Safety Investigation and Justice

Stakes, Objectives, SMS Issues, Just Culture and the holy grail
In summary

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Head of Safety Unit – Network Manager Directorate
EUROCONTROL
21 Nov 2013 - Madrid
## [ES]$^2$ 2013 Programme

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<tr>
<th>THEMES</th>
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<th>TARGET AUDIENCE</th>
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<tr>
<td>WS 1-13</td>
<td>Software Safety Assurance SWALs, Industry and ANSPs contributions in Safety Assessments and Software Assessments (98 participants + web broadcast)</td>
<td>SW and HF experts, Safety Managers, Safety Specialists (OPS &amp; TECH), NAA, EC, EASA, PRU</td>
<td>07-08 May</td>
<td>IANS Hosted by EUROCONTROL in IANS Luxembourg</td>
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<td>SW Assurance</td>
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<td>WS 2-13</td>
<td>Safety Human Performance Conference (138 participants)</td>
<td>Human Factors and Safety experts, Projects Managers, Safety Managers, NAA/NSAs EC and EASA</td>
<td>26-27 September</td>
<td>Dublin Hosted by IAA</td>
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<td>Safety HP</td>
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<td>WS 3-13</td>
<td>Best Practices in Occurrence Investigations Safety 1 and Safety 2 State of the art Tools e.g RAT Just Culture environment (150 participants)</td>
<td>Safety Investigators, Safety managers, safety Specialists (OPS &amp; TECH), AAIB, EASA, EC, Airlines, Prosecutors, Judiciary</td>
<td>21-22 November</td>
<td>Madrid Hosted by APROCTA with AENA support</td>
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<td>Safety Investigation</td>
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March 2013   ➔   CEO Safety Conference in Bled

Next CEO Conference 2015

http://www.eurocontrol.int/services/es2-experience-sharing-enhanced-sms
Just Culture – on old issue
Code of Hammurabi (1795-1750)

If a physician heals the broken bone or diseased soft part of a man, the patient shall pay the physician five shekels in money. If he were a freed man he shall pay three shekels. If he were a slave his owner shall pay the physician two shekels.

If a physician makes a large incision with an operating knife and cure it, or if he open a tumour (over the eye) with an operating knife, and saves the eye, he shall receive ten shekels in money. If the patient be a freed man, he receives five shekels. If he be the slave of some one, his owner shall give the physician two shekels.

If a physician makes a large incision with the operating knife, and kill him, or open a tumour with the operating knife, and cut out the eye, his hands shall be cut off. If a physician makes a large incision in the slave of a freed man, and kill him, he shall replace the slave with another slave. If he had opened a tumour with the operating knife, and put out his eye, he shall pay half his value.

(after prof. Hollnagel)
“Forensic” of the Concept of Just Culture

Actions, omissions and decisions expected from someone with your level of training and experience

Gross Negligence or Willful Misconduct

BUT WHO DRAWS THE LINE?

The Judiciary of course!
Safety I – Focus on what goes wrong

Safety-I looks at what happens from the side of unsafe functioning

When the focus is on that which goes wrong (accidents, incidents, etc.), then it is difficult to see that which goes right.
Safety II – Focus on what goes right

Safety-II looks at what happens from the side of safe functioning. The success case

When the focus is on that which goes right (everyday performance), ‘failures’ no longer dominate the picture.
How to find out what goes right...

Safety Investigation
Ten principles of systems thinking for safety improvement

System Focus

1. Equivalence
2. Field Experts
3. Local Rationality
4. Just Culture
5. Demand, Production Pressure & Goal Conflicts
6. Resources & Constraints
7. Interactions & Flow
8. Efficiency-Thoroughness Trade-off
9. Performance Variability
10. Emergence
Purpose

- Enable safety analysis of adverse events, routine performance, and exceptional performance, including what went right as well as what went wrong
- Maximise historical compatibility
- Enable multiple uses
  - Investigations
  - Normal operations safety surveys (e.g. to choose markers)
  - Risk assessments (e.g. Structured What-IF Technique checklist)
  - etc
Investigation & Learning Cards
System Safety Investigation & Learning Cards
for understanding safety occurrences and everyday performance
Edition 1

Organisation of the Cards

There are several individual cards for each of section of the explanatory factors.

Each card introduces a different issue for analysis, reflection or discussion.

Fundamental Principles
- Personnel
- Interaction with the Environment
- Equipment
- Contextual Factors

Cards for each major category within these groups
Fundamental Principles

Principle 9. Efficiency-Thoroughness Trade-Off (ETTO)

People have to balance the thoroughness and efficiency of performance in a complex and uncertain environment.

Consider how people balance efficient and thoroughness, from their point of view, and understand the tactics they use to maintain efficiency (e.g. multitasking, recognition) and thoroughness (e.g. checking).

Principle 6. Demand, Production Pressure & Goal Conflict

Pressures relating to efficiency and capacity have a fundamental effect on performance.

Performance needs to be understood in terms of demands, resulting pressures and conflicts between goals of production and protection.
Safety Investigation Cards

Personnel

Decision

Judging or projecting the accuracy of spatial or temporal information and forming a decision or plan to achieve an intended outcome

Judgements and decision-making requires continuous adjustments to the context and conditions. Decision making must be considered from the point of the view of the person, including goals, knowledge, understanding of the situation and focus of attention at the time, as well as the context of work.

Photo by Andrew Tanton

A.3. Decision

A3-1. Judge / project
A3-2. Decide / plan (correctness/workability)
A3-3. Decide / plan (sufficiency)
A3-4. Decide / plan (timing)
A3-5. Decide / plan (presence of decision/plan)
Accountability vs. Learning

“The Accountability Scale”

Secretive  Blame  Reporting  Just

“The Learning Scale”

Failure to learn  Incremental Learning  Continuous Learning  Transform. learning
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<td>WS 1-14</td>
<td>FAB Safety</td>
<td>Safety Managers, Safety Specialists (OPS &amp; TECH), NAA, EC, EASA,</td>
<td>22-23 May</td>
<td>Cyprus/Amsterdam (TBC)</td>
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<td>FAB SMS Roadmaps</td>
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<td>WS 2-14</td>
<td>Safety Human Performance Conference</td>
<td>Human Factors and Safety experts, Projects Managers, Safety Managers, NAA/NSAs EC and EASA</td>
<td>24-26 Sept</td>
<td>Lisbon</td>
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<td>WS 3-14</td>
<td>Just Culture and Prosecutors</td>
<td>ATCOs, Safety Experts, Investigators, Safety and OPS managers, Prosecutors</td>
<td>20-21 November</td>
<td>Amsterdam/Rome</td>
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Any Other Volunteers for Hosting the events?