PURDUE UNIVERSITY

Safety&
IMPROVING WORKPLACE SAFETY AND
REDUCING OPERATIONAL RISKS

"Lessons From Management Systems – Leadership and Mgmt. Commitment

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Larry Pearlman, Founder
lpearlman@SAFETYand.org
www.safetyand.net
+1 984.920.7550

Larry Pearlman

Expertise in safety, risk, organization culture, and change management.

Select clients include BP, Chick-Fil-A, Delta Air Lines, Direct Energy, Exxon, FedEx, Hess, Milliken, National Grid, Northrop Grumman, Pfizer, Shell, Suncor and Toyota.

In addition to Safety And, Larry has been employed by Amoco, BP, General Mills, Marsh McLennan, and Pfizer.

He is a lean Master Black Belt.

B.B.A. in Economics and Industrial Relations and Human Resources from the University of Iowa

M.A. in Labor and Industrial Relations from the University of Illinois at Urbana-Champaign.

He serves as an adjunct professor at the University of Illinois since 2012 and Columbia Southern University since 2024.

+Safety&

March 23, 2005

Bolton
Cruz
Herrera
Hogan
Hunnings
King
Linsenbardt
Ramos
Rodrigues
Rowe, J.
Rowe, L
Smith
Taylor
Thomas
White

Introductory exercise

1 How does your organization define process safety leadership?

2 How does your organization evaluate process safety leadership?

Road Map

Captain Hazelwood and the Origins of Safety Management Systems

- ExxonMobil created its Operations Integrity Management System (OIMS) framework in 1989.

- OIMS was created in response to the Exxon Valdez oil spill, as well as other notable incidents.

- OIMS was meant to ensure operations are safe, secure, and environmentally responsible.

- ExxonMobil requires OIMS across all its organization.

- Later, the International Standard Organization (ISO) created the 45001 standard for occupational health and safety.

Captain Joseph Hazelwood

Other High-Risk Businesses Followed

- Exxon's OIMS served as a model for other companies.

- BP created their OMS in 2005.

- Other companies soon followed suit.

- The FAA implemented their SMS in 2015.

- That same year, the API introduce RP 1173 for pipelines.

- ISO 45001 was introduced in 2018.

- All are rooted in the PDCA methodology.
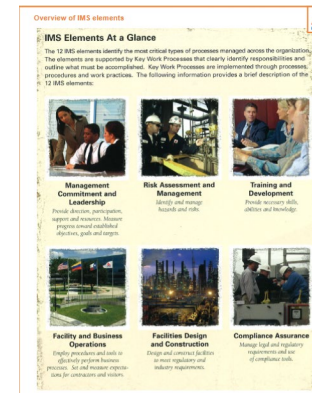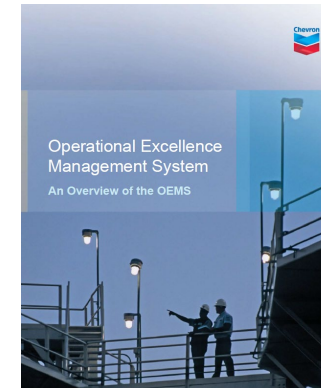
Leadership: A Fundamental Element

Leadership is viewed as the most important factor in successfully implementing a management system.

- "Management establishes policy, provides perspective, sets expectations and provides the resources for successful operations."
  - ExxonMobil

- "Leadership is the single largest factor for success in Operational Excellence."
  – Chevron

- "Leaders demonstrate they care by establishing safety policy, setting expectations, and providing the resources for safe operations."
  – Delta Air Lines

- "Senior leadership must demonstrate a clear commitment to safety through visible support for the SMS."
  – FAA

Commonalities Across Management Systems

- **Commitment**: Leaders should demonstrate a commitment to safety in what they say and what they do.

- **Communication**: Leaders must effectively communicate safety expectations to workers at every level of the organization.

- **Accountability**: Leaders must hold themselves and others accountable for safety performance.

- **Resources**: Leaders must provide the resources necessary to implement and maintain a successful safety management system.

- **Continuous Improvement**: Leaders must participate in continuous improvement of the safety management system.

Does the Data Support That Leadership Makes A Difference?

High leadership engagement in safety processes correlates with a **30-50% reduction** in incidents.
- Campbell Institute "The Impact of Leadership on Safety Performance," National Safety Council, 2018.

Strong leadership involvement have **30-40% fewer injuries** and improved safety outcomes.
- The Health and Safety Executive (HSE), "Leadership and Safety Culture: A Review of Research and Practice," HSE Research Report, 2019.

Companies with visible leadership commitment to safety had **40-60% fewer workplace injuries**.
- National Safety Council (NSC), "The Role of Leadership in Safety Excellence," NSC Safety Management Journal, 2020.

Companies with high leadership engagement in safety achieve **50% lower accident rates** in high-risk industries.
- Global Safety Index, "Safety Performance Benchmarking and Leadership in High-Risk Industries," 2021.

Leadership's proactive focus on safety results in a **25% improvement** in safety outcomes, including **reducing chemical spills**.
- International Journal of Occupational Safety and Ergonomics, "Safety Outcomes and Leadership Engagement in High-Hazard Industries," 2018.

Pipeline Safety Management

1. Leadership & Management Commitment

2. Stakeholder Engagement

3. Risk Management

4. Operational Controls

5. Incident Investigation, Evaluation and Lessons Learned

6. Safety Assurance

7. Management Review and Continuous Improvement

8. Emergency Preparedness and Response

9. Competence, Awareness and Training

10. Documentation and Record Keeping

Top Management: A person or group of people who direct and control the organization at the highest level. Top management can include an organization's chairman, president, executive director, city manager, and their direct reports.

Management - Person or group of people who directs and controls all or part of a facility, location, department, or other function; has fiscal responsibility for the organization; and is accountable for compliance with legal and other applicable requirements.

Sample Process Safety - Leadership Elements

1. **Commitment**

2. **Goals and Objectives**

3. **Accountabilities**

4. **PSMS Scope**

5. **Incentives**
   - Personnel policies support the PSMS, including appraisal, recognition, and discipline.

6. **Safety Culture Tone**

7. **PSMS Design**

8. **PSMS Execution**
   - Training and competence are integrated.
   - Sharing across the organization.
   - Personnel are assigned.

9. **Competence Execution**

10. **Resource allocation**
    - Appropriate resource allocation authority by management
    - Employee and contractor safety programs

11. **Safety Culture**
    - Management assesses, evaluates, and improves the safety culture.

12. **Risk Focus**
    - Management ensures that risk management occurs routinely.

13. **Procedure Use**
    - Employees follow procedures.

14. **Procedure Improvement**

15. **Risk Awareness**
    - Employees identify and reveal risks to Management
    - Take action to prevent cascading failures / catastrophes

Conformance	Effectiveness	Better Practices	Opportunities For Improved Effectiveness

15 Most Significant Leadership Attributes

Commitment to Safety
Clear and visible commitment to safety at all levels, both internally and externally.

Stakeholder Engagement
Communicates commitment to safety with all stakeholders.

Leadership at All Levels
Promotes engagement and leadership.

Policy and Goal Setting
Establishes and communicates measurable policies, goals, and objectives.

Resource Allocation
Ensures proper allocation of resources to maintain safe operations.

Accountability
Clearly defines and communicates roles, accountabilities, and responsibilities.

Process Integration
Ensures processes and procedures are integrated and aligned with safety goals and objectives.

Continuous Improvement
Leads and supports ongoing evaluation and improvement of safety systems.

Risk Management
Promotes proactive risk management processes to identify and mitigate risks.

Safety Culture
Fosters a positive safety culture that encourages openness, trust, and continuous improvement.

Performance Monitoring
Establishes high-level performance measures and monitors outcomes.

Compliance
Ensures adherence to regulatory requirements.

Training and Competence
Promotes training and ensures that people are competent to fulfill their responsibilities.

Incentives and Recognition
Establishes recognition and incentive systems.

Communication
Communicates a clear and constant safety message.

Better Leadership Practices From Top Performers

1. **Personal Passion** — Safety is in their DNA.

2. **Strong Leadership Commitment** — Leaders are "hands on" in safety.

3. **Protection vs. Production Clarity** — Absolute clarity on safety over production.

4. **Focus on Safety Culture** — Purposeful intent to build a strong safety culture.

5. **Budgets and Resource allocation** — Budgets align with aspirations.

6. **Dedicated Safety Resources** — People, process, and tools for safety.

7. **Communication with Stakeholders** — Effective and measured communication with stakeholders.

8. **Learning from Incidents** — Sharing of incidents and updating policies, training & audits.

9. **Business Voice** — Not done "to" the business but "with" them.

10. **Competence Verification** — All crews are verified before they begin work.

SO WHAT?

- Safety Management Systems have become commonplace since 1989.

- Leadership is a critical component of the SMS.

- There is data to support the role of leadership as a necessity for incident and injury reduction.

- Leadership is not a 'squishy' component of an SMS.

- Leadership has a lot of complexity to define and measure.

- Better leadership practices are not surprising, but they are difficult to execute.