University of Stavanger

Ove Njå, Professor

A critical view on learning from accident investigations – some examples from road tunnel fire investigations

(Et kritisk blikk på læring fra ulykkesundersøkelser – noen eksempler fra tunnelulykker)

1

Observed FAR-values Norwegian oil & gas

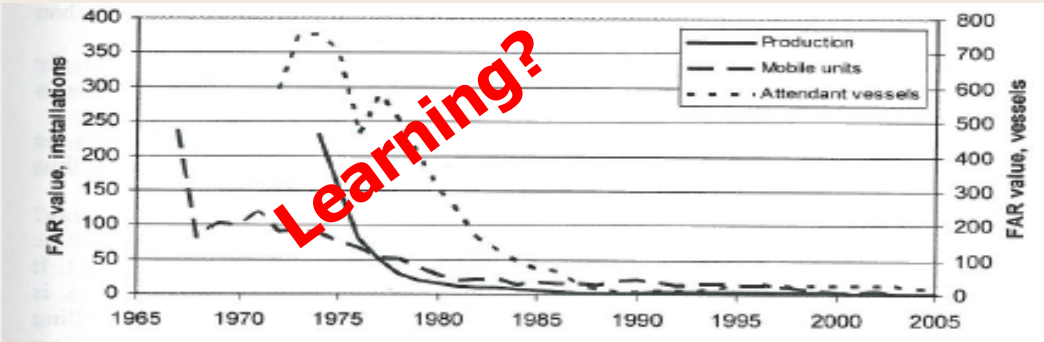


Figure 3.5. Long term trend in average FAR values for occupational accidents on all offshore installations and attendant vessels

Vinnem 2013

2

2

NPRA's risk based approach to (tunnel) traffic safety

The Zero Vision - foundations

- Ethical principles
- Scientific based knowledge
- Principle of responsibility

3

3

The Norton-accident

Ove Njå

Fortrolig

Dødsulykke ved kryss anlegg
Skifjelltunnell og Rv 402 ved Norton,
Lillesand.

Sakkyndig rapport

Rapportnr. 11

Liability investigations ≠ Learning investigations?

Statens vegvesen

Vestfold politidistrikt
Baglergaten 2
3111 TØNSBERG

Att: Olaf R. Kløvstad

Behandlende enhet:	Saksbehandler/innvalgsnr:	Vår referanse:	Deres referanse:	Vår dato:
Vegdirektoratet	Lars Aksnes - 22073610	2010/005509-100	10356663 23603/08-18	09.02.2011

Kommentarer til rapport fra rettsoppnevnt sakkyndig i forbindelse med dødsulykke på Rv 402 i Lillesand 14. mai 2008

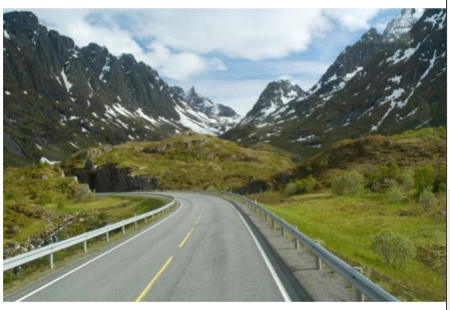
Figur 3: Personbilen ble sammenklemt av dumperen og ble liggende opp-ned mellom førerhytte og lastekasse (foto: Morten Frank Boswarva).

4

4

Rapport

Statens vegvesens deling av informasjon fra ulykkesanalysearbeid (UAG)



Juni 2015

«The Graver – report»

Lukkethetskultur

I rapporten retter utvalget, som har vært ledet av jussprofessor Hans Petter Graver, skarp kritikk mot en hemmelighetskultur som har utviklet seg i Vegvesenet de siste årene.

Mellom 2005 og 2012 ble nesten 1.550 såkalte UAG-rapporter om dødsulykker holdt hemmelige. Verken politiet eller pårørende fikk innsyn i rapportene, som heller ikke ble gjort tilgjengelige for retten i forbindelse med bildrapssaker.

I 2010 og 2011 innførte Vegvesenet en rutine om å avslå absolutt alle anmodninger om innsyn i ulykkesrapportene.

Facsimile Aftenposten 5 June 2015

Learning?

What is learning?

Does «learning» influence the accident investigation process?

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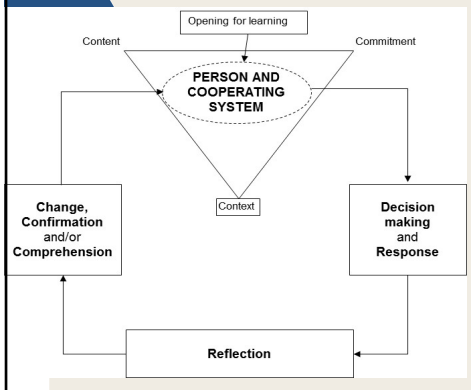
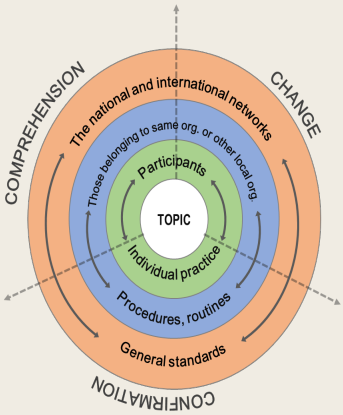
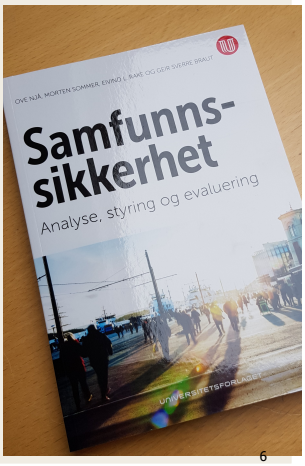
Learning from accident investigations







6

6

Åsta-accident – learning processes

- Groth-commission (ad hoc assigned investigation committee)
- Norwegian State Railways (NSB)
- Norwegian National Rail Administration (JBV)
- The Norwegian Railway Authority (SJT)
- The Police with help from UiO

Transportation Research Part A 69 (2014) 354–366

Contents lists available at ScienceDirect

Transportation Research Part A

journal homepage: www.elsevier.com/locate/tra

Organizational effects of experience from accidents. Learning in the aftermath of the Tretten and Åsta train accidents

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Fire safety in tunnels

«Safety – a system's ability to avoid damages and losses»

Two cases/events:

1) Fire in the Oslofjord-tunnel in 2011 (AIBN, 2013)
2) Fire in the Gudvanga tunnel in 2013 (AIBN, 2015)

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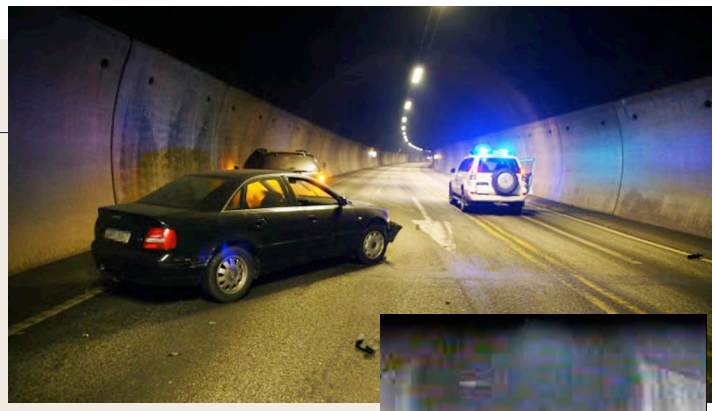
8

Oslofjord tunnel



Self rescue principle
Self regulation principle
Cooperation principle
Universal design

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Gudvanga tunnel

- Road-users trapped in smoke
- Improve safety systems and equipment
- Improve reporting systems for injuries
- Information to road-users to aid self rescue
- Emergency response procedures and systems
- Cooperation principle

ogntoget slik det ble stående etter brannen i Gudvangatunnele

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Results – critical decisions

- Event detection on CCTV and tunnel closure
- Triplet alarm and resource allocation
- Fire ventilation
- Information to road-users (radio information, light, smoke dispersion)
- Road-user solidarity
- "Fearless firefighting behavior"
- Rapid rescue with ATV (all-terrain vehicle) and the paramedics available close to the scene in the tunnel
- Debrief and the road users own initiatives to gather and cope with the psychological stress reactions

11

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Workshop on tunnel safety 2015

"How do representatives from responsible road tunnel fire and rescue services express their uncertainties and expectations?"

- Little knowledge about traffic conditions, road-user behaviour and contents of goods
- Understanding the risk and vulnerability analyses
- Comprehension of ventilation strategies
- Situation awareness when meeting a tunnel with smoke coming out
- The self-rescue principle balanced against fire fighting and rescue operation – ventilation strategies
- Interaction between the traffic control centre and the emergency centre – lack of training


Fire Safety Journal 97 (2018) 137–145

Contents lists available at ScienceDirect

Fire Safety Journal

journal homepage: www.elsevier.com/locate/firesaf

A review of competencies in tunnel fire response seen from the first responders' perspectives

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Challenges in investigations

- Understanding entire accident pictures is impossible
- Identify explanatory factors involving leadership and management in accordance with internal control principles:
  - Structures and documentation
  - No considerations of working practices
  - The roles of the managers are absent
  - External control functions prioritized
  - No systematic investigation of HES practices
- Assumptions about learning are restricted to safety recommendations
- How is the investigation processes adapted learning amongst target groups?
- Involvement - fear of being disqualified

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Conclusions – still worried about learning

- Who will learn? Contents, contexts and commitment
  - After the report is submitted to the Ministry of Transportation?
- To what extent is it possible to «test» new knowledge from accident investigations – what's in it for me?
- How are necessary reflections about «learning points» facilitated?
- Who observes intended changes (learning) based on investigations?
- Who ensures that confirmations are obtained from the investigations?
- How can people affirm deeper comprehension of the system based on investigations?

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