Risk Managers are from Mars,
EHS Professionals are from Venus-
The EHS Professionals' Role in ERM

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EHS Manager Job Summary

“Provide professional knowledge and expertise in the administration and support of environmental health and safety programs. Responsible for the overall coordination and implementation of environmental health and safety programs to assure compliance with regulatory agency guidelines and institutional policies.”
Question?

Imagine for a moment that you are interviewing to be hired as the new EHS Director for an organization.

Would you prefer an organization that, while deemed highly compliant with OSHA and EPA regulations, lacks senior level support or a positive safety culture and has a high injury rate;

Or

an organization with senior level support, positive safety culture and few if any regulatory violations, but is not fully compliant with OSHA and EPA regulations that it has evaluated as unlikely to occur?

This is essentially the conflict between compliance-based and risk-based programs.
Fire Extinguishers

Cal/OSHA Title 8 CCR 6151

e) Inspection, Maintenance and Testing.
   (1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.
   (2) Portable extinguishers or hose used in lieu thereof under Subsection (d)(3) of this Section shall be visually inspected monthly.

(d) Selection and Distribution.
   (1) Where portable fire extinguishers are provided for employee use, they shall be selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.
   (2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9m) or less.
THE PROBLEM

Risk Management and EHS Professionals seek the same results yet we typically do not work together.

• Risk Managers see EHS Professionals as a subdivision of their department.

• EHS Professionals typically sees Risk Management as simply the purchasers of insurance.

• Some organizations have a CRO, Chief Risk Officer.

• Few organizations have a CSO, Chief Safety Officer
So Why is This Bad?

Two departments trying to accomplish the same goal with different budgets and personnel

• Inefficient

• Expensive

• Confuses Management on the value of both departments
  — Reduces the value of each department
EHS Professionals & Risk Management Viewpoints

**EHS Professionals** – That science and art devoted to the recognition, evaluation and control of environmental factors or stresses, arising in and from the workplace, which may cause sickness, impaired health and well being or significant discomfort and inefficiency among workers and/or citizens of the community (NSC, Fundamentals of Industrial Hygiene, 3rd Edition)

**Risk Management** – is the process of making and implementing decisions that will minimize the adverse effects of accidental and business losses on an organization. (Fundamentals of Risk Management, 3rd Edition, Volume 1)
EHS Professionals vs. Risk Management Steps

EHS Professionals (Develop Program/process)

Identify/Analyze Hazards
- Property
- Liability
- Personnel
- Automobile
- Business Interruption

Develop methods to eliminate/control hazards

Implement those methods

Monitor Results/Make Changes

Risk Management process

Identify/analyze risk exposures

Exam feasible alternative risk management techniques

Select the best RM techniques

Implement chosen techniques

Monitor Results
Z10 Table of Contents

To provide a base for review and comparison with safety management systems with which SH&E practitioners are familiar, following is the table of contents from Z10.

Foreword

1.0 Scope, Purpose and Application
   1.1 Scope
   1.2 Purpose
   1.3 Application

2.0 Definitions

3.0 Management Leadership and Employee Participation
   3.1 Management Leadership
   3.1.1 Occupational Health and Safety Management System
   3.1.2 Policy
   3.1.3 Responsibility and Authority

3.2 Employee Participation

4.0 Planning
   4.1 Initial and Ongoing Review
   4.1.1 Initial Review
   4.1.2 Ongoing Review
   4.2 Assessment and Prioritization
   4.3 Objectives
   4.4 Implementation Plans and Allocation of Resources

5.0 Implementation and Operation
   5.1 OHSMS Operation Elements
   5.1.1 Hierarchy of Controls
   5.1.2 Design Review and Management of Change
   5.1.3 Procurement
   5.1.4 Contractors
   5.1.5 Emergency Preparedness

6.0 Evaluation and Corrective Action
   6.1 Monitoring and Measurement
   6.2 Incident Investigation
   6.3 Audits
   6.4 Corrective and Preventive Actions
   6.5 Feedback to the Planning Process

7.0 Management Review
   7.1 Management Review Process
   7.2 Management Review Outcomes and Follow-Up

Annexes
   A Policy Statements (Section 3.1.2)
   B Roles and Responsibilities (Section 3.1.3)
   C Employee Participation (Section 3.2)
   D Initial/Ongoing Review (Section 4.1)
   E Assessment and Prioritization (Section 4.2)
   F Objectives/Implementation Plans (Sections 4.3 and 4.4)
   G Hierarchy of Control (Section 5.1.1)
   H Incident Investigation Guidelines (Section 6.2)
   I Audit (Section 6.3)
   J Management Review Process (Sections 7.1 and 7.2)
   K Bibliography and References

The annexes contain explanatory comments, examples of forms and references. While information in the annexes is not part of the standard, it will be helpful to those charged with its implementation.

ANSI Z10 Summary

Characterized by integration of safety management into operations, continual improvement and systemic elimination of underlying root causes of deficiencies.

Major Elements

• Management leadership & Employee participation

• Planning

• Implementation of the Occupational Safety & Health Management System (OSHMS)

• Evaluation and corrective action

• Management Review
ERM Frameworks and Standards

**ISO 31000:2009** - Scope is to enable all strategic, management and operational tasks of an organization throughout projects, functions, and processes to be aligned to a common set of risk management objectives.
Enterprise Risk Management for the EHS Professional

The best EHS professionals understand risk management, and the best risk managers understand EHS.

ERM is essentially the marriage of the two disciplines as it requires the risk and safety managers to collaborate in identifying and controlling a broad array of risk exposures in support of the organization’s strategic plan and mission.
Strategic Plan

In the Spring 2010, the EH&S Directors Leadership Council developed a 5 year strategic plan that provides the necessary guidance to the UC system wide senior management as well as direction to campus and medical center EH&S programs. The goal is to strategically align EH&S resources so as to reduce to the greatest extent practicable the safety and environmental risks associated with the instructional, research and public service mission of the University.

Environment, Health, and Safety Leadership Council

Strategic Plan 2010-2015
(Revised 03-25-10)

Mission

EHS supports the UC mission by promoting a safe, healthful environment in a proactive and cost effective manner that helps the University community minimize their risk.

Vision

The University of California will be a recognized leader by customers, regulators, and our peers in establishing an effective safety culture which holds employees at all levels accountable for environment, health, and safety performance at Campus, Healthcare, and Laboratory settings.

Values
Traditional RM vs. ERM

Reduce Potential Claims

Traditional

Concerned with pure risk and speculative risk

Focused on preventing or reducing potential hazard or operational losses

Risk Optimization

ERM

Concerned with global array of risks

Focused on strategic, financial, operational, hazard, compliance, environment, human capital, reputation, and technology risks
Four Major Differences Between Traditional Management and ERM

**Risk Categories** - strategic, financial, operational, hazard, reputation, environment, compliance, human capital, and technology.

**Strategic Integration** - Traditional risk management looks at pure risk and hazard risk. ERM takes a **holistic approach** to risk.

**Performance Metrics** - How do we measure success? Not just activity based, but result driven.

**Organizational Structure** - ERM is decentralized and integrated to all levels of organization.
Types or Risk Exposures in ERM

- **Hazard risk**
  - risks related to accidental losses, such as workplace injuries, liability torts, property damage, and natural disasters.

- **Financial risk**
  - risks related to financial activities, such as pricing, asset valuation, currency fluctuations, and liquidity.

- **Operational risk**
  - risks related to operations, such as supply chain, customer satisfaction, product failure, or loss of key personnel.

- **Strategic risk**
  - risks related with an organization’s long-term goals and management, such as partnerships, mergers, and acquisitions.

- **Reputational risk**
  - risks related to the trustworthiness of business. Damage to a firm's reputation can result in lost revenue or destruction of shareholder value.

- **Compliance risk**
  - risks related to violations of or nonconformance with laws, rules, regulations, prescribed practices, internal policies, and procedures, or ethical standards.
Why organizations are going ERM?

**Increased Profitability** - Monitors systemic risk inherent in the organization that can adversely affect its long-term financial outlook

**Reduced Volatility** - Exam areas that could affect cash flows

**Improved Ability to Meet Strategic Goals** - Identify risks that would impede growth and achievement

**Increased Management Accountability** - Managers become responsible for the risks they oversee
Why organizations are going ERM?

**Management Consensus** - Creating a corporate culture that embraces risk as an additional component

**Stakeholder Acceptance** - Managers’ understanding that the way they manage will have a positive impact on the organization
How the Safety and Risk Management Departments view each other

Risk Management views EHS’s job as:
- Compliance
- Doing inspections/audits
- Accident investigations
- Focused on employee safety

EHS views Risk Management’s job as:
- Buying insurance
- Settling claims
- Analyzing loss data
- Access to resources
- Risk managers/actuaries don’t give credit for safety initiatives
So Which Is Better?

EHS Professionals

• EHS Professionals works with 1st line supervisors to see controls are implemented
  ― May lack Exec. Level support

• EHS Professionals works closely with 1st line and Mid-level mgmt thus getting the true picture
  ― Results often don’t get accurately reported to Exec. Level

• EHS Professional is often not considered “elite” because it doesn’t work at Enterprise level
  ― Often EHS Professionals can measure the results more accurately
So Which Is Better?

Risk Management

• Works on more of an “enterprise” level
  — Lacks attention to detail (root cause) like EHS Professionals

• Works with Exec. Mgmt and has more info available
  — May lack feedback from employees and 1st line supervisors

• Often considered more “elite”
  — Measurements may not be as accurate (more lagging)
Solution

Integrate the best of both EHS Professionals and Risk Management to form a more cohesive dept.

• Look at Enterprise wide risk
  — Ensure controls are implemented effectively

• Better evaluation of cost of losses and controls
  — Improves risk financing
How to Make this Happen

EHS Professionals must insinuate themselves more strongly into the risk financing decisions

- Use risk control expertise to influence RM decisions

- Use risk identification and analysis expertise to influence RM decisions
How to Make this Happen

In order to integrate RM and EHS Professionals, the EHS Professionals professional must initiate the action by building relationships with Risk Managers and their staff and show the value “EHS Professionals” brings to the table

• Speak the RM language

• Be able to talk about losses in financial/RM terms

• Speak more intelligently about risk financing

• Show how the “EHS Professionals model” is more effective in reducing risk
UC Case Study

ERGONOMICS AND INJURY PREVENTION

UNIVERSITY OF CALIFORNIA

ENTERPRISE RISK MANAGEMENT
Everyone is a Risk Manager
Analysis of Return on Investment

by

Bickmore Risk Services
BSAS Initial Concept & Goals

Concept

• Developed as a funding mechanism to invest in *new and innovative* loss prevention and loss control measures with the goal of reducing the cost of risk as it relates to employee safety

• Not intended to supplement program budgets

Funding

Currently funded at 10% off each location’s workers’ compensation base accrual rate
Rationale for Program

Provides the locations with funding for loss prevention and loss control programs that were not available prior to the inception of BSAS

Has a direct impact on the locations’ WC accrual rate

• Investing in loss prevention and loss control will reduce the locations’ core premiums, as the actuary provides a rate discount to those locations participating in the BSAS program

Investing in loss prevention will lead to a reduction in claim frequency, which in turn will have a positive effect on a location’s severity and overall claim exposure

Investing in employee health & safety through loss prevention and loss control is a sound business decision
Risk/Loss Profile Driven Strategy: Proposals by Project Purpose 2005-2010

- Ergonomics - Programs/Staffing: 27%
- Multiple Areas & General Safety Programs/Staffing: 22%
- Wellness: 10%
- Safety Training: 5%
- Safety Equipment: 5%
- Investigation: 3%
- Return-to-Work: 4%
- Outreach: 2%
- Lab Safety: 2%
- Stress/EAP: 2%
- Other: 10%
- Ergonomics - Equipment: 7%
- Ergonomics - Training: 1%
University of California “Be Smart About Safety” (BSAS): Analysis Methodology

Control data valued as of 6/30/06

Evaluation BSAS projects funded and implemented

Experimental data valued as of 6/30/08

FY 2005-2006

FY 2006-2007

FY 2007-2008
### Claim Profile Results
Workers’ Compensation Program Statistics

<table>
<thead>
<tr>
<th></th>
<th>FY 05-06</th>
<th>FY 06-07</th>
<th>FY 07-08</th>
<th>FY 08-09</th>
<th>FY 09-10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Losses</strong></td>
<td>$22,349,394</td>
<td>$22,887,092</td>
<td>$26,071,261</td>
<td>$22,373,304</td>
<td>$24,141,225</td>
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<tr>
<td><strong>Claims</strong></td>
<td>9,121</td>
<td>9,328</td>
<td>9,861</td>
<td>9,301</td>
<td>9,172</td>
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<tr>
<td><strong>Frequency</strong></td>
<td>1.18</td>
<td>1.14</td>
<td>1.11</td>
<td>0.97</td>
<td>0.94</td>
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<tr>
<td><strong>Severity</strong></td>
<td>$2,450</td>
<td>$2,454</td>
<td>$2,644</td>
<td>$2,405</td>
<td>$2,632</td>
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<tr>
<td><strong>Loss rate</strong></td>
<td>$0.29</td>
<td>$0.28</td>
<td>$0.29</td>
<td>$0.23</td>
<td>$0.25</td>
</tr>
</tbody>
</table>

**Frequency** – Number of claims per $1,000,000 payroll  
**Severity** – Average cost per claim  
**Loss rate** – Cost of claims per $100 payroll
Changes in Claims Count by Claim Type

FY 2005-2006 to FY 2009-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Indemnity</th>
<th>Medical</th>
<th>First Aid</th>
</tr>
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<tbody>
<tr>
<td>2005-2006</td>
<td>1,157</td>
<td>4,256</td>
<td></td>
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<tr>
<td>2006-2007</td>
<td>1,130</td>
<td>4,107</td>
<td></td>
</tr>
<tr>
<td>2007-2008</td>
<td>1,158</td>
<td>4,029</td>
<td></td>
</tr>
<tr>
<td>2008-2009</td>
<td>987</td>
<td>3,758</td>
<td></td>
</tr>
<tr>
<td>2009-2010</td>
<td>1,055</td>
<td>3,582</td>
<td></td>
</tr>
</tbody>
</table>
Changes in Frequency by Claim Type
FY 2005-2006 through FY 2009-2010
(claims per $1,000,000 payroll)
Participating Locations
Workers’ Compensation Program Statistics
Changes in Incurred by Claim Type
FY 2005-2006 to FY 2009-2010
Participating Locations

Workers’ Compensation Program Statistics

Changes in Loss Rate by Claim Type
FY 2005-2006 to FY 2009-2010
(in incurred per $100 payroll)
Participating Locations
Workers’ Compensation Program Statistics

Change in Frequency
(claims per $1,000,000 payroll)

<table>
<thead>
<tr>
<th>Period</th>
<th>UC</th>
<th>WCIRB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2007</td>
<td>-8.8%</td>
<td>-4.3%</td>
</tr>
<tr>
<td>2007-2008</td>
<td>-2.4%</td>
<td>-4.1%</td>
</tr>
<tr>
<td>2008-2009</td>
<td>-8.6%</td>
<td>-5.2%</td>
</tr>
</tbody>
</table>

*Ultimate losses, UC losses limited to $100,000 per claim.*
Participating Locations
Workers’ Compensation Program Statistics

Change in Severity
(average cost per claim)

<table>
<thead>
<tr>
<th>Year</th>
<th>UC</th>
<th>WCIRB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2007</td>
<td>+11.5%</td>
<td>+15.3%</td>
</tr>
<tr>
<td>2007-2008</td>
<td>+12.4%</td>
<td>+14.3%</td>
</tr>
<tr>
<td>2008-2009</td>
<td>+6.3%</td>
<td>+8.6%</td>
</tr>
</tbody>
</table>

*Ultimate losses, UC losses limited to $100,000 per claim.*
Ultimate losses, UC losses limited to $100,000 per claim.

Participating Locations
Workers' Compensation Program Statistics

Change in Loss Rate
(cost of claims per $100 payroll)

- **2006-2007**: +1.9%
- **2007-2008**: +9.1% +9.7%
- **2008-2009**: +2.9% -3.3%

*Ultimate losses, UC losses limited to $100,000 per claim.*
Funding vs. Injury Metrics

Ergonomics

- Incurred as of fiscal year end.

2006-2007: $5,960,414
2007-2008: $6,241,194
2008-2009: $3,661,206
2009-2010: $3,053,996

* Incurred as of fiscal year end.
Funding vs. Injury Metrics
Ergonomics

<table>
<thead>
<tr>
<th>Year</th>
<th>BSAS Ergonomics Spending</th>
<th>Ergonomic Injuries Count @ FYE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2007</td>
<td>$1,444</td>
<td>1,444</td>
</tr>
<tr>
<td>2007-2008</td>
<td>$1,422</td>
<td>1,422</td>
</tr>
<tr>
<td>2008-2009</td>
<td>$967</td>
<td>967</td>
</tr>
<tr>
<td>2009-2010</td>
<td>$724</td>
<td>724</td>
</tr>
</tbody>
</table>

Legend:
- BSAS Ergonomics Spending
- Ergonomic Injuries Count @ FYE
Analysis Conclusions

Campuses investing in ergonomics-related programs showed strongest improvement

- Average 5:1 ROI

Increases in first aid claims indicate employees are reporting problems and injuries earlier

Marketing of safety and general awareness may assist in improving safety culture
• **Situation:** Custodians and groundskeepers injured while emptying trash into dumpster
  – Lifting, bending and reaching to put trash into receptacles
  – **$117,110** cost over past 5 years
• **Solution:** Purchased 35 new containers
• “Foot Pedal” modifications will give users
  – Mechanical advantage for easy opening and access
  – Ability to use two hands for dumping and closing lids
• Total project cost $28,678
Work Station Ergonomics

• **Situation:** Employees at several office work locations experiencing pain & discomfort

• **Solution:** 144 ergonomic evaluations completed at individual employee work station stations in 2007-2008

• *Be Smart About Safety* funded 50% (up to $500 per person) for injury prevention for these 144 employees

• Cost avoidance example: $30-40K for just one carpal tunnel injury

• Total 2007-08 BSAS funds expended: $33,864
Be Smart About Safety

VMTH: Fork Lift Pivot Boom

- **Situation:** Past practice was for three or four employees to manually handle 1800 lb downed cow to keep it on its feet
- Projected back surgery cost >$60k for injured worker
- **Solution:** Purchase of pivot boom
- Pivot boom cost: $2,900
**Situation:** Food Service employees experience over 700 slip/fall injuries per year with associated direct WC cost in excess of $7 million

**Solution:** Provided 2 pairs Shoes for Crews non-slip shoes to 4,000 food service employees annually. Shoes for Crews provides warranty which will pay up to $10,000 of WC claim if employee slips/falls while wearing shoes.
- UC Irvine – 1 to 2 slip/falls per year w/program
- UC Los Angeles – 120+ slip/falls per year w/o program

- Annual cost of $300,000 funded through WC Fund
- Expected direct WC annual savings in excess of $1.5 million
Finding Money to Fund Safety Program

• EHS, Risk Manager and Actuary need to work together

• Workers’ Compensation Rate Additive
  • Select an additional % as part of WC rate for new loss control programs

• Pay it Forward – Fund from WC Loss Fund
  • Must be able to demonstrate ROI to actuary
  • Fund programs with largest potential ROI first
    • Ergonomics, Slip/fall prevention
University of California

Actuarial Review of the Self-Insured Workers' Compensation Program

Outstanding Liabilities as of June 30, 2011
Forecast for Program Year 2011-2012

ESTIMATED SAVINGS SINCE IMPLEMENTATION OF BSAS
Projected Accruals for Claim Costs ($000)
Tended to 2011-12

<table>
<thead>
<tr>
<th></th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on 2006-07 Rate</td>
<td>$130,033</td>
<td>$140,075</td>
<td>$143,086</td>
<td>$143,268</td>
<td>$144,968</td>
<td>$146,756</td>
<td>$848,186</td>
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<tr>
<td>Based on Actual Rate</td>
<td>130,033</td>
<td>112,490</td>
<td>89,020</td>
<td>77,766</td>
<td>76,280</td>
<td>71,297</td>
<td>556,884</td>
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<tr>
<td>Difference</td>
<td>$0</td>
<td>$27,586</td>
<td>$54,067</td>
<td>$65,502</td>
<td>$68,688</td>
<td>$75,459</td>
<td>$291,302</td>
</tr>
</tbody>
</table>

According to the table above, the difference between accrual costs at the 2006-07 rate level and costs at the actual level, trended to 2011-12, is about $291 million. Based on the funding amount thus far for BSAS, we estimate that the return on investment has been approximately 2:1.
Tools to Take Back With You

• ROI Calculator
  • Calculates ROI of projects over time using NPV
• Risk Assessment/Risk Ranking Tool
• Risk-Based Budget Changes Tool
  • Workbook will help you consider the risks involved and decide among your options for reducing your budget. Considers ERM risks/benefits and provides a risk score.

• [http://www.ucop.edu/riskmgmt/erm/risk_assessment.html](http://www.ucop.edu/riskmgmt/erm/risk_assessment.html)
New Job Summary

To provide professional knowledge and expertise in the administration, integration, and support of environmental health and safety programs at all levels of the organization. In coordination with the risk manager, develops environmental health and safety programs that reduce hazard, operational, strategic, reputational, and compliance risks in support of the strategic objectives and mission of the organization.