NBAA

Your Essential Role in Safety Culture Development

Thursday, Feb 09, 2017 | 8:45 a.m. – 10:00 a.m.

PRESENTED BY:

Stephen Birch

SCHEDULERS & DISPATCHERS CONFERENCE

February 7-10, 2017 | Fort Worth, TX

Presentation Goal

S&D Impact to Safety Culture

Presentation Goals

What will I leave with?

- Gain an understanding of core safety culture concepts

- High-trust organizations rely upon individual stakeholders

- Understanding of how S&D impacts safety culture

- A desire to join the safety committee of your organization

Safety Culture Introduction
What is it?

- High degree of academic definition debate beginning in 1982

- "The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management"

- Ultimately, the ability of the organization to align policy and action

Source: Cox, S., & Flin, R. (1998). Safety culture: Philosopher's stone or man of straw? *Work & Stress, 12*(3), 189–201.

Safety Culture Introduction

Normal Accident Theory

- Introduced the complex interaction between man and machine

- "tightly-coupled technological systems and unexpected failures are inevitable and cannot be eliminated through redundancy"

- Developed in response to Three Mile Island nuclear meltdown

- Served as the foundation for NASA during Challenger launch explosion

Source: Perrow, C. (1984). *Normal accidents : living with high-risk technologies.*
New York, NY: Basic Books.

# Safety Culture Introduction

Organizational Accident Theory

- Organizational accident: a rare but often catastrophic event that occurs within complex modern technology

- Organizational Accidents arise from:

    - Latent decisions (dormant or active)
    - Organizational decisions
    - External decision paths

- Proposes Swiss Cheese Model

Source: Reason, J. T. (1997). *Managing the risks of organizational accidents*. Brookfield, VT: Ashgate.

Safety Culture Introduction
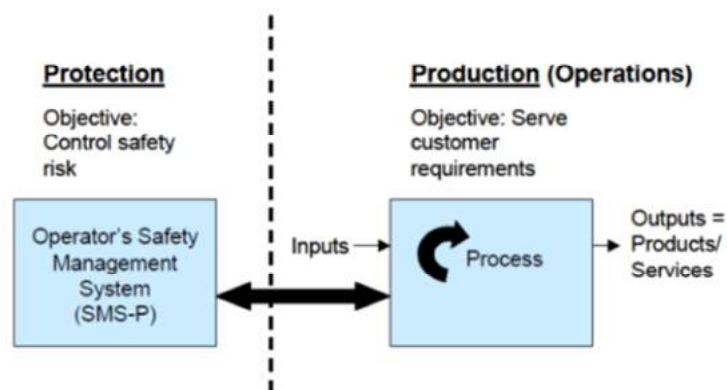
Familiar? Swiss Cheese vs. Accident Chain
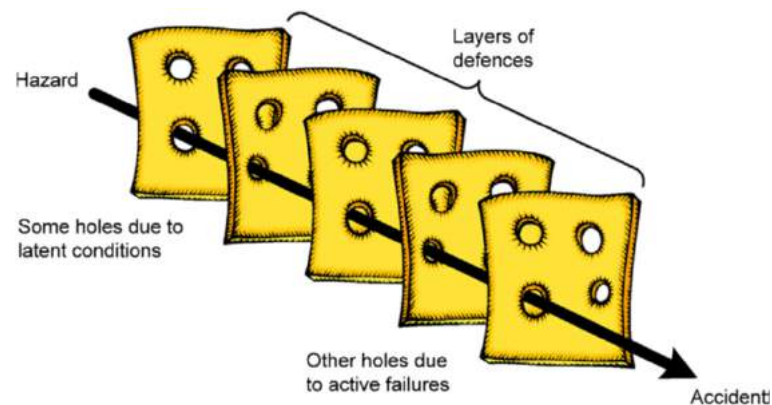
Source: Underwood, P., & Waterson, P. (2014). Systems thinking, the Swiss Cheese Model and accident analysis: a comparative systemic analysis of the Grayrigg train derailment using the ATSB, AcciMap and STAMP models. *Accident; Analysis and Prevention*, 68, 75–94.

Safety Culture Introduction

Introduction of SMS

- Concept of SMS introduced early

- Protection: Institutional methods taken to protect the service from human error

Protection

Objective: Control safety risk

Operator's Safety Management System (SMS-P)

Inputs → Process

Production (Operations)

Objective: Serve customer requirements

Outputs = Products/Services

Sources: FAA AC 120-92

Safety Culture Introduction
High Reliability Organizations

- HROs ≠ high risk

- Builds on Perrow and Reason in creating error-free organizations

- Aviation operations rely on internal and external factors to achieve safety

- Term *sociotechnical systems* captures this complex interaction

- Desire to create predictable processes aid in HRO development

Sources: Weick, K. E. (1987). Organizational culture as a source of high reliability.
California Management Review, XXIX(2), 112–128.

Safety Culture Introduction
High Trust Organizations

- Trust between individuals is critical to building safety culture

- Focus on quality of interactions between employees

- Key drivers of high-trust: competence, openness and honesty, concern for employees and stakeholders, reliability, and identification

Sources: Shockley-Zalabak, P. S., & Morreale, S. P. (2011). Building high-trust organizations. *Leader to Leader*, *2011*(60), 39–45.

Audience Demographics

Who is here?

- S&D representing Part 91, 135, 121

- How many currently serve or have served on the safety committee?

- How many have been interviewed/tasked during a safety audit?

- Would you assess your existing safety culture as effective?

- What makes it this way?

Organizational Culture
S&D Statistics

- 94% of all safety and quality measurement tools include S&D activities

- S&D role exists in only 18% of Part 91 operators

- 8% of S&D members on a safety committee in Part 135 operators

- 5% of S&D members on a safety committee in Part 91 operators

Source: Pepperdine University study (2016)

Organizational Culture

S&D – First Line of SMS Effectiveness

- Wary of automated tools

- Implementation of FRAT-type measures

- S&D touches every aspect of the operational process

  - Security
  - Crew rest
  - Route planning
  - Logistical relationships

Sources: enter sources here

Organizational Culture
Developing Safety Culture

- S&D touches multiple levels of the organization to influence attitudes, perceptions, and group values

- Continued professionalism instills safety culture

- Safety culture development is individualistic in nature, social in execution

- SMS and other programs are designed for processes

- Human error remains greatest barrier to effective safety culture development

Source: Rochlin, G. I. (1999). Safe operation as a social construct. *Ergonomics, 42*(11), 1549–1560.

Organizational Culture

## Ways S&D Impacts Safety Culture

- Continue to improve existing processes and implement reform when required

- Encourage open reporting and data collection capturing safety measures

- Be diligent to identify and report non-compliant behavior

- Share information and analysis

- Be flexible to dynamic and demanding task environment

Source: Parker, D., Lawrie, M., & Hudson, P. (2006). A framework for understanding the development of organisational safety culture. *Safety Science, 44*(6), 551–562.

Organizational Culture
S&D Role in Institutional Trust

- Trust built on contingent reward

- NASA and Carrier Operations example of trust
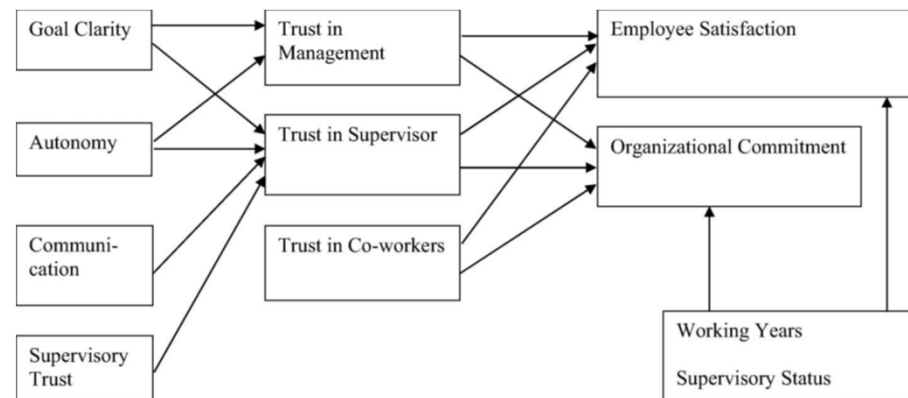
Source: Cho, Y. J., & Park, H. (2011). Exploring the Relationships Among Trust, Employee Satisfaction, and Organizational Commitment. *Public Management Review*, *13*(February 2015), 551–573.

S&D Influences Safety Culture

Reasons to Join Safety Committee

- S&D processes guide safety culture decision making

- Few other positions have ability to influence broad sections of the organization

- Contact with wide range of stakeholders

- Direct interaction with safety review auditors in multiple areas

- Insight to process inefficiencies and improvements due to daily usage

Presentation Goals
What will I leave with?

- Gain an understanding of core safety culture concepts

- High-trust organizations rely upon individual stakeholders

- Understanding of how S&D impacts safety culture

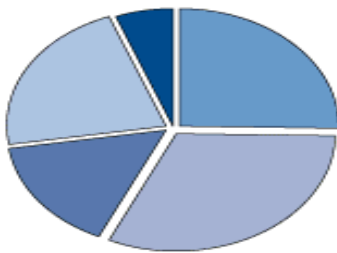- A desire to join the safety committee of my organization

National Business Aviation Association   1200 G Street NW, Suite 1100   Washington, DC 20005   (202) 783-9000   www.nbaa.org

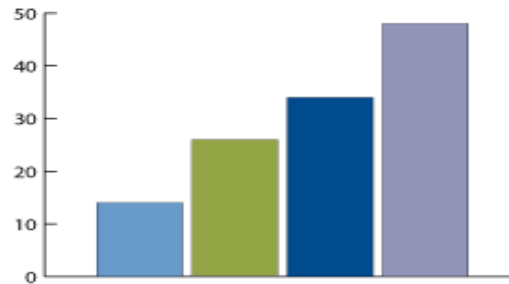| Heading	Column 2	Column 3	Column 4	Column 5
Row 1				
Row 2				
Row 3				
Row 4				
Row 5				
Row 6				
Row 7				
Row 8				

Sources: enter sources here

Developing Safety Culture

S&D on the SMS Safety Committee

Try using the shades in the same color.

Keep Chart Colors Within the Branding Palette.

Sources: Pepperdine University study, 2016