

Construction Hazard and Risk Control

Lecture Title:

Inspections, Auditing and reviewing the management system

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Undergraduate Diploma in
Occupational Health and Safety

This lecture covers the following learning objectives:

- The difference between audits and other forms of monitoring such as inspections
- The purpose of, and the procedures to carry out a health and safety inspections'.
- The purpose of, and the procedures for regular reviews of health and safety performance.



Monitoring H&S Performance

Health and safety differs from many areas measured by managers because:

- Improvement in performance means **fewer** outcomes from the measure (injuries or ill-health) rather than more;
- A low injury or ill-health rate trend over years is still no guarantee that risks are being controlled and that incidents will not happen in the future.
- This is particularly true in organisations when major hazards are present where, fortunately, there is a low probability of an incident occurring, but it would be catastrophic if it happened.



Monitoring H&S Performance

Health and safety performance should be monitored. This can be done using various methods that fall into two broad categories:

- **Active monitoring** – to ensure that health and safety standards are correct in the workplace before accidents, incidents, or ill health are caused. This involves routine inspections and checks to make sure that standards and policies are being implemented and that controls are working
- **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.



Active Monitoring- what we need to ask?

- Where is the position relative to the overall health and safety aims and objectives?
- Where is the position relative to the control of hazards and risks?
- How does the organisation compare with others?
- What is the reason for the current position?
- Is the organisation getting better or worse over time?
- Is the management of health and safety doing the right things?



Active Monitoring- what we need to ask?

- Is the management of health and safety doing things right consistently?
- Is the management of health and safety proportionate to the hazards and risks?
- Is the management of health and safety efficient?
- Is an effective health and safety management system in place across all parts of the organisation?
- Is the culture supportive of health and safety, particularly in the face of competing demands?



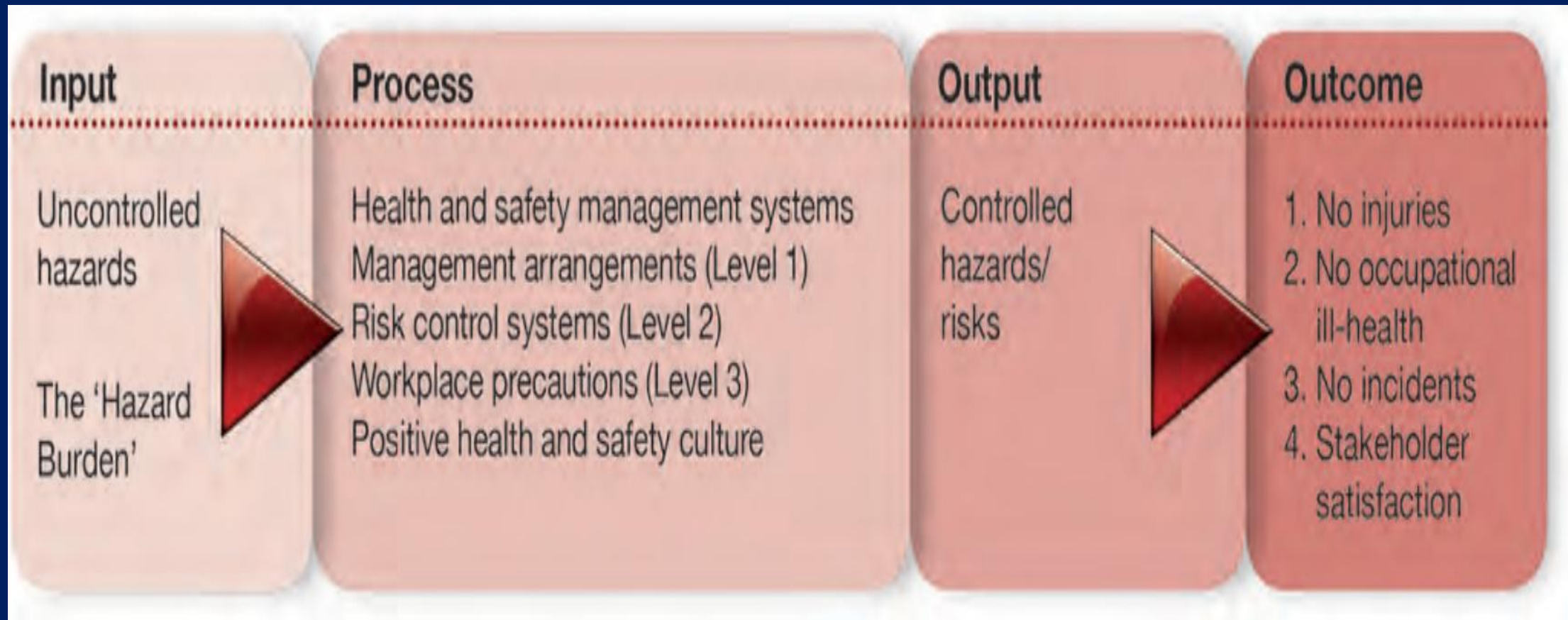
The answers will lead to decision making

The checking or monitoring of performance standards helps in deciding:

- Where the organisation is in relation to where it wants to be;
- What progress is necessary and reasonable in the circumstances;
- How that progress might be achieved against particular restraints (e.g. resources or time);
- Priorities – what should be done first and what is most important;
- Effective use of resources.



Active Monitoring- What to measure



Active Monitoring- What to measure

Input: monitoring the scale, nature and distribution of hazards created by the organisation's activities – measures of the hazard burden.

- **Process: active monitoring** of the adequacy, development, implementation and deployment of the health and safety management system and the activities to promote a positive health and safety culture – measures of success.
- **Outcomes: reactive monitoring** of adverse outcomes resulting in injuries, ill-health, loss and accidents with the potential to cause injuries, ill health or loss – measures of failure.



Effective risk control- the strategy

Level 1 – the key elements of the health and safety management system: the management arrangements (including plans and objectives) necessary to organise, plan, control and monitor the design and implementation of RCSs.

Level 2 – risk control systems (RCSs): the basis for ensuring that adequate workplace precautions are provided and maintained;

Level 3 – effective workplace precautions provided and maintained to prevent harm to people who are exposed to the risks;



Type of Active Monitoring- Safety Sampling

- This is the technique of monitoring compliance with a particular workplace standard by looking at a representative sample only. If a big enough sample is collected, then there is a strong likelihood that the results of the sample will reflect the results for the workplace as a whole.
- For example, if the standard in a large office complex is that all 1,200 fire extinguishers must be inspected annually by a competent engineer, then there are several ways to monitor this standard:
 1. Check the maintenance records to ensure each and every fire extinguisher has been signed off.
 2. Check all 1,200 fire extinguishers directly by inspecting every one.
 3. Check a representative sample of, say, 50 extinguishers selected at random from various locations around the complex.



Type of Active Monitoring- Safety Surveys

A safety survey is a detailed examination of one particular issue or topic, e.g. a detailed examination of the provision of emergency lighting within a building. The word “survey” can be used to refer to various types of detailed examination:

- **Environmental monitoring** is a form of safety survey, e.g. a noise assessment usually requires that a noise survey is carried out by a competent person using a sound-level meter.
- **A structural survey** is a detailed examination of the structural integrity of a building or item.
- **A staff survey** is an examination of workers’ opinions, usually collected by asking staff to fill in a questionnaire.



Type of Active Monitoring- Safety Tours

- A safety tour is a high-profile inspection of a workplace carried out by a group or team, including managers. The tour may be formal, but can also be informal - a walkaround looking at points of interest (usually unscheduled).
- The group carrying out the tour should include managers from the area being inspected and possibly worker representatives, safety specialists, occupational health specialists, engineers and workers from the area.
- One of the objectives of the tour is to raise the profile of health and safety and to demonstrate management interest and commitment.
- Safety observation tours can also be used to monitor the way that workers are behaving – these are known as behavioural observations. Once behaviours are observed, feedback (positive and negative) is given to the worker so that the organisation and operator can learn from the process.

ARRANGEMENTS FOR WORKPLACE INSPECTIONS

- Allocation of responsibilities – those responsible for ensuring that inspections take place should be identified, as should the employees who will be carrying out the inspections.
- The competence and objectivity of the inspector – an essential characteristic of whoever is conducting the inspection;
 1. the person should have the necessary training, knowledge and experience. In some instances, certification to a specific standard will be required.
 2. In other situations all that is necessary is an understanding of the workplace, health and safety principles, and a willingness to ask questions.
 3. An inspector also needs to be impartial and objective in their approach, even when looking at an area that they are very familiar with. Training may be required for those who will be conducting inspections.

ARRANGEMENTS FOR WORKPLACE INSPECTIONS

- The type of inspection – inspections are carried out for a number of different reasons and they examine different aspects of safety in the workplace.
 1. Is this a statutory inspection to ensure legal compliance?
 2. A general workplace inspection that looks at plant and premises?
 3. A pre-start inspection for an item of machinery?
- The frequency of inspection – likely to be determined both by the type of inspection and the level of risk.
 1. For example, a general workplace inspection might be conducted in an office once a month, but once a week in a workshop environment to reflect the higher risk. The frequency of statutory inspections is normally determined by the relevant law.



Active Monitoring- complimentary

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.



Systematic Inspections: How to set up your inspection

1. **Plant** – machinery and vehicles, as well as any statutory inspections and examinations.
2. **Premises** – the workplace and the working environment.
3. **People** – working methods and behaviour.
4. **Procedures** – safe systems of work, method statements, permits-to-work, etc.



Structured Checklist – using the 4P's- Premises

Premises, including:

- work at height
- access
- working environment
- welfare
- services
- fire precaution



Structured Checklist – using the 4P's- Plant and substances

Plant and substances, including:

- work equipment
- manual and mechanical handling
- vehicles
- dangerous/flammable substance
- hazardous substance



Structured Checklist – using the 4P's- Procedures

Procedures, including:

- risk assessments
- safe systems of work
- permits to work
- personal protective equipment
- contractors
- notices, signs and posters



Structured Checklist – using the 4P's- People

People, including:

- health surveillance
- people's behaviour
- training and supervision
- appropriate authorised persons
- violence
- those especially at risk.



Key points in becoming a good observer



To improve health and safety performance, one must eliminate unsafe acts by observing them, taking immediate corrective action and following up to prevent recurrence.



To become a good observer, one must improve his/ her observation skills and must learn how to observe effectively.

Effective observation includes:

- 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.



Effective observation techniques:

- 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
- Recognise good performance.



Some commonly observed poor work practices include:

- Using machinery or tools without authority
- Operating at unsafe speeds or in other violation of safe work practice
- Removing guards or other safety devices, or rendering them ineffective
- Using defective tools or equipment or using tools or equipment in unsafe ways
- Using hands or body instead of tools or push sticks



Some commonly observed poor work practices include:

- Overloading, crowding, or failing to balance materials or handling materials in other unsafe ways, including improper lifting
- Repairing or adjusting equipment that is in motion, under pressure, or electrically charged
- Failing to use or maintain, or improperly using, personal protective equipment or safety devices
- Creating unsafe, unsanitary, or unhealthy conditions by improper personal hygiene, by using compressed air for cleaning clothes, by poor housekeeping, or by smoking in unauthorised areas
- Standing or working under suspended loads, scaffolds, shafts, or open hatches.



Additional principles for conducting inspections:

1. Draw attention to the presence of any immediate danger – other items can await the final report.
2. Shut down and 'lock out' any hazardous items that cannot be brought to a safe operating standard until repaired.
3. Do not operate equipment. Ask the operator for a demonstration. If the operator of any piece of equipment does not know what dangers may be present, this is cause for concern. Items should never be ignored because the observer did not have the knowledge to make an accurate assessment of safety.



Additional principles for conducting inspections:

4. Clearly describe each hazard and its exact location in rough notes. Allow 'on-the-spot' recording of all findings before they are forgotten. Record what have or have not been examined in case the inspection is interrupted.
5. Ask questions, but do not unnecessarily disrupt work activities. This may interfere with efficient assessment of the job function and may also create a potentially hazardous situation.
6. Consider the static (stop position) and dynamic (in motion) conditions of the item you are inspecting.
7. If a machine is shut down, consider postponing the inspection until it is functioning again.
8. Discuss as a group, 'Can any problem, hazard or accident generate from this situation when looking at the equipment, the process or the environment?'
9. Determine what corrections or controls are appropriate.



Additional principles for conducting inspections:

10. Do not try to detect all hazards simply by relying on human senses or by looking at them during the inspection.
11. Monitoring equipment may have to be used to measure the levels of exposure to chemicals, noise, radiation or biological agents.
12. Take photographs to help with any description of a particular situation. Make sure it is safe to operate a camera in the workplace concerned.





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Carrying an inspection

- <https://youtu.be/ajUNi85hhwl>



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C1 CONSTRUCTION INSPECTION REPORT			
1. Name and address of person for whom inspection was carried out.			
2. Site address.		3. Date and time of inspection.	
4. Location and description of place of work or work equipment inspected.			
5. Matters which give rise to any health and safety risks.			
6. Can work be carried out safely?		Yes	No
7. If not, name of person informed.			
8. Details of any other action taken as a result of matters identified in 5 above.			
9. Details of any further action considered necessary.			
10. Name and position of person making the report.			
11. Date and time report handed over.			
12. Name and position of person receiving report.			

EFFECTIVE REPORT WRITING

- Many inspection systems require the inspector to write a report summarising their main findings and recommendations.
- In some cases, this report is presented in a standard pro-forma style, where the inspector simply fills in blank spaces on a report form. In other instances, a more narrative-style report is required where the inspector has much wider scope to explain and describe what they found and what they recommend should be done about it.
- If this sort of inspection report is written, then it must be effective. This requires an appropriate writing style.

Report- Writing Style

- The language used in the report must be formal and free of slang and jargon.
- The tone of language must be factual and persuasive.
- The report must be concise.
- Busy managers do not have time to read long, rambling sections of text.



Report- Structure

Structure

A typical report structure is:

1. Executive summary – a concise overview of the main findings and recommendations.
2. Introduction – a few sentences to outline where, and when the inspection took place, who was present and the reasons for the inspection.
3. Main findings – this can perhaps be divided up into specific topic areas. For each topic the problem highlighted can be described in a factual manner and any relevant legal standard identified.
4. Recommendations – the immediate, medium and long-term actions needed to remedy each of the issues found should be identified, along with timescales and responsible persons. Actions should be prioritised on the basis of risk. Justification of the recommendations should be included.
5. Conclusions – a short section to end the report.

Report- Content

- The significant findings of the inspection should be presented.
- Trivial and minor issues should be omitted.
- The report must be factual and concise. Evidence of what was observed might be presented.



Justified Recommendations

- Any recommendations made should be justified.
- A persuasive argument might be made based on the moral, legal and economic arguments.
- Recommendations might be presented in an action plan



REACTIVE MONITORING

- Reactive monitoring uses incidents, ill-health and other unwanted events and situations as indicators of health and safety performance to highlight areas of concern.
- By definition, this means 'reacting' after things have gone wrong. This indicates two weaknesses with reactive monitoring:
 1. Things have already gone wrong: things are being put right after the event rather than before.
 2. It measures failure, which is a negative aspect to focus on.



Reactive Monitoring

- Despite these weaknesses, reactive monitoring is a valid tool for an organisation to use as long as some forms of active monitoring are being carried out as well.
- Reactive monitoring can be carried out by learning lessons:
 1. From one individual event, such as an accident, a dangerous occurrence, a near miss, or a case of ill-health.
 2. From data gathered from large numbers of the same types of event.



Statistics:

Data can be collected and reported about a number of different unwanted events, such as:

- Accidents.
- Dangerous occurrences.
- Near-misses.
- Cases of ill health.
- Complaints from the workforce.
- Enforcement action.



Statistics:

This data can then be analysed to see if there are any:

- Trends - consistent increases or decreases in the number of certain types of event over a period of time.
- Patterns - collections or hot-spots of certain types of event.



Accident Rate:

This analysis usually involves converting the raw data (i.e. the actual numbers) into an accident rate so that more meaningful comparisons can be made.

One popular accident rate used to measure an organisation's safety performance is the Accident

Incidence Rate (AIR):

$$\bullet \text{ IR} = \frac{\text{Number of accidents}}{\text{A specific time period}} \times 1000$$

Average number of workers over the same time period.

(The answer is in units of 'accidents per 1000 workers'.)

This allows meaningful comparison of accident statistics from one year to the next, even though more or fewer workers may be present in the workplace.





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