

World-Class Safety Culture

Applying the Five Pillars of Safety

By Michael Saujani

When OSH professionals talk about world class, they generally mean best of the best, best in the class, best in the world. Murali (2012) defines *safety culture* as “the attitude, beliefs, perceptions and values that employees share in relation to safety” in an organization.

Since safety is a process, world-class safety cannot have a singular value. The Campbell Institute identified five main qualities based on its analysis of applications for NSC’s Award of Excellence, which recognizes superior OSH management systems. Specifically, these are: 1) OSH on par with business performance; 2) system-based approach to OSH; 3) continuous improvement; 4) OSH aligned with organization strategies and values; and 5) promoting safety and health on and off the job.

Similarly, Hansell (2012) identifies five key qualities found among world-class companies: 1) visible senior management leadership and commitment; 2) employee involvement and ownership; 3) systemic integration of OSH and business functions; 4) data-based decision making and system-based root-cause analysis; and 5) going beyond compliance.

This article shares lessons from the author’s experience in helping a large multilocation printing operation develop a world-class safety culture (Saujani & Adler, 2004). This effort was based on five key pillars: 1) management commitment; 2) employee ownership; 3) system data; 4) system integration; and 5) organization-wide engagement. Although this case example involved a manufacturing setting, most of the principles and ideas used can apply to various other industries as well.

Management Leadership & Commitment

Visible senior management leadership and commitment to safety are critical factors in setting a goal to attain world-class performance and developing the culture needed to achieve this goal. This commitment is best indicated “by the proportion of resources (time, money, people) and support allocated to health and safety management and by the status given to health and safety” (Flin & Yule, 2004).

How can an OSH professional secure management commitment? A proactive safety professional should know the characteristics of senior managers and understand what distinguishes the organization from similar companies. Some senior leaders are holistic and may need constant communication. Others make knowledge-based decisions—they need to hear logical reasoning behind safety-related activities and expenditures.

However, all senior leaders want their organizations to succeed financially and to perform optimally. This raises the question: How can an OSH professional use what motivates senior leaders (e.g., profit) to gain visible management commitment in safety?

IN BRIEF

- This article shares lessons learned from one company’s experience developing a world-class safety culture through innovation, hard work and persistence.
- OSH professionals are encouraged to use the five pillars of safety to create a road map to world-class safety culture.

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Table 1

OSHA Penalty Structure

Violation type	Penalty
Willful A violation that the employer intentionally and knowingly commits or a violation that the employer commits with plain indifference to the law.	OSHA may propose penalties of up to \$70,000 for each willful violation, with a minimum penalty of \$5,000 for each willful violation.
Serious A violation where there is substantial probability that death or serious physical harm could result and that the employer knew, or should have known, of the hazard.	There is a mandatory penalty for serious violations, which may be up to \$7,000.
Other than serious A violation that has a direct relationship to safety and health, but probably would not cause death or serious physical harm.	OSHA may propose a penalty of up to \$7,000 for each other-than-serious violation.
Repeated A violation that is the same or similar to a previous violation.	OSHA may propose penalties of up to \$70,000 for each repeated violation.

Note. Adapted from OSHA Training Institute presentation.

Financial Benefits

OSH professionals must strive to communicate to managers the direct, positive correlation between investment in safety and subsequent return on investment (Weibert & Plunkett, 2006). Avoiding legal issues and their associated costs is also a motivating factor. The expectations of various governing bodies continue to increase, as do fines and criminal investigations for noncompliance. Table 1 shows the potential penalties imposed by OSHA for regulatory violations; these serve as a strong message of the benefits of a proactive safety culture.

Safety improvements can also increase productivity. For example, during his work as a loss control consultant, the author worked with a glove manufacturer that experienced one finger amputation every year for several years. These injuries occurred in an operation in which employees cut cloth with foot-operated clicker presses. Initially, the plant's general manager viewed these injuries as a cost of doing business. However, the insurance company (for which the author was a loss control consultant) recommended that the company install two-hand trip devices. The company did so and subsequently reported that production increased more than 20%. So, in this case, eliminating a safety concern (amputation potential) minimized operational risks and delivered a financial benefit in the form of higher productivity.

Allocating the Cost of Injuries

Another technique available to OSH professionals is to allocate the cost of injuries to each plant or profit center. Different systems can be used to achieve this fairly and equitably. Most companies charge back workers' compensation costs to a plant based on its payroll; however, this approach is not sensitive to controlling injuries and associated costs. Other companies pay the workers' compensation premiums up front, then collect monies from each plant after the end of the policy year based on the percent cost of injuries per plant per year. This approach is an im-

provement since it encourages a proactive approach to controlling employee injuries and costs.

A better system is to collect workers' compensation insurance costs from each plant using a formula, then provide a rebate after the close of a policy year based on each plant's injury experience. The formula could have two components: fixed cost and variable cost. The fixed cost element could be the company's deductible premium for the large loss deductible program divided by the total company payroll multiplied by the plant's payroll. The variable cost could be the weighted cost of injuries measured by the incurred cost for the last 4 years. The variable cost of injuries could then be allocated based on a 4-year average allocation percent developed per plant. Table 2 presents an example of variable cost allocation. This approach requires active participation in managing safety by all general managers and employees.

Return on Investment: Cost-Benefit Analysis

Another way to secure senior managers' support for a new safety project is to provide them with return on investment (ROI) details that highlight how the company would benefit from investing in that project. ROI is the financial measure commonly used to compare investment opportunities. Most companies require ROI calculations for all investments, and such calculations must pass a hurdle rate, or minimum rate of return (e.g., 8% to 9%) to be acceptable (Pais, 2011).

For example, the finishing department in a printing company was reporting ergonomic injuries. Employees in this department used five paper-cutting machines equipped with two-hand trip devices to cut paper. Once the cutting cycle was complete, employees would pick up waste paper trims with their right hand and throw the trimmed paper into a cardboard box placed behind them. Once the box was full, a lift truck operator would dump its contents in a baler; the bales of paper trims were later picked up by a waste hauler for recycling.

This process required paper cutters to assume awkward postures and use awkward shoulder movement. Helpers had to bend down to pick up the waste trim, causing some back injuries. The safety manager analyzed the process and recommended installation of an automatic vacuum system that would pick up the trims from all five finishing cutters and move them to the baler via air ducts. However, because this system cost \$250,000, the safety manager had to complete an ROI calculation to demonstrate the potential financial benefit to the company.

For most safety projects, ROI = risk reduction divided by cost. However, this project presented significant benefits and risk reductions, so this equation was used:

- ROI = [(benefits/time) + (risk reduction/time)]/the initial investment

- ROI% = (return - cost of investment)/(cost of investment) x 100

Table 3 (p. 40) presents an example ROI calculation from the author's experience.

Table 2

Plant Allocation

	Total incurred policy year 1	Total incurred policy year 2	Total incurred policy year 3	Total incurred policy year 4	Weighted average loss	Loss allocation %
Annual weight	10%	10%	40%	40%		
Plant A	395,395	242,288	114,687	35,305	123,765	32.23
Plant B	135,835	320,610	25,162	63,741	81,206	21.15
Plant C	19,280	2,668	0	72,691	31,271	8.14
Plant D	27,115	100,933	215,118	19,963	106,837	27.82
Plant E	543	282,441	1,861	0	29,043	7.56
Plant F	96,319	3,529	1,103	3,578	11,857	3.09
Gross allocable cost	674,487	952,469	357,931	195,278	383,979	100

Savings to Be Realized per Year

The term *good night's sleep* (Rodda & Hedges, 1983) is the value assigned for the reduced anxiety and added peace of mind achieved when one has identified and controlled loss exposures through safety improvements. This value is higher if the potential for a loss is high without the safety intervention. It is a subjective number and varies depending on the exposure, reduction in potential for a loss, and number of senior managers and employees affected.

Consider this example from the printing organization. For a 3-year period, based on insurance company loss analysis, savings of \$560,387 (\$1,259,345 - \$698,967) was achieved throughout the six plants, with a projected savings of approximately \$31,132 for this plant and an estimated savings of \$25,360 (81%) in the finishing department (Figure 1, p. 40). The result was calculated by dividing the ROI by the cost of the investment expressed as a percentage: $106,240/250,000 = 42\%$. In other words, 42% of the investment would be recovered in the first year; it would take about 28 months to recoup the total investment.

The 3-year ROI percent is often called the internal rate of return; it is calculated as net return (3 years' total returns minus the cost of investment) divided by the cost of investment expressed as a percentage. In this example, this was calculated at 27% [$(\$106,240 \times 3 - \$250,000)/\$250,000$], or annual rate of return of 9%. This surpassed the company's 8.5% hurdle rate.

Various factors can influence ROI calculations. For example:

- Companies with a high cost of capital may have a higher hurdle rate.
- The years needed to recoup the investment may vary depending on the type of investment and the company's tax amortization policy.
- Present value factors must be considered if the net present value is included in the calculations.

Employee Involvement & Ownership

A company that is world class or is striving to be world class involves the entire organization in safety. This usually occurs through a series of initiatives. For example:

- Define roles and responsibilities for various levels in the organization (Saujani & Adler, 2004).
- Perform safety awareness surveys.
- Encourage and reward safe behaviors.

- Engage associates [e.g., safety committee meetings (Torres, 2006); risk assessments and safety audits; safety board program; identify-the-hazard program; safe plant of the year award; safety conversations].

Defining roles and responsibilities for each stakeholder helps to ensure that all personal are focused on a singular path of achieving safety success. For example, the role and responsibilities of a safety director could be: plan and implement company safety policy; coordinate company-wide safety initiatives; audit company facilities and operations; investigate incidents; support and encourage safety team leaders; train and motivate associates; and be a safety champion at the executive level.

Associates at all levels can be actively engaged through monthly safety committee meetings that follow a meaningful agenda. Asking committee members to volunteer for semimonthly plant safety audits adds another layer of involvement.

Managers can become engaged by completing daily informal inspections to identify and correct unsafe conditions and address risky behaviors in their departments. The safety director and general manager might be asked to conduct annual risk assessment surveys and establish safety goals for continuous improvement.

At the multiplant printing company, the safety board program helped encourage employee ownership and involvement. Under this program, employees in each of the organization's four departments had to prepare a safety board each quarter centered on a particular safety theme (e.g., electrical safety, HazCom, machine guarding, lift truck operator safety). The completed safety boards were then judged by a team of three senior executives. Employees in the department with a winning safety board received a free lunch.

The program generated extensive chatter and safety discussions among employees. The safety board program also led to a safe plant of the year award program. The goal was to encourage plant management to take an active interest in safety. Each plant had to submit documentation highlighting its initiatives and successes. The award selection committee, which consisted of the senior vice president of operations, corporate safety director and corporate human resource director, used the following criteria to score each plant's submission:

Table 3

Return on Investment

Year	Item	Benefits	Cost reduction	Total savings
1	Helper not needed (\$12.28 per hour plus benefits at 23% of rate, two shifts)	---	\$60,418	\$60,418
2	Increase cutter efficiency, 4%	\$12,084	---	\$12,084
3	Reduced waste	\$1,200	---	\$1,200
4	Savings in leasing lift truck	---	\$2,178	\$2,178
5	Reduced cost of ergonomic injuries	---	\$25,360	\$25,360
6	Good night's sleep, increase level of safety confidence	\$5,000	---	\$5,000
	Total			\$106,240

- results and accomplishments (30 points);
- general manager's commitment to safety (15 points);
- department managers' involvement in safety (15 points);
- fully functional safety committees (10 points);
- training and motivation of associates and managers (25 points);
- miscellaneous (5 points).

Integration of OSH & Business Functions

The systemic integration of OSH and business is reflected in several ways. For example, when the safety function has a direct reporting relationship

with the CEO or COO and is involved in business decisions, it signals that safety is a critical business function. For example, when the firm was in the process of acquiring a new plant in a coastal area with significant exposure to hurricanes, the safety director (the author) recognized that the building was not designed for this exposure; he recommended that as a purchase condition the building's wind protection be significantly improved.

In another situation, the company purchased a large printing press with the intent of moving the press to one of its plants in 3 months. However, during this 3-month period, the seller was to continue to operate and maintain the press. The safety director intervened and required the seller to provide a certificate of insurance naming the company as an additional insured while the press was in the seller's care and custody. A week after the closing a serious incident involving the press occurred; the safety director's actions saved the company significant money and spared its executives some tough questions from the board of directors. These examples illustrate how safety goals/strategies can align with company goals/strategies and create momentum toward world-class performance.

Data-Based Decision Making

A company must gather data so it can analyze the safety system and ensure that safety decisions are sound. Common data points include trends in incident rates (e.g., DART rates, lost-time incident rates); loss analysis trends; gap analysis for established safety goals; safety awareness scores; and hazard surveys (Middlesworth, 2013).

Perception surveys are another data source. These surveys help a company check how safety culture is perceived at the plant floor level, which can reveal gaps and identify areas that need improvement.

Two lagging indicators of note include the NCCI mod chart and OSHA incident rates. The NCCI mod chart shows a company's overall loss experience for a

Figure 1
Cost of Injuries

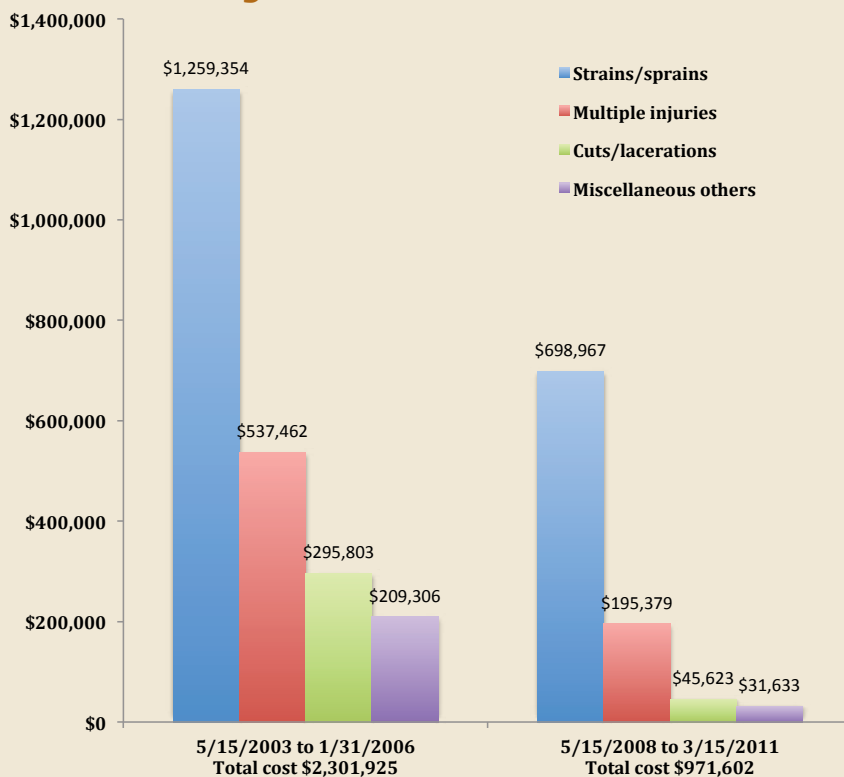
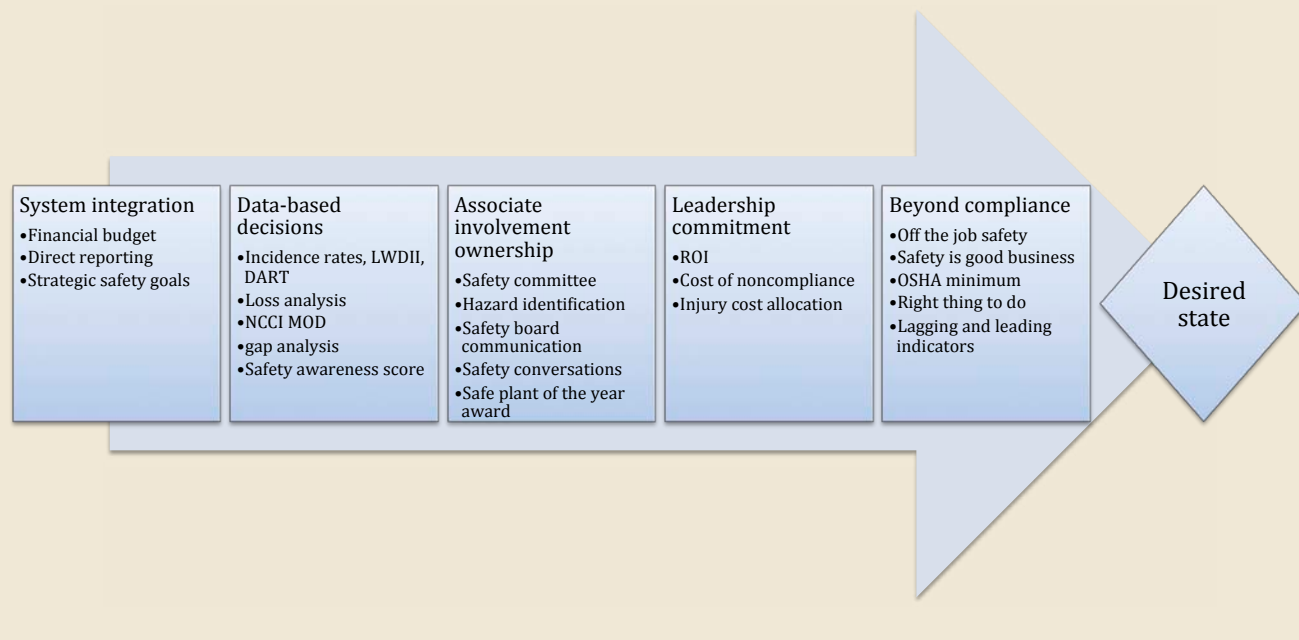


Figure 2

Road to World-Class Safety



3-year period and provides some indication of how well the company is managing incidents and injury costs. OSHA rates reflect how many incidents have occurred in that category in a year for an average of 100 employees. Such statistics primarily reflect past performance, but they can help a company compare how well its safety system is performing compared to its peers and to prior years.

To achieve world-class safety performance, companies must also identify and monitor leading indicators. Examples of these include completed behavior-based safety observations; completed safety training (managers and associates); completed safety audits and hazard assessments; corrected hazards; completed department safety meetings; and completed coaching and counseling sessions.

Figure 2 presents a road map that companies can follow to improve safety performance. By definition, truly world-class companies exceed compliance. They are proactive in identifying hazards, and thoroughly investigate incidents and near-hits to continuously improve the safety system. **PS**

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