Guideline for Incident Investigation

There is no one single method. All are demanding quality in order to reach the goals.

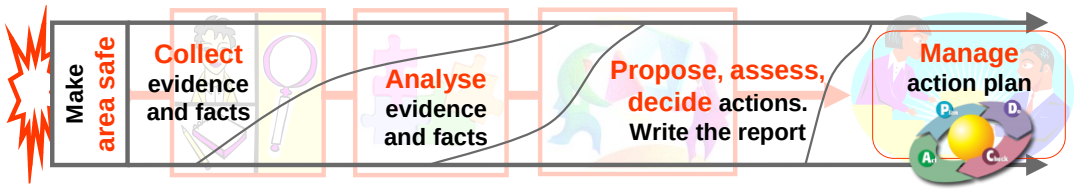
Experience is not what happens to a man;
it is what a man does with what happens to him. *(Aldous Huxley)*

ArcelorMittal

Incident Investigation – Guideline Reference Card (v 1.0 10/2011)

- Guideline for Incident Investigation -

Every incident and unsafe situation is an opportunity.
Learn from things that went wrong, and those that could have gone wrong.



1. **Gather facts,** evidence, and write the timeline,
2. **Build the logic,** from losses to roots,
3. **Define actions,** to control.

Goals: determine…
- what happened,
- why it happened,
- what can be done to avoid a recurrence.

Pitfalls:

- Investigating as an admission that things went wrong,
- Focusing on short term results,
- Ignoring or hiding usual issues,
- Looking for faults rather than causes…

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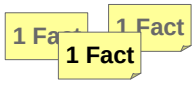
1. Gather facts

Facts need evidence: **P**hysical + **P**aper + **P**eople
Lack of evidence ⇒ weak analysis ⇒ little-effective actions

Ask: **W**hat? **W**hen? **W**here? **W**hy? **W**ho? and **H**ow?

Explore fields:
- **M**achine (process)
- **M**aterial (processed)
- **M**ethod (procedures, training)
- **M**an (behavior, then reasons)
- **M**anagement (behavior, the reasons)
- **E**nvironment (working place, external conditions)
- …

Write down with accuracy (garbage in ⇒ garbage out)
Tip: use Post-It®, 1 sentence per fact



Write the timeline: What happened When…
(+ Where, to Whom, How…)

protect evidence

be curious

be specific

never assume

Pitfalls:

- Unclear and unspecific statements,
- Regarding assumptions and opinions as facts,
- Lack of facts…

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To avoid new occurrences widely, share information and findings (REX data base).

2. Build the logic of the incident

Starting point: the losses (actual or potential).

Build causal tree diagram with single facts,
Step by step, always using the same 3 questions:

1. **What made this happen?** = Find a cause!
2. **Was this cause necessary?** = Is it really a reason?
   Y/N (N = remove, change it)
3. **Was this cause enough?** = Is there any other cause?
   Y/N (N = search another one)

be rigorous!

emotional-free

evidence-driven

Team-work, map to read from losses to causes:

End branches with causes that can be addressed by focused actions. An opinion cannot be addressed.

Root causes are underlying, hidden.
If obvious or symptomatic, it is probably not a root cause.

Keep “unknown” factors open till the end of the investigation.

Pitfalls:

- Jumping to conclusions,
- Scratching the surface,
- Regarding symptoms as causes…

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3. Define actions

To control the risk…
- Propose & Select (**effectiveness**),
- Assess (**through HIRA**), then
- Decide & Support (**by Managers**).

Think sustainability…
Verbal warning is NOT a control.

HIERARCHY OF CONTROLS	
1	**Eliminate the hazard** from the workplace
2	**Substitute the hazard** with a safer alternative
3	**Isolate the hazard** away from workers
4	**Use engineering controls**, adapt tools / equipment to reduce the risk
5	**Use administrative controls**, change work practices / organisation
6	**Use PPE**, last option after you have considered all the other options

Check your findings before decision.
Review if…
- **B**eyond control
- **O**bvious
- **G**randiose
- **U**nrelated
- **S**implistic

be open-minded

assess proposals

update HIRA, retrain

Other Pitfalls:

- Fateful minset,
- Blame mentality,
- Easy-going way,
- Optimizing way,
- Emotional way,
- Forget to document,
- Forget to update
- Forget to share…

“Lesson learned” = We have applied changes!
no change = we fail!

Communication: always follow procedure, or driven by CEO

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(managing action plans and checking effectiveness is not "investigation")