Safety & Behaviour Change

Three Mile Island – Nuclear 1979

Fukushima Nuclear – 2011

Windscale (Sellafield) Nuclear 1957

Piper Alpha - Oil 1988

Bhopal – Chemicals 1984

Buncefield – Chemicals 2005


Kegworth - 1989

Challenger – Space Shuttle - 1986

Safety & Behaviour Change

A Well Trodden Path

Public health

Behaviour Change Agendas

Prevention Focus

Disease reduction

Personal responsibility

Lifestyle issues

Diet

Alcohol

Smoking

Exercise

Perception of risk

Motivating cautionary behaviour
**Why do people take risks?**

**Key distinction between: Human Error & Volitional acts**

**Human Error**
- Unintended Acts
- Slips
- Lapses
- Incomplete mental models

**Conscious unsafe acts**
- Reasoned action
  - Based on some form of assessment of costs & benefits
    - e.g. rule infringement
    - short cuts
    - defeating machinery guards
    - improvising

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**Volitional Risk Taking**

People take risks because:
- Time pressure
- Unrealistic optimism
- Natural reinforcement - quicker / easier / less effort
- Custom & practice
- Systems of payment & reward
- Most risky acts have ‘positive’ outcomes
- Frustration
- Goal centredness
- Interpretations of managerial priorities

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**A Historical Focus on Individuals**

**Accident proneness**
- Personality differences
- No reliable profile measures
- Risk of masking underlying causes
- Assumes risk taking is a minority activity
- Clouded by skills deficits
- Most people are just lucky

**Risk homeostasis**
- Assumes that we adjust our behaviour to maintain a constant level of risk
Socio-Technical Systems

Human Factors

Individual
- Competence
- Ability
- Training / Skills
- Personality
- Beliefs / attitudes

Organisation
- Structures
- Systems of work
- Leadership style
- Culture
- Resources
- Risk management
- Systems

Job
- Workload
- Technology
- Procedures
- Performance objectives
- Social relations

Behaviour Change

Interventions

- Currently Two Influential Perspectives
  - Safety Culture / Climate
  - Behaviour-based Safety

Individuals & Contexts

Safety Culture

Key Behaviour Change issue - Individuals & Situations
Safety Culture / Climate Perspective

- Leadership style
- Managerial Commitment
- Priorities
- Norms
- Conformity

What do we mean by safety culture?

- The way we do things around here
  - Custom & practice
  - Accepted norms – what’s OK
  - Sub-cultures – e.g. work team differences
- The way we would like things done around here....

  Latent drivers
  - Time pressure
  - Unrealistic optimism
  - Natural reinforcers - quicker / easier / less effort
  - Custom & practice
  - Systems of payment & reward
  - Most risk acts have ‘positive’ outcomes
  - Frustration
  - Goal centredness
  - Interpretations of managerial priorities

Organisational climate

Negative
- Low corporate commitment
- Reactive
- Low trust
- Blame

Positive
- High corporate commitment
- Active / learning
- High trust
- Focus on root causes
Safety Culture Maturity

Hierarchy of Risk Control

Focus on Behaviour only when...
- possess an adequate Safety Management System
- compliant with H&S law & good practice
- technical failures are not the cause of the majority of accidents
- safety agenda driven by the desire to prevent accidents - not the desire to avoid prosecution

Safety Climate Surveys

Output
- A profile of organisational risk management performance
- A benchmark against which to assess change
- An agenda for change
- Capacity to compare the profiles of different parts of the organisation
- Evidence-based strategic - segmented change agenda

Interventions
Safety Climate Tools

Questions
- I am clear about what my responsibilities are for health and safety.
- There is good communication at shift handover.
- Safety rules are adhered to even under production pressure.
- Sometimes I am uncertain what to do to ensure health and safety in the work for which I am responsible.
- The training I had covered all the health and safety risks associated with the work for which I am responsible.
- Training has given me a clear understanding of all those aspects of my job which are critical to safety.
- People here are consulted to establish their training needs.
- I fully understand the health and safety risks associated with the work for which I am responsible.

Typical trajectory
- Conduct staff survey 😊
- Produce scores 😊
- Interpret scores 😛 😎
- Devise intervention plan 😛 😎
- Apply intervention plan 😛 😎
**Behavioural Safety Perspective**

- Accidents are caused by unsafe acts.
  - Directly reducing risk taking behaviour should therefore prevent accidents.
  - Primary focus on volitional risk taking – rather than error.
  - Belief that major injuries and minor injuries share a common basis (Heinrich 1959)
  - Thus tackling behaviours associated with minor events also mitigates high impact events.

**Examples**

- Major
- Minor
- No injury accidents
- Unsafe acts

### Behavioural Safety - Traditional Approaches

#### Essential Elements

- Identify target behaviours
- Observe employee behaviour and antecedents of behaviour
- Assess referenced to defined safe/unsafe behaviour
- Behaviour change
  - Normative feedback
  - Incentives / rewards
  - Goal setting
- Focus
  - Front line staff
  - Presenting behaviour

#### Claims

- 80%+ of accidents due to behaviour – not unsafe conditions
- Reinforcing safe behaviour - improves attitudes to safety
- Employees involvement inc’s ownership & compliance
- Enhanced personal responsibility for safety

#### Their Appeal...

- Simple & intuitive
  - Easy to operationalise
  - They produce numbers – people like numbers
- Low cost
  - To design
  - To implement
  - No major implications for the behaviour of senior staff
- Aligns with traditional focus on individuals
  - i.e. it’s ignorant / deviant / careless people who have accidents
- It’s something organisation can do....

#### Areas of Contention

- Blaming the messenger
  - Do not address underlying causes
- Underplay situational drivers
- Overplay
  - normative influence
  - role of praise
  - impact of rewards
- Feeds them & us orientation
  - they need to change their culture
- Focus on low consequence issues
- Focus on behaviour – not winning hearts & minds
- Risks diverting attention from complex hazards
The need for an integrated approach

Safety Climate

Culture Change
Top-Down
Right problems
Right solutions

Bottom-up
Behaviour Change
Right people
Right messages

The Need for an Evidence-Based Approach

Organisational Learning

Organisational Learning

The Need for an Evidence-Based Approach

Trail indicators - The Limits of Outcome Data -


Insight?
- Identifying trends unreliable
- Ill health long lead in
- Near-miss partial
- Risk management practice data poor
- Feedback on investment data poor
Intelligence gathering

Plugging the Gaps in Outcome Data

Lead indicators
Primary Data Sources
- Safety culture employee surveys
- Behavioural auditing
- Health monitoring
- Root cause analysis

Lead Indicators
Role in Risk Management
- Intelligence gathering
  - Measures of potential – not outcomes
  - Measures of risk management performance
  - Measures of compliance with good practice
  - They are not risk management interventions
  - They do not engender behavioural change
    - They are barometers
Lead Indicators

Output
- Reliable data on potential
  - can be used to highlight hot spots / inform priorities of issues / areas for change
- Provide a focus for discourse with staff
  - tells us more about how much rather than why
- Provide an agenda for change
  - informs thinking over intervention(s)
- Benchmark performance – and assess improvement
  - Performance manage interventions.
  - Rather than hit and hope...

Conclusions
- The quality of the behavioural-based ‘solutions’ on offer is highly variable
  - Done well -
    - they offer a valuable component of a comprehensive and integrated approach to risk management.
    - they contribute to organisational learning
      - Barometer of performance
      - Feedback on progress of interventions
      - A focus for worker engagement / involvement in developing solutions
  - Done poorly -
    - their linkage to the underpinning science is barely discernable.
    - they are the latest quick fix cast adrift into an otherwise hostile safety climate