

Incident Investigation Techniques

Getting to the Bottom of It

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What are some of the
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- Unplanned event
- Multiple factors involved - Unsafe behaviors and/or unsafe physical conditions
- Incidents result in some form of loss – people, property, environment, process

What is a fundamental reason
for investigating incidents?

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Prevention of similar future loss

In other words – an investigation is a reactive process that should result in **proactive** improvements to incident prevention measures.

Although reactive, effectively conducted incident investigations allow us to learn from the loss experience in order to strengthen our **proactive** efforts and prevent future similar loss situations.

Who is the primary person
responsible for the Investigation ?

Aside from showing concern - why do supervisors need to be directly involved in the investigation process?

Personal interest – accidents directly affect department personnel, equipment, and productivity.

Knowledge of people and conditions.

Responsibility for (or at least involvement in) taking corrective action.

Demonstrates control.

OTHERS INVOLVED MAY INCLUDE:

MANAGERS

- A major loss or a high potential incident
- The circumstances cross into other supervisors' areas
- The remedial actions have a broad scope or significant costs

STAFF PERSONNEL

- When they can serve as advisors to the investigators - but they are not the prime investigator
- Special knowledge areas such as safety, industrial hygiene, engineering, purchasing, maintenance, human resources, etc.

What types of Incident would we investigate?

What's the difference between an incident and a "near-miss" (or near hit)?

Under slightly different circumstances they could have resulted in loss

Difference in severity

Warning/Caution signs



STEPS IN THE INVESTIGATION:

- Initial response
- Gathering information
- Analyzing the data and determining the causes
- Determining/initiating actions and writing the report
- Follow-up

Initial response

Taking control of the scene

Avoiding secondary accidents

Obtaining medical treatment

Preliminary Information Gathering - At The Scene

Identifying sources of information

Note your surroundings; people present; environmental conditions (light, noise, heat, cold, etc.); position of materials, tools and equipment; anything out of the ordinary

Preserve the scene

Protection of the area from alteration as much as possible, ensure required notifications are made and gather information quickly and completely.

Be a sponge

Gathering Information

It is important to distinguish between **FACT** and **OPINION** and understand the role **BOTH** play in the investigation

Gathering Information (continued)

Depending on the emotional state of those involved - Interview eye witnesses first, then secondary witnesses

Tips on Conducting Interviews

- Interview separately
- Interview in an appropriate place, on-site (if not dangerous or uncomfortable) or in a private area. Offices may appear too much like interrogation/cross examination.
- Put the person at ease - assure them that the mission is "fact" finding to prevent a recurrence.
- Avoid intimidating voice and body language.
- Get the individual's version
 - * Avoid interrupting
 - * Don't put words in their mouth
 - * Don't make judgmental statements like "that was sure a dumb thing to do."

CONDUCTING THE INTERVIEW (continued)

- Don't ask leading questions and avoid yes-no questions.
- Give the witness some feedback. Repeat information to ensure understanding and provide a chance for correction. This creates "active" listening on the part of both parties.
- Use visual aids (sketches, digital photos).
- End on a positive note. Thank them for their time and effort. Ask their ideas on how this situation could be prevented in the future. Keep the line open.

Information gathering from other sources

Depending on the situation, other sources of information may be helpful, such as:

- Training Records
- Maintenance records (repair and PM)
- Safety inspection reports
- JHA, JSA , JSP and MOC documents

Information gathering from other sources (continued) –

- Changes in production schedule, materials, tools and equipment
- Special testing such as Material Failure Analysis
- Drawings and photos*

Note: If you use photography (still or video) be sure to photograph from all angles and provide scale reference.

Evaluation of data and identification of causes (Root Cause Analysis)

- Immediate causes (symptoms)
- Basic causes (the why)

"CARELESSNESS" IS NOT AN ACCEPTABLE REASON FOR "WHY" AN ACCIDENT HAPPENED.

WE SHOULD ASK "WHY" WAS THE PERSON "CARELESS".

Accident Investigation Flowchart

Let's Take A Look

Accident Cause Analysis Flow Chart

ACCIDENTS	IMMEDIATE CAUSES	BASIC CAUSES	MANAGEMENT ISSUES
<u>Basic Types</u> 1. Struck By 2. Struck Against 3. Contact With 4. Caught On 5. Caught In or Between 6. Fall on Same Level 7. Fall From Different Level 8. Exposure 9. Overexertion 10. Other	<u>Unsafe Acts</u> 1. Operating without authority 2. Failure to warn or secure 3. Operating at unsafe speed 4. Nullifying safety devices 5. Using defective equipment 6. Using equipment improperly 7. Moving without looking 8. Improper loading or placement 9. Improper lifting 10. Servicing equipment in motion 11. Failure to use PPE 12. Horseplay <u>Unsafe Conditions</u> 1. Inadequate guards or protection 2. Defective equipment or material 3. Congestion or inadequate work space 4. Fire & explosion hazards 5. Unexpected movement hazards 6. Projection hazards 7. Poor housekeeping 8. Hazardous environmental conditions 9. Hazardous placement or storage 10. Inadequate ventilation 11. Inadequate illumination 12. Unsafe personal attire	<u>Personal Factors</u> 1. Lack of knowledge or skill 2. Improper motivation attempting to: a) Save time or effort b) Avoid discomfort c) Attract attention d) Assert independence e) Seek group approval f) Express hostility 3. Physical or mental problem 4. Distraction 5. Complacency <u>Job Factors</u> 1. Inadequate work standards 2. Inadequate design 3. Inadequate maintenance 4. Inadequate purchasing standards 5. Normal wear and tear 6. Abnormal use and wear	1. Inadequate standards / procedures 2. Lack of knowledge of standards / procedures 3. Lack of enforcement / consequences of standards / procedures 4. No follow-up on reported hazards

INSTRUCTIONS: Start at the left side, and ask all questions in each column starting with the Accident Types column. Then proceed to the subsequent columns until you reach the bottom of the Management Issues column. This should assist you in completing a quality accident investigation report.

Planning corrective and preventive actions

"Prescription without diagnosis is malpractice, whether it be in medicine or management."

- Karl Albrecht, Organization Development

ITC – Immediate Temporary Control

Bandage

Versus

Cure

Can we control the
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Can we control the **severity** of an incident?

Although the actual severity of an incident within a given range of potential severity is largely a matter of luck, the **RANGE of **POTENTIAL SEVERITY** can be controlled.**

Therefore, if you can't **eliminate** the exposure, the name of the game is to reduce the “range” of potential severity to its lowest feasible level.

Elimination: The best method is to eliminate the risk entirely (risk avoidance)

Isolation: Loss prevention (no human intervention)

Minimization: Loss prevention (exposure reduction); or loss control (severity reduction).
Assumption of liability

Risk Transfer: Insurance, outside vendor, etc.

Risk Decisions

What was the “potential” for loss?

What control is recommended?

What’s the cost of the control (and the expected ROI)?

What’s the degree of control expected?

How difficult will it be to implement and maintain?

What’s the effect up and down stream?

What’s the alternatives and what is the justification for choosing the recommended control?

Documentation

Distinguishing between fact and opinion

Legal Document

Report Writing Issues

Be specific – avoid generalities

Avoid legal opinions

Avoid extreme language

Watch your ADJECTIVES

Use familiar terminology

SUMMARY: Effective incident investigations

Determine what “really” happened rather than try and prove what we “think” happened.

Provide an assessment of the loss potential associated with the event (Risk).

SUMMARY: Effective incident investigations

Provide the information necessary to strengthen our proactive preventive program controls (PRE-CONTACT STAGE**) and assist in improving our loss minimization controls (“Damage Control” – **CONTACT STAGE**).**

SUMMARY: Effective incident investigations

Define incident trends

Demonstrate concern and improve perception

“...it is perception that governs beliefs, attitudes and behaviors.”

- Dr. Stephen Covey, Principal-Centered Leadership

QUESTIONS...

COMMENTS...

CONCERNS ?????