

ARE YOUR SAFETY MANAGEMENT ACTIVITIES ALIGNED WITH EACH OTHER?

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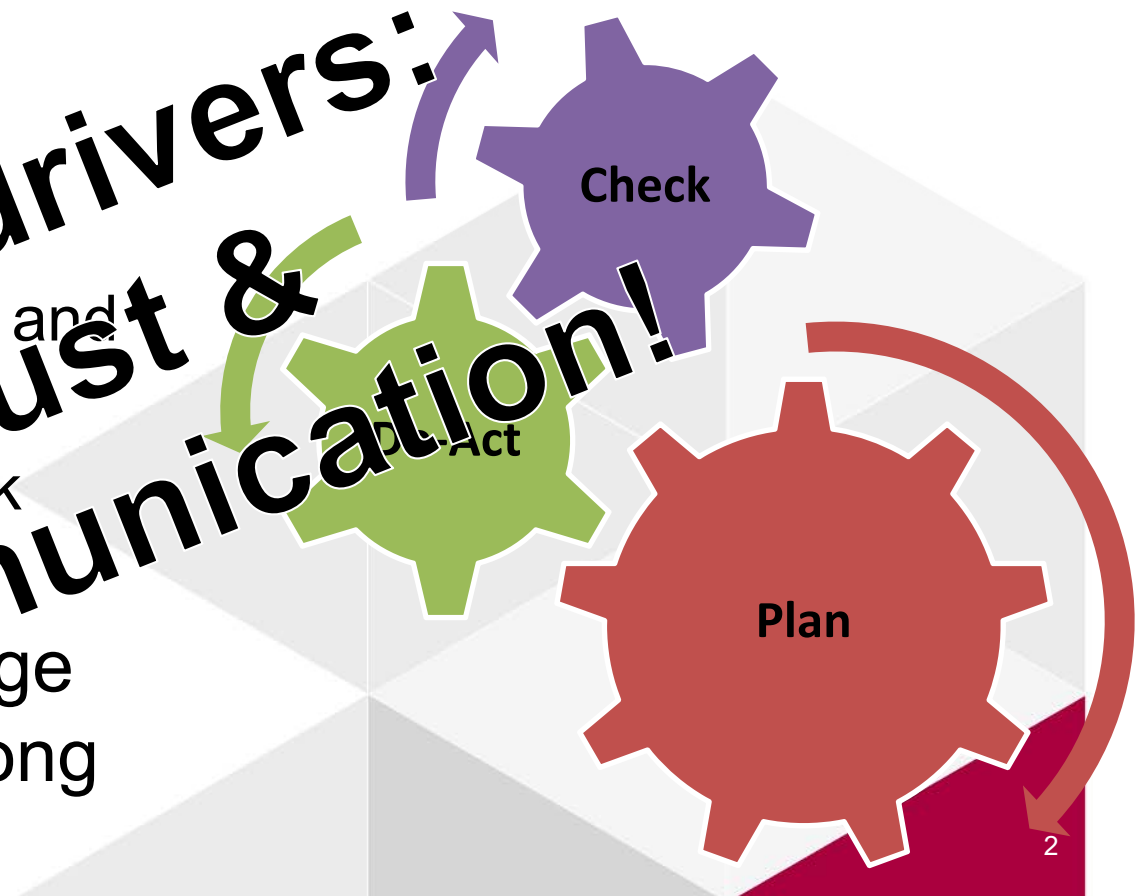
European Union Health, Safety & Environment Forum
20-21 March 2018, Amsterdam, the Netherlands



HOW DO WE (WANT TO) ACHIEVE OUR SYSTEMS OBJECTIVES?

- Structures:
organizational alignment via
 - top-down influence and directions
 - bottom-up feedback and involvement
- Networks: exchange of information among agents

**Main drivers:
Trust &
Communication!**



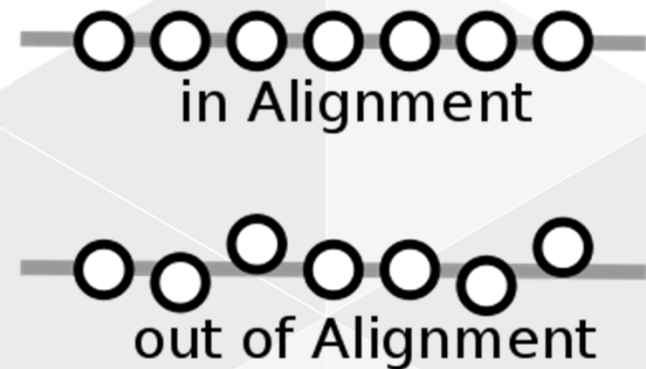
WHERE DO WE FOCUS WHEN LOOKING AT HOW A SYSTEM FUNCTIONS?

- Vertical alignment
 - common understanding across the organization: from senior management to middle managers and end-users
 - achievable through directions, rules and controls
- Horizontal alignment?

“An efficient horizontal coordination can often not be directed from above as it requires an insight into the details of the process organization, which is mainly developed by those directly executing the tasks” (Heesen, 2012, pp.8).

HORIZONTAL ALIGNMENT IN THE SMS CONTEXT

- SMS is more than sum of individual practices on safety
- Coordination and interlinks of safety management activities are expected to enhance common awareness of the factors affecting safety in an organization.



THE PRINCIPAL QUESTION

To what degree are safety committees and auditors aligned with each other and with the results from safety investigations within an organization?



..AND MORE SPECIFICALLY

Overarching question: To what degree are safety committees and auditors aligned with each other and with the results from safety investigations?		
Pairs of Safety Data Sources		Analysis Questions
Investigation reports	Audit reports	Have safety auditors revealed problems at the same frequency such problems were recorded in the safety investigation reports?
Audit reports	Meeting minutes	Have safety committees proportionally discussed internal safety audit findings?
Investigation reports	Meeting minutes	Have safety committees attended causal factors at the same extent such factors were uncovered through safety investigations?

THE OVERALL RESULTS

- Misalignment of safety meetings and audits between them and with the findings of safety investigations.
 - inadequate communication among the safety staff participating in safety review meetings and performing safety audits
 - lack of a procedure for considering the findings from safety investigations during audits and review meetings
 - lack of a central safety information database
 - emphasis on problems at the operational level and end-users and exclusion of self-checks at the middle and senior management levels
 - safety meetings, audits and investigations were seen as individual tasks and their intersection was missing

INVESTIGATIONS VS AUDITS

Causal Factors	Ratio differences* (Investigation – Audit reports)		
	Organization	Section	Unit
Aircrew act	+ 0.22	+ 0.16	+ 0.39
Bird strike	- 0.05	- 0.10	- 0.56
Foreign Object Debris	- 0.35	- 0.34	- 0.22
Maintenance personnel act	+ 0.13	+ 0.12	+ 0.28
Material failure	+ 0.43	+ 0.47	+ 0.28

AUDITS VS MEETINGS

Causal Factors	Ratio differences* (Audit reports – Meeting minutes)		
	Organization	Section	Unit
Aircrew act	- 0.17	- 0.13	- 0.18
Bird strike	+ 0.04	- 0.08	+ 0.60
Foreign Object Debris	+ 0.45	+ 0.30	+ 0.09
Maintenance personnel act	- 0.14	- 0.21	- 0.10
Material failure	+ 0.01	- 0.10	- 0.06

INVESTIGATIONS VS MEETINGS

Causal Factors	Ratio differences (Investigation reports – Meeting minutes)		
	Organization	Section	Unit
Aircrew act	+ 0.05	+ 0.03	+ 0.21
Bird strike	- 0.01	- 0.18	+ 0.04
Domestic Object Debris	+ 0.10	+ 0.14	+ 0.06
Foreign Object Debris	+ 0.09	- 0.04	- 0.13
Maintenance personnel act	- 0.01	- 0.09	+ 0.18
Material failure	+ 0.42	+ 0.37	+ 0.22
Outsource–depot maintenance act	+ 0.05	+ 0.04	+ 0.06
Supervision factors	- 0.38	+ 0.03	- 0.02

THE DATA ANALYZED

Data sources (6 years period)	Functional Level		
	STRATEGIC- ORGANIZATION (all units included)	TACTICAL- OPERATION (all subordinate units included)	OPERATIONAL UNIT
Safety investigation reports [all investigated (serious) incidents and accidents]	342	176	18
Safety meeting minutes	9	6	20
Safety audit reports	39	21	3

x 4 interviews

TAKE AWAYS!

- A horizontal alignment between SMS activities means that:
 - SMS is seen and performs as a system
 - SMS processes are coordinated and retrofit each other
- How to achieve alignment
 - Share safety information – exploit information technology
 - Standardize the use of various safety sources in meetings and preparation of audits
- Check of SMS alignment across all organizational levels
 - Documented data might provide evidence
 - Open communication will provide explanations and offer solutions
 - Extend the concept of alignment between any relevant SMS activity

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Thank you!

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CREATING TOMORROW

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