Construction Hazards and Risks Control

Lecture Title: – Incident Investigation & Reporting Best Practices in Construction

Lecturer: Katia Fenech

Date: 11th December 2024

Undergraduate Diploma in
Occupational Health and Safety

Create a short power point presentation

Understanding Construction Workplace Hazards

Objectives

- Solving incident/accident investigation and reporting

Incident

- Incidents are often defined as unplanned events, such as near-miss injuries, safety breaches, property damage, or minor bumps or bruises. In most cases, an incident doesn't result in major harm to a person.
    - Productivity loss
    - Work disruption
    - Minor Property Damage
- While all these outcomes are negative, they're not severe, and won't result in major injuries or fatalities.

Accident

- An accident is most often defined as a situation, hazard, or event which happens suddenly and leads to serious illness or injury. Accidents are unintentional and unexpected, often causing property damage, injuries to people, and serious consequences for the company, such as productivity loss.

- The difference between an incident and an accident is that accidents are more often categorised as severe. While all accidents are incidents, not all incidents are accidents.

What is the priority, when an incident happens?

- When an incident occurs, the priority is to ensure the safety and well-being of the individuals involved.
- This involves taking prompt actions such as providing first aid, evacuating the area if necessary, and implementing emergency response protocols to contain potential hazards.

- If necessary, establish a safe perimeter to protect others from harm. Use barriers, cones, or warning signs to keep non-involved personnel away from the incident site.
- If it’s safe to do so, take steps to eliminate any ongoing hazards. For example, turn off machinery or power sources to prevent further injuries.
- Trained personnel should provide first aid to injured individuals as soon as it is safe. This could include basic wound care, CPR, or controlling bleeding.
- If injuries are severe, promptly call 112 to ensure that professional medical assistance is on the way.

Establishing an investigation team

- This team typically includes representatives from different departments or disciplines, such as safety professionals, engineers, operations personnel, and management. Their collective knowledge and perspectives will aid in conducting a comprehensive investigation.

Gathering Information

- To uncover the causes of an incident, it is vital to gather relevant evidence and preserve the scene. This may involve taking photographs, securing any equipment or materials contributing to the incident. Preserving the scene in its original state helps ensure accurate analysis and prevents the loss of critical information.

Conducting interviews with personnel involved

- Interviews play a vital role in comprehending the sequence of events that led to an incident. The investigation team will speak with individuals involved, including witnesses and those directly impacted. By collecting firsthand accounts and perspectives, the team can reveal important insights into the factors that contributed to the incident.

Analysing collected data and documenting findings

- After gathering all pertinent evidence and information, the investigation team shall analyse the collected data.
- This process includes reviewing incident reports, examining witness statements, studying relevant documents, and applying various analytical techniques.
- The objective is to pinpoint the **root causes** and contributing factors that led to the incident.
- The findings are then compiled into a report, which serves as a reference for implementing corrective actions and preventing similar incidents in the future.

21 ACADEMY

Undergraduate Diploma in Occupational Health and Safety

Root Cause Analysis

- 5 Whys

- The 5 Whys is a straightforward yet powerful technique that involves repeatedly asking “why” to identify the root cause of a problem. Delving deeper into each answer it helps uncover the underlying causes behind an incident and addresses them systematically.

In a construction site a forklift collided with a pedestrian, resulting in minor injuries to the worker.

- Investigation Using the 5 Whys Technique:

1. Why did the forklift collide with the pedestrian?
    1. Because the forklift operator did not see the pedestrian in the aisle.
2. Why did the forklift operator not see the pedestrian?
    1. Because the aisle was poorly lit, making visibility difficult.
3. Why was the aisle poorly lit?
    1. Because the overhead lights in that section of the warehouse were malfunctioning and had not been repaired.
4. Why had the overhead lights not been repaired?
    1. Because there was no maintenance schedule in place to regularly check and address lighting issues.
5. Why was there no maintenance schedule in place?
    1. Because the company lacked a formal safety management system that included regular inspections and maintenance protocols.

- The investigation revealed that the root cause of the incident was the absence of a formal safety management system, which led to inadequate lighting and maintenance protocols

- The 5 why approach focuses on only a single string of causes and effects, it's not well suited for complex problems with multiple factors.

5-M Model Approach

- The 5-M Model comprises of
  Man, Machine, Medium, Mission and Management are five core areas that failing factors of accident/incident may appeared in.
- It provide systematic way of focusing and analysing areas that errors mostly occurred within the structure of organisation.

5M

5-M	Factors
Man	Refers to human elements inclusive of Physiological, Psychological, Proficiency aspects as well as Qualifications of performing tasks
Medium	Refers to the environment where the task is to be conducted inclusive of Weather conditions, Terrain, Obstructions, Sunset/sunrise, Airfield lightnings, Navaids available
Machine	Refers to the Design, Manufacture, Maintenance of aircraft and Engineering reliabilty/ Performance of equipment
Management	Refers to supervisory capacity of management in terms of Regulations, Polices, Attitudes towards safety
Mission	Refers to the type of task implemented, whether it was Complex or Routine

Man

- Was the individual mentally or physically capable of responding properly? If not, why?
- Did this failure occur due to a self induce state such as alcohol intoxication or fatigue?
- Had the individual been properly trained in how to cope with the situation that lead to the accident?
- If not who was responsible for the training deficiency and why?
- Was the individual given adequate operational information on which to base decisions?
- If they were not given proper information, who failed to provide the information and why?
- Was the individual distracted to the point that he/she was not paying proper attention to their duties?
- If so who or what created the distraction and why?

Machine

- Was the machine inspected properly?
- If not who did the inspection?
- Was the machine certified properly?
- If not who did the certification?
- Was an emergency button on place?
- Was the emergency button reachable?
- Were there guards in place?

Medium - Environment

How was the weather during the operation/work?

How was the wind during the works?

Was the worker working outside in the cold/hot conditions?

Was the worker wearing proper PPE for wet conditions?

Misson

- Was the mission too ambitious that could not be possibly achieved?
- Were the deadlines extreme?
- Who was assigned to work with the person?

Management

- Did management consult safety Dep. when the company bought the equipment that the person was working with?
- Did management schedule the person for training that he was suppose to undertake?

Swiss Cheese Model

- The Swiss Cheese model is a framework for understanding how incidents or errors occur within complex systems and how they can be prevented. This model would be used to identify and address the holes in each layer of defence and try to make them. as small as possible and as infrequent as possible.