DUTCH
SAFETY BOARD

Accident Investigation

When does it improve safety and quality?

Lianne van der Veen

ISPO Conference – Rotterdam – June 22nd 2017

Dutch Safety Board

Multi-modal

Indepen-dent

Impartial

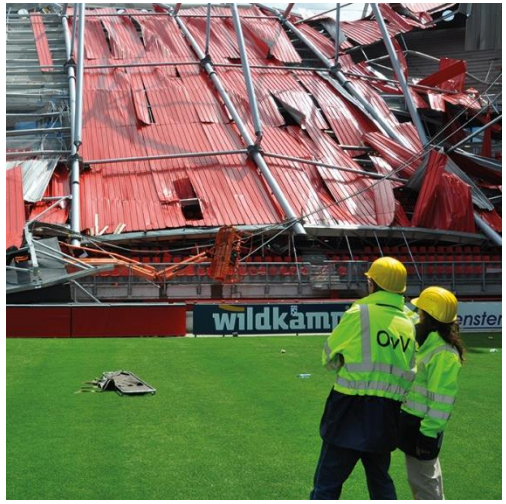
Objective

No blame

Mission

Its main focus is those situations in which civilians are dependent on the government, companies or organisations for their safety.


BEVER


OVV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Dutch Safety Board

Multi modal

No blame

Mission

Its main focus is those situations in which civilians are dependent on the government, companies or organisations for their safety.

Maritime obligation (IMO, EU)

Very serious casualty

Loss of life

Total loss of the ship

Severe pollution

Obligation to investigate

IMO Casualty Investigation Code (Resolution MSC.255(84)) (Marine casualty or incident)

PART 1 General Provisions
Chapter 1 Para 1.2

Serious casualty

Fire, explosion, grounding, contact, heavy weather, hull cracking resulting in:

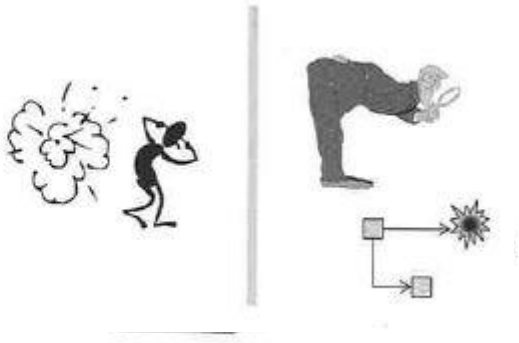
- Structural damage (unseaworthy)
- Pollution (any quantity)

*A Marine Safety Investigation should be **separate** from, and **independent** of, **any other form of investigation***

Assessment

What is the main cause of accidents?

Human error…



“The point of an investigation is not to find where people went wrong – it is to understand why their assessments and actions made sense at the time” (Sydney Dekker 2002)

Gathering information

- ✓S - Software
- ✓H - Hardware
- ✓E - Environment
- ✓L – Liveware

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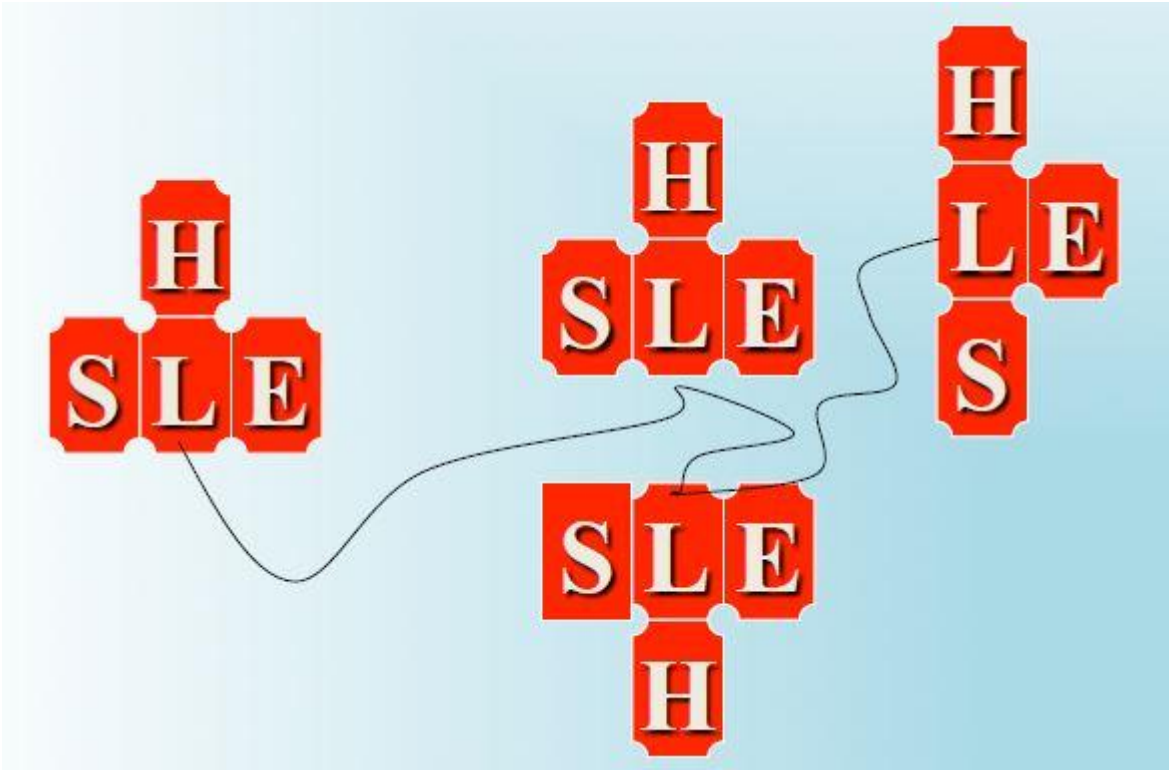
Gathering information



Now you can start to understand the "circumstances", that possibly have influenced the central person.

Analysis

What does analysis actually mean?

Van Dale:
the separating of any material or abstract entity into its constituent elements.

… A systematic approach to solving a problem. Complex issues are made simpler by dividing them into more understandable elements.

Analysis

What?	Chronology
	Identify all casualty and accident events
	Human Factors
How?	Methods (Step, Tripod, Bowtie, HFACS etc)
	5 times “Why”

To determine safety issues and deficiencies

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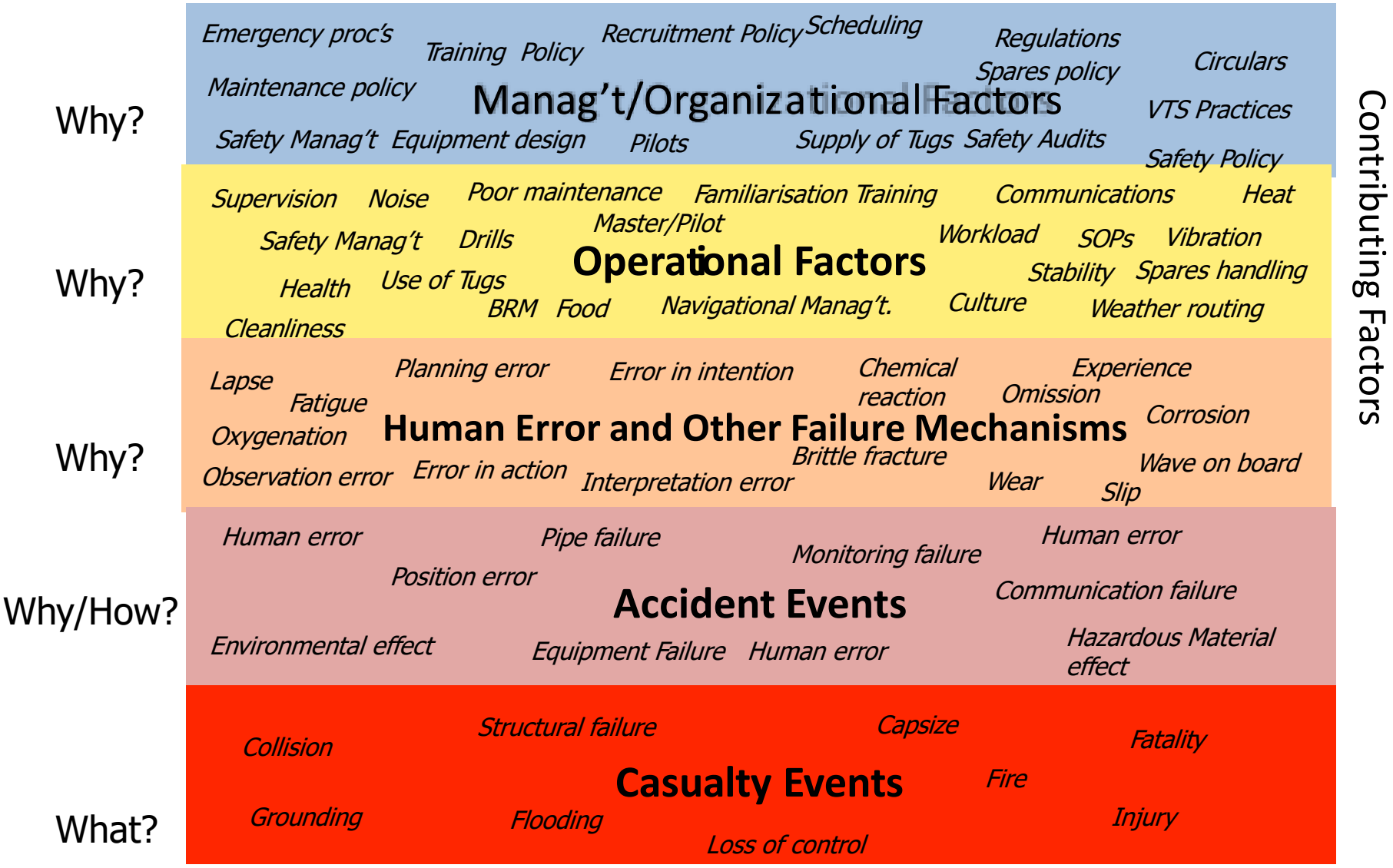
5 times "Why"


Why?
Why?
Why?
Why/How?
What?
Contributing Factors
Emergency proc's
Training
Policy
Recruitment Policy
Scheduling
Regulations
Spares policy
Circulars
Maintenance policy
Manag't/Organizational Factors
VTS Practices
Safety Manag't
Equipment design
Pilots
Supply of Tugs
Safety Audits
Safety Policy
Supervision
Noise
Poor maintenance
Familiarisation Training
Communications
Heat
Master/Pilot
Safety Manag't
Drills
Workload
SOPs
Vibration
Operational Factors
Health
Use of Tugs
Stability
Spares handling
BRM
Food
Navigational Manag't.
Culture
Weather routing
Cleanliness
Lapse
Planning error
Error in intention
Chemical reaction
Experience
Fatigue
Omission
Corrosion
Oxygenation
Human Error and Other Failure Mechanisms
Brittle fracture
Wave on board
Observation error
Error in action
Interpretation error
Wear
Slip
Human error
Pipe failure
Monitoring failure
Human error
Position error
Communication failure
Accident Events
Environmental effect
Equipment Failure
Human error
Hazardous Material effect
Collision
Structural failure
Capsize
Fatality
Casualty Events
Fire
Grounding
Flooding
Injury
Loss of control

Reporting

- Determine your audience
- A report does not have to be long
- Make a distinction between “need to know/nice to know”
- Try to avoid (technical) jargon and make a list of symbols
- Describe facts without premature analysis
- Describe your analysis (maybe also the theories that didn’t work)
- Let the reader draw their own conclusions before they finish the report

And remember, how thorough your investigation might have been, the message stands (or falls) with the quality of your report!

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When does AI improve safety and quality?

International Standard for maritime Pilot Organizations

1.2 Scope

1.2.1 The objectives of the ISPO are:

- to ensure that the activities of the maritime pilot organization are administered, so as to provide a quality service with due regard to the safety of human life and the avoidance of damage to environment and property;
- to encompass existing good practice and
- to provide a recognizable system for international application that can be audited.

Severity	People	Hardware	Pollution	Reputation	Never heard of in company	Incident has occurred in the company	Happens several times per year in the company
0	No injury	No damage	No environmental effect	No Damage			
1	First aid treatment	Damage < € 50.000,-	Slight environmental effect (< 10l)	Slight damage Customer complaint	Level 1		
2	Lost time incident	Damage > € 50.000,- < €100.000,-	Minor environmental effect (< 100l)	Minor damage Local press		Level 2	
3	Hospitalised	Damage > € 100.000,- < € 250.000,-	Local environmental effect (> 1m³)	National Press			
4	Fatality	Damage > € 250.000,-	Massive environmental effect	Severe damage International Press			Level 3

The matrix distinguishes three investigation levels:

- *Level 1: Minor - No further investigation required*
- *Level 2: Significant - Investigation by the DP or manager*
- *Level 3: Critical - Investigation Team*

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Thank you!

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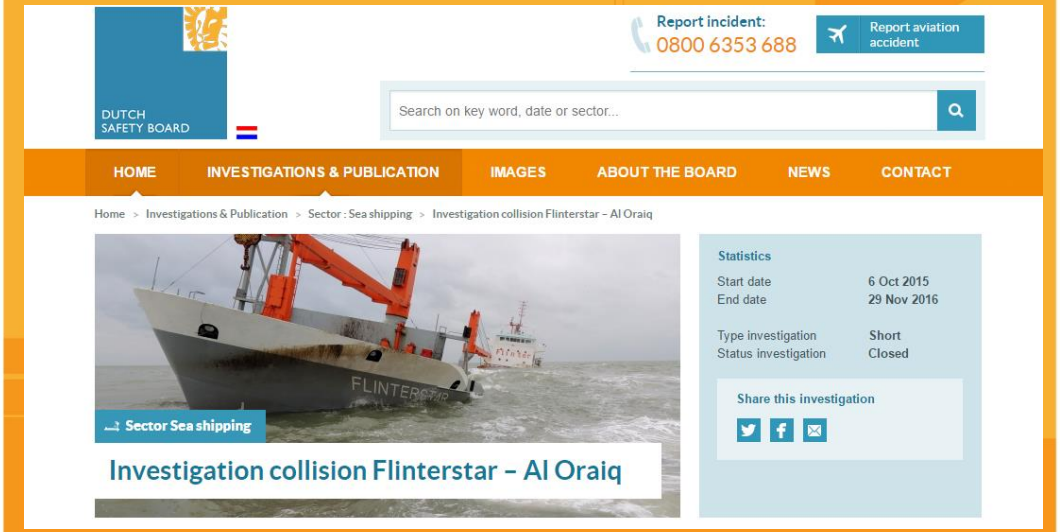

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