

Human factors aide memoir for investigations

Identifying human failures

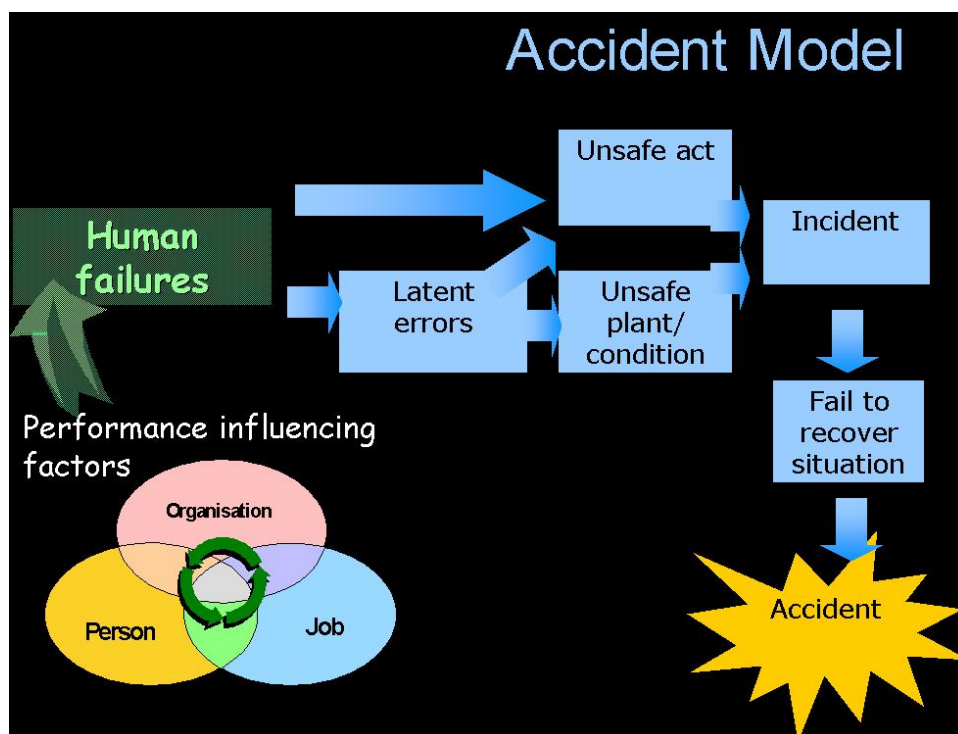
What (if any) were the

- Latent human failures? (actions in the past that have caused or allowed an unsafe situation which has remained unidentified. Often decisions or actions by managers, engineers and others – e.g. modifications, choice or design of plant or procedure)
- Immediate human failures? (unsafe acts or omissions)

Why was there no, or incomplete, recovery of the situation? (lack of system, or human failure?)

What category would the human failures observed be likely to belong to? (this is important because it often determines what could have been done to prevent it)

- ‘Skill-based’ error (slip, lapse)
- ‘Rule-based’ mistakes, (following inappropriate routine or assumption)
- ‘Knowledge-based’ mistakes (not well prepared, working from first principles)
- Violations (knowingly acting in a way that was unsafe or in breach of rules or procedures)
 - Routine violations (everyone does it)
 - Situational violations (situation encouraged violation)



Root causes

What performance influencing factors might there have been?

Job factors

- Clarity of signs, signals, instructions and other information
- System/equipment interface (labelling, alarms, error avoidance/ tolerance)
- Difficulty/complexity of task
- Routine or unusual
- Divided attention
- Procedures inadequate or inappropriate
- Preparation for task (e.g. permits, risk assessments, checking)
- Time available/required
- Tools appropriate for task
- Communication, with colleagues, supervision, contractor, other
- Working environment (noise, heat, space, lighting, ventilation)

Person factors

- Physical capability and condition
- Fatigue (acute from temporary situation, or chronic)
- Stress/morale
- Work over/under load
- Competence to deal with circumstances
- Motivation vs other priorities
- Risk perception

Organisation factors

- Work pressures e.g. production vs safety
- Level and nature of supervision / leadership
- Communication
- Manning levels
- Peer pressure
- Clarity of roles and responsibilities
- Likelihood of detection, and effectiveness of reaction to, violations
- Organisational or safety culture (refer to safety culture aide memoir)

What *management system* failures allowed this? e.g.

- Risk identification and assessment
- Risk/incident reporting
- Effectiveness of organisational learning (learning from experiences)
- Design processes
- Competence assurance
- Etc.