

High Reliability Organizations

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The following is developed from the work of Karlene Roberts, PhD, Haas School of Business, University of California, Berkeley.

Death can come to organizations, individuals, and communities when complex and volatile situations become unmanageable. Organizations and individuals traditionally rely on mechanistic (engineering) or bureaucratic methods for error-free function even in emergencies. Preparation for these situations may include plans for all known or possible contingencies. Reaction during the situation generally relies on collecting information, following an algorithm or protocol, and direction from a central decision maker. However, uncertainty and time-dependence inherent in complex volatile situations will confound these approaches.

Within these complex, uncertain, unstable environments some organizations avoid errors that could result in catastrophic consequences. They conduct relatively error-free operations over a long period of time and make consistently good decisions. Dr. Roberts describes these as High Reliability Organizations (HROs). This concept came from her research on banks and the US Navy's carrier aviation program. Other examples include commercial aviation, many commercial nuclear power plants, the Orange County (CA) Fire Authority, and Totally Kids Specialty Healthcare (subacute and chronic intensive care).

HROs rely on culture and human interactions for flexibility when faced with uncertain, time-dependent threats. An engineering model that consists of gathering facts, designing a solution, and then relying on that solution to work does not offer the flexibility and error reduction necessary to mitigate catastrophic outcomes. An HRO's culture comes from its values, beliefs, and behaviors. These may change when the environment changes from certainty and low risk to uncertainty and high risk.

HROs share five characteristics:

- 1.) Process auditing which is an established system for ongoing checks to spot expected as well as unexpected problems;
- 2.) A reward system that encourages desired behaviors (punitive measures may reward behavior that hides results or redirects blame);
- 3.) Avoiding quality degradation by maintaining the essential quality of the system, this involves constant evaluation of the organization's performance,

its capabilities, and its goals (this is not comparing an organization to a referent standard for the industry);

- 4.) Perception of risk, the knowledge that risk exists and the extent to which the risk is acknowledged and appropriately mitigated;
- 5.) Command and control elements that include:
 - a. Migrating decisions to the person with the most expertise, regardless of where that person is in the hierarchy
 - b. Redundancy in backup systems that do not duplicate each other
 - c. Situational awareness where senior managers see the big picture, do not micromanage, and do not cone attention to small sections of the problem
 - d. Formal rules and procedures that allow predictability yet permit flexibility; there is a definite hierarchy but not in the negative bureaucratic sense
 - e. Training that builds teams with common objective and seamless collective behavior.

Three mechanisms lead to organizational reliability (Bigley, Roberts 2001):

- 1.) Structuring mechanisms
 - a. Elaborate the structure of the problem
 - b. Switch roles as necessary to address the situation
 - c. Authority migration
 - d. Reset the system as the problem expands or contracts or new problems are uncovered
- 2.) Constrained improvisation or adaptive rule-breaking
 - a. People will change the system as the situation evolves using tools, rules, and routines (compared to freelancing where constraint does not contribute)
 - b. When to drop or change one's tools when they no longer fit the situation
 - c. Rules may not fit the situation; error from the strong-but-wrong rule
 - d. Routines adjusted for the specific situation
- 3.) Cognitive management strategies
 - a. Development of operational representation of the situation
 - b. Intense, aggressive communication
 - c. Shifting representational responsibility to others when unable to maintain accurate and viable operational representation
 - d. Nesting of representations along lines of authority.