

Intermediate Approaches to High Reliability: Advanced Concepts on Reliability

Gerard Koenig:

The Bornem Incident. (Coke)

June 11 to 14, New confounding incidents: imposed recall and Ban.

Unconvincing explanations.

Scare spread worldwide, Coke's chairman assures the CCC.

The Belgian Episode and the HRO principles:

Bornem is not a sudden onset incident; it took place after an incubation period.

-four adults are nauseated after drinking Coke from little bottles filled in Antwerp on May 12

Illustrate the five principles of HRO

(1) Sense-making is a figure ground issue: interpreted without sufficient attention to context.

(2) Restrain propensity to simplify.

--Simplification: Coke insisted that the product is safe.

(3) Migration of decision.

(4) Cultivate resilience, keep errors small, improvise to keep the system functioning.

(5) Let decisions migrate to those with the expertise.

Versatility of the HRO framework: Levees, fires, soft drinks. Time pressures (low, high, intermediate); Figure/ground (complex figure, ground: complex combination of known elements; ground: complex combination of known and unknown elements). Sense-making structure: network of competencies; identified and bound: uncertain).

Bob Bea:

High Reliability and Low Reliability.

(1) High consequence compromises in quality.

(2) Life cycle failures: equality costly: quiet project failures that usually show up in court proceedings.

(3) Quality: ability to satisfy requirements: serviceability; safety; compatibility; durability.

- (4) Reliability: probability of developing desirable of the above four qualities.
- (5) Engineered system consisted of three complimentary systems.
- (6) Three complimentary approaches: proactive knowable; interactive unknowable, reactive reactionary.
- (7) Time-frame of approaches. Probability of failure increases as one goes from proactive, to interactive, to reactive (learning from history).
- (8) Three complimentary strategies:
- (9) defenses in depth, organizational performances (extensive process auditing, etc) command and control (migrating decision making, redundancy, rules & procedures, etc)
- (10) The world is full of non HRO practices.
- (11) Mapping through case history analysis.
- (12) Five Cs: commitment; capability (top down, down up), cognizance, culture, counting (measures created to recognize tangible and intangible benefits).

Karl Weick.

The past settles its accounts: Patt Lagadec. Preventing Chaos in a crisis. “the ability to deal with a crisis situation is largely dependent on the structures that have been developed before chaos arrives. The event can in some ways be considered as an abrupt and brutal audit: at a movement’s notice, everything that was left unprepared becomes a complex problem, and every weakness comes rushing to the forefront.

During crisis, people fall back into their dominant, habitual tendencies. When pressures are put on the firefighters, they reverted back to the old wild life methods without foresights.

Paul Schulman (1997). Canyon:

(1)The major determinant of reliability in an organization is not how greatly it values reliability or safety per se over other organizational values , but rather how greatly it disvalues the mis-specification, mis-estimation, and misunderstanding of things.

(2) All else being equal, the more things that more members of an organization care about mis-specifying, mis-estimating, and misunderstanding, the higher the level of reliability that organization can hope to attain.

Sense-making vs. decision-making: Paul Gleason.

Decision-making:

“If I make a decision, it is a possession; I take pride in it; I tend to defend it and not to listen to those who question it.”

Sense-making:

“If I make sense, then this is more dynamic and I listen, and I can change it. A decision is something you polish. Sense-making is direction for the next period.

Explain yourself:

Situation: Here is what I think we face.

Task: Here is what I think we should do.

Intent: Here is why

Concern: Here is what we need to watch.

Calibrate: now talk to me.

Questions raised by the audience.

(1) Tony: Controversies and debate in the field of HRO. Pattie Cornell in Engineering: tell me what is your concept of high reliability. I still don't know what a high reliability organization is. Medicine and Aviation. Randomly selected doctor is far less reliable than a randomly selected aviator.

Bob: We still don't have objective measures that measure an HRO. We are still in the research phase of developing the coherent framework of an HRO.

Karl: What problems do you encounter upstream and down stream? What are unexplained? People equate high reliability with high variability, and that is wrong. It's not helpful for a company to claim itself as an HRO or not. It's too monolithic.

(2) Sam: Tease out the dichotomy between health care with other industries such as aviation which have more systematized processes. Health care relies on professionalism. Surgeons cannot be randomly selected. Do you recommend health care to shift toward systematized processes?

Sutcliff: I will show some data and research later in the afternoon.

Karl: Emory hospital. Hospitals with “hospitalists working with nursing staff” have fewer errors because they can provide more continuity day after day can on site. There are other high reliability roles in the hospital such as this that can increase the amount and consistency of information that can be relevant.

Bob: I'm an engineer, and I am a professional. We cannot influence organizations without influencing the professionalism of the practices.

(3) Hart: Airlines industry. Top down, down up. How is the middle manager influence?

Bob: It's a chain. An organization is a weak link system. You don't have reliability when you don't have consistency through out the system to maintain that inherent stability.