of dangerous substances are held.

3.18.2 Size and nature of potential accidents and the consequences if they occur

In order to be prepared for any emergency event, the company will plan for reasonably foreseeable incidents and prepare a written plan outlining procedures to be followed in such an event. These plans will be discussed with the emergency services before being finalised.

The company will, in consultation with workers and their representatives:

(a) carry out a risk assessment to identify foreseeable major incidents for which emergency procedures would be required.
(b) establish procedures to be followed by employees in the event of an emergency situation, including:-
    a. raising the alarm
    b. means of escape
    c. assembly points and "safe havens"
    d. summoning the emergency services
    e. evacuation of disabled persons
(c) appoint persons to be responsible for specific procedures in the event of an emergency situation (plus deputies for those listed below to cover holiday or sick leave), including:-
    a. incident controller
    b. site main controller
    c. employees responsible for shutting down plant and making it safe before evacuating the area
    d. fire wardens and fire marshals
    e. persons responsible for emergency power supplies and lighting
    f. persons responsible for moving equipment to or from the scene of the incident
    g. first aiders

h. rescuers (if appropriate)

(d) provide a written version of the procedures to all personnel, including details of the responsibilities of persons listed in (c).

(e) ensure that the plans cover night and shift working, weekend working and closures for holidays.

(f) ensure there is an up to date call-out list for key personnel and that this is readily accessible.

(g) clearly label all important items such as shut-off valves, electrical isolators and fire points or equipment.

(h) at regular intervals stage evacuation drills, test and check emergency equipment and inspect the means of escape.

(i) keep all access routes for emergency services and all escape routes clear at all times.

(j) assist the emergency services by clearly marking the premises and by drawing up a simple plan of the premises (e.g. showing the location of hazardous substances).

(k) reassess the emergency plan at regular intervals and following any major change in process plant and personnel, and update or alter it as necessary.

(l) provide training in emergency procedures for all employees, plus specialist training for those with special responsibilities.

3.18.3 Action of the employees on site

What actions should employees know before an emergency occurs?

- Be familiar with the work site's emergency evacuation plan
- Know the pathway to at least two alternative exits from every room/area at the workplace
- Recognize the sound/signaling method of the fire/evacuation alarms
- Know who to contact in an emergency and how to contact them
- Know how many desks or cubicles are between your workstation and two of the nearest exits so you can escape in the dark if necessary
- Know where the fire/evacuation alarms are located and how to use them
- Report damaged or malfunction safety systems and back-up systems

What should employees do in an emergency?

- Leave the area quickly but in an orderly manner, following the work site's emergency evacuation plan; go directly to the nearest fire-free and smoke-free stairwell

recognizing that in some circumstances the only available exit route may contain limited amounts of smoke or fire
- Listen carefully for instructions over the building's public address system
- Crawl low, under the smoke to breathe cleaner air if there is a fire; test doors for heat before opening them by placing the back of your hand against the door so you do not burn your palm and fingers; do not open a hot door, but find another exit route; keep "fire doors" closed to slow the spread of smoke and fire
- Avoid using elevators when evacuating a burning building
- Report to the designated meeting place
- Do not re-enter the building until directed by authorities

What should employees do if trapped?

- Stay calm and take steps to protect yourself
- Go to a room with an outside window, and telephone for help if possible
- Stay where rescuers can see you and wave a light-colored cloth to attract attention
- Open windows if possible, but be ready to shut them if smoke rushes in
- Stuff clothing, towels, or newspapers around the cracks in doors to prevent smoke from entering your room

3.18.4 Contacting emergency services

Emergency services should be called as soon as possible after the start of an emergency. The system for calling out the services will vary between countries. The following information and Appendix 6.5 gives information on a number of countries worldwide. Many emergency services prefer to be called early as this gives them the best chance to contain the emergency and save lives. Within Europe such services are generally provided at tax payers' cost and there is no direct charge at the point of use. This encourages people to use the services. This may not be the case in all countries, and it is then even more important that the organization has a well-defined policy to call the emergency services in good time, so that individuals are not personally penalized for calling the services.

Many countries' public telephone networks have a single emergency telephone number, sometimes known as the universal emergency telephone number or occasionally the emergency services number, that allows a caller to contact local emergency services for assistance. The emergency telephone number may differ from country to country. It is typically a three-digit number so that it can be easily remembered and dialled quickly. Some countries have a different emergency number for each of the different emergency services; these often differ only by the last digit.

An emergency telephone number call may be answered by either a telephone operator or an emergency service dispatcher. The nature of the emergency (police, fire**,** medical) is then

determined. If the call has been answered by a telephone operator, they then connect the call to the appropriate emergency service, who then dispatch the appropriate help. In the case of multiple services being needed on a call, the most urgent need must be determined, with other services being called in as needed.

Emergency dispatchers are trained to control the call in order to provide help in an appropriate manner. The emergency dispatcher may find it necessary to give urgent advice in life-threatening situations. Some dispatchers have special training in telling people how to perform first-aid or CPR.

The emergency dispatcher will need the following information:

- The caller's telephone number.
- The exact location of the incident, e.g. the road name
- and any important details about approaching and accessing the site.
- The type and seriousness of the incident, i.e. major
- fire, robbery taking place.
- Details of any hazards, e.g. gas leak or fire.

In many parts of the world, an emergency service can identify the telephone number that a call has been placed from. This is normally done using the system that the telephone company uses to bill calls, making the number visible even for users who have unlisted numbers or who block caller ID. For an individual fixed landline telephone, the caller's number can often be associated with the caller's address and therefore their location. However, with mobile phones and business telephones, the address may be a mailing address rather than the caller's location. The latest 'enhanced' systems, such as Enhanced 911 in the USA, are able to provide the physical location of mobile telephones. This is often specifically mandated in a country's legislation

Assembly and roll call

Assembly points should be established for use in the event of evacuation. They should be at a position, preferably undercover, that is unlikely to be affected at the time of emergency. In some cases, it may be necessary to make mutual arrangements with the client or occupiers of nearby premises.

In the case of small sites, a complete list of the names of all staff should be maintained so that a roll call can be made if evacuation becomes necessary.

In those premises where the number of staff would make a single roll call difficult, each area warden should maintain a list of the names of employees and contractors in their area. Roll call lists must be updated regularly.

3.19 Requirements for, and effective provision of, first-aid in the workplace

People at work can suffer injuries or fall ill. It does not matter whether the injury or the illness is caused by the work they do. What is important is that they receive immediate attention and that an ambulance is called in serious cases. First-aid at work (FAW) covers the arrangements that employers must make to ensure this happens. It can save lives and prevent minor injuries becoming major ones.

ILO-R164 requires the employer to provide first-aid treatment. The UK's guide on the provision of first-aid at work L74 is used as the basis for the guidance given here.

Employers should provide adequate and appropriate equipment, facilities and personnel to enable first-aid to be given to employees if they are injured or become ill at work.

What is adequate and appropriate will depend on the circumstances in a particular workplace.

The recommended minimum first-aid provision on any work site is:

- a suitably stocked first-aid box;
- an appointed person to take charge of first-aid arrangements.

It is also important to remember that accidents can happen at any time. First-aid provision needs to be available at all times people are at work.

Many small firms will only need to make the minimum first-aid provision. However, there are factors which might make greater provision necessary. The following checklist covers the points that should be considered.

3.19.1 First-aid provision check list

The risk assessments should show whether there are any specific risks in the workplace requiring particular first-aid provision. The following should be considered:

- Are there hazardous substances, dangerous tools and equipment; dangerous manual handling tasks, electrical shock risks, dangers from neighbours or animals?
- Are there different levels of risk in parts of the premises or site?
- What is the accident and ill-health record, and type and location of incidents?
- What is the total number of persons likely to be on site?
- Are there young people, pregnant or nursing mothers on site, employees with

disabilities or special health problems?

- Are the facilities widely dispersed with several buildings or compact in a multi-storey building?
- What is the pattern of working hours? Does it involve night work?
- Is the site remote from emergency medical services?
- Do employees travel a lot or work alone?
- Do any employees work at sites occupied by other employers?
- Are members of the public regularly on site?

3.19.2 Contents of first-aid box

There is no standard list of items to put in a first-aid box. It depends on what the employer assesses the needs to be. Where there is no special risk in the workplace, a minimum recommended stock of first-aid items is listed.

Typical Contents of first-aid box - low risk	
Stock for up to 50 persons:	
A leaflet giving general guidance on first-aid, for example HSE leaflet Basic advice on first-aid at work	
Medical adhesive plaster	40
Sterile eye pads	4
Individually wrapped triangular bandages	6
Safety pins	6
Individually wrapped: medium sterile unmedicated wound dressings	8
Individually wrapped: large sterile unmedicated wound dressings	4
Individually wrapped wipes	10
Paramedic shears	1
Pairs of latex gloves	2
Sterile eyewash if no clean running water	2

3.19.3 Appointed persons

An appointed person is someone who is appointed by management to:

- take charge when someone is injured or falls ill. This includes calling an ambulance if required;
- look after the first-aid equipment, for example keeping the first-aid box replenished;
- keep records of treatment given.

Appointed persons should never attempt to give first-aid for which they are not competent. Short emergency first-aid training courses are often available locally. Remember that an appointed person should be available at all times when people are at work on site - this may mean appointing more than one. The training should be repeated about every three years to keep up-to-date.

First aider

A first aider is someone who has undergone a recognized training course with for example the Red Cross/Red Crescent Society, in administering first-aid at work and holds a current certificate. Many countries will have local lists of training organizations. The training should be repeated every three years to maintain a valid certificate and keep the first aider up-to-date.

It is not possible to give hard and fast rules on when or how many first aiders or appointed persons might be needed. This will depend on the circumstances of each particular organization or work site. Table 3.2 offers suggestions on how many first aiders or appointed persons might be needed in relation to categories of risk and number of employees. The details in the table are suggestions only; they are not definitive.

Employees should be informed of the first-aid arrangements. Putting up notices telling staff who and where the first aiders or appointed persons are and where the first-aid box is will usually be enough. Special arrangements will be needed for employees with reading or language difficulties.

To ensure cover at all times when people are at work and where there are special circumstances, such as remoteness from emergency medical services, shift work or sites with several separate buildings.

Coverage in relation to shift work & geographical location

It is essential to provide adequate first aid cover at all times people are in work. Separate arrangements may need to be made for each shift. You may also want to train additional first aiders to cover annual leave or unexpected absences.

The HSE recommend that you have at least one first-aider trained in Emergency First Aid at Work (EFAW) This is a one day certificated course and qualifies the candidate to administer first aid in the workplace. You also need to know how you will provide adequate cover where there is shift work or the first aider is on holiday. It might be acceptable for an appointed person to cover short unforeseen circumstances.

How many appointed persons or first-aiders do I need?

There are no hard and fast rules on exact numbers. You should assess your first-aid needs in the light of your particular circumstances. Where there are special circumstances, such as shift work or sites with several buildings, there may need to be more first-aid personnel. You will need increased provision to cover for absences.

Table 3.2 Number of first-aid personnel

Category of risk	Numbers employed at any location	Suggested number of first-aid personnel
Lower risk		
For example shops and offices, libraries	Fewer than 50	At least one appointed person
	50-100 More than 100	At least one first aider One additional first aider for every
Medium risk		
For example light engineering and assembly work, food processing, warehousing	Fewer than 20	At least one appointed person
	20-100 More than 100	At least one first aider for every 50 employed (or part thereof) One additional first aider for every 100 employees
Higher risk		
For example most construction, slaughterhouses, chemical manufacture, extensive work with dangerous machinery or	Fewer than 5	At least one appointed person

	5-50 More than 50	At least one first aider One additional first aider for

3.20 Preventive and protective measures

General principles of the preventive and protective measures with reference to ILO-OSH 2001

Prevention and control measures

Hazards and risks to workers' safety and health should be identified and assessed on an ongoing basis. Preventive and protective measures should be implemented in the following order of priority:

(a) eliminate the hazard/risk;
(b) control the hazard/risk at source, through the use of engineering controls or organizational measures;
(c) minimize the hazard/risk by the design of safe work systems, which include administrative control measures; and
(d) where residual hazards/risks cannot be controlled by collective measures, the employer should provide for appropriate personal protective equipment, including clothing, at no cost, and should implement measures to ensure its use and maintenance.

Hazard prevention and control procedures or arrangements should be established and should:

(a) be adapted to the hazards and risks encountered by the *organization*;
(b) be reviewed and modified if necessary on a regular basis;
(c) comply with national laws and regulations, and reflect good practice; and
(d) consider the current state of knowledge, including information or reports from *organizations*, such as labour inspectorates, occupational safety and health services, and other services as appropriate.

Duties of employers when workers are exposed to occupational hazards

In situations where workers are exposed to occupational hazards, employers have the duty to:

- inform the workers of all the known hazards associated with their work, the health risks involved and the relevant preventive and protective measures;

- take appropriate measures to eliminate or minimize the risks resulting from exposure to those hazards;
- provide workers with suitable protective equipment, clothing and other facilities where adequate protection against risk of accident or injury to health, including
- exposure to adverse conditions, cannot be ensured by other means; and
- provide first aid for workers who have suffered from an injury or illness at the workplace, as well as appropriate transportation from the workplace and access to appropriate medical facilities.

Engineering control and housekeeping

Engineering control involves controlling the hazard at the source. The competent authority should ensure that exposure to hazardous substances (such as asbestos, for instance), is prevented or controlled by prescribing engineering controls and work practices which afford maximum protection to workers. One type of engineering control involves built-in protection as part of the work process concerned. These engineering controls should be built in during the design phase; they may be implemented later, but this tends to be more costly. Engineering controls may be more expensive to implement than methods which depend on continual vigilance or intervention by the worker, but they are safer. Examples include erecting guards around machines to prevent accidents or encasing a noise source with a muffler.

Another form of engineering control is the mechanization process. This involves the use of a machine to do dangerous work rather than exposing a worker to the hazard. An example is the use of an automatic parts dipper on a vapour degreaser rather than having dipped parts into the tank by hand.

Where the elimination of hazardous substances is not practicable in existing plants and processes, employers or managers should apply technical measures to control the hazard or risk by changing the process, so that the job is done in a completely different and safer way, or by enclosing the process completely to keep the hazard from reaching the worker. If the problems still cannot be solved by these methods, then methods such as local exhaust ventilation could be used to control the hazard.

These and other appropriate measures should be taken so that the exposure level is reduced to a level which, in the light of current knowledge, is not expected to damage the health of workers, even if they should go on being exposed at the same level for the duration of their working lives.

Good work practices and working methods can ensure that hazardous materials are contained before they become a problem. Where complete containment has not been achieved, strict housekeeping and personal hygiene are absolutely essential to ensure

workplace and personal safety. In the presence of toxic chemicals, for instance, strict personal hygiene must always be observed so as to prevent local irritations or the absorption of such chemicals through the skin. Where hazardous substances such as lead dust in a storage battery plant or asbestos dust in brake shoe manufacture are involved, inadequate housekeeping can result in toxic materials circulating in the air.

There are several ways of maintaining good housekeeping; for example:

- vacuuming is the best way of cleaning up dust, as dry sweeping often makes the problem worse by pushing dust particles back into the air; and
- regular and thorough maintenance of machines and equipment will reduce dust and fumes.

Work practices and organizational methods

Where the evaluation of the working environment shows that elimination of risk and total enclosure of machinery are both impracticable, employers should reduce exposure to hazard as much as possible, through administrative or organizational measures, so as to:

- reduce the source of the hazard, so that risks are confined to certain areas where engineering control measures can be applied effectively;
- adopt adequate work practices and working-time arrangements so that workers' exposure to hazards is effectively controlled; and
- minimize the magnitude of exposure, the number of workers exposed and the duration of exposure, e.g. carry out noisy operations at night or during the weekend, when fewer workers are exposed.

Personal protective equipment

When none of the above approaches is feasible, or when the degree of safety achieved by them is considered inadequate, the only solution is to provide exposed persons with suitable personal protective equipment and protective clothing. This is the final line of defence and should be used only as a last resort, since it entails reliance on active cooperation and compliance by the workers. Moreover, such equipment may be heavy, cumbersome and uncomfortable, and may restrict movement.

Employers should consult workers or their representatives on suitable personal protective equipment and clothing, having regard to the type of work and the type and level of risks. Furthermore, when hazards cannot be otherwise prevented or controlled, employers should provide and maintain such equipment and clothing as are reasonably necessary, without

cost to the workers. The employer should provide the workers with the appropriate means to enable them to use the individual protective equipment. Indeed, the employer has a duty to ensure its proper use. Protective equipment and clothing should comply with the standards set by the competent authority and take ergonomic principles into account. Workers have the obligation to make proper use of and take good care of the personal protective equipment and protective clothing provided for their use.

Element 4 - Health and safety management system – Check

Key learning points:

- Outline the principles, purpose and role of active and reactive monitoring
- Explain the purpose of, and procedures for, investigating incidents (accidents, cases of work-related ill-health and other occurrences)
- Describe the legal and organisational requirements for recording and reporting incidents.

4.1 Active and reactive monitoring

4.1.1 Active monitoring

The measurement process can gather information through:

- direct observation of conditions and of people's behaviour (sometimes referred to as unsafe acts and unsafe conditions monitoring);
- talking to people to elicit facts and their experiences as well as gauging their views and opinions;
- examining written reports, documents and records.

These information sources can be used independently or in combination. Direct observation includes inspection activities and the monitoring of the work environment (e.g. temperature, dust levels, solvent gas and vapour levels, noise levels) and people's behaviour. Each risk control system (RCS) should have a built-in monitoring element that will define the frequency of monitoring; these can be combined to form a common inspection system.

Inspections

General

This may be achieved by developing a checklist or inspection form that covers the key issues to be monitored in a particular department or area of the organization within a particular period. It might be useful to structure this checklist using the 'four Ps' (note that the examples are not a definitive list).

premises, including:

- work at height;
- access;
- working environment;
- welfare;
- services;
- fire precautions;

plant and substances, including:

- work equipment;
- manual and mechanical handling;
- vehicles;
- dangerous/flammable substance;
- hazardous substance

procedures, including:

- risk assessments;
- safe systems of work;
- permits-to work;
- personal protective equipment;
- contractors;
- notices, signs and posters;

people, including:

- health surveillance;
- people's behaviour;
- training and supervision
- appropriate authorized persons;
- violence;
- those especially at risk

It is essential that people carrying out an inspection do not in any way put themselves or anyone else at risk. Particular care must be taken with regard to safe access. In carrying out these safety inspections, the safety of people's actions should be considered, in addition to the safety of the conditions they are working in - a ladder might be in perfect condition but it has to be used properly too.

Key points in becoming a good observer

To improve health and safety performance, managers and supervisors must eliminate unsafe acts by observing them, taking immediate corrective action and following up to prevent recurrence. To become a good observer, they must improve their observation skills and must learn how to observe effectively. Effective observation includes the following key points:

- be selective;
- know what to look for; practice;
- keep an open mind;
- guard against habit and familiarity;
- do not be satisfied with general impressions;
- record observations systematically.

Observation techniques

In addition, to become a good observer, a person must:

- stop for 10-30 seconds before entering a new area to ascertain where employees are working;
- be alert for unsafe practices that are corrected as soon as you enter an area;
- observe activity - do not avoid the action;
- remember ABBI - look above, below, behind, inside;
- develop a questioning attitude to determine what injuries might occur if the unexpected happened and how the job might be accomplished more safely. Ask 'why?' and' what could happen if...?';
- use all senses: sight, hearing, smell, touch;
- maintain a balanced approach. Observe all phases of the job;
- be inquisitive;
- observe for ideas - not just to determine problems;
- recognize good performance.

Daily/weekly/monthly safety inspections

These will be aimed at checking conditions in a specified area against a fixed checklist drawn up by local management. It will cover specific items, such as the guards at particular machines, whether access/agreed routes are clear, whether fire extinguishers are in place, etc. The checks should be carried out by staff of the department who should sign off the checklist. They should not last more than half an hour, perhaps less. This is not a specific

hazard-spotting operation, but there should be a space on the checklist for the inspectors to note down any particular problems encountered.

Reports from inspections

Some of the items arising from safety inspections will have been dealt with immediately; other items will require action by specified people. Where there is some doubt about the problem, and what exactly is required, advice should be sought from the Site Safety Adviser or external expert. A brief report of the inspection and any resulting action list should be submitted to the safety committee. While the committee may not have the time available to consider all reports in detail, it will want to be satisfied that appropriate action is taken to resolve all matters; it will be necessary for the committee to follow up the reports until all matters are resolved (Figure 5.3). Essential elements of a report are:

- identification of the organization, workplace, inspector and date of inspection;
- list of observations;
- priority or risk level; actions to be taken;
- timescale for completion of the actions.

Inspection standards

In order to get maximum value from inspection checklists, they should be designed so that they require objective rather than subjective judgements of conditions. For example asking the people undertaking a general inspection of the workplace to rate housekeeping as good or bad, begs questions as to what does good and bad mean, and what criteria should be used to judge this. If good housekeeping means there is no rubbish left on the floor, all waste bins are regularly emptied and not overflowing, floors are swept each day and cleaned once a week, decorations should be in good condition with no peeling paint, then this should be stated. Adequate expected standards should be provided in separate notes so that those inspecting know the standards that are required. The checklist or inspection form should facilitate:

- the planning and initiation of remedial action, by requiring those doing the inspection to rank deficiencies in priority order (those actions which are most important rather than those which can easily be done quickly);
- identifying those responsible for taking remedial actions, with sensible timescales to track progress on implementation;
- periodic monitoring to identify common themes which might reveal underlying problems in the system;

- management information on the frequency or nature of the monitoring arrangements.

Safety sampling

Safety sampling is a management tool for making the workplace safer by studying how processes and people operate. By identifying unsafe behaviours, future accidents can be avoided.

Safety-sampling plans are designed to meet the specific needs of the organisation. Analysis of collected data enables management to develop a plan to identify and eliminate unsafe behaviours from their system.

Reactive checks are those that are made post-incident in response to reports that highlight something that is not according to plan.

The most common such checks in health and safety are the accident statistics used to ensure accident performance. These record failures (accidents) after they have occurred and, while they can give an indication of where corrective action needs to be taken, the price of an accident has already been paid. There is also delay between the incident, or series of incidents that have attracted attention, and the initiation of corrective action.

Unless care is taken in the way in which an investigation into an accident is carried out, obvious causes, such as lack of guards etc. especially when there is the possibility of future litigation, can divert attention from the underlying, but not necessarily obvious, cause.

Accident statistics are relatively easy to collect but have a limited role and must be seen as one of a number of techniques that can be employed in the identification, elimination and control of hazards.

The proactive approach, on the other hand, endeavours to identify, evaluate and control hazards and risks before they develop to the stage of causing an accident.

Safety Tours

A safety tour is a walk around the work place or a facility. The purpose of the safety tour is to provide a general appraisal of working conditions and safety practices. The safety tour also functions to monitor safe systems which are in place, identify and recommend areas where improved safety could take place.

- less formal, sometimes scheduled and undertaken by line managers with or without involvement of the H & S Coordinator.
- Inspections have a broader scope than tours and are undertaken less frequently.

Key elements of a safety tour are as follows:

- You do not have to devote a lot of time to the safety tour, and you do not have to conduct a complete tour of an area.
- If you know of some places that are trouble spots, concentrate on them first.
- Sample one or more parts of an area where you can observe staff work practices and conditions quickly and effectively.
- Some managers opt to take 15 or 20 minutes each day for this purpose, others choose to make a single safety tour once a week, spending 30 to 60 minutes. Others devote longer periods within a single major work site once a quarter.
- For geographically diverse locations, it may be wiser to cover multiple locations on the same day, spending a day a quarter for the tours.
- You need to develop your own system; in fact, you will only get results if you tailor your approach to safety tours and adhere to it even when other business pressures suggest different priorities.
- Letting safety tours lapse sends signals that other things are more important than safety. Therefore, plan your safety tours in good time and stick to the commitment you have made. It is crucial that you do not try to combine a safety tour with other visits to the area.
- The only way you and your workforce can benefit from your safety tour is for you to react to what you see. The manner in which you react may well be the strongest single element in improving the safety climate at your site. Your reaction (or lack of it) tells your organisation what is, and is not, acceptable.

In line with the conviction that all injuries and occupational illnesses can be prevented, you must display confidence that work sites and facilities for which you are responsible can achieve high standards of safety.

Become familiar with safety requirements

Before starting on a safety tour, review the area, the equipment and if needed, applicable standards. Obtain information on process hazards and emergency procedures. Wear the prescribed protective equipment, just as if you were doing the job.

Focus on people

Make sure each safety tour involves the observation of, and two-way communication with, people in the workplace. Gain a better understanding by asking open-ended questions - those which cannot be answered with a simple 'yes' or 'no.' Such questions do not merely aid in an accurate evaluation, they frequently stimulate the thinking of others as well.

How to conduct effective safety tours?

1) Do not let the observed persons see you taking notes.
2) Focus on acts of people, and not on "things".
3) The safety tour should not generate merely a list of things to do.
4) Observe people working for a short while before you start talking to them. Always talk to people in a place of safety. Take care to ensure that you do not create a risk by interrupting a safety-critical activity. Give people time to stop their work activity safely.
5) Put the people you would like to address at ease before starting the conversation. This takes time and should not be rushed.
6) Do not forget to thank, or congratulate sincerely, people for their actions that reflect good safety practices, role compliance, etc.
7) The safety tour team should ask questions, not deliver lectures. The objective is to get staff members to personally recognise the need to upgrade their safety performance.
8) The discussion should be open, honest, and direct, but not argumentative or confrontational. The discussion has to be a mutual learning experience.
9) Staff members should be encouraged to comment on any safety concerns they may have. These should be written down (in front of them) to show that a follow-up will be made. The results of this follow-up must be subsequently communicated to the staff member by a member of the safety tour team. Staff member's supervisor should also be kept appropriately informed.
10) Staff members should be thanked for their constructive participation in the safety tour process.
11) Safety tours should not, unless the staff member's conduct is particularly inappropriate, become the basis for disciplinary action. Disciplinary action should be

taken by direct supervision based on evidence they have personally gained, coupled with the individual's performance history.

12) The report can be combined with other safety tour reports for the period to enable trend analyses, etc. The safety tour findings should be distributed within the specific line organisation where the safety tour was carried out. Additionally, the reports can be distributed and used throughout the organisation to assist in safety discussions.
13) The safety tours will become a powerful tool supporting the total safety effort. They require management presence in the workplace, and active interaction with staff members on a subject that is staff- oriented (their safety). The safety tours have been found to have an enormous success in improving morale of the people at the workplace.

Questions for Manager's safety tour:

Addressed to supervisors/managers

- Which rules and procedures do your people find difficult to follow? Why?
- What does your workforce think you expect of them?
- Tell me about your safety programme and action plans.
- What changes have you seen in site safety in the past year or two?
- What approach do you use to help your staff become more familiar with rules and procedures?
- Do you lead safety tours? How do they help you, and help you do your job?
- What are you doing to achieve company safety targets / accident-free performance?
- What elements of safety do you emphasise?
- How?
- Why?
- What single thing in how we do things round here would best help you improve the safety record in your area of responsibility? Why would it do so?
- What area, job, activity, or piece of equipment do you think most needs attention to improve safety? Why?
- What tasks most worry your staff with regard to their own safety? Why?
- Why are rules and procedures violated in your area of responsibility?
- What is the rate of lost time accidents in your area of responsibility? What were the root causes of the most recent lost time accident?
- How do you measure your staff's safety performance?
- What are your staff's safety needs?
- What does your manager expect of you with respect to safety? How are these expectations communicated to you?
- How often do you discuss safety with your manager? On what occasions?

- Does your manager tell you what he thinks of your group's safety performance? Does your manager tell you what he thinks of your performance and contribution?
- Does your manager carry out safety tours with you? How frequently? How do you benefit from this activity?
- Can you use disciplinary measures to correct safety violations? Have you ever done so? When?
- Do you give pre-job safety instructions? What do you say? Do you check to ensure compliance?
- How much time do you spend in the site?
- How often do you watch people work?

Addressed to own and contractors' staff members

- What has been the safety experience of this group?
- What, if anything, needs additional safety attention?
- What part of your job do you worry about most? Why?
- What do you think your supervisor expects of you regarding safety?
- Why are rules and procedures violated?
- Which rules and procedures do you find difficult to follow?
- Which tools and/or equipment do you find difficult or hazardous to use?
- Why?
- What areas of safety has your supervisor emphasised? How?
- Who do you think is really responsible for developing and maintaining good safety performance at this work site?
- Tell me about the safety training you received for your job.
- Have you ever short-cut safety practices on your job? What caused you to take this action?
- Do you ever contribute to developing safety measures, ideas, or rules and procedures?
- Have you ever submitted a safety suggestion? Why? What were the results of your action?
- How do you rate your supervisors' efforts in the safety programme?
- What aspect of the safety programme do you like? Why?
- If you were in charge of administering the safety programme, what changes would you make? How? Why?
- To whom do you go when you have a safety problem?
- Where is the greatest potential for serious injury in your area?
- What aspects of the operation are most likely to cause trouble?
- Tell me about your safety and pre-work briefing meetings.
- Are they worthwhile?

- Are they opportunities for two-way communications?

The Do's and Don'ts of Safety Tours

To improve safety performance, one must eliminate unsafe acts by observing them, taking immediate corrective action, and following up to prevent recurrence.

Becoming a good observer takes practice.

Even if you conduct safety tours already, you should consider how to improve your observation skills, so that your tours can be more effective.

The teaching of good observation techniques must be central to training in how to conduct safety tours.

Effective observation has the following main points:

- Be selective.
- Know what to look for.
- Practice.
- Keep an open mind.
- Guard against habit and familiarity.
- Do not be satisfied with general impressions.
- Record observations systematically.

Observation techniques (the do's):

- Stop for 10 to 30 seconds before entering a new area to ascertain where people are working.
- Be alert for unsafe practices that are corrected as soon as you enter an area.
- Observe activity/do not avoid the action.
- Remember ABBI - look Above, Below, Behind, Inside.
- Recognise good performance.
- Develop a questioning attitude to determine what injuries might occur if the unexpected happened, and how the job might be accomplished more safely. Ask, 'What could happen if . . .?' and 'How can this job be performed more safely?'
- Use all your senses: sight, hearing, smell, touch.
- Maintain a balanced approach. Observe all phases of the job.
- Be inquisitive.
- Observe for ideas - do not go on a tour just to determine problems.

Wrong safety tour practices (the don'ts):

- Only supervisors or foremen conduct safety tours.
- Little interest from, or involvement by, higher management.
- No follow-up or record of participation.
- No staff involvement.
- Letting quotas on required number of observations.
- Use of 'cops and robbers' approach.
- No communication of results to staff.
- Lack of discussion between management levels.
- No follow-up to correct problems, or to change behaviour.

Approaching people on safety tours

A safety tour is an opportunity to communicate to the people your own personal values and standards of safety. Remember: You get the level of safety you demonstrate you want. If you walk past an unsafe act without taking time to talk to the person about it, you have lost a golden opportunity of showing how serious you are about safety. On the contrary, the message you give is: I accept your low standards of safety.

On a safety tour, you need to talk with the people about what is wrong, what is right, and about their jobs. However, most persons, especially senior managers, are reluctant to approach staff members and talk to them about their safe and unsafe acts. What are the reasons for this reluctance?

In most cases, it is the uncertainty about:

- How the person will react;
- Having the skill or the knowledge;
- Whose responsibility it is.

One cannot predict the reaction of the staff being approached; it could be anything between positive listening to telling you off. However, certain skills can be learned to minimise negative reactions.

Starting a conversation with general questions, and expressing your concern about that person's well-being if the unsafe act got out of control, are very effective approaches to creating a positive atmosphere.

4.1.2 Reactive monitoring

Reactive monitoring, after things go wrong, involves looking at historical events to learn from mistakes and see what can be put right to prevent a recurrence.

So far, this chapter has concentrated on measuring activities designed to prevent the occurrence of injuries and work-related ill-health (active monitoring). Failures in risk control also need to be measured (reactive monitoring), to provide opportunities to check performance, learn from failures and improve the health and safety management system.

Reactive assessment relies on records of accident, work-related injuries and ill-health as well as near miss and any enforcement notices. Any recommended remedial or preventative actions, following an investigation, must be implemented immediately and monitored regularly.

Reactive monitoring discovers why controls have failed, using investigation of accidents and incidents. It is also important to measure the organization against its own long-term goals and objectives.

Reactive measures that monitor ill-health, incidents including accidents and near misses and any other historical evidence of poor performance.

Reactive monitoring arrangements include systems to identify and report:

- injuries and work-related ill-health (details of the incident rate calculation is given in Chapters-other losses such as damage to property;
- incidents, including those with the potential to cause injury, ill-health or loss (near misses);
- hazards and faults;
- weaknesses or omissions in performance standards and systems, including complaints from employees and enforcement action by the authorities.

Reactive monitoring is triggered by events including:

- Injuries
- Ill health
- Property damage
- Incidents with potential to cause harm
- Hazard reports
- Complaints

In reality reactive measures are more tangible than active, and for this reason many organisations remain fixated with them. Also, it is fair to say the occurrence of an incident does focus the mind more than some active measures can ever achieved. However, whilst

reactive measures still give the opportunity to learn a great deal, these opportunities often occur after someone has been injured.

These systems are almost always limited to measurement of the extent of failure of safety management procedures.

Reactive monitoring should include the identification, reporting and investigation of:

I. work-related injuries, ill-health (including monitoring of aggregate sickness absence records), diseases and incidents;
II. other losses, such as damage to property;
III. deficient safety and health performance, and OSH management system failures; and
IV. workers' rehabilitation and health-restoration programmes.

For example:

- historical records to show the extent of lost profits arising from damaged goods, lost production time and reduced output following a safety failure
- a review of accident and injury statistics either against national averages for the same sector of employment
- a review of absence statistics
- health monitoring
- review of complaints by employees or contractors
- risk control monitoring

4.2 Investigating incidents

Incidents and accidents rarely result from a single cause and many turn out to be complex. Most incidents involve multiple, interrelated causal factors. They can occur whenever significant deficiencies, oversights, errors, omissions or unexpected changes occur. Any one of these can be the precursor of an accident or incident. There is a value on collecting data on all incidents and potential losses as it helps to prevent more serious events. (See Chapter 5 for accident ratios and definitions.)

Incidents and accidents, whether they cause damage to property or more serious injury and/or ill-health to people, should be properly and thoroughly investigated to allow an organization to take the appropriate action to prevent a recurrence (Figure 8.1). Good investigation is a key element to making improvements in health and safety performance.

Incident investigation is considered to be part of a *reactive monitoring system* because it is triggered after an event.

The range of adverse events includes:

1. *Accidents:* An event that results in injury or ill-health, including sickness, absences
2. Incidents :
    a. *Near miss* - Events that have the potential to cause injury or ill-health and may cause damage to property, personal effects, work in progress.
    b. *Undesired circumstance* - A set of conditions or circumstances that have the potential to cause injury or ill-health or damage.

Difference between an accident, near miss and undesired circumstances. Each type of event gives the opportunity to:

- check performance;
- identify underlying deficiencies in management systems and procedures;
- learn from mistakes and add to the corporate memory;
- reinforce key health and safety messages;
- identify trends and priorities for prevention;
- provide valuable information if there is a claim for compensation;
- help meet legal requirements for reporting certain incidents to the authorities

4.2.1 Reasons for accident/incident investigation

Logic and understanding

Incident/accident investigation is based on the logic that:

- all incidents/accidents have causes - eliminate the cause and eliminate future incidents;
- the direct and indirect causes of an incident/accident can be discovered through investigation;
- corrective action indicated by the causation can be taken to eliminate future incidents/accidents

Investigation is not intended to be a mechanism for apportioning blame. There are often strong emotions associated with injury or significant losses. It is all too easy to look for someone to blame without considering the reasons why a person behaved in a particular

way. Often short cuts to working procedures that may have contributed to the accident give no personal advantage to the person injured. The short cut may have been taken out of loyalty to the organization or ignorance of a safer method.

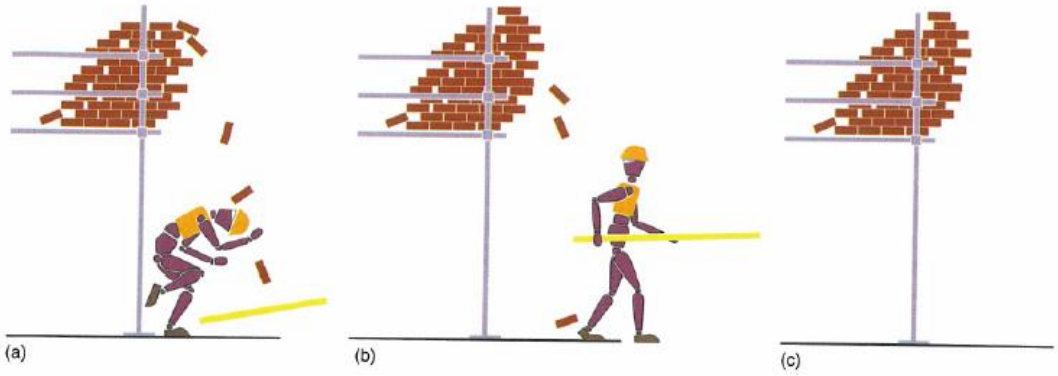


Figure - (a) Accident (b) Near miss (c) Undesired circumstances. Source: HSE

Valuable information and understanding can be gained from carrying out incident/accident investigations. These include:

- an understanding of how and why problems arose which caused the incident/accident;
- an understanding of the ways people are exposed to substances or situations which can cause them harm;
- a snapshot of what really happens, for example why people take short cuts or ignore safety rules;
- identifying deficiencies in the control of risks in the organization.

Benefits

There are many benefits from investigating accidents/incidents. These include:

- the prevention of similar events occurring again. Where the outcomes are serious injuries the enforcing authorities are likely to take a tough stance if previous warnings have been ignored;
- the prevention of business losses due to disruption immediately after the event, loss of production, loss of business through a lowering of reputation or inability to deliver, and the costs of criminal and legal actions;
- improvement in employee morale and general attitudes to health and safety particularly if they have been involved in the investigations;
- improving management skills to enhance health and safety performance throughout the organization.

The case for investigating near misses and undesired circumstances may not be so obvious but it is just as useful and much easier as there are no injured people to deal with (Figure 8.3). There are no demoralized people at work or distressed families and seldom a legal action to answer. Witnesses will be more willing to speak the truth and help with the investigation.

What managers need to do?

Managers need to:

- communicate the type of accident and incident that needs to be reported;
- provide a system for reporting and recording;
- check that proper reports are being made;
- make appropriate records of accidents and incidents;
- investigate all incidents and accidents reported; ensure that appropriate remedial action is taken where recommended;
- analyse the events routinely to check for trends in performance and the prevalence of types of incident or injury;
- monitor the system to make sure that it is working satisfactorily.

4.2.2 Which incidents/accidents should be investigated?

Injury accident

Should every accident be investigated or only those that lead to serious injury? In fact the main determinant is the potential of the accident to cause harm rather than the actual harm resulting. For example, a slip can result in an embarrassing flailing of arms or, just as easily, a broken leg. The frequency of occurrence of the accident type is also important - a stream of minor cuts from paper needs looking into.

As it is not possible to determine the potential for harm simply from the resulting injury, the only really sensible solution is to investigate all accidents. The amount of time and effort spent on the investigation should, however, vary depending on the level of risk (severity of potential harm, frequency of occurrence). The most effort should be focused on significant events involving serious injury, ill-health or losses and events which have the potential for

multiple or serious harm to people or substantial losses. These factors should become clear during the accident investigation and be used to guide how much time should be taken.

Table 5.1 has been developed by the UK's Health and Safety Executive (HSE) to help to determine the most appropriate level of investigation which is appropriate. The potential worst injury consequences in any particular situation should be considered when using the table. A particular incident like a scaffold collapse may not have caused an injury but had the potential to cause major or fatal injuries.

In a *minimal-level* investigation, the relevant supervisor will look into the circumstances of the accident/ incident and try to learn any lessons which will prevent future incidents.

A *low-level* investigation will involve a short investigation by the relevant supervisor or line manager into the circumstances and immediate underlying and root causes of the accident/incident, to try to prevent a recurrence and to learn any general lessons. A *medium-level* investigation will involve a more detailed investigation by the relevant supervisor or line manager, the health and safety adviser and employee representatives and will look for the immediate, underlying and root causes. A *high-level* investigation will involve a team-based investigation, involving supervisors or line managers, health and safety advisers and employee representatives. It will be carried out under the supervision of senior management or directors and will look for the immediate, underlying and root causes.

Likelihood of recurrence	Potential worst injury consequences of accident/incident			
	Minor	Serious	Major	Fatal
Certain				
Likely				
Possible				
Unlikely				
Rare				
Risk	Minimal	Low	Medium	High
Investi-gation level	Minimal level	Low level	Medium level	High level

Table – Appropriate level of investigation

4.2.3 Investigation and cause of accidents/incidents

Who should investigate?

Investigations should be led by supervisors, line managers or other people with sufficient status and knowledge to make recommendations that will be respected by the organization. The person to lead many investigations will be the Departmental Manager or Supervisor of the person/area involved because they:

- know about the situation; know most about the employees; have a personal interest in preventing further incidents/accidents affecting 'their' people, equipment, area, materials;
- can take immediate action to prevent a similar incident/accident;
- can communicate most effectively with the other employees concerned;
- can demonstrate practical concern for employees and control over the immediate work situation.

When should be investigation be conducted?

The investigation should be carried out as soon as possible after the incident to allow the maximum amount of information to be obtained. There may be difficulties which should be considered in setting up the investigation quickly - if, for example, the victim is removed from the site of the accident, or if there is a lack of a particular expert. An immediate investigation is advantageous because:

- factors are fresh in the minds of witnesses;
- witnesses have had less time to discuss the incident with others (there is an almost automatic tendency for people to adjust their story of the events to bring it into line with a consensus view);
- physical conditions have had less time to change; more people are likely to be available, for example delivery drivers, contractors and visitors, who will quickly disperse following an incident, making contact very difficult;
- there will probably be the opportunity to take immediate action to prevent a recurrence and to demonstrate management commitment to improvement;
- immediate information from the person suffering the accident often proves to be most useful.

Consideration should be given to asking the person to return to site for the accident investigation if they are physically able, rather than wait for them to return to work. A

second option, although not as valuable, would be to visit the injured person at home or even in hospital (with their permission) to discuss the accident.

Investigation method

- There are four basic elements to a sound investigation:
- Collect facts about what has occurred.
- Assemble, and analyse the information obtained.
- Compare the information with acceptable industry and company standards and legal requirements to draw conclusions.
- Implement the findings and monitor progress.

Information should be gathered from all available sources, for example, witnesses, supervisors, physical conditions, hazard data sheets, written systems of work, training records. The amount of time spent should not, however, be disproportionate to the risk. The aim of the investigation should be to explore the situation for possible underlying factors, in addition to the immediately obvious causes of the accident. For example, in a machinery accident it would not be sufficient to conclude that an accident occurred because a machine was inadequately guarded. It is necessary to look into the possible underlying system failure that may have occurred.

Investigations have three facets, which are particularly valuable and can be used to check against each other:

- direct observation of the scene, premises, workplace, relationship of components, materials and substances being used, possible reconstruction of events and injuries or condition of the person concerned;
- documents including written instructions, training records, procedures, safe operating systems, risk assessments, policies, records of inspections or test and examinations carried out;
- interviews (including written statements) with persons injured, witnesses, people who have carried out similar functions or examinations and tests on the equipment involved and people with specialist knowledge.

Immediate causes

A detailed investigation should look at the following factors as they can provide useful information about *immediate causes* that have been manifested in the incident/ accident.

Personal factors:

- behaviour of the people involved;
- suitability of people doing the work;
- training and competence;

Task factors:

- workplace conditions and precautions or controls;
- actual method of work adopted at the time;
- ergonomic (human comfort) factors;
- normal working practice either written or customary.

Underlying and root causes

A thorough investigation should also look at the following factors as they can provide useful information about *underlying and root causes* that have been manifested in the incident/accident:

Underlying causes are the less obvious system or organizational reasons for an accident or incident such as:

- pre-start-up machinery checks were not made by supervisors;
- the hazard had not been considered in the risk assessment;
- there was no suitable method statement;
- pressures of production had been more important;
- the employee was under a lot of personal pressure at the time;
- have there been previous similar incidents?
- was there adequate supervision, control and coordination of the work involved?

Root causes involve an initiating event or failing from which all other causes or failings arise. Root causes are generally management, planning or organizational failings including:

- quality of the health and safety policy and procedures;
- quality of consultation and co-operation of employees;
- the adequacy and quality of communications and information;
- deficiencies in risk assessments, plans and control systems;
- deficiencies in monitoring and measurement of work activities;
- quality and frequency of reviews and audits.

Investigation interview techniques

It must be made clear at the outset and during the course of the interview that the aim is not to apportion blame but to discover the facts and use them to prevent similar accidents or incidents in the future.

A witness should be given the opportunity to explain what happened in their own way without too much interruption and suggestion. Questions should then be asked to elicit more information. These should be of the open type, which do not suggest the answer. Questions starting with the words in Figure 8.4 are useful.

'Why?' should not be used at this stage. The facts should be gathered first, with notes being taken at the end of the explanation. The investigator should then read them or give a summary back to the witness, indicating clearly that they are prepared to alter the notes, if the witness is not content with them.

If possible, indication should be given to the witness about immediate actions that will be taken to prevent a similar occurrence and that there could be further improvements depending on the outcome of the investigation.

Seeing people injured can often be very upsetting for witnesses, which should be borne in mind. This does not mean they will not be prepared to talk about what has hap-pened. They may in fact wish to help, but questions should be sensitive; upsetting the witness further should be avoided.

Figure - Questions to be asked in an investigation.

Comparison with relevant standards

There are usually suitable and relevant standards which may come from the ILO, national authorities, industry or the organization itself. These should be carefully considered to see if:

- suitable standards are available to cover legal standards and the controls required by the risk assessments;
- the standards are sufficient and available to the organization;
- the standards were implemented in practice;
- the standards were implemented, why there was a failure;
- changes should be made to the standards

Recommendations

The investigation should have highlighted both immediate causes and underlying causes. Recommendations, both for immediate action and for longer term improvements, should come out of this, but it may be necessary to ensure that the report goes further up the management chain if the improvements recommended require authorisation, which cannot be given by the investigating team.

Follow-up

It is essential that a follow-up is made to check on the implementation of the recommendations. It is also necessary to review the effect of the recommendations to check whether they have achieved the desired result and whether they have had unforeseen 'knock-on' effects, creating additional risks and problems.

Use of information

The accident or incident investigation should be used to generate recommendations but should also be used to generate safety awareness. The investigation report or a summary should therefore be circulated locally to relevant people and, when appropriate, summaries circulated throughout the organization. The accident or incident does not need to have resulted in a 3-day lost time injury for this system to be used.

Training

A number of people will potentially be involved in accident or incident investigation. For most of these people this will only be necessary on very few occasions. Training guidance and help will therefore be required. Training can be provided in accident/incident investigation in courses run on-site and also in numerous off-site venues. Computer-based training courses are also available. These are intended to provide refresher training on an individual basis or complete training at office sites, for example, where it may not be feasible to provide practical training.

Remedial actions

For most situations, a *qualitative* risk assessment will be perfectly adequate. During the risk assessment, a judgment is made as to whether the risk level is high, medium or low in terms of the risk of somebody being injured. This designation defines a timetable for remedial actions to be taken thereby reducing the risk. High-risk activities should normally be addressed in days, medium risks in weeks and low risks in months or in some cases no action will be required. It will usually be necessary for risk assessors to receive some training in risk level designation.

The checklist or inspection form should facilitate:

- the planning and initiation of remedial action, by requiring those doing the inspection to rank deficiencies in priority order (those actions which are most important rather than those which can easily be done quickly);
- identifying those responsible for taking remedial actions, with sensible timescales to track progress on implementation;
- periodic monitoring to identify common themes which might reveal underlying problems in the system;
- management information on the frequency or nature of the monitoring arrangements.

4.3 Recording and reporting incidents

4.3.1 Incident records

Employers must follow national authorities' specified way(s) in which incidents have to be recorded, kept and what the records should contain. Some authorities simply specify the information which must be recorded while others may well provide a specific form or incident/accident book in which to keep records. Records will normally cover occupational accidents, occupational diseases, commuting accidents (ILO recommendation), dangerous occurrences and incidents. The records should be kept available and readily retrievable at all reasonable times.

The recording and reporting procedures should be the responsibility of a competent person in the organization.

Key data to be covered in accident, ill-health and incident reports

The event

- Details of any injured person, including age, sex, experience, training, etc.
- A description of the circumstances, including the place, time of day and conditions.
- Details of the event, including:
  - any actions which led directly to the event;
  - the direct causes of any injuries, ill-health or other loss;
  - the immediate causes of the event;
  - the underlying causes – for example failures in workplace precautions, risk control systems or management arrangements.
- Details of the outcomes, including in particular:
  - the nature of the outcome – for example injuries or ill-health to employees or members of the public; damage to property, process disruption, emissions to the environment, creation of hazards;
  - the severity of the harm caused, including injuries, ill-health and losses.
- The immediate management response to the situation and its adequacy:
  - Was it dealt with promptly?
  - Were continuing risks dealt with promptly and adequately?
  - Was the first-aid response adequate?
  - Were emergency procedures followed?
  - Whether the event was preventable and if so how?

The potential consequences

- What was the worst that could have happened?
- What prevented the worst from happening?
- How often could such an event occur (the *'recurrence potential'*)?
- What was the worst injury or damage which could have resulted (the *'severity potential'*)?
- How many people could the event have affected (the *'population potential'*)?

Recommendations

- Prioritized actions with responsibilities and targets for completion.

Source: HSG65.

Workers or their representatives need to be informed of the person responsible and the arrangements for recording.

The ILO Code of Practice states that the following information should be required by National laws or regulations and should include the following:

enterprise, establishment and employer:

- name and address of the employer, and his or her telephone and fax numbers (if available);
- name and address of the enterprise;
- name and address of the establishment (if different);
- economic activity of the establishment;
- number of workers (size of the establishment);

injured person:

- name, address, sex and date of birth;
- employment status;
- occupation;
- length of service for present employer;

injury:

- fatal accident;
- non-fatal accident;
- nature of the injury (e.g. fracture,);
- location of the injury (e.g. leg);

- incapacity for work in calendar days;

accident and its sequence:

- geographical location of the place of the accident (usual workplace, another workplace within the establishment or outside the establishment);
- date and time;
- shift, start time of work of the injured person and hours worked in the activity in which the accident occurred;
- work environment (e.g. workshop area, office, road, etc.);
- work process (e.g. welding, maintenance, manual transport, etch activity of the injured person at time of the accident (e.g. welding, maintaining press, operating machine, driving, walking, etc.);

4.3.2 Typical Incidents which need to be reported

The ILO Code of Practice requires that occupational accidents are classified as shown below in two stages depending on the maturity of the national reporting system. As a national system becomes more established they recommend that statistics are improved as shown in paragraph 9.2.2 of the Code.

- To provide evidence for these statistics organizations will have to report as a minimum:
- occupational accidents resulting in death;
- occupational non-fatal accidents with at least 3 consecutive days of incapacity excluding the day of the accident;
- commuting accidents;
- occupational diseases.

National laws or regulations should specify that notification of an occupational disease by an employer is mandatory, at least whenever the employer receives a medical certificate to the effect that one of his or her workers is suffering from an occupational disease; dangerous occurrences as defined by national laws (no specimen list is given by ILO).

Whom to report to?

The employer or a responsible person is required to notify the authorities according to national laws and regulations.

The ILO code requires the following to be implemented:

- The timing of the notification, which should preferably be made by the employer:

- by the quickest possible means immediately after reporting an occupational accident causing loss of life;
- within a prescribed time for other occupational accidents and occupational diseases.

In a number of countries like the UK , reporting can now be done on the internet using on-line versions of the official forms. Confirmation is sent back via email to the notifier with a copy of the completed form. Some national notification requirements also involve notifying insurance institutions and the statistics producing official body.

4.3.3 Compensation and insurance issues

Accidents/incidents arising out of the organization's activities resulting in injuries to people and incidents resulting in damage to property can lead to compensation claims. The second objective of an investigation should be to collect and record relevant information for the purposes of dealing with any claim. It must be remembered that, in the longer term, prevention is the best way to reduce claims and must be the first objective in the investigation. An overzealous approach to gathering information concentrating on the compensation aspect can, in fact, prompt a claim from the injured party where there was no particular intention to take this route before the investigation. Nevertheless, relevant information should be collected. Sticking to the collection of facts is usually the best approach.

Checklist of headings, which may assist in the collection of information. It is not expected that all accidents and incidents will be investigated in depth and a dossier with full information prepared. Judgement has to be applied as to which incidents might give rise to a claim and when a full record of information is required. All accident/incident report forms should include the names of all witnesses as a minimum. Where the injury is likely to give rise to lost time, a photograph(s) of the situation should be taken.

Workplace claims

- accident book entry;
- first aider report;
- surgery record;
- foreman/supervisor accident report;

- safety representatives accident report;
- statutory report to national authorities;
- other communications between defendants and national authorities;
- minutes of Health and Safety Committee meeting(s) where accident/incident considered;
- report to national authorities concerned with social security payments;
- documents listed above relative to any previous accident/incident identified by the claimant and relied upon as proof of negligence;
- earnings information where defendant is employer.
- pre-accident/incident risk assessment;
- post-accident/incident re-assessment;
- accident/incident Investigation Report prepared in implementing the requirements;
- health surveillance records in appropriate cases; information provided to employees;
- documents relating to the employee's health and safety training.

Workplace claims

- repair and maintenance records;
- housekeeping records;
- hazard warning signs or notices (traffic routes).

Work Equipment claims

- manufacturers' specifications and instructions in respect of relevant work equipment establishing **its** suitability to comply with legislation;
- maintenance log/maintenance records required;
- Documents providing information and instructions to employees;
- documents provided to the employee in respect of training for use;
- any notice, sign or document relied upon as a defence against alleged breaches dealing with controls and control systems

Personal Protective Equipment claims

- documents relating to the assessment of the PPE;
- documents relating to the maintenance and replacement of PPE;
- record of maintenance procedures for PPE;
- records of tests and examinations of PPE;

- documents providing information, instruction and training in relation to the PPE;
- instructions for use of PPE to include the manufacturers' instructions.

Manual Handling Claims

- manual handling risk assessment carried out;
- re-assessment carried out post-accident;
- documents showing the information provided to the employee to give general indications related to the load and precise indications on the weight of the load and the heaviest side of the load if the centre of gravity was not positioned centrally;
- documents relating to training in respect of manual handling operations and training records.

4.3.4 Lesson learnt

Factual information needs to be collected where there is the likelihood of some form of claim either against the organization or by the organization (e.g. damage to equipment). This aspect should be considered as a second objective in accident/incident investigation, the first being to learn from the accident/incident to reduce the possibility of accidents/incidents occurring in the future.

Element 5 - Health and safety management system – Act

Learning outcomes

- Explain the purpose of, and procedures, for health and safety auditing
- Explain the purpose of, and procedures for, regular reviews of health and safety performance.

5.1 Health and safety auditing

5.1.1 Audits – purpose

The final steps in the health and safety management control cycle are auditing and performance review. Organizations need to be able to reinforce, maintain and develop the ability to reduce risks. The 'feedback loop' produced by this final stage in the process enables them to do this and to ensure continuing effectiveness of the health and safety management system.

Audit is a business discipline which is frequently used, for example, in finance, environmental matters and quality. It can equally well be applied to health and safety.

The term is often used to mean inspection or other monitoring activity. Here, the following definition is used, which follows HSG65:

> The structured process of collecting independent information on the efficiency, effectiveness and reliability of the total health and safety management system and drawing up plans for corrective action.

Over time, it is inevitable that control systems will decay and may even become obsolete as things change. Auditing is a way of supporting monitoring by providing managers with information. It will show how effectively plans and the components of health and safety management systems are being implemented. In addition, it will provide a check on the adequacy and effectiveness of the management arrangements and risk control systems (RCS).

Auditing is critical to a health and safety management system, but it is not a substitute for other essential parts of the system. Companies need systems in place to manage cash flow and pay the bills - this cannot be managed through an annual audit. In the same way, health and safety needs to be managed on a day-to-day basis and for this, organizations need to have systems in place. A periodic audit will not achieve this.

The aims of auditing should be to establish that the three major components of a safety management system are in place and operating effectively. It should show that:

- appropriate management arrangements are in place;
- adequate risk control systems exist, are implemented and are consistent with the hazard profile of the organization;
- appropriate workplace precautions are in place.

Where the organization is spread over a number of sites, the management arrangements linking the centre with the business units and sites should be covered by the audit.

There are a number of ways in which this can be achieved and some parts of the system do not need auditing as often as others. For example an audit to verify the implementation of risk control systems would be made more frequently than a more overall audit of the capability of the organization or of the management arrangements for health and safety. Critical risk control systems, which control the principal hazards of the business, would need to be audited more frequently. Where there are complex workplace precautions, it may be necessary to undertake technical audits. An example would be chemical process plant integrity and control systems.

A well-structured auditing programme will give a comprehensive picture of the effectiveness of the health and safety management system in controlling risks. Such a programme will indicate when and how each component part will be audited. Managers, safety representatives and employees, working as a team, will effectively widen involvement and co-operation needed to put together the programme and implement it.

The process of auditing involves:

- gathering information from all levels of an organization about the health and safety management system;
- making informed judgements about its adequacy and performance.

Internal audit - Internal audit is a function that, although operating independently from other departments and reports directly to the audit committee, resides within an organisation (i.e. they are company employees). It is responsible for performing audits (both financial and non-financial) within a wide range of areas within a business, as directed by the annual audit plan. Internal audit look at key risks facing the business and what is being done to manage those risks effectively, to help the organisation achieve its objectives. For example, they may look at risks to the company's reputation such as the use of cheap labour in foreign countries, or strategic risks such as producing too many products in comparison to resources available etc.

External audit - External audit is an independent body which resides outside of the organisation which it is auditing. They are focused on the financial accounts or risks associated with finance and are appointed by the company shareholders. The main responsibility of external audit is to perform the annual statutory audit of the financial accounts, providing an opinion on whether they are a true and fair reflection of the company's financial position. As part of this, external auditors often examine and evaluate internal controls put in place to manage the risks which could affect the financial accounts, to determine if they are working as intended.

5.1.2 Advantages and disadvantages of external and internal audits

5.1.2.1 External Audit

Advantages

- The vital advantage of an audit is that it makes it easier to compare diverse companies as the auditors articulate their judgments about the equality of measures. Of a company is given a good judgment then it means that it is follow the law. It also assists in following positive values. An audit will remain the managers from frustrating to pamper in deceptive performs as it is a resources of responsibility. It confirm to dependability and honesty of the consequences.
- the external audit is essential if the internal auditor is unfaithful to the organization then the external auditor can verify the accounts of the company to identify whether the company has fair and true accounts or there are some unfair and false accounts are there so this is the grounds the company assigns the external for the company..
- Audit that the owner will be contented about the business operations and working of its various subdivisions.
- The errors whether committed unknowingly or consciously are exposed by the process of audit and its attendance prevents their occurrence in the future. No one will try to commit an error or fraud as the accounts are subject to audit and hence they will have a fear of being detected.
- Auditing is very practical in attaining the sovereign opinion of the auditor about business condition. If the accounts are audited by a sovereign auditor, the report of the auditor will be true and fair in all respects and it will be of tremendous importance for the management of the company.
- The procedure of audit will institute a check on the minds of the staff working in the business and they will not be able to commit any abnormality, as they will have a fear and will also be aware that the accounts will be examined in the near future and that action would be taken against them if any wrongdoing is exposed. Thus the audit prevents the happening of any wrongdoing before it starts and the staff hence

becomes more active and accountable. The fear of their getting jammed act as a moral check on the staff of the company.

Disadvantages

- The only disadvantage of an audit can be the expenses concerned because you have to pay the auditors and also guarantee that you preserve comprehensive records of all the interactions which engage a lot of expenses.
- External examines contributors may be secluded from the relaxed networks of the organization, putting them at a weakness when navigate the surroundings. External service providers do not offer a systematic internal recruiting ground for future senior managers.
- The education curve for external examine providers can be steep. An insufficient considerate of the organization may gravely obstruct the service provider's helpfulness.
- Discretion might be violated if external individuals have access to susceptible in rank.
- A significant potential disadvantage of the private audit firms is the fact that an Auditor General may have more experience in auditing public sector organizations and may therefore have an audit approach that is more in line with the different objectives and values that govern these. The operations of the organizations continue to be more similar to those of national public.
- As appealing also private sector auditors to bid would likely augment the number of bids received and the diversity between these, the evaluation and selection process would become longer and possibly more complex both for the secretariat and for the Finance Committee, which may be considered a disadvantage.

5.1.2.1 Internal Audit

Advantages

- Internal auditors know the organisation and where to look for evidence.
- Internal auditors' reports have high internal credibility
- Because internal auditors audit their peers, their findings are more likely to be seen as realistic by auditees
- Auditing is an excellent developmental experience because employees learn in detail about other parts of
- the organization.
- Using internal auditors helps the transfer of good practices across the organisation because they identify

- opportunities for sharing

Disadvantages

- External stakeholders may have suspicions about the independence of internal auditors
- Internal auditing takes resources away from normal work for both training and planned audits.
- Internal auditors can have a limited vision of improvement opportunities because of a lack of external
- benchmarks

5.1.3 ILO-OSH 2001 requirements of audits

The ILOOSH 2001 guidelines contain the following requirements for audits:

(a) Arrangements to conduct periodic audits are to be established in order to determine whether the OSH management system and its elements are in place, adequate, and effective in protecting the safety and health of workers and preventing incidents.

(b) An audit policy and programme should be developed, which includes a designation of auditor competency, the audit scope, the frequency of audits, audit methodology and reporting.

(c) The audit includes an evaluation of the organization's OSH management system elements or a subset of these, as appropriate. The audit should cover:

- **OSH policy;**
- worker participation;
- responsibility and accountability;
- competence and training;
- OSH management system documentation;
- communication;
- system planning, development and implementation;
- prevention and control measures;
- management of change; emergency prevention, preparedness and response; procurement-contracting;

- performance monitoring and measurement-investigation of work-related injuries, ill-health, diseases and incidents, and their impact on safety and health performance;
- audit;
- management review; preventive and corrective action;
- continual improvement;
- and any other audit criteria or elements that may be appropriate.

(d) The audit conclusion should determine whether the implemented OSH management system elements or a subset of these:

- are effective in meeting the organization's OSH policy and objectives;
- are effective in promoting full worker participation;
- respond to the results of OSH performance evaluation and previous audits;
- enable the organization to achieve compliance with relevant national laws and regulations; and
- fulfill the goals of continual improvement and best OSH practice.

(e) Audits should be conducted by competent persons internal or external to the organization who are independent of the activity being audited.

(f) The audit results and audit conclusions should be communicated to those responsible for corrective action.

(g) Consultation on selection of the auditor and all stages of the workplace audit, including analysis of results, are subject to worker participation, as appropriate.

5.1.4 Gathering information

Decisions will need to be made about the level and detail of the audit before starting to gather information about the health and safety management of an organization. Auditing involves sampling; so initially it is necessary to decide how much sampling is needed for the assessment to be reliable. The type of audit and its complexity will relate to its objectives and scope, to the size and complexity of the organization and to the length of time that the existing health and safety management system has been in operation.

Information sources of interviewing people, looking at documents and checking physical conditions are usually approached in the following order:

Preparatory work

- meet with relevant managers and employee representatives to discuss and agree the objectives and scope of the audit;
- prepare and agree the audit procedure with managers;

- gather and consider documentation.

On site

- interviewing;
- review and assessment of additional documents;
- observation of physical conditions and work activities.

Conclusion

- assemble the evidence;
- evaluate the evidence;
- write an audit report.

5.1.5 Making judgements

It is essential to start with a relevant standard or benchmark against which the adequacy of a health and safety management system can be judged. If standards are not clear, assessment cannot be reliable. Audit judgements should be informed by legal standards, authoritative guidance and applicable industry standards. The ILO-OSH 2001 guidelines and the UK's HSG65 sets out benchmarks for management arrangements and for the design of risk control systems. This book follows the same concepts.

Auditing should not be seen as a fault-finding activity. It should make a valuable contribution to the health and safety management system and to learning. It should recognize achievement as well as highlight areas where more needs to be done.

Scoring systems can be used in auditing along with judgments and recommendations. This can be seen as a useful way to compare sites or monitor progress over time. However, there is no evidence that quantified results produce a more effective response than the use of qualitative evidence. Indeed, the introduction of a scoring system can have a negative effect, as it may encourage managers to place more emphasis on high-scoring questions which may not be as relevant to the development of an effective health and safety management system.

To achieve the best results, auditors should be competent people who are independent of the area and of the activities being audited. External consultants or staff from other areas of the organization can be used. An organization can use its own auditing system or one of the proprietary systems on the market or, as it is unlikely that any ready-made system will provide a perfect fit, a combination of both. With any scheme, cost and benefits have to be taken into account. Common problems include:

- systems can be too general in their approach. These may need considerable work to make them fit the needs and risks of the organization; systems can be too cumbersome for the size and culture of the organization;
- scoring systems may conceal problems in underlying detail;
- organizations may design their management system to gain maximum points rather than using one which suits the needs and hazard profile of the business.

Some authorities like the UK's HSE encourages organizations to assess their health and safety management systems using in-house or proprietary schemes but without endorsing any particular one. Other countries have adopted the ILO-OSH 2001 or OHSAS 18001: 2007 and incorporated it into their statutory requirements or guidance.

Different types of incident: by outcome; injury; ill-health; dangerous occurrence; near miss; damage only

ILO-OSH 2001 covers the 'Investigation of work-related injuries, ill-health, diseases and incidents, and their impact on safety and health performance' This requires that:

- The investigation of the origin and underlying causes of work-related injuries, ill-health, diseases and incidents should identify any failures in the OSH management sys-tem and should be documented.
- Such investigations should be carried out by competent persons, with the appropriate participation of workers and their representatives.
- The results of such investigations should be communicated to the safety and health committee, where it exists, and the committee should make appropriate recommendations.
- The results of investigations, in addition to any recommendations from the safety and health committee, should be communicated to appropriate persons for corrective action, included in the management review and considered for continual improvement activities.
- The corrective action resulting from such investigations should be implemented in order to avoid repetition of work-related injuries, ill-health, diseases and incidents.

5.2 Review of health and safety performance

When performance is reviewed, judgements are made about its adequacy and decisions are taken about how and when to rectify problems. The feedback loop is needed by organizations so that they can see whether the health and safety management system is working as intended. The information for review of performance comes from audits of risk control systems and workplace precautions, and from the measurement of activities. There may be other influences, both internal and external, such as reorganization, new legislation or changes in current good practice. These may result in the necessity to redesign or change parts of the health and safety management system or to alter its direction or objectives.

Performance standards need to be established which will identify the systems requiring change, responsibilities, and completion dates. It is essential to feed back the information about success and failure so that employees are motivated to maintain and improve performance.

In a management review, the following areas will need to be examined:

the operation and maintenance of the existing system; how the safety management system is designed, developed and installed to accommodate changing circumstances.

5.2.1 Purpose of reviewing health and safety performance:

(a) evaluate the overall strategy of the OSH management system to determine whether it meets planned performance objectives;
(b) evaluate the OSH management system's ability to meet the overall needs of the organization and its stakeholders, including its workers and the regulatory authorities;
(c) evaluate the need for changes to the OSH management system, including OSH policy and objectives;
(d) identify what action is necessary to remedy any deficiencies in a timely manner, including adaptations of other aspects of the organization's management structure and performance measurement;
(e) provide the feedback direction, including the determination of priorities, for meaningful planning and continual improvement;
(f) evaluate progress towards the organization's OSH objectives and corrective action activities; and
(g) evaluate the effectiveness of follow-up actions from earlier management reviews.

Reviewing is a continuous process. It should be undertaken at different levels within the organization. Responses will be needed as follows:

- by first-line supervisors or other managers to remedy failures to implement workplace precautions which they observe in the course of routine activities;
- to remedy sub-standard performance identified by active and reactive monitoring;
- to the assessment of plans at individual, departmental, site, group or organizational level;
- to the results of audits.

The frequency of review at each level should be decided upon by the organization and reviewing activities should be devised which will suit the measuring and auditing activities. The review will identify specific remedial actions which establish who is responsible for implementation and set deadlines for completion. The findings of the management review should be recorded and formally communicated to:

- the persons responsible for the relevant element(s) of the Occupational Safely and Health management system so that they may take appropriate action;
- and the safety and health committee, workers and their representatives

5.2.2 Who should take part in review?

Health and safety managers

Status and *competence* are essential to the role of health and safety practitioners and other advisers. They must be able to advise management and employees or their representatives with authority and independence. They need to be able to advise on performance reviews and audit of the whole health and safety management system.

Role of managers

Primarily management is responsible for providing safe systems of work, as they will know the detailed way in which the task should be carried out.

Management is responsible to ensure that employees are adequately trained in a specific safe system of work and are competent to carry out the work safely. Managers need to provide sufficient supervision to ensure that the system of work is followed and the work is carried out safely. The level of supervision will depend on the experience of the particular employees concerned and the complexity and risks of the task.

When construction work is involved, principal or main contractors will need to monitor sub-contractors to check that they are providing suitable safe systems of work, have trained their employees and are carrying out the tasks in accordance with the safe systems.

Collective responsibilities for directors and senior managers

The safety statement must set out the specific safety and health responsibilities of each management level within the undertaking and, in particular, how they will work together to ensure safety and health. Directors must also be given the authority to effect safety and health changes in the workplace(s) covered by the safety statement.

The safety statement must start with the safety and health policy. This policy is the undertaking's commitment to protect the safety and health of employees and others at the workplace under the director's control. This policy should be specific to each workplace in the undertaking – consult employees when it is being prepared and review it regularly, as necessary, including if there are changes in the workplace, workforce, organisation or method of work, articles or substances used at work etc. Directors should have a clear understanding of what the safety and health policy covers and should formally accept it as company policy. Then the board, and its senior management team, must ensure that all their business decisions reflect the policy as set out.

The policy should be open to examination at board level to ensure that it is sufficiently robust to cover the safety and health risks posed by the undertaking. The board should be responsible for driving the safety and health agenda, understanding the risks and opportunities associated with safety and health and any matters that might affect safety and health. The knowledge, training, experience and safety and health competence that directors require to carry out this role and to meet their legal responsibilities will depend on the safety and health risks posed by the undertaking.

The key tasks that board members should carry out in ensuring that they accept collective responsibility and meet their legal safety and health obligations include:

- Reviewing and, where appropriate, endorsing the safety statement when prepared by the senior management team
- Receiving regular reports on progress, performance and implementation of safety and health plans
- Ensuring sufficient resources are made available to achieve and implement these safety and health plans
- Ensuring that the senior managers and the workforce are actively involved in the management of safety and health
- Developing a communications plan to show the board's commitment to its safety and health policy
- Making sure the necessary organisational structures exist to ensure that safety and health is properly managed

- Keeping aware of all matters in relation to safety and health, especially major incidents and changes in legislation
- Ensuring safety and health audits are undertaken to monitor all aspects of safety and health policy implementation

5.2.3 Review at planned intervals

Measuring health and safety performance is an ongoing activity, so in one sense the measurement process is continuous. But like any other activity measurement should be both efficient and effective, so the frequency with which it takes place needs to be planned appropriately. You should consider the following factors:

Suitable intervals to ensure that specific planned milestones are achieved

If health and safety plans and objectives are SMART, they will include specific times when specific milestones will be achieved. Monitoring the progress with the plans should be aligned with the particular timescales for achievement.

The potential for change from one state to another over time

For example, the design of a particular management arrangement or risk control system does not change from day to day so that the checks on the design might be appropriate at:

- the initial design phase;
- whenever changes are made which could impact on the operation of the systems;
- when information is obtained which indicates that the system as designed has failed in some way (eg when there has been an injury); or
- when data from the monitoring of the operation of the system indicates the design is flawed.

Similarly, the state of a particular work place precaution, for example the integrity of a fixed machine guard, might not be expected to vary significantly from day to day once it has been put in place. A check at greater intervals might be more appropriate. Suppliers of plant and equipment will often prescribe inspection and maintenance intervals to ensure optimum performance.

The relative importance of the activity or particular precaution relative to the overall control of risk

Some precautions needed to control a particular risk may need to be monitored on an almost continuous basis, eg the flow of cooling water, the presence (or absence) of oxygen, air flow, flammable gas levels, and require effective instrumentation. Systems to control risks associated with high hazards will need to be monitored at more frequent intervals than those for low hazards.

Where intervals for monitoring are prescribed by legislation

Some legislation requires monitoring to take place at specific intervals, for example, inspection of lifting equipment.

Where there is evidence that there is non-compliance

Where monitoring has discovered evidence of non-compliance then once remedial action has been taken, it may be appropriate to introduce more frequent monitoring to check that the remedial action has been successful.

Where there is evidence of compliance

Where monitoring has provided evidence that there is regular compliance with a particular requirement,it may be appropriate to consider reducing the frequency of that monitoring and targeting resources elsewhere.

The relative frequency and time at which a particular activity takes place

Some work activities only occur at particular times of the day or night or periods of the year. It is important that the measurement process covers these activities effectively and is not just confined to frequent '9 to 5' activities.

5.2.4 Assessing opportunities for improvement and the need for change

Few workplaces stay the same. Sooner or later, you will bring in new equipment, substances and procedures that could lead to new hazards. It makes sense therefore, to review what you are doing on an ongoing basis.

Look at your risk assessment and think about whether there have been any changes? Are there improvements you still need to make? Have your workers spotted a problem? Have you learnt anything from accidents or near misses? Make sure your risk assessment stays up to date.

When you are running a business it's all too easy to forget about reviewing your risk assessment – until something has gone wrong and it's too late. During the year, if there is a significant change, don't wait: check your risk assessment and where necessary, amend it. If possible, it is best to think about the risk assessment when you're planning your change – that way you leave yourself more flexibility.

In seeking to improve your organisation's approach to measuring health and safety performance, a useful starting point is to review what measuring activity is currently taking place against this guidance. You should include consideration of:

- range, nature and deployment;
- gaps in the coverage;
- balance and emphasis;
- design basis;
- frequency - too little/too much;
- responsibility for collecting, analysing and reporting measurement information;
- corrective action arrangements; and
- effectiveness in driving improvement.

5.2.5 Review to consider:

Evaluations of compliance with applicable legal and organisational requirements

The yardsticks for checking 'technical adequacy' are relevant legal requirements and best practice including the consideration of human factors issues (see HSE guidance *Reducing error and influencing behaviour*7). Information on best practice might be obtained through published guidance or through benchmarking with.

The procedures for implementing the system should be realistic and achievable in terms of the demands placed upon the people who have to carry them out. For example, can people actually do what is required of them to the standard required in the time available? Procedures should also be

compatible with other procedures the organisation has in place to manage other aspects of the business.

Compliance

No matter how well the management arrangements and risk control systems are designed, they can never deliver the desired outcome if they are not implemented or complied with. Performance measurement must provide information to determine the level of compliance with the management

arrangements and risk control systems.

It is vitally important that employees understand how the particular management arrangement or risk control system is expected to operate. It is useful to be able to capture the implementation process as designed in a process flowchart. This can be used to decide what aspects of the process need to be measured to check that the process is being implemented as intended (see *Deriving performance measures*). The basis for the active monitoring of compliance are performance standards (see HSG 65) which define **who** does **what**, **when** and with **what result**.

Assessing compliance with reasonable practicability

When reviewing health or safety measures on an existing plant, installation or situation (such as when considering retrofitting, safety reviews or upgrades), duty-holders should compare existing measures against current good practice. The good practice measures set out should be adopted so far as is reasonably practicable. It might not be reasonably

practicable to apply retrospectively to existing plant, for example, all the good practice expected for new plant. However, there may still be ways to reduce the risk e.g. by partial solutions, alternative measures etc.

In determining what is reasonably practicable, the starting point for the risk/sacrifice computation should be the current situation. Duty-holders should also consider the adequacy of the relevant good practice (paragraphs 2.1.e. & f. are appropriate considerations). When a code or standard is updated to a higher standard, the plant, installation or situation should be examined to see if it can be brought up to the new standard. Any such upgrades should be undertaken if reasonably practicable.

New plant, installations or situations should conform to current good practice, as a starting point. Other potential options should be considered to determine whether further risk reduction measures are reasonably practicable. As a guide, designers can aim and compare against levels of safety that are known to have been achieved in other "best practice" designs.

The use of good practice at the design stage is essential to demonstrating achievement of ALARP. This should include use of sound design principles (e.g. inherent safety) as well as codes, standards and guidance. Further advice is given in "Policy and guidance on reducing risks as low as reasonably practicable in Design" .

In prioritising its resources, HSE may decide in an individual case not to pursue further action where a duty-holder has reduced risk to within the 'broadly acceptable' region of the TOR framework (see R2P2, para.122ff, for an explanation of this framework) and only a small reduction in risk would be achieved." However, the legal duty to reduce risks ALARP remains.

Accident and Incident Data, corrective and preventive actions

Accident includes any undesired circumstances that give rise to ill-health or injury, damage to property etc.
Incident includes all undesired circumstances that could cause accidents.

The use of such data (including ill-health data) is a valuable management tool that helps to:

- Measure whether performance is improving or deteriorating using trend analysis;
- Make comparisons;
- Draw lessons from the data – epidemiological analysis.

However, there are limitations on these data, which can be set out follows:

- Accident data are the result of accidents that happened in the past, sometimes a considerable time ago, so it can be said that they are not up-to-date.
- Occupational diseases are quite rare because their long-term effects cannot be easily measured or recorded.

There are two stages in using a database:

- Setting up the database.
- Entering the data.

Specific databases such as ones specifically for recording accidents etc:

This type of database requires you to be clear about what data you are to record, and what analysis needs to be carried out on that data.

Choosing Software:

- Ensure that you know (or have access to the relevant knowledge of) the hardware and system software you have. This way you can narrow down the selection criteria of software programmes that run on your system.
- Ensure that you know what it is you want to achieve from the software.
- Ensure you have a good look at what is available on the computer market before making your choice.
- Ensure that you have a demonstration by the software company to ensure you can get the best from it.
- Ensure you complete a cost/benefit analysis before you buy.

Corrective Action

This involves designing into work structures at all levels systems that monitor and measure performance on a regular basis. This should include proactive measures of performance that monitor compliance with the OH&S management programme, operational criteria and applicable legislation, regulatory requirements and approved codes of practice.

CHASE

Originally designed for health and safety, the CHASE (Complete Health And Safety Evaluation) system is designed around good management practices. In the UK, such a system is described in Successful Health and Safety Management (HSG65) from the HSE and BS 8800 from BSI, or the OHSAS 18001 standard.

In terms of BS 8800, CHASE fits into both the Measuring and Auditing aspects of the model, which is shown below, while in OHSAS 18001, CHASE fits in to Checking and Corrective Action.

Key Features.

Originally designed for health and safety, CHASE is used for any type of loss control - Environmental, Quality, Food Hygiene, etc.
CHASE is designed to be flexible so you use it to monitor your performance against your standards - edit or create your own questions to make it specific to your organisation.

- Create and follow up recommendations and actions plans.
- Monitor performance over time.
- Built-in evaluation and audit scheduling.
- CHASE enables managers to extract useful information from audit and monitoring data.
- Line managers can perform their own self-assessments, backed up with external verification by independent auditors.

Preventive actions

Hazard prevention and control procedures or arrangements should be established and should:

(a) be adapted to the hazards and risks encountered by the organization;
(b) be reviewed and modified if necessary on a regular **basis;**
(c) comply with national laws and regulations, and reflect good practice; and
(d) consider the current state of knowledge, including information or reports from organizations, such as labour inspectorates, occupational health and safety services, and other services as appropriate.

Preventive and protective measures should be implemented in the following order of priority:

(a) eliminate the hazard/risk;

(b) control the hazard/risk at source, through the use of engineering controls or organizational measures;
(c) minimize the hazard/risk by the design of safe work systems, which include administrative control measures; and
(d) where residual hazards/risks cannot be controlled by collective measures, the employer should provide for appropriate personal protective equipment, including clothing, at no cost, and should implement measures to ensure its use and maintenance.

Inspections, surveys, tours and sampling

Inspections

These will be aimed at checking conditions in a specified area against a fixed checklist drawn up by local management. It will cover specific items, such as the guards at particular machines, whether access/agreed routes are clear, whether fire extinguishers are in place, etc. The checks should be carried out by staff of the department who should sign off the checklist. They should not last more than half an hour, perhaps less. This is not a specific hazard-spotting operation, but there should be a space on the checklist for the inspectors to note down any particular problems encountered.

Surveys

This can mean a detailed investigation of one aspect of the workplace; for example a noise survey of an engineering workshop might involve detailed measurements over several days and subsequent analysis of the results.

'Survey' may also mean a familiarisation exercise, planning the campaign to make best use of limited resources - for example, an occupational hygienist may have conducted a walk-through survey of the engineering workshop in order to ascertain if a full noise survey is required and, if so, how this should be undertaken.

Tours

The purpose of the safety tour is to provide a general appraisal of working conditions and safety practices. The safety tour also functions to monitor safe systems which are in place, identify and recommend areas where improved safety could take place.

- less formal, sometimes scheduled and undertaken by line managers with or without involvement of the H & S Coordinator.

- Inspections have a broader scope than tours and are undertaken less frequently.

Sampling

Sampling implies an inspection that is limited either to certain areas of the workplace or to certain aspects of workplace activity - e.g. Inspection of all the fire doors and fire escape signs.

The defects that are spotted are noted and the total number of defects is added up to give an index of accident potential. You will appreciate that both trivial and major defects will register the same.

Absence and sickness

On 17 February 2011 the government called for a major review of the sickness absence system in Great Britain in order to help combat the 140 million days lost to sickness absence every year. The review was jointly chaired by David Frost, former Director General of the British Chambers of Commerce, and Dame Carol Black, then National Director for Health and Work, and published on 21 November 2011.

The review presented an important analysis of the:

- sickness absence system in the UK
- impact of sickness absence on employers, the state and individuals
- factors which cause and prolong sickness absence and which, in too many cases, mean that employees move out of work entirely and on to benefits

The review also provided a critique of the current system and the roles that healthcare professionals, employers and government services play. This is an important contribution to our understanding of the sickness absence system and the reviewers offered challenging and new insights into this complex problem as well as a number of recommendations.

The review had the following aims:

- to explore how the current sickness absence system could be changed to help people stay in work, reduce costs and contribute to economic growth

- to examine whether the balance of these costs are appropriately shared between the state, individuals and employers
- to make tangible recommendations for system change
- to ensure that recommendations for change are consistent with promoting private sector growth and minimising burdens on business and in particular small and medium-sized businesses

The review considered:

- radical and wide-ranging options to achieve these changes over the medium- and long-term
- other international models and their context, such as that in Holland, where the state has successfully reduced its costs
- whether any recommendations made will work as well for those with mental health conditions as they will for other health conditions
- how any options fit with the coalition agreement and other agreed government priorities including: promoting private-sector growth, 'One-in One-out', the Big Society agenda, and the Employment Law Review
- how any options put forward may work in practice and the potential impact of any changes on employers, businesses (by business size) and labour demand
- the costs and administrative burdens on businesses by business size (micro, small, medium and large)
- the benefits and costs to government of any proposed changes
- the impact on the devolved administrations

In making recommendations, the review also considered whether there are wider lessons that can be drawn about how the state supports people who return to work quickly rather than remaining on SSP. It examined the Industrial Injuries Disablement (IIDB) scheme, which provides state compensation for people who have had 'no fault' illness or injury as a result of their employment.

Monitoring data/records/reports

To keep records (such as incidences of accidents and ill-health at work) as required by local legislation, and report these as required to the authorities concerned. Copies of records of all maintenance, statutory and other necessary inspections (e.g. by insurance companies or other officials) must be kept by the Departmental Manager.

A review of accident, incident and ill-health data/records will also help with the identification. Other sources of information include safety inspection, survey and audit

reports, job or task analysis reports, manufacturers' handbooks or data sheets and Approved Codes of Practice and other forms of guidance.

External communications and complaints

The purpose of considering the external communications and complaints in review is to establish a method for management of external communications and/or complaints related to the plant's environmental management system and environmental aspects that includes coordination, implementation, and documentation to ensure consistency with regulatory and corporate procedures.

Responsibilities and tasks:

Plant Manager:

1. Respond or designate an employee to respond to all complaints regarding environmental issues and press releases.
2. Act as a liaison for community affairs, including public meetings.
3. Sign environmental correspondence including applications and permits.
4. Ensure external communications are performed in accordance with the corporate communication policy.

EMP Team:

1. Advise the Plant Manager on environmental issues and ensure follow up action from environmental complaints are complete.
2. Maintain records of external communication related to environmental issues as well as documented initial contacts made by employees.
3. Interact with environmental regulatory agencies including escorting regulatory inspectors during site inspections.

All Managers:

1. Refer complaints to the Plant Manager or Production Manager.
    A. If neither the Plant Manager nor Production Manager is available, record the caller's name, address, and phone number, date and time, and details of the contact.
    B. Submit the initial record of the contact to the Plant Manager or Production Manager in a timely manner.
2. Initiate a corrective action, delegated by the Plant Manager to address a public complaint.

3. Notify the Production Manager of actions taken to respond to a complaint and maintain a record of these actions.

All Employees:

1. Refer individuals, organizations, or the media to the Plant Manager or Production Manager for questions, complaints, or requested statements about environmental issues.
2. Provide the Production Manager with a Contact Record for initial contacts about environmental issues.

Results of participation and consultation

Worker participation -This is an essential element of the occupational health and safety management system in the organization. The employer should ensure that workers and their health and safety representatives are consulted, informed and trained on all aspects of occupational health and safety, including emergency arrangements, associated with their work. Arrangements should be made for workers and their health and safety representatives to have the time and resources to participate actively in the processes of organizing, planning and implementation, evaluation and action for improvement of the occupational health and safety management system. Finally, the employer should ensure, as appropriate, the establishment and efficient functioning of a health and safety committee and the recognition of workers' health and safety representatives, in accordance with national laws and practice. 2. Documentation - Depending upon the size and activities of the organization, occupational health and safety management system documentation should be established and maintained, and may cover:

(a) the health and safety policy and objectives of the organization;
(b) the allocated key health and safety management roles and responsibilities for the implementation of the occupational health and safety management system;
(c) the significant occupational health and safety hazards/risks arising from the organization's activities, and the arrangements for their prevention and control; and
(d) arrangements, procedures, instructions or other internal documents used within the framework of the occupational health and safety management system.

The occupational health and safety management system documentation should be:

(a) clearly written and presented in a way that is understood by those who have to use it; and
(b) periodically reviewed, revised as necessary, communicated and readily accessible to all appropriate or affected members of the organization.

Occupational health and safety records should be established, managed and maintained locally and according to the needs of the organization. They should be identifiable and traceable, and their retention times should be specified. Workers should have the right to access records relevant to their working environment and health, while respecting the need for confidentiality. Occupational health and safety records may include:

(a) records arising from the implementation of the occupational health and safety management system;
(b) records of work-related injuries, ill-health, diseases and incidents;
(c) records arising from national laws or regulations dealing with occupational health and safety;

Objectives met

Issues to be addressed as part of the review process and agenda should typically include:

- Any recommendations which have been made in audit reports.
- Any recommendations made in the investigation and analysis of incidents.
- Extent of follow-up on audit and incident action items.
- The continuing suitability, adequacy, and effectiveness of HSE Policy.
- The continuing suitability, adequacy, and effectiveness of HSE goals, objectives, and/or targets, consequent amendments to the HSE Plan, and to HSE Management System documentation.
- Comparison of business results against goals, objectives, targets, and/or KPIs.
- Resources allocated to achieve HSE goals, objectives, targets, and/or KPIs.
- Review of goals and strategy.
- Status of actions in the business plan.
- Trend analysis of business results.
- Assessments of the organization's residual risk profile – including health, process and occupational safety, and environmental risks.
- Performance benchmarking results.
- Assurance activity results (Level I, II, and III audits).
- Analysis of monitoring reports.
- Improvement and action plans.
- Stakeholder suggestions.

A comprehensive performance assessment includes:

- Reviewing the employee's functional job description (updating as necessary) as well as the specific competencies and performance standards for the position.
- Collecting feedback from the employee's customers/peers.

- Setting a date with the employee for the formal performance assessment meeting. (Allow at least 30 minutes.)
- Asking the employee to complete a self-assessment which includes 3-5 goals for the upcoming year.
- Drafting a formal assessment that includes measurable core competencies and standards for the position.
- Holding the performance assessment meeting, documenting any changes or plans for further action.
- Finalizing the formal assessment tool to include employee input and goals to be signed by the employee and supervisor.
- Providing a copy of the assessment to the employee.

Applying Continual Improvement to the Review Process

The management review process itself should be subject to continual improvement as well. This should include unbiased evaluations and activities including:

- Evaluation of review information to identify the basic causes of good and poor business performance.

- Evaluation of basic causes to identify the strengths and weaknesses of the management system.

- Evaluation of the effectiveness of the management review process.

Actions from previous management reviews

Few workplaces stay the same. Sooner or later, you will bring in new equipment, substances and procedures that could lead to new hazards. It makes sense therefore, to review what you are doing on an ongoing basis.

Look at your risk assessment and think about whether there have been any changes? Are there improvements you still need to make? Have your workers spotted a problem? Have you learnt anything from accidents or near misses? Make sure your risk assessment stays up to date.

When you are running a business it's all too easy to forget about reviewing your risk assessment – until something has gone wrong and it's too late. During the year, if there is a significant change, don't wait: check your risk assessment and where necessary, amend it. If possible, it is best to think about the risk assessment when you're planning your change – that way you leave yourself more flexibility.

legal/good practice developments

- Performance on health and safety and wellbeing is increasingly being recorded in organisations' annual reports to investors and stakeholders.
- Board members can make extra 'shop floor' visits to gather information for the formal review.
- Good health and safety performance can be celebrated at central and local level.

- Case study: A leading supermarket with the involvement of all board directors was able to win reductions in sickness absence, reportable incidents and improvements in morale and pride in working for their company.
- Auditing and reporting

5.2.6 Maintenance of records of management review

There is no set amount of time that you need to keep your records relating to general risk assessment. It is good practice, however, to keep them whilst they remain relevant.

Records should include details of the:

1. person or persons responsible for conducting the risk assessment, managing, and implementing the written scheme
2. significant findings of the risk assessment
3. written control scheme and details of its implementation
4. results of any inspection, test or check carried out, and the dates
5. This should include details of the state of operation of the system, i.e. in use/not in use.

These records should be retained throughout the period for which they remain current and for at least two years after that period. Records kept in accordance with (d) should be retained for at least five years.

5.2.7 Reporting on health and safety performance

The Health and Safety Executive publishes an Annual Report on the performance of its functions, as required by the Health and Safety at Work Act 1974. It shows how the organisation has performed against published work plans so that stakeholders can see how we are delivering. It also includes a section on the HSE Accounts.

The report summarises health and safety issues within HSE. It charts HSE's performance against the Health and Safety Corporate Plan.

Areas covered include: management of stress, musculoskeletal disorders, display screen equipment, manual handling, slips, trips and falls, health and safety of the public where HSE has responsibility and accident, ill health and near miss reporting. It also encompasses health and safety training and ill health statistics.

Larger public and private sector organisations should have formal procedures for auditing and reporting health and safety performance.

The board should ensure that any audit is perceived as a positive management and boardroom tool. It should have unrestricted access to both external and internal auditors, keeping their cost-effectiveness, independence and objectivity under review.

Various codes and guides (many of them sector-specific) are available to help organisations report health and safety performance and risk management as part of good governance.

5.2.8 Feeding into action and development plans as part of continuous improvement

Current management science theories suggest that performance is better in all areas of business, including Occupational Health and Safety, if it is measured and continuous improvement sought in an organized fashion. Drawing from the principles defined in the ILO Guidelines on Occupational Safety and Health Management Systems 2001, the latest Convention 187 (2003) and its accompanying Recommendation 197 (in 2006) applies a similar approach to the management of national Occupational Health and Safety systems to ensure they are improved through a continuous cycle of policy review, evaluation and action for improvement.

The principles are based on two fundamental concepts, namely to:

- develop a preventative safety and health culture; and
- apply a systems approach to managing Occupational Health and Safety nationally.

A national preventative safety and health culture is one in which the right to a safe and healthy working environment is respected at all levels. It is also one where governments, employers, workers and other interested stakeholders actively participate in securing a safe and healthy working environment through a system of defined rights, responsibilities and duties, and where the principle of prevention is accorded the highest priority. Building and maintaining such a culture requires a permanent mobilization of all available means of

action, particularly education and training, to increase general awareness, knowledge and understanding of the concepts of hazards and risks and how they may be prevented and controlled. Educational systems need to recognize the concepts of workplace hazards,

Source of reference

- Guidelines on Occupational Safety and Health Management Systems (ILO-OSH 2001) ISBN 0-580-37805-5
- Occupational Health and Safety Assessment Series (OHSAS 1800): occupational Health and safety Management Systems OHSAS 18001:2007 ISBN 978 0 580 50802 8, OHSAS 18002:2008 ISBN 9780 580 61674 7
- Successful Health and Safety Management (HSG65), HSE Books 1997 ISBN 978 0 7176 1276 5