

Glossary

Descriptions of Common Human Performance Terms and Phrases

Term or Phrase	Description
Accountability	The expectation that an individual or an organization is answerable for results; to explain its actions, or be subject to the consequences judged appropriate by others; the degree to which individuals accept responsibility for the consequences of their actions, including the rewards or sanctions.
Action	Externally observable, physical behavior (bodily movements or speech). (See also <i>behavior</i> .)
Active Error	Action (behavior) that changes equipment, system, or plant state triggering immediate undesired consequences
Administrative Control	Direction that informs people about what to do, when to do it, where to do it, and how well to do it, and are usually documented in various written policies, programs, and plans
Alignment	The extent to which the values, processes, management, and existing factors within an organization influence human performance in a complementary and non-contradictory way; facilitating organizational processes and values to support desired safe behavior
Anatomy of an Event	A cause-and-effect illustration of the active and latent origins (linkages) of plant events initiated by human action
Assumption	A condition taken for granted or accepted as true without verification of the facts. (See also <i>belief</i> , <i>mental model</i> and <i>unsafe attitudes</i> .)
At-Risk Practice	A behavior or habit that increases the chance for error during an action, usually adopted for expedience, comfort, or convenience
Attitude	An unobservable state of mind, or feeling, toward an object or subject
Barrier	Anything that keeps operations or processes within safe limits, or protects a system or person from a hazard. (See also <i>controls</i> and <i>defense</i> .)
Behavior	The mental and physical efforts to perform a task; observable (movement, speech) and non-observable (thought, decisions, emotional response, and so forth) activity by an individual— Generally, we treat observable behavior as measurable and controllable.

Term or Phrase	Description
Behavior Engineering Model	An organized structure for identifying potential environmental and individual factors that impact performance at the job site, and for analyzing the organizational contributors to those factors
Belief	Acceptance of and conviction in the truth, existence, or validity of something, including assumptions about what will be successful
Benchmarking	A process of comparing products, processes, and practices against the best in class, the toughest competitors or those companies recognized as industry leaders; discovering innovative thinking or approaches
Change Management	A methodical planning process to establish the direction of change, align people and resources, and implement the selected modifications throughout an organization, large or small
Coaching	The process of facilitating changes in behavior of another person through direct interaction, feedback, collaboration, and positive relationships. (See also <i>feedback</i> .)
Cognitive (cognition)	Descriptive of mental activity related to sensing and thinking phases of information processing; perception, awareness, problem-solving, decision-making, and judgment
Complacency	Self-satisfaction accompanied by unawareness of actual dangers, hazards, or deficiencies; being unconcerned in a hazardous environment
Conservative Decision-Making	Reaching conclusions by placing greater value on safety than the production goals of the organization—decisions demonstrate recognition and avoidance of activities that unnecessarily reduce safety margins
Controls	Devices, methods, or practices that make an activity or process go safely, effectively, efficiently, predictably, and according to high standards to protect key assets from human error—usually taking an engineered, administrative, cultural, or oversight form. (See also <i>defenses</i> , <i>barrier</i> , and <i>positive control</i> .)
Critical Step	A procedure step, series of steps, or action that, if performed improperly, will cause irreversible harm to equipment, people, or the environment.
Culture	An organization's system of commonly held values and beliefs that influence the attitudes, choices and behaviors of the individuals of the organization. (See also <i>safety culture</i> .)
Cultural Control	Leadership practices that teach (consciously and unconsciously) their organizations how to perceive, think, feel, and behave

Term or Phrase	Description
Defense	Means or measures taken to prevent or catch human error, to protect people, plant, or property against the results of human error, and to mitigate the consequences of an error. (See also <i>barrier</i> and <i>controls</i> .)
Defense-in-Depth	The set of redundant and diverse defenses, barriers, controls, and safeguards to protect personnel and equipment from human error, such that a failure with one defense would be compensated for by another defensive mechanism to prevent or mitigate undesirable consequences.
Dependency	The increased likelihood of human error due to the person's unsafe reliance on or relationship with other seemingly independent defense mechanisms. (See also <i>team error</i> .)
Engineered Controls	Those physical items (hardware, software, and equipment) in the working environment designed to modify behavior and choices, or limit the consequences of undesired actions or situations. These controls may be active (requires action/change of state) or passive (defense requires no action).
Error	An action that unintentionally departs from an expected behavior
Error of Commission	An error that involves performance of an action other than the expected action
Error of Omission	Failure to take an expected action.
Error Precursors	Unfavorable factors that increase the chances of error during the performance of a specific task by a particular individual. (See also <i>human nature</i> , <i>individual capabilities</i> , <i>task demands</i> , and <i>work environment</i> .)
Error-likely Situation	A work situation in which there is greater opportunity for error when performing a specific action or task due to error precursors (also known as "error trap")
Event	An undesirable change in the state of structures, systems, or components or human/organizational conditions (health, behavior, controls) that exceed established significance criteria.
Expectations	Established, explicit descriptions of acceptable organizational outcomes, business goals, process performance, safety performance, or individual behavior (specific, objective, and doable)
Factor	An existing condition that positively or adversely influences behavior. (See also <i>organizational factors</i> .)
Fallibility	A fundamental, internal characteristic of human nature to be imprecise or inconsistent.

Term or Phrase	Description
Feedback	Information about past or present behavior, and results that is intended to improve individual and organization performance.
Flawed Defenses	Defects with engineered, administrative, cultural, or oversight controls that, under the right circumstances, fail to: <ul style="list-style-type: none"> • Protect plant equipment or people against hazards • Prevent the occurrence of active errors • Mitigate the consequences of error (See also <i>anatomy of an event</i> and <i>defense-in-depth</i> .)
Function Allocation	The distribution of actions (functions) among human or machine elements of a system to achieve a particular outcome
Gap Analysis	The process of comparison of actual results or behavior with desired results or behavior, followed by an exploration of why the gap exists
Human Error	A phrase that generally means the slips, lapses, and mistakes of humankind
Human Factors	The study of how human beings function within various work environments as they interact with equipment in the performance of various roles and tasks (at the human-machine interface): ergonomics, human engineering , training, and human resources
Human-Machine Interface	The point of contact or interaction between the human and the machine.
Human Nature	The innate characteristics of being human; generic human limitations or capabilities that may incline individuals to err or succeed under certain conditions as they interact with their physical and social environments.
Human Performance	A series of behaviors executed to accomplish specific results (HP = B + R)
Human Reliability	The probability of successful performance of human activities, whether for a specific act or in general
Individual	An employee in any position in the organization; that is, worker, supervisor, staff, manager, and executive
Individual Capabilities	Unique mental, physical, and emotional abilities of a particular person that fail to match the demands of the specific task
Infrequently Performed Task	Activity rarely performed although covered by existing normal or abnormal procedures.
Initiating Action	A human action, either correct, in error, or a violation; that results in an event. (See also <i>Anatomy of an Event</i> .)

Term or Phrase	Description
Job	A combination of tasks and duties that define a particular position within the organization usually related to the functions required to achieve the organization's mission, such as Facility Manager or Maintenance Technician.
Job Site	The physical location where people touch and alter the facility.
Job-Site Conditions	The unique factors associated with a specific task and a particular individual; factors embedded in the immediate work environment that influences the behavior of the individual during work. (See also <i>error precursors</i> and <i>organizational factors</i> .)
Knowledge & Skill	The understanding, recall of facts, and abilities a person possesses with respect to a particular job position or for a specific task
Knowledge-based Performance	Behavior in response to a totally unfamiliar situation (no skill, rule or pattern recognizable to the individual); a classic problem-solving situation that relies on personal understanding and knowledge of the system, the system's present state, and the scientific principles and fundamental theory related to the system
Knowledge Worker	An individual who primarily develops and uses knowledge or information. (e.g. scientist, engineer, manager, procedure writer)
Lapse	An error due to a failure of memory or recall. (See also <i>slip</i> and <i>mistake</i> .)
Latent Condition	An undetected situation or circumstance created by past latent errors that are embedded in the organization or production system lying dormant for periods of time doing no apparent harm. (See also <i>latent organizational condition</i>)
Latent Error	Errors (typically committed by knowledge workers) resulting in undetected organizational conditions or equipment flaws that lay dormant and may be hidden from view until revealed later by an event, near miss, testing, or self-assessment.
Latent Organizational Condition or Weakness	Undetected deficiencies in organizational processes, equipment, or values that create job-site conditions that either provoke error or degrade the integrity of defenses.
Leader	An individual who takes personal responsibility for his or her performance and the facility's performance, and attempts to influence the organization's processes and/or the values of others.

Term or Phrase	Description
Leadership	The behavior (actions) of individuals to influence the behaviors, values, and beliefs of others.
Leadership Practices	Techniques, methods, or behaviors used by leaders to guide, align, motivate, and inspire individuals relative to the organization's vision.
Management (manager)	That group of people given the positional responsibility and accountability for the performance of the organization
Management Practices	Techniques, methods, or behaviors used by managers to set goals, plan, organize, monitor, assess, and control relative to the organization's mission. (See also <i>practices</i> .)
Mental Model	Structured organization of knowledge a person has about how something works (usually in terms of generalizations, assumptions, pictures, or key words); a mental picture of the underlying way in which a system functions, helping to describe causes, effects, and interdependencies of key inputs, factors, activities, and outcomes
Mistake	Errors committed because the intent of the act was incorrect for the work situation, typically defined by the condition of the physical plant; incorrect decision or interpretation. (See also <i>error</i> and compare with <i>slip</i> .)
Motives	The personal (internal) goals, needs, interests, or purposes that tend to stimulate an individual to action.
Near Miss	Any occurrence that could have resulted in undesirable consequences but did not; ranging from minor breaches in defenses to incidents in which all the available safeguards were defeated, but no actual losses were sustained
Norm	A behavior or trait observed as typical for a group of people.
Organization	A group of individuals with a shared mission, set of processes, and values to apply resources and to direct people's behavior toward safe and reliable operation
Organizational Factors	<ol style="list-style-type: none"> 1) Task-specific sense: an existing job-site condition that influences behavior and is the result of an organizational process, culture, and other environmental factors 2) General sense: the aggregate of all management and leadership practices, processes, values, culture, corporate structures, technology, resources, and controls that affect behavior of individuals at the <i>job site</i>
Oversight Control	Methods to monitor, identify, and close gaps in performance

Term or Phrase	Description
Performance	Any activity that has some effect on the environment; the accomplishment of work. (See also <i>human performance</i> .)
Performance Gap	The difference between desired performance and actual performance, whether in terms of results or behavior
Performance Improvement	A systematic process of identifying and analyzing gaps in human performance, followed by developing and implementing interventions or corrective actions to close the gaps
Performance Indicators	Parameters measured to reflect the critical success factors of an organization. A Leading Indicator is a measure of results or outcomes. A Lagging Indicator is a measure of system conditions or behaviors which provide a forecast of future performance. (also known as “metrics”)
Performance Mode	One of three modes a person uses to process information related to one's level of familiarity and attention given to a specific activity. People will likely use multiple modes to complete a task. (See also <i>Skill-based</i> , <i>Rule-based</i> , and <i>Knowledge-based performance</i> .)
Performance Model	A systems perspective of the context of individual human performance, showing how plant results and individual behavior are interrelated with organizational processes and values through job-site conditions
Performance Monitoring	Review and comparison of performance against expectations and standards using problem reporting, feedback, reinforcement, coaching, observation data, event data, trend data, and so on. (See also <i>performance indicator</i> , <i>performance gap</i> , and <i>gap analysis</i> .)
Performance Problem	A discrepancy in performance with respect to expectations or operating experience, or an opportunity to improve performance created by changes in technology, procedures, or expectations. (See also <i>performance gap</i> .)
Physical Plant	Systems, structures, and components of the facility
Plant Results	The outcomes of the organization in terms of production, events, personnel safety, external assessments, configuration, and so on
Population Stereotype	The way members of a group of people expect things to behave; for example, in the U.S., up, right (direction), or red implies on or energized.
Positive Control	Active measure(s) to ensure that what is intended to happen is what happens, and that is all that happens

Term or Phrase	Description
Practices	Behaviors usually associated with a role that can be applied to a variety of goals in a variety of settings. (See also <i>work practices</i> .)
Prevention Behaviors	Behaviors or practices oriented toward the prevention of errors or events. (See also <i>production behaviors</i> .)
Principles	A set of underlying truths that can be used to guide both individual performance and the management of human performance
Proactive	Preemptive measures to prevent events or avoid error by identifying and eliminating organizational and job-site contributors to performance problems before they occur; preventing the next event
Process	A series of actions organized to produce a product or service; tangible structures established to direct the behavior of individuals in a predictable, repeatable fashion as they perform various tasks
Production Behaviors	Behaviors oriented toward creating the organization's product from the resources provided. (corollary to <i>prevention behaviors</i> .)
Reactive	Taking corrective action in response to an <i>event</i> or <i>error</i> .
Readiness	An individual's mental, physical, and emotional preparedness to perform a job as planned
Reinforcement	The positive consequences one receives when a specific behavior occurs that increases the probability the behavior will occur again
Rigor	Completeness and accuracy in a behavior or process; cautiously accurate, meticulous, exhibiting strict precision during the performance of an action
Root Cause	A cause that, if corrected, will prevent recurrence of an event
Rule-Based Performance	Behavior based on selection of a defined path forward derived from one's recognition of the situation; follows an IF (symptom X), THEN (action Y) logic.
Safety Culture	An organization's values and behaviors—modeled by its leaders and internalized by its members—that serve to make safety the overriding priority. (See also <i>values</i> and <i>culture</i> .)

Term or Phrase	Description
Self-Assessment	Formal or informal processes of identifying one's own opportunities for improvement by comparing present practices and results with desired goals, policies, expectations, and standards. (See also <i>benchmarking</i> and <i>performance monitoring</i> .)
Shortcut	An action, perceived as more efficient by an individual, that is intended to accomplish the intent of actions rather than the specific actions directed by procedure, policy, expectation, or training. (See also <i>violation</i> .)
Situation Awareness	The accuracy of a person's current knowledge and understanding of actual conditions compared to expected conditions at a given time
Skill-Based Performance	Behavior associated with highly practiced actions in a familiar situation executed from memory without significant conscious thought.
Skill of the Craft	The knowledge, skills, and abilities possessed by individuals as a result of training or experience. Activities related to certain aspects of a task or job that an individual knows without needing written instructions
Slip	A physical action different than intended. (See also <i>error</i> , <i>lapse</i> , and compare with <i>mistake</i> .)
Standdown	A period of time devoted by an organization toward the education, training, and sensitization of personnel on issues associated with performance improvement.
Supervisor	That member of first-line management who directs and monitors the performance of individual contributors (front-line workers) in the conduct of assigned work activities
System	A network of elements that function together to produce repeatable outcomes; the managed transformation of inputs (resources) into outputs (results) supported with monitoring and feedback
Systems Thinking	Consideration of the multiple, diverse, and interrelated variables and their patterns that come to bear on a worker at the job site; knowledge of the interdependencies of processes and leadership dynamics on performance—the organizational nature of human performance. (See also <i>Performance Model</i> .)
Task	An activity with a distinct start and stop made up of a series of actions of one or more people; sometimes a discrete action

Term or Phrase	Description
Task Demands	Specific mental, physical, and team requirements that may either exceed the capabilities or challenge the limitations of human nature of the individual assigned to perform the task. (See also <i>error precursor</i> .)
Team Error	A breakdown of one or more members of a work group that allows other members of the same group to err due to either a mistaken perception of another's abilities or a lack of accountability within the individual's group
Uneasiness	An attitude of apprehension and wariness regarding the capacity to err when performing specific human actions on plant components
Unsafe Attitudes	Unhealthy beliefs and assumptions about workplace hazards that blind people to the precursors to human error, personal injury, or physical damage to equipment
Values	The central principles held in high esteem by the members of the organization around which decisions are made and actions occur, such as reactor safety. (See also <i>culture</i> and <i>safety culture</i> .)
Violation	A deliberate, intentional act to evade a known policy or procedure requirement for personal advantage usually adopted for comfort, expedience, or convenience. (See also <i>shortcut</i> .)
Vision	A picture of the key aspects of an organization's future that is both desirable and feasible—to be the kind of organization people would aspire to—that guide employees' choices without explicit direction, but understandable enough to encourage initiative.
Vulnerability	Susceptibility to external conditions that either aggravate or exceed the limitations of human nature, enhancing the potential to err; also the weakness, incapacity, or difficulty to avoid or resist error in the presence of error precursors. (See also <i>error precursor</i> .)
Work Environment	General influences of the work place, organizational, and cultural conditions that affect individual behavior at the job site. (See also <i>error precursors</i> .)
Work Execution	Those activities related to the preparation for, performance of, and feedback on planned work activities
Worker	An individual who performs physical work on equipment, having direct contact (touching) with equipment, and is capable of altering its condition. (Compare with <i>knowledge worker</i> .)

Term or Phrase	Description
Work Practices	Methods an individual uses to perform a task correctly, safely, and efficiently including equipment/material use, procedure use, and error detection and prevention. (See also <i>practices</i> .)