

Procedural Compliance and Behavioural Based Safety

UKOPA/07/0073

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Why have procedures?

- To minimise error/mistakes
- To standardise working practice
- To provide a basis for training
- To protect against loss of operating knowledge (e.g. de-manning)
- To meet statutory requirements

The consequences of not following procedures – major injury



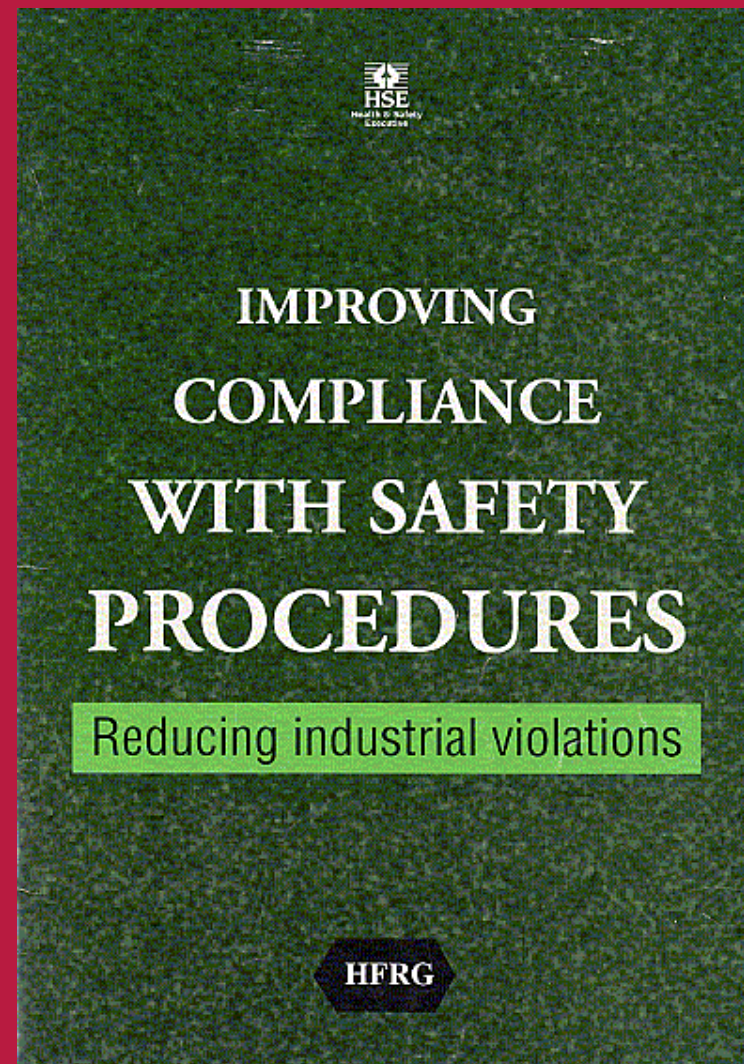
The consequences of not following procedures – near miss



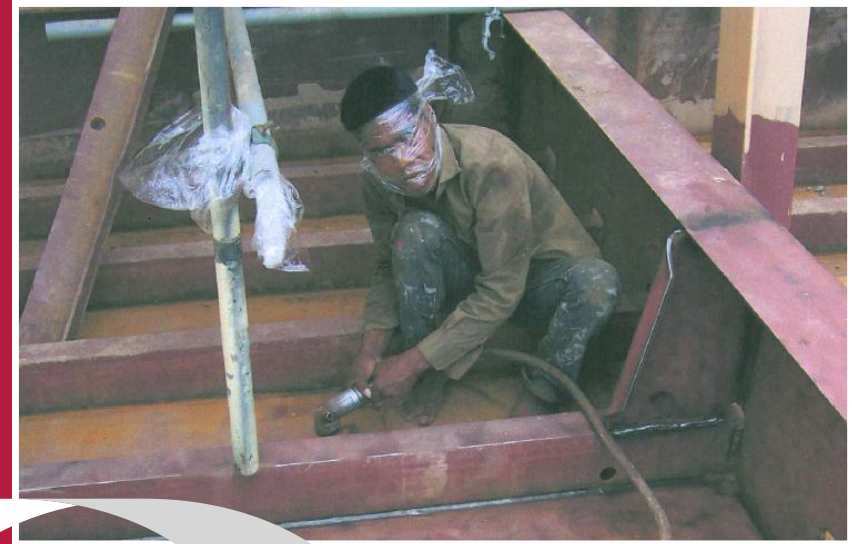
Why don't people follow procedures?



- Inaccurate
- Out-of-date
- Impractical
- Too time consuming
- Do not describe the 'best way' of carrying out the work



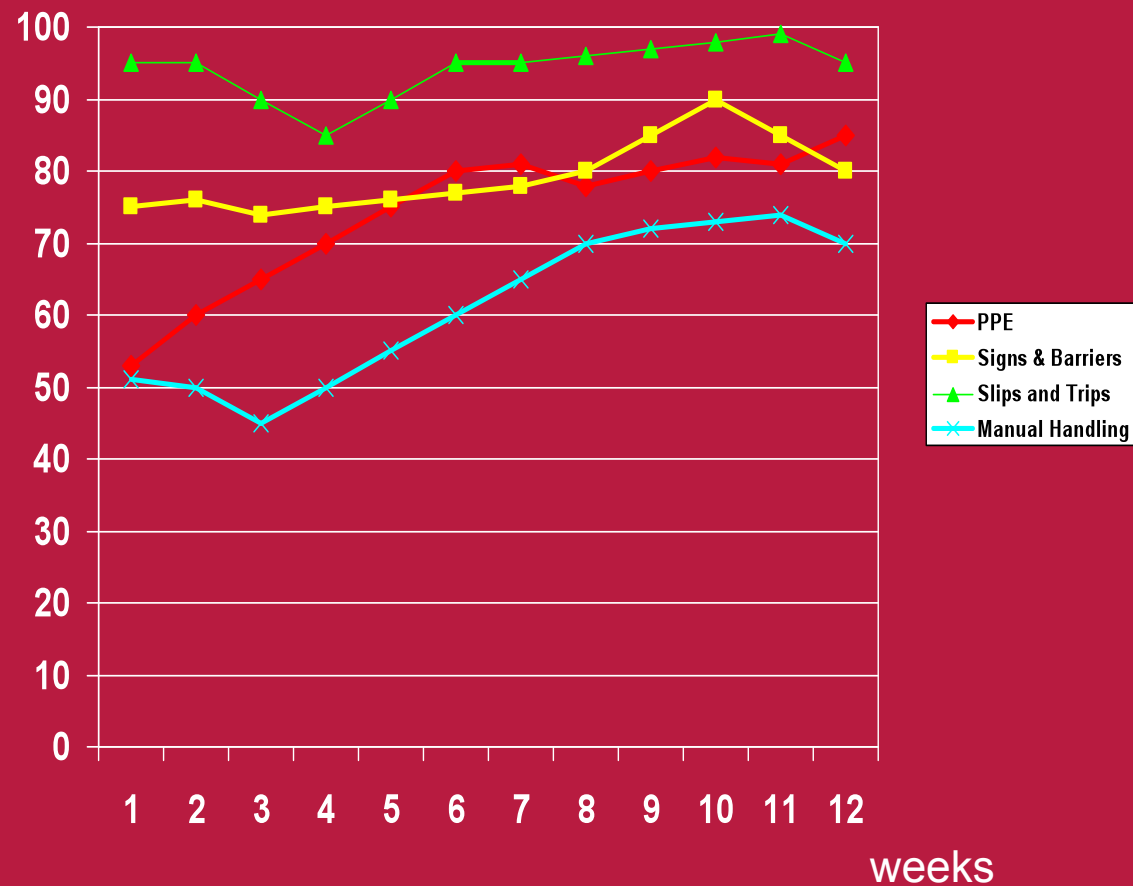
Behavioural-Based Safety



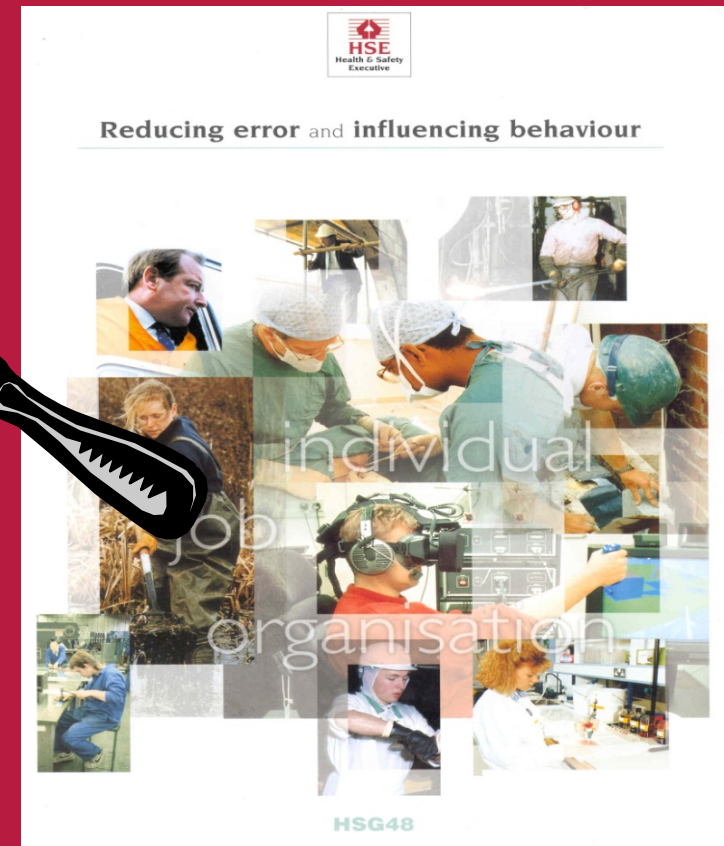
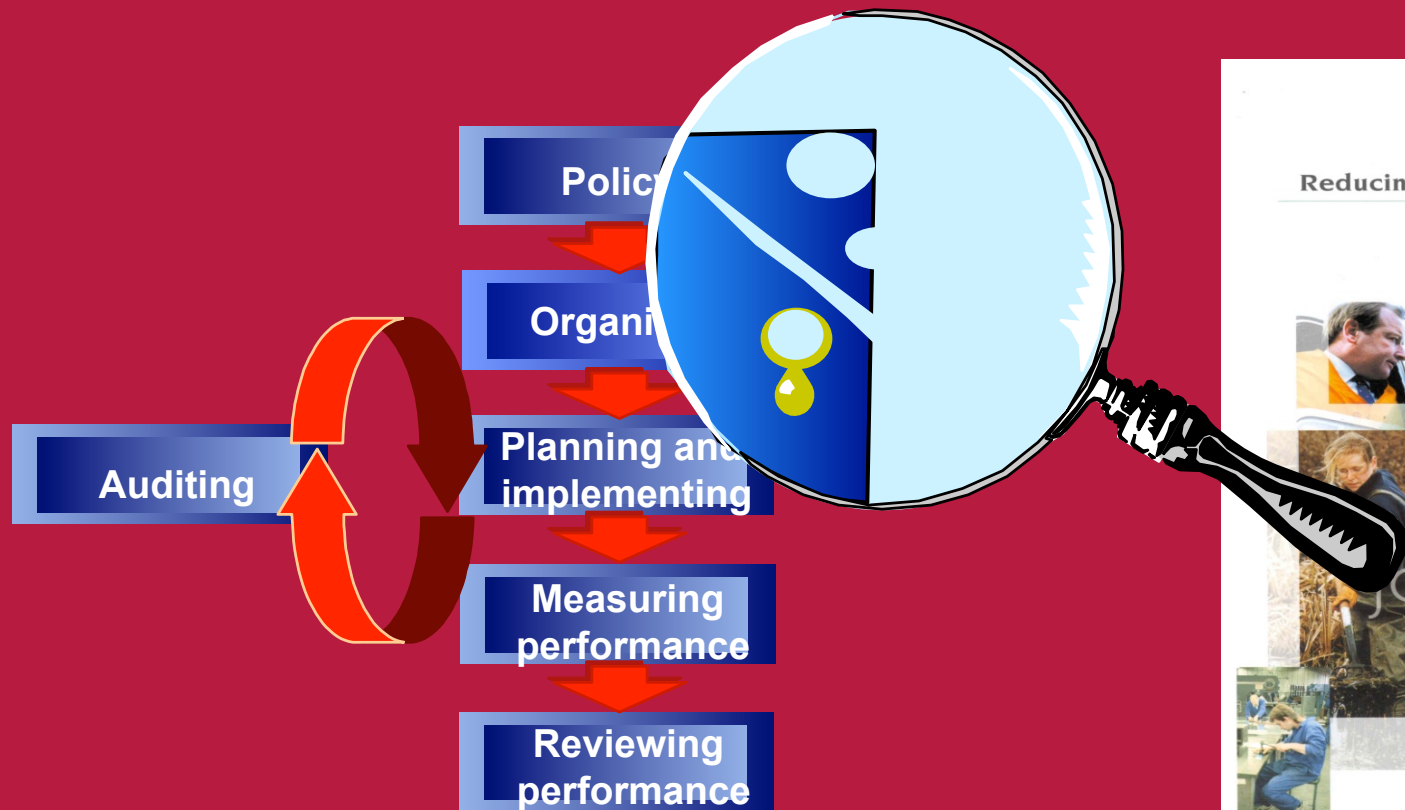
Observing behaviour and providing feedback



% Safe



SMS maturity & Human Factors in risk assessments



5-Steps to checking whether risk assessments have included Human Factors



Step 1: Identify who does the task (who is the procedure intended for) ?

Step 2: Outline the key steps of the task

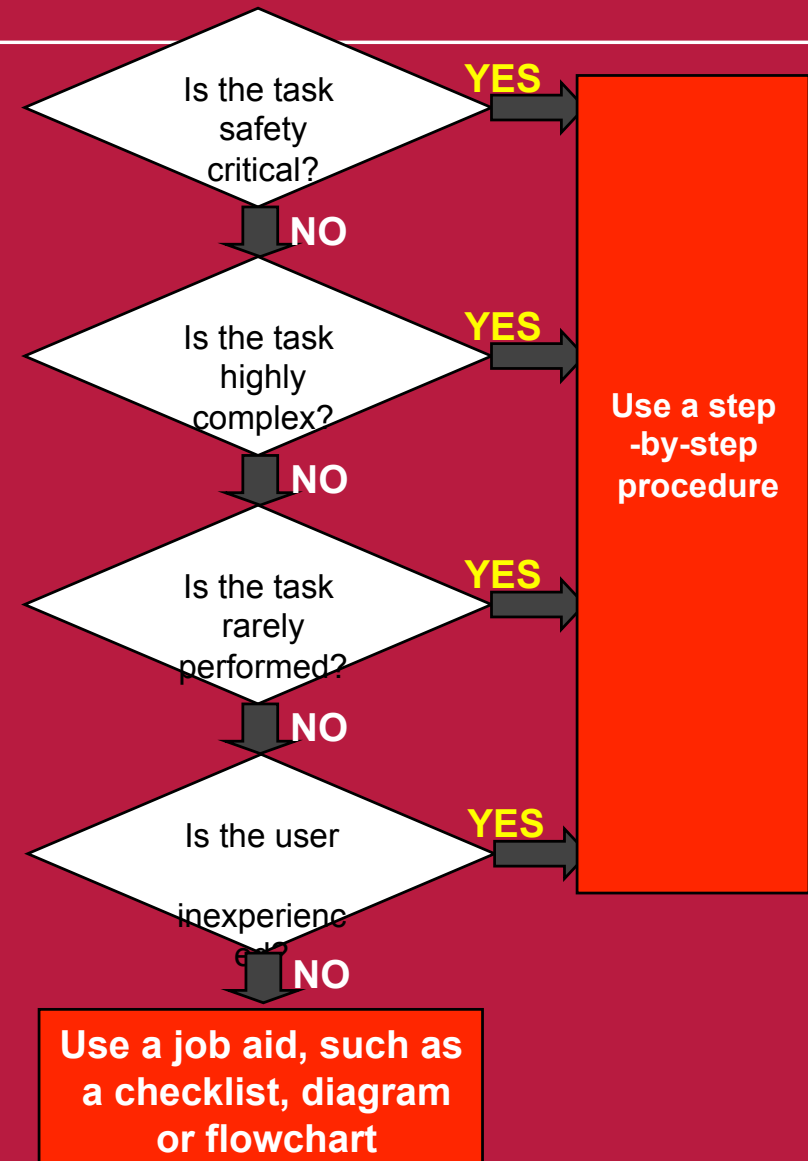
Step 3: Identify the potential human failures in these steps

Step 4: Identify factors that make failures more likely

Step 5: Implement appropriate risk management strategies

Step 1: Who does the task?

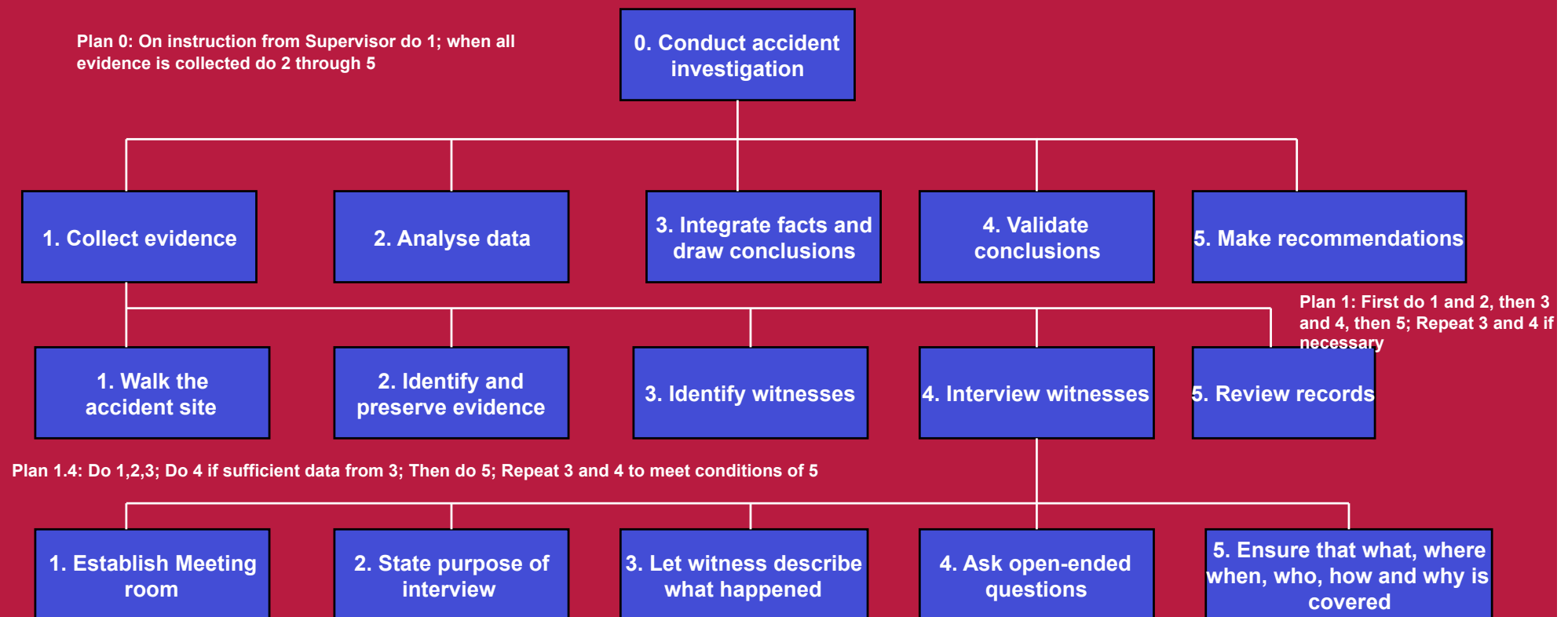
- Amount of detail in the procedure should support the operator, not replace their competence
- What kind of procedure?
 - Background detail
 - Step-by-step written procedure
 - Job aid (e.g. checklist, flowchart, diagram)



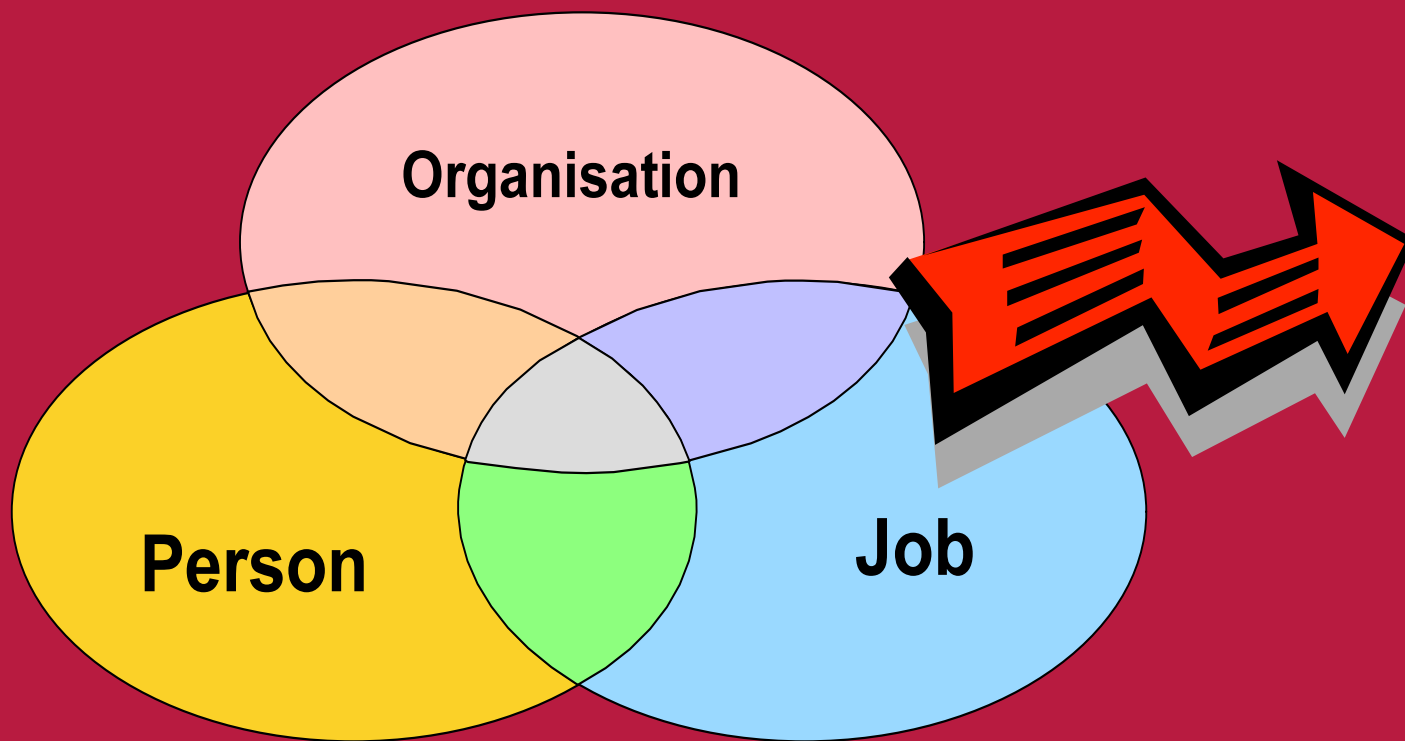
Step 2: Outline the key steps in these activities



Sound decomposition of task, e.g. task analysis



Step 3: Identify the potential human failures



ERRORS

MISTAKES

VIOLATIONS

Step 4: Manage Performance Shaping Factors

- Usability of procedures (contents)



- Clearly and precisely expressed to avoid doubt
- Represent the best way of doing the job safely, without undesirable side effects;
- Limited in number, in cases where staff are expected to remember them accurately
- Checked by staff to ensure they are practical, easy to follow, and fully understood
- Explain, where possible, the purpose of any controls and checks to enable staff their understand their importance
- Ensure that the user can confirm most current version of procedure

Step 4: Manage Performance Shaping Factors

- Usability of procedures (clarity)



- Ensure that the sequence of steps in procedure reflects the actual task;
- States **who** does **what**, and **when**?
- Highlights unusual features of the task
- **Warnings** appear before relevant step
- Conforms to Human Factors best practice, e.g. HSG 48
- Use simple language and avoid jargon (recognise the language needs of user);

Recognise the language needs of the individual
using the procedure



Step 4: Managing Performance Shaping Factors

- Workload, Shift patterns and Fatigue



- Production/time pressures?
- Sufficient staffing levels to meet workload/demand?
- Time-on-shift effects
- Time-of-day effects
- Shift patterns

Step 4: Managing Performance Shaping Factors - Environmental Factors



- Temperature
- Humidity
- Noise
- Lighting
- Weather

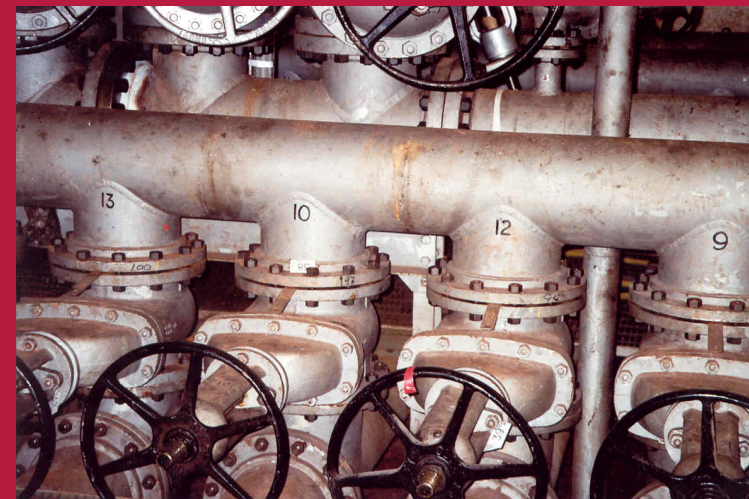


Step 4: Managing Performance Shaping Factors

- Plant and Equipment Design



- Ergonomic 'fit'
 - Labelling
 - Improvised tools



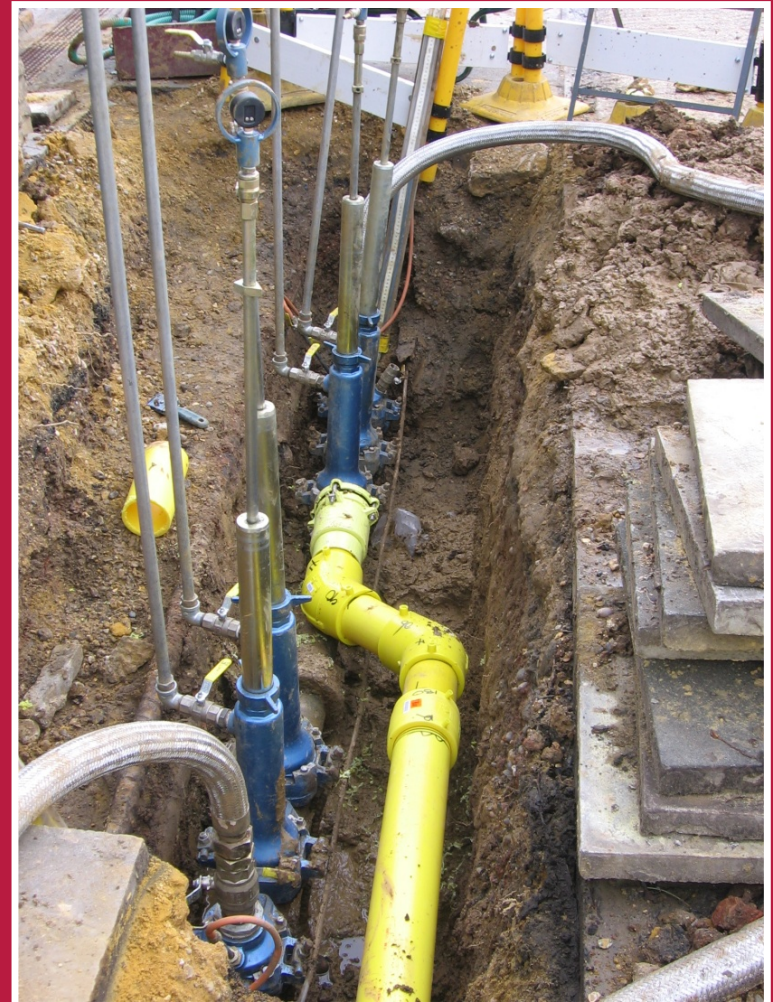


Step 4: Managing Performance Shaping Factors

- Supervisor Effectiveness



- Supervisor skill set underestimated
- Lowest standard accepted is the highest that can be expected
- Team Player Vs. Team Leader



Step 5: Implement appropriate risk management strategies



- Controls appropriate to human failure type
- Manage risks using hierarchy of control (eliminate, substitute, reduce etc)

Conclusion

- Behavioural-Based Safety is a useful approach to improving safety performance if it considers antecedents and root causes of behaviour;
- BBS will have more of an impact if the SMS of the organisation is mature and includes Human Factors in risk assessments;
- The procedural review method is one way of checking that risk assessments are valid;
- Foreseeability and reasonably practicable – focus on ‘Human Factors’ by HSE to determine whether incident represents an isolated act or an example of wider custom and practice within the organisation.

• Questions?