HOW TO MANAGE MY INCIDENT INVESTIGATION?

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I kept six honest servants,
They taught me all I knew,
Their names were WHAT and
WHEN and WHERE
And HOW and WHY and WHO.

Rudyard Kipling

ABSTRACT

Organisations should continuously optimize their primary process. For the Dutch Safety Board this means optimizing the investigation process of accidents and incidents, and the process of recommending and monitoring the follow up of these recommendations. Rudyard Kipling's "six honest servants", serve as a framework for decisions in the investigation process.

INTRODUCTION

The Dutch Safety Board is a statutorily established autonomous agency, responsible for the independent and integral investigation of the causes and possible consequences of disasters, serious accident and incidents in a broad range of sectors (from here referred to as incidents). The Dutch Safety Board:

- identifies the learning points resulting from the investigation;
- issues recommendations aimed at improving public safety to responsible organizations;
- monitors the implementation of recommendations.

The Dutch Safey Board is required to provide adequate lessons to be learned. These adequate lessons must be the result of good quality incident investigation. Good quality incident investigation starts with timely, adequate and transparent decisions on the incident investigation. "The six honest servants" of Rudyard Kipling, author of The Jungle Book, assist us making those decisions. The "servants" are: What, Why, When, Where, Who, and How.

WHAT

What should I investigate?

Almost any incident consists information to learn from. However, means are limited and choices have to be made which incidents to investigate. It is less useful to look for incidents, which are unique and approximately will never happen again, when the (potential) effect of the incident is small. By reporting incidents, classifying them, and monitoring all reported incidents, choices can be made which incidents/type of incidents will be investigated.

Incidents with large effects are likely to be investigated. Victims, relatives, colleagues and responsible managers want to know what happened, why it happened and how it can be prevented from happening again. Multiple (smaller) incidents of a certain type can also trigger investigation. An advantage of investigation of smaller incidents is that they are less prone to media, politics and the question of quilt.

Incident investigation should focus on the system in which the incident occurred. This system can be divided in three levels:

1. Micro level: the situation/people close to the incident (f.e. victims, supervisors, accident location);
2. Meso level: the organisation surrounding the situation/people close to the incident (f.e. management, management decisions, (safety) management systems, (safety) policies)
3. Macro level: the organisations/policies influencing micro and meso level (f.e. sector organisations, self-regulation, guidelines, ministries, inspectorates).

Incident investigation aims to learn from one or more incidents at different levels within this context [Hale 2001].

The Dutch Safety Board welcomes incident investigation by companies, sector- and governmental organisations. Organisations have a responsibility in learning from their mistakes.

However, incident investigations by companies, sector- and governmental organisations can be limited to certain levels of the system. Besides, organisations investigating their own incidents closely relate to their system. They have little independence, which can result in a one side version of the facts.

The Dutch Safety Board conducts investigation without regard to political and economic interests. The Board independently decides whether an investigation is called for. The Board focuses on incidents with a large (societal) impact, using risk matrices to classify incidents on their (potential) impact. The Board can also investigate series of incidents when there are indications of structural deficiencies. Investigations can include all levels of the system in its investigation.

WHY

Why should I investigate?

Incident investigation is not a goal on itself. In general, there can be three major reasons to conduct incident investigation:

1. to blame
2. to understand (What and how)
   To provide information to victims and relatives what happened.
3. to learn (Why)
   To identify how it happened and what made it happen, in order to learn and prevent it from happening.

The focus of the Board is never on who is to blame. The focus of the Board can be on understanding what happened, understanding how it happened, identifying how it could have such an effect, and /or how to learn from all findings in order to prevent future incidents.

Organisations involved in incidents, will have similar focus. When they take their responsibility by investigating the incident and their role in it, remedy the latent failures / improve their organisation and communicate their findings, investigation by the Dutch Safety Board might not be necessary. The organisations will learn themselves.

When not all aspects and/or all levels of the system have been investigated, the Dutch Safety Board can decide to conduct additional investigation. The aim of the investigation will be learning with a broader scope.

Besides, after incidents with a large impact, society can demand independent investigation to reveal what happened and how it happened. The Dutch Safety Board is the organisation to do so. The aim then will be on identifying what has happened and why (to understand), possibly extended with why it happened (to learn).

WHEN

When should I investigate?

Information on the incident site can disappear or be damaged in the hours and days after the incident. To make use of this information it is essential that it is collected in the first view hours or days after an incident. Correcting loss of information afterwards is costly in money, time and effectiveness. Additional information can be collected in a later phase, when hypotheses have been formulated and the scope has been decided.

Investigators aim for completeness and certainty. They have a natural interest to discover. Investigations carry the risk that they take a long time: for instance more evidence might be searched for to eliminate all uncertainty or the scope might be broadened or changed during investigation. But victims and relatives have the right to know what happened in a reasonable time so they can come to

terms with their sorrow. Besides, organisations should know the structural deficiencies so they can remedy them, before new incidents occur or their organisation has changed so much that they do not recognize the recommendations anymore. Therefore, investigations should not take years.

The investigation should start in an early phase when physical evidence needs to be collected. The Dutch Safety Board strives to end the investigation and communicate the findings within 12 months after the start.

WHERE

Where should I investigate?

Incidents always come unexpected. When the incident needs to be investigated, things have to be organized at once. People have to be made available, means have to be provided, information has to be shared. The logistics of such can be managed from the office.

The incident site itself can be an important location. This location, where people might have been hurt, assets might have been damaged, environment might have been polluted, provides information on “What happened”. This information has to be identified and secured as soon as possible. There is the risk that information has been removed or damaged in the process of rescue and first aid. However, investigations should never interfere the process of rescue and first aid, neither should the investigator jeopardize the safety of it’s own or others. The Investigator In Charge (IIC) has to find the balance between the risk for safety of the team and the risk of losing essential information.

Not all relevant information to the investigation is to be found on the incident site itself. Information on papers and people, for instance, can also be found on other locations like a head-office of the organisations involved or inspectorates.

The office of the investigators can be the location for analysis of the facts and investigation management. This location offers disctance. To bring all gathered information to a location where the investigation team can inventory, observe, discuss and analyse the information in peace and quiet is of great use.

WHO

Who should investigate?

Different people have different skills. Specialists for instance can be essential for understanding what happened, for forensic investigation, technical analysis, analysis of law and regulations. Generalists can be essential when structures have to be unravelled; organisations, systems and policies have to be analyzed.

But most important of different people is that they are different. Different eyes mean: more views; different backgrounds mean: more knowledge; different personalities mean: more approaches. Investigation is teamwork.

HOW

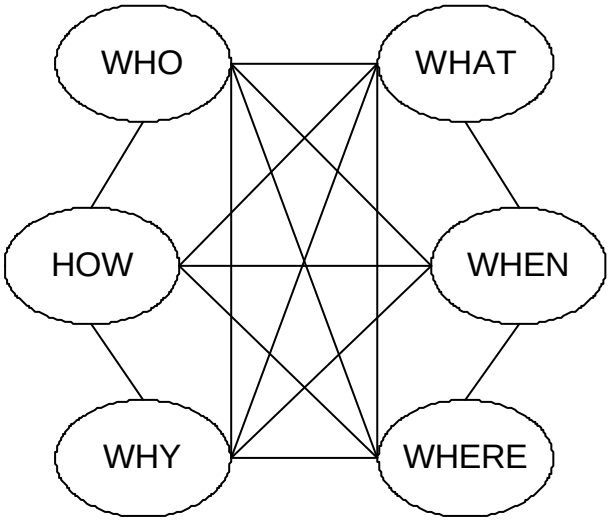
How should I investigate?

The HOW becomes relevant after at least the WHAT, WHY and WHEN have been determined. For the HOW, the WHY is of greatest importance. When the WHY is to understand what happened, emphasis will be placed on the reconstruction of the incident. When the WHY is focused on identifying learning points, emphasis will be placed on underlying causes like organisational or system failures. This will influence the emphasis on certain parts of the investigation process. The following steps are part most investigation processes:

1. Recognize incident
2. Forensic investigation
3. Timeline - WHAT HAPPENED
4. Identification/positioning/classification of relevant actors
5. Identification of operational processes - as designed
6. Identification of latent failures contributing to events leading to the incident – WHAT HAPPENED
7. Comparison findings timeline and operational processes - as designed (Type A error) – WHY DID IT HAPPEN
8. Identification of the processes - as expected (by law & regulations / good practices / the Dutch Safety Board)
9. Comparison findings operational processes- as designed and operational processes - as expected (Type B error) – WHY DID IT HAPPEN
10. Generate recommendations
11. Communicate findings and recommendations
12. Follow up on recommendations

This process is not a serial one. Parts of the process can run simultaneously, and findings from certain parts can feedback to other parts to start them again.

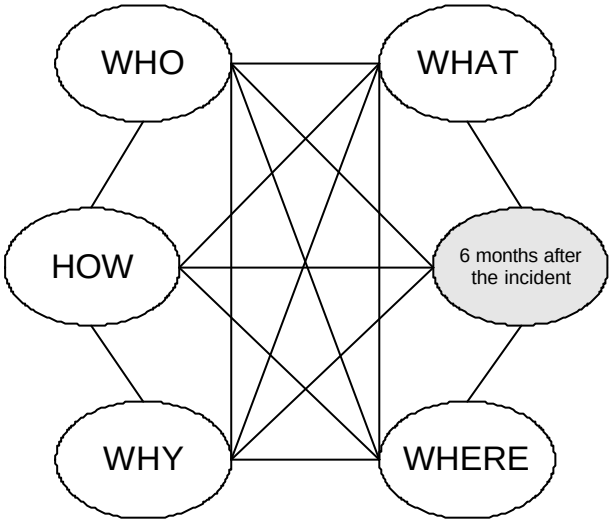
THE SIX SERVANTS – A TEAM



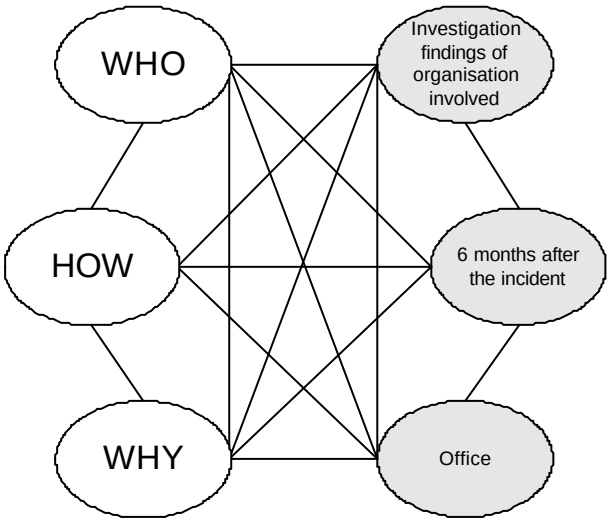
We have discussed the 6 servants in isolation. But as the investigation team acts as a team, so do the servants. A decision made for one servant, will influence the other. Some examples to illustrate this:

Example – start with WHEN

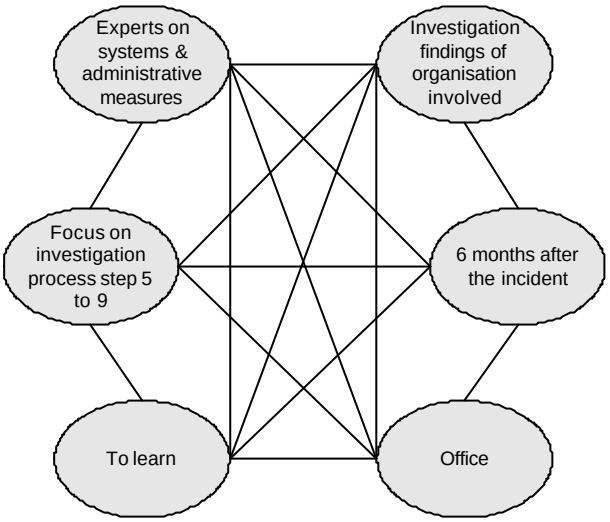
1. WHEN
   6 months after an incident a decision was made that investigation is needed.



2. WHAT & WHERE
   This usually means the incident site is no longer available for investigation and investigation can only focus on the investigation findings of the organization involved

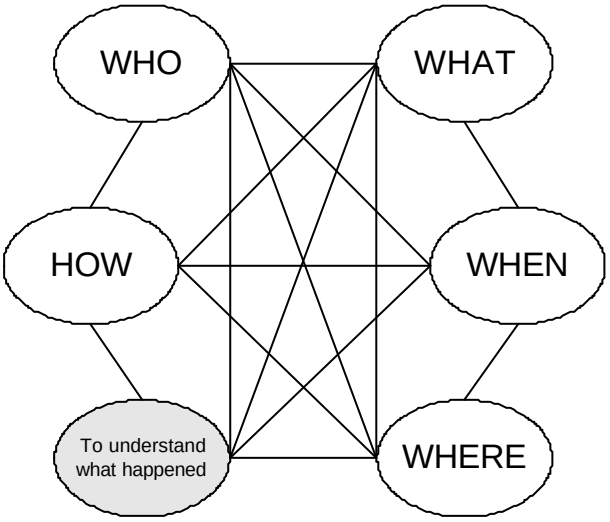


3. WHY & HOW & WHO
   This implicates that focus most likely will be on learning, focus will be on additional aspects/levels to the investigation findings of the organisation involved, and the people needed for this investigation will need to have expertise on these additional aspects/systems.

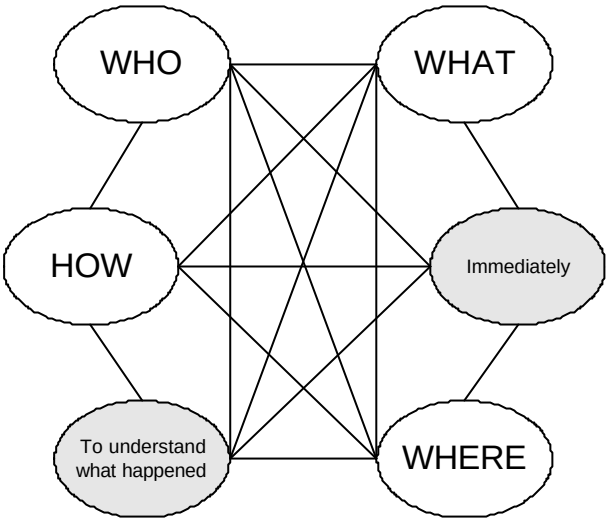


Example – start with WHY

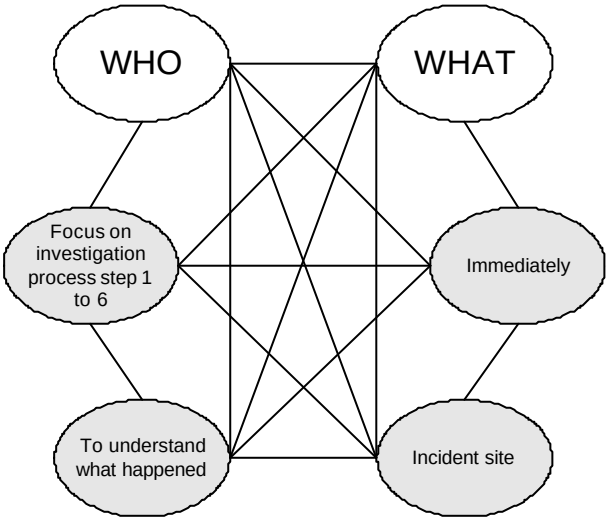
1. WHY
   The incident needs to be investigated in order to find out what happened.



2. WHEN
   This means that the investigation has to start immediately.



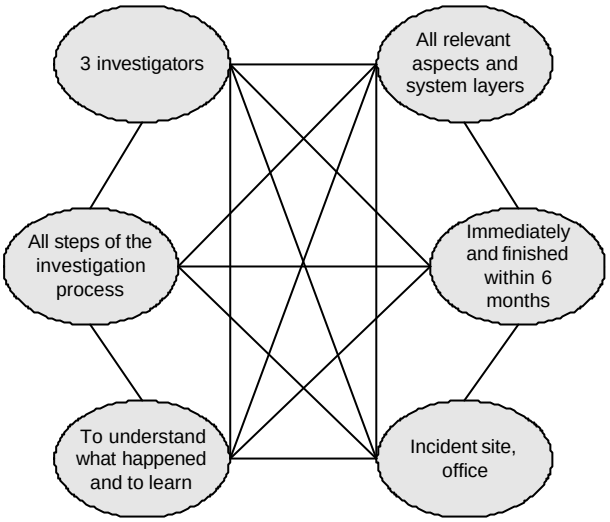
3. WHERE AND HOW
   The investigation will start on the incident site, and will include forensic investigation, timeline analysis



When in investigation is planned, and after decisions have been made for all servants, it is wise to see if the can work as a team. It can be that decisions made on one servant in the beginning, is no longer realistic with decisions made on other servants on a later moment.

Example:

WHY	understand what happened, ánd learn from it
WHAT	all relevant aspects ánd all relevant actors
HOW	include all steps of the investigation process
WHEN	start immediately and finish within 6 months
WHO	3 investigators



In this case it will be wise evaluate every servant on its importance and to see what servant has to be changed in order to create a good team. This can for instance be: to add some investigators, to reduce the scope or to extend the period of investigation.

Optimizing your primary processes also means being prepared for all variables and the unexpected. The six servants can be used to inventory all possible team compositions. Identify all possible WHY's, all possible WHEN's, all possible WHO's, et cetera. Prepare your organisation for the teams which are most likely to assign. This will facilitate decision-making, an early response and a more optimized investigation process.

CONCLUSION

The six servants – What, Why, Where, When, Who, and How – demand decisions on their positions. They act as a team: a decision made on the position of one, will affect the position of the other. It is recommended to inventory all possible team compositions up front, in order to speed up decision making on the spot and facilitate the investigation process. A well-considered team can increase the quality of the investigation.