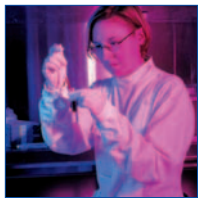
HEALTH AND SAFETY AUTHORITY





Improving safety behaviour at work

Guidance for employers, managers and the self-employed

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Who we are and what we do

The Health and Safety Authority is the national body with responsibility for the promotion and enforcement of workplace health and safety in Ireland. In that capacity, we monitor and enforce compliance with occupational health and safety law, we promote workplace safety, health and welfare and we prepare proposals for regulations and Codes of Practice for the Minister for Enterprise, Trade and Employment. We also publish a range of guidance booklets and other information materials.

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Purpose of this booklet

Workplace accidents are frequently the result of human error, which in turn are the unfortunate outcome of flawed systems of work. Within any system are the key stakeholders:

- the human
- the machine
- the method in which one acts on the other

When the method, for various reasons, is flawed, it can create terrible consequences for individuals and organisations.

Improved safety behaviour yields many benefits for employers and employees alike:

- Firstly, and most importantly, it reduces the risk of workplace fatalities and serious injuries.
- Secondly, it reduces the monetary cost associated with accidents such as hospitalisation charges, medical expenses, loss of earnings, legal fees, damage to equipment, outlay for accident investigation reports, compensation costs, as well as the cost of training replacement staff.
- Thirdly it increases morale in the organisation as repeated accidents and absences reduce morale and wellbeing.

This booklet is a guide for employers, managers and the self-employed and is designed to provide practical guidance on ways to improve safety behaviour at work. The information contained here is based on interventions, which international research studies have shown to be successful in helping to reduce both the number and the severity of errors and injuries in workplace environments.

Types of interventions to improve safety behaviour

Intervention methods vary enormously. They may include:

- training
- altering ways of delivering employee performance feedback
- creating reward systems
- introducing new instruction systems
- influencing attitudes and beliefs
- modifying supervisor behaviour
- changing manufacturing production systems
- changing process systems

The information and advice contained in this booklet focuses on interventions aimed at three specific types of desired outcome.

1. Changed individual behaviour
2. Improved worker interaction with equipment or processes
3. Culture change at organisational level

Changing individual behaviour

Although individuals may differ in terms of their levels of ability, as well as their levels of intelligence, skill and concentration patterns, certain types of behaviour are common to almost all people in a given set of circumstances.

Section 1 below gives practical guidance on how to actively discourage risk-taking behaviour. This is followed with a list of strategies for encouraging safe behaviour. Finally there is an outline of issues which may have a bearing on safety performance when carrying out routine tasks.

1 - Discouraging risk-taking behaviour

Accidents do not always follow automatically from risk-taking behaviour. As a result, people learn to make educated guesses about when they can "get away with" taking a risk, both in the workplace and in other spheres of life.

Because of this, discouraging employees from taking risks may prove particularly challenging. Managers attempting to highlight risks and discourage risk-taking behaviour should employ the following strategies:

- Always comment on unsafe behaviour – irrespective of whether or not an accident followed from the behaviour. If someone "gets away with" an unsafe act and it is discovered, it is not enough to simply reprimand the individual in question. The potential consequences of the act, even though they did not occur, should be verbalised.
- Advise the person concerned of the correct behaviour and insist that the stipulated procedures are followed through as soon as possible.
- Promote safe behaviour by commenting positively when it occurs.
- Acknowledge safe behaviour publicly – preferably in the presence of the individuals concerned and their colleagues/peers.

- Lead by example. Never cut corners on safety – particularly if you are in a position of authority.
- Ensure that all potentially hazardous incidents are recorded. Identify the hazard and, where possible, reduce/eliminate it.

2 - Encouraging individuals to behave safely

Managers should encourage safe behaviour by:

1. Using a combination of training and feedback. Using training methods alone is insufficient. Researchers recommend that feedback should continue for some time after new work practices have been introduced in order to ensure that new performance standards have been fully integrated into everyday work routines.
2. Providing regular demonstrations of safe versus unsafe behaviour.
3. Explaining to workers why an act is unsafe, even if it is not followed by an accident.
4. Identifying a goal – in terms of measurable outcomes (reduced near-misses/mistakes, for instance) - per week, per work area.
5. Focussing particularly on those doing routine work as repetition encourages less attention over time.
6. Giving employees both visual and verbal instructions: the use of images or photographs is particularly recommended.
7. Displaying lists of 'dos' and 'don'ts' prominently – i.e. where workers can see them clearly as they work.

3 - Improving safety behaviour in the performance of routine tasks:

Research shows that when people are performing routine tasks such as assembly work, packing, loading, stacking, inputting data, routine computing,

they become less vigilant and their concentration becomes less focused after a period of thirty minutes has elapsed.

In order to reduce the risk of accidents managers should:

1. Schedule regularly throughout the working day short on-the-spot 'time out' periods of 1-2 minutes duration.
2. In consultation with workers, consider changing location/lines of work periodically where possible, in a structured, consistent way in order to keep stimulation levels up – this should not be done sporadically as that will have a negative effect.
3. If at all possible, set up a team structure which facilitates the rotation of tasks between individual workers.
4. Devise ways of making tasks more interesting for workers.
5. Keep a careful record of the timing of all on-site accidents. Fatigue may be a factor in the cause of certain accidents and is therefore a particularly relevant issue for night-shift workers.
6. Ensure levels of alertness are as near as possible to optimum levels (see 3.1).
7. Avoid over-supervising as this can cause skill-based errors (see 3.2).
8. Avoid asking workers to handle excessive amounts of data when carrying out safety-critical tasks, as this can cause knowledge-based errors (see 3.3).
9. Be familiar with rule-based errors and ensure the correct rules are known and applied (see 3.4).

3.1 Levels of alertness/arousal:

Every task has an optimum level of alertness above or below which, performance is not as good as it might be. The optimal level of alertness when performing routine tasks is higher than that recommended when performing more complex or more challenging tasks.

It is essential therefore, that managers of employees performing routine tasks ensure that these individuals are sufficiently alert to allow for sustained attention and therefore peak performance. One possible strategy for achieving this is to present workers with random alerting beeps although it is likely this will only work in the short-term. Other ways of keeping people's attention from flagging should be explored. If a radio is playing in the area, interruptions with short safety messages could be tried. Alternatively, a piece of music associated with danger could be played, or music could be turned off for ten minutes and employees asked to pay special attention during this period to safety aspects of their tasks and do a mental 'tidy-up' of procedures.

3.2 Skill based errors:

There is a gradual increase in errors where individuals are carrying out routine tasks over a long period. Errors of this type are known as skill-based errors. Such errors can occur when the person carrying out the task is very familiar with it, but makes errors when interrupted and the flow is lost, because s/he has to "think about" the task in a way they generally haven't had to do. For this reason, managers in such circumstances should avoid "over-supervising" or constant interruptions which can disrupt the flow. This is not to say that managers shouldn't use acceptable supervisory standards, but they should consult with those doing the task and reduce the possibility of skill-based errors. Also managers should make employees aware of how these errors can happen as this is an integral part of preventing them.

3.3 Knowledge-based errors:

Most people are capable of processing only a limited amount of information at a time i.e. between about five and nine pieces of data at a go. An example of this is when trying to recall telephone numbers. Most people would find it difficult to recall a nine digit number such as 3, 5, 2, 6, 8, 4, 8, 5, 9. However, if they 'chunk' the numbers into groups, they only have to recall three 'pieces of information, as in 352, 684, 859. Another way to improve recall is to make the 'chunks' have a meaning, such as in the above case, three hundred

and fifty two, six hundred and eighty four and eight hundred and fifty nine. Furthermore, even when we have chunked information, we will more easily recall the first and last, and often forget the middle piece. This has implications for people doing safety critical tasks – setting alarms, for instance, so caution should be taken.

For this reason, managers should ensure that when performing safety-critical tasks, workers are not asked to handle more than the optimum amount of data. If too much information is offered, an individual may selectively attend to just one aspect of a task and this may lead them to make errors when carrying out other aspects of the task.

3.4 Rule-based errors:

Rule-based errors are ones which result when an individual:

- does not know the rules for performing a job safely, or
- knows the rule but chooses not to apply it or
- applies the wrong rule

An example of when the first bullet point above may apply would be when a new employee receives no training and therefore does not know the rules for performing a job safely. It may also apply when someone training an apprentice by-passes the 'rule book' way of doing the task and just tells him or her 'the way we do it around here' even though that way may be wrong/unsafe/cumbersome. In these cases the mistake/accident is due to not knowing the right rule for the safe performance of the task.

The second bullet point above may apply when the person is told the correct rule but decides to by-pass it believing it to be wrong/cumbersome or taking too much time.

The last category of rule-based error would apply when an individual makes a mistake in his or her 'choice' of rule to follow. For instance, a person may believe that the way to react safely when opening up a machine is to press the 'start' button followed by use of the machine. If they are then moved

to a new machine, where a different start process is used, they will, if not told otherwise, apply the rule from working on the last machine, which may not be appropriate and may have safety consequences. This is an example of applying the wrong rule.

To prevent these errors, supervisors/managers should:

- Be watchful for rule-based errors and find out every time 'why' the error occurred.
- Carry out routine informal question and answer sessions, asking workers questions such as 'what's the next step after turning on the machine?' or 'how would you close off the system for maintenance?'.
- Outline new rules, new dangers, and new types of behaviour required when changing from one work activity to another.
- Regularly check on those who are leading the tasks – those who train new people. Are they passing on bad habits?
- Check that appropriate rules are being applied as practices change. In some cases, there may be a need to alter the rules to take account of changing circumstances.

10

Achieving improved employee interaction with equipment and work processes

Failure to anticipate how individual workers will interact with new equipment and work processes is one of the most common mistakes made by designers and manufacturers.

For this reason, managers may find it useful to consider the following questions – especially if they have recently introduced new equipment or work processes to their employees.

1. Do certain workers' jobs involve carrying out tasks that are extremely repetitive?
2. Do workers regularly present with productivity or quality problems, which do not seem to rectify themselves – despite best efforts?
3. Is there a high incidence of injuries (or reports of workers requesting modified duties) associated with any one particular job or task?
4. Do employees complain about having to perform certain tasks or refuse to carry out certain tasks?
5. Does the performance of some tasks, to the required standard, tend to be within the capability of certain employees only?
6. Do employees complain that their rest breaks are inadequate? Do they frequently take unscheduled breaks?
7. Are some work spaces cramped or confined, and therefore causing employees to brush against equipment, fittings or fixtures
8. Are workers obliged to walk long distances to retrieve materials, tools, supplies or equipment?

9. Does poor lighting make it difficult for them to see the surface that they are working on? Do they have to exert undue effort in order to see their work surface clearly?

10. Are they obliged to bend or stretch in order to carry out particular tasks, or to reach tools and other equipment?

11. Are certain tasks performed in a jerking or strained manner?

12. Do certain kinds of tasks require workers to make movements or actions that do not add any discernible benefit to the overall work process?

'Dos and don'ts'

The following is a list of 'dos and don'ts' for managers in a number of different types of workplace environments.

(i) **Managing machinery operators**

The placement of a guard on a piece of machinery will not necessarily ensure the safe operation of that equipment. Therefore, managers should ensure that the machinery operator is shown:

- exactly how the machine works
- which parts of the machine are potentially dangerous
- a number of possible ways in which the operating process could go awry

(ii) **Manual handling of goods and equipment**

- Manual handling of goods and equipment should be eliminated, or reduced as much as possible.
- Training by a competent person must be given to those working in manual handling areas.
- Managers and supervisors should instil in workers an awareness of the dangers of lifting heavy items and the importance of wearing protective footwear.

- Heavy items stored at a height should be moved mechanically and in order to address the breadth of manual handling a proper risk assessment should be carried out.

(iii) **Reducing slipping and falling accidents**

Slips, trips and falls in the workplace may be reduced if managers take a number of simple precautionary measures such as ensuring that:

- All areas used by workers are well lit
- Workers wear suitable footwear at all times while on the premises
- Workers do not move about the premises with undue haste
- Obstacles and obstructions are removed from walkways
- New recruits are properly informed about safe work practices
- Non-slip flooring is installed in all areas used by workers, and suitable non-slip cleaning products are used on all floor areas
- Floors are kept clean and dry
- Adequate signage is used to highlight soiled or potentially hazardous floor areas
- Essential cleaning and maintenance operations are carried out after normal working hours

(iv) **Coping with shift working**

Shift working can cause numerous difficulties – disrupted sleep patterns, changes in appetite, alterations in mood, proneness to emotional outbursts, melancholy moods and secondary effects such as social isolation, bad eating patterns, weight gain and depression.

In general, the consensus amongst researchers is that:

- Fixed shifts are preferable to rotating shifts.

- If managers favour rotating shifts, then, from a worker's point of view, rapid shift rotations are preferable to slow shift rotations. In other words, a person should be on one rota for a short period, rather than a long one.
- Longer working days (i.e. 10 to 12 hours) appear to be no more hazardous to workers than eight-hour working days. Indeed, they may have a positive influence on workers' feelings about their health and about their family life in general.

Note: All managers of shift workers should familiarise themselves with the regulations laid down in the Organisation of Working Time Act (1997).

Achieving culture change at organisational level

While legislation may help to create and foster safer workplaces, the key factor that tends to either hinder or help an organisation's progress is its safety culture i.e. a combination of the following :

- how things are done in that organisation
- how those actions are perceived by employees
- how risk or danger are perceived by workers
- how they feel about injury and illness
- how they feel about themselves

Attitudes are a key element of a safety culture, and an organisation can improve its safety culture, and in turn its safety record, by modifying the attitudes of both management and employees towards safety. It is important to note that expecting employees on the ground to change while those at management level do not, will not work.

For change to occur, it must be rewarded – this doesn't mean monetary reward, but may be the reward of praise, positive feedback and/or recognition. Punishment for breaking the norms and behaving in unsafe ways is also a part of the process, although the initial stages of implementing change programmes concentrate on the former.

One strategy employed is the provision of safety training courses. However, research has shown that people who believe that certain behaviours are 'safe enough' do not alter their behaviour – even if they have undergone a safety-training course. In fact, before they will modify their behaviour, they will first need to be convinced that certain work methods and practices are inherently dangerous.

To achieve this, awareness-raising campaigns may be used. Such campaigns give information about the issues, and attempt through this information to change attitudes and eventually behaviour. Sometimes it is a matter of changing the attitude of the team leader or supervisor, if he or she is cynical about change itself and distrustful of the motives of senior management. In these circumstances, supervisors, as leaders within those teams, need to be won over.

Whatever the strategy used, managers attempting to change attitudes, and thereby achieve safety improvements should consider the following issues:

- Individual work teams should receive training within their own self-contained groupings. In other words, managers should target groups of individuals who work together, know each other, or have some other natural affiliation with each other.
- The organisation's hierarchy/pecking order matters. Mixing managers and junior staff may prove ineffective – particularly for the latter.
- The entire workforce should be involved in safety decisions. Safety initiatives should not be perceived purely as a 'top down' management phenomenon.
- Managers need to offer the workforce various insights into how people's attitudes may affect behaviours such as smoking, driving at speed, or healthy living/exercise regimes. In other words, they should give graphic examples of how taking safety and health seriously in one's personal life is often linked to behaving responsibly in a workplace setting.

IMPROVING SAFETY BEHAVIOUR AT WORK

GUIDANCE FOR EMPLOYERS, MANAGERS AND THE SELF-EMPLOYED

Achieving a Healthy and Safe Working Life -Together

HEALTH AND SAFETY AUTHORITY HEADQUARTERS
10 Hogan Place, Dublin 2
Tel. (01) 614 7000
Fax. (01) 614 7020
website: www.hsa.ie

Your Safety Questions Answered (01) 614 7010

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1-84496-006-4

Athlone Regional Office
Government Buildings
Pearse Street
Athlone
Co Westmeath
Tel: (090) 64 92608
Fax: (090) 64 92914

Cork Regional Office
3rd Floor
1A South Mall
Cork
Tel: (021) 4251212
Fax: (021) 4251217

Galway Regional Office
Odeon House
Eyre Square
Galway
Tel: (091) 563985
Fax: (091) 564091

Limerick Regional Office
Ground Floor
Park House
1-2 Barrington Street
Limerick
Tel: (061) 419900
Fax: (061) 419559

Sligo Regional Office
Government Offices
Cranmore Road
Sligo
Tel: (071) 9143942
Fax: (071) 9144078

Waterford Regional Office
5th Floor
Government Buildings
The Glen
Waterford
Tel: (051) 875892
Fax: (051) 870610

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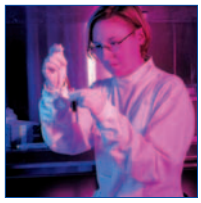

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