Safety Management As Seen Through Three Lenses

- Strategic Design Lens
- Political Lens
- Cultural Lens

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Safety Management

• Many approaches to safety and reliability have developed over time:
  – Engineering design and engineered barriers, probabilistic risk analysis, redundancy
  – Human factors, task design, stress and overload, training and procedures
  – Management and leadership, vision, incentive plans
  – Safety culture/climate, attitudes and values
• No “One Best Way” or “Silver Bullet” – must look at safety using multiple “lenses”
Strategic Design Lens

- **Model**: organizations are designed (engineered) to achieve agreed-upon goals
- **Key processes**: grouping (formal structure), linking, alignment, fit to environment
- **Key concepts**: goal-directed, tasks, roles, information flows, interdependence
- **Leader**: strategist, designer, architect
- **Drivers of change**: lack of fit to environment, internal lack of alignment
Safety Through Design

- Engineering risk analysis and design
- Human error probabilities and response shaping factors
- Barrier analysis (Swiss Cheese) models
- Reliability through redundancy
- Control systems approaches to administrative hierarchy
- Procedural controls, prescriptive regulation
- Cost-benefit analysis (everything is $)
Is Strategic Design Enough?

• The basic idea of strategic design is “get people with the right knowledge and give them appropriate tasks to do and sufficient information to accomplish the organizational goals”

• But, this assumes:
  – clear and agreed-upon goals
  – clear roles and tasks and sufficient information

• Is “safety” a clear goal? How do you trade off safety vs. production, costs, profits? Your goal vs. your boss’s or another department goal?

• What if procedures & rules are *incomplete* (as they always are)?
Drug Administration Example

• Hospitals want to give the right drug in the right dosage to the right patient at the right time

• How do you make sure this happens?
  – Procedures and training
  – Redundancy (a second nurse checks up)
  – Bar coding meds and patients
  – Unit dosing
  – Problem reporting and continuous improvement
  – Culture of speaking up, psychological safety

• Every one of these has potential side effects, including on engagement of stakeholders
Political Lens

- **Model**: organizations are contests for power and autonomy among stakeholders
- **Key processes**: conflict, negotiation, coalition building
- **Key concepts**: power, influence, networks, autonomy, interests, dominant coalition
- **Leader**: coalition builder, negotiator
- **Drivers of change**: shifts in power of stakeholders (can be influenced by changes in design, environment, or strategy)
Power Failures

• Trading off safety vs. production is also a political battle of stakeholder interests – build a coalition for safety/rel.
• Who advocates for production, and what are their power bases?
• Who advocates for safety; their influence/credibility?
• When elites are at risk, industries are safer, e.g., aviation vs. mining
• You can’t “regulate in” safety (e.g., in Japan, regulators expect to retire into industry jobs)
• Command-and-control usually produces resistance
• Middle managers are often an impediment – they see new practices as reducing their power
Safety Staff Influence

• What is the typical status of safety staff?
  – No one listens to them or trusts them?
  – Despised, get in the way of real work?
  – Least competent people are put in safety?

• Safety staff have influence because of legal and regulatory requirements

• What if the only way to become an executive was to rotate through safety?
SUBSAFE Separation of Powers

Navy program to assure hull integrity and operability post-
Thresher: checks and balances

Platform Program Manager

Program Manager can only select from set of acceptable options derived by ITA

Independent Technical Authority

Independent Safety & QA Authority
Cultural Lens

- **Model**: organizations are shared mental maps, identities, assumptions
- **Key processes**: meaning and interpretation, attribution, “taken for granted” (cognitive), “invested with value” (normative)
- **Key concepts**: artifacts, symbols, myths, values, assumptions, identities, subcultures
- **Leader**: symbol of the culture, shaper of the culture, articulator of symbols and vision
- **Drivers of change**: challenges to basic assumptions, new interpretations
Safety Culture

• Do organizations have “a culture” or do they have “cultures” from professions, departments, locales, etc.?
• What does “safety culture” mean – is it just everything we can’t measure objectively?
• Is culture more than climate?
• Is HRO primarily a cultural approach about attitudes and values?
Incident Investigations

• Goal is to analyze and solve problems
• The cultural subtext is mutual respect and understanding across disciplines and levels:
  – Would operators talk to engineers?
  – Would managers listen to critics?
  – Would managers understand recommendations?
• “Tilt the culture” by working together on common problems in new ways that enact new values and assumptions (continuous improvement programs have similar collateral benefits by empowering people, creating trust, etc.)
So What? Using The Lenses

• Complex systems may have no “root causes” or “right answers” (that’s a Strategic Design Lens idea)
• Using all the lenses is a way to be more comprehensive – to get “unstuck” from the familiar (what we pay consultants for)
• Useful for incident investigation, design of interventions, change management, etc.
• Continual adaptation to new technology, knowledge, social issues, regulation, etc.
# JCAHO Approach

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