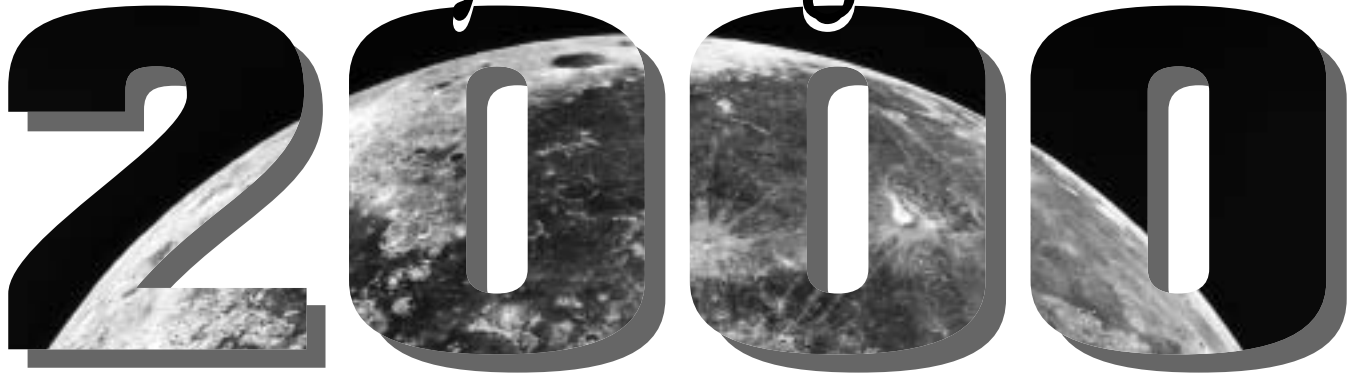# Safety Management 2000

Our Strengths & Weaknesses

By DAN PETERSEN

The 20th century witnessed the birth and growth of the safety movement around the world. One can trace its evolution from early attempts to guard machinery and address severe hazards, through passage of workers' compensation laws, to today's sophisticated approaches. At times, as safety professionals have delved into concepts such as system safety, behavior-based safety, ergonomics, industrial hygiene, human factors and human error reduction, it has often appeared that all the bases have been covered. Despite these advances, one must ask, "To what extent have safety professionals built systems that truly control losses?"

THE RESEARCH

The research is relatively clear. It suggests that certain criteria are essential for safety success. NIOSH studied several companies in a matched pair study (Cohen et al). National Safety Council conducted a study in 1967 and a follow-up study in 1992 which identified safety system elements that are used by top-performing U.S. companies (Plank et al; Plank and Fearn). Similarly, firms have historically benchmarked each other, often reaching similar conclusions. When one examines the step-change improvements made, key criteria for success can be identified.

Research has also examined the types of management systems that have led to catastrophes. The results can be best described via the following six criteria for safety excellence. The safety system must:

1) Ensure daily proaction by supervisors and teams which demonstrates that safety is a core value of the organization.

2) Involve middle managers as key players. It must require them to:

a) ensure subordinate, supervisor or team performance;

b) ensure quality of that performance;

c) engage in actions that demonstrate the importance of safety.

3) Require visibly demonstrated executive action, not merely commitment.

4) Ask for and obtain hourly involvement in *meaningful* daily activities.

5) Allow flexibility. Units and personnel must have options regarding what actions they will take.

6) Be perceived as positive by the workforce.

DO TODAY'S SYSTEMS MEET THESE CRITERIA?

Over the years, few methods have been available to assess the true effectiveness of safety systems. Although research has helped, it offers little advice to guide efforts to assess where systems actually are in comparison to that research.

Perhaps the greatest problem in safety has been—and continues to be—measurement. How do safety professionals measure their efforts and determine whether safety "programs" are effective? Historically, practitioners have chosen ineffective, inadequate and invalid measures.

In the early days of safety, accident measures (e.g., number of accidents, frequency and severity rates) were used to assess progress (of a corporation, department or facility). Practitioners felt comfortable using these measures even though they offered little—they did not indicate whether the system was working; diagnose what was right or wrong; nor indicate whether the system was in or out of control.

When problems with these metrics became obvious during the 1950s and 1960s, safety professionals created a different measure—the audit. In theory, it was reasoned, if a firm can dictate, in advance, what actions it should take to prevent accidents, then it can measure how well those predetermined actions are being executed.

Clearly, however, the practice of accepting audits as a valid measure of excellence is questionable, unless the audits have passed some rigorous tests. If the audit an organization uses has been correlated to its accident record in large enough numbers over time, it may be a good indicator of performance; if not, it should be considered suspect.

THE PERCEPTION SURVEY

The perception (climate) survey is a third measure of safety system effectiveness. Such surveys have long been used in non-safety applications. Dr. Rensis Likert, a pioneer of this technique, used surveys to measure the relationship among key factors of productivity. His research suggests that a "high achievement" organization generally exhibits a high degree of supportive relationships; utilizes the principles of group decision-making; and has supervision in areas with high performance aspirations.

Attitudes toward the company, job and superiors, as well as the level of motivation, are also key factors. Good performance in these areas results in higher sales volume and production, lower costs and better quality. In short, Likert's research showed a high positive correlation between scores in these areas and the bottom line (e.g., profitability, growth, return on investment).

Stemming from this research, safety practitioners began to examine whether a perception survey might work as an indicator of safety system "health." After many years of development and testing, it has been determined that such surveys are a much better predictor of a company's future safety performance than other indicators tested. Perception surveys have been found to be invaluable in diagnosing what actions are needed to improve safety systems.

Data accumulated through these surveys may be descriptive of how truly effective safety systems are. If a pattern exists in the surveys of many organizations over time, it might suggest that overall approaches to safety need to be reassessed—and perhaps changed.

A fundamental difference exists between what perception surveys tell users and what research or benchmarking efforts reveal. Most safety research asks what safety professionals or managers think works/does not work. Similarly, in the search for "best practices," benchmarking efforts tend to ask safety professionals and managers what they feel works/does not work.

Conversely, perception surveys query hourly employees. This suggests that the key reality is hourly employee perception. Supervisor and/or manager perception is measured only to determine how far from reality it is; this exercise is useful

TABLE 1 20 Categories of a Safety System

Communication	Training
Attitudes	Meetings
Support	Recognition
Goals	Inspections
Motivation	Discipline
Regulations	Investigations
Substance Abuse	Hazard Correction
Involvement	Climate
Credibility	Supervision
Employment	Supervisory Training

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within an individual organization because it reveals just how removed management is from shopfloor employees.

In recent years, some patterns have emerged—patterns which suggest that safety professionals have been successful in some efforts, not so in others. Thus, it is time to reassess and reformulate approaches for the new millennium.

INTERPRETING THE SURVEYS

In recent years, many organizations have performed perception surveys provided by various sources. While it is not possible to accumulate data from different surveys, data from companies using the same survey (the Minnesota Perception Survey) can be discussed.

This survey asks 74 yes/no questions, then clusters these questions into 20 categories of a safety system (Table 1). Questions in each category have been statistically validated to show what people

think and what works/does not work. Although norms cannot be established based on overall scores from surveys conducted within an array of organizations (including furniture manufacturers, railroads, chemical and petrochemical facilities, paper mills, food processing and construction), the scores can be interpreted and shared with each organization.

Scores are communicated as "% positive" for each category. A survey can measure by unit, location or craft within each company to reveal any similarities/differences. By-category maximum, minimum and mean scores are calculated for a number of companies in order to provide a picture against which an organization can compare itself.

The remainder of this article discusses survey data from 56 companies, which cumulatively employ 1.657 million people at all levels. These results depict how these firms have succeeded—or failed—in their safety efforts as judged by the people who truly count—hourly employees.

SURVEY RESULTS

A score below 70% positive in a category at the hourly employee level suggests the need to examine the organization's safety activities. Such a score indicates that three of 10 employees do not believe the system is working well. A score below 60% positive is a red flag indicating that the system needs help.

Analysis of this data reveals some similarities in safety system element effectiveness. For example, as a rule, firms are not highly successful in categories that score, on average, below 60% positive (hourly employee only):

- **recognition - 56.9% positive**
- **discipline - 58.4% positive**

The same can be said for categories that score below 70% positive:
- **inspections - 60.0%**
- **supervisory training - 60.3%**
- **substance abuse - 63.7%**
- **employee training - 64.6%**
- **quality of supervision - 65.4%**
- **employee involvement - 66.4%**
- **operating procedures - 67.6%**

Borderline categories include:
- **attitudes toward safety - 70.0%**
- **support for safety - 70.0%**
- **management credibility - 70.0%**
- **goal setting - 70.7%**

TABLE 2 Corporate Highs & Lows

CRITERIA	CATEGORIES	MEAN	LOW	HIGH
Supervisory Performance	Recognition	56.9	40	76
	Discipline	58.4	29	82
Middle-Management Performance	Supervisory Training	60.3	31	82
	Quality of Supervision	65.4	42	85
	Inspection	60.0	37	78
	Average	**60.2**	**35.8**	**80.6**
Top Management Performance	Management Credibility	70.0	52	86
	Support for Safety	70.0	54	84
	Goals	70.7	52	96
	Operating Procedures	67.6	45	82
	Average	**69.6**	**50.8**	**87.0**
Employee Involvement	Involvement of Hourly Employees	66.4	59	83
	Employee Training	64.6	44	86
	Average	**65.5**	**51.5**	**84.5**

As these results indicate, surveyed firms fare poorly in four of the six criteria for safety excellence. When one examines corporate highs and lows, not merely the means, the picture depicted in Table 2 emerges.

Overall, companies are relatively good in the following categories:
- •accident investigation - 78.0%
- •communication - 75.7%
- •motivational programs - 73.4%
- •new employee orientation - 72.7%
- •hazard correction - 72.7%
- •safety contacts - 72.7%
- •climate - 72.4%

Comparison of these data to the criteria for safety success reveals that the categories of recognition, discipline, supervisory training, quality of supervision and inspections—activities typically carried out by supervisors or teams (criteria #1 made to happen by criteria #2)—would average a score of 60.2% positive—barely above red-flag level. This suggests that hourly employees believe their supervisors either do not know how to satisfy their safety responsibilities or that no system requires them to do so.

The categories of management credibility, support for safety, goal setting and operating procedures, which are means of judging upper and mid-management (criteria #2 and #3), average a score of 69.6% positive. This is still below the 70% cut-off where a firm can begin to feel comfortable about safety system effectiveness. Criteria #4 (employee involvement) scores 66.4% positive.

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DIFFERENCES IN PERCEPTION
The cited scores reflect results of hourly employee surveys only. In all cases, supervisors and managers are also polled, and the differences in perception computed. Within a good organization, the difference is typically 10 to 12 percent; a similar difference exists between managers or executives and hourly employees. A composite picture shows considerably wider discrepancies in these categories:

•**Employee training:** Supervisors think they are 31 percent better than employees do.

•**Quality of supervision:** Supervisors think they are 25 percent better than employees do.

•**Inspections:** 25 percent better.

•**Supervisory training:** Nearly 25 percent better.

•**Accident investigation:** 18 percent better.

•**Hazard correction:** 17 percent better.

•**Attitude toward safety:** 14 percent better.

•**Support for safety:** 13 percent better.

•**Communication:** 13 percent better.

•**New employee orientation:** 13 percent better.

•**Management credibility:** 13 percent better.

In seven categories, the difference was less than 12 percent. In the category of discipline, employees perceived the situation to be better than supervisors.

A fairly wide discrepancy was noted in perceptions about 1) employee training, where managers think they are 16 percent better than employees do; and 2) inspections, where managers think they are 15 percent better than employees do. In the remaining 18 categories, differences ranged between -1% and +11%.

SAFETY STRENGTHS
Composite scores indicate that companies are, in employees' eyes, doing a good job: investigating accidents, talking about safety; and administering motivational and awareness programs. Some would interpret this to mean that safety professionals spend most of their time on meetings, reaction and gimmicks.

Supervisors generally scored many categories high (nine categories in the 80s, one in the 90s), resulting in an overall score of 77.2% positive—eight points higher than hourly workers. Upper managers were considerably closer to reality.

SAFETY MANAGEMENT 2000
If this small sample is descriptive of safety system effectiveness, then these results reflect the current state-of-the-art in safety. As safety professionals strive to address apparent weaknesses, they must assess the following areas.

1) Most companies score notably low

Safety excellence only occurs when supervisors, managers and executives demonstrate their values through actions and then, being credible, ask hourly workers to help improve the system.

on recognition. This category refers to whether people are recognized daily (regularly) for doing a good job and working safely. This is a measure of whether people are positively reinforced, which is known to be the best way to foster safe behaviors.

Recognition was the worst-rated category in more than 41 percent of companies surveyed. The composite score of 56.9% positive indicates that nearly one-half of the workforce feels it is being ignored.

2) Not only are employees ignored when they do a good job, they are also ignored when they engage in unsafe acts. Discipline was the lowest category in 23 percent of those firms surveyed—receiving a composite score of 58.4% positive. In this context, discipline refers not only to punishment, but also to whether people are allowed to work unsafely without being corrected.

3) When one considers that it has been 30 years since passage of the OSH Act, with its emphasis on physical conditions, it is disconcerting that inspections (the mechanism used to improve physical conditions) is rated the worst category in 11 percent of companies and received a 60.0% positive response from employees. In other words, a red flag.

4) Supervisory training was rated the worst category in 11 percent of companies, with an overall score of 60.3% positive.

5) These four categories (recognition, discipline, inspections and supervisory training) are solid indicators of a serious problem in current approaches to safety management. That problem? The performance of supervisors, middle managers and teams. Add the quality of supervision category, with its 65.4% positive score, and it becomes clear that supervisory performance is notably weak. Overall, these five categories received an average score of 60.2% positive—borderline red flag.

These scores reflect one of two conditions: 1) Supervisors do not know what it is they are supposed to do with respect to safety—a training problem; or 2) no system requires them to take these actions—an accountability problem. In the author's opinion, accountability for safety is a major problem throughout U.S. industry. Managers, supervisors and teams simply are not held accountable for safety performance.

6) Management credibility does not fare too well either. The categories that comprise this criteria received an overall score of 69.6% positive. This indicates

that many managers say safety is a top priority, yet their actions (downsizing, outsourcing, overtime) say otherwise.

7) Employee involvement is another area of concern. It received a composite score of 66.4% positive, which suggests that at least one-third of the total workforce wishes to be more involved.

8) The differences in perception, particularly between supervisors and hourly workers, have created a void. To be successful leaders, supervisors must be close to their workers—or at least understand each worker's needs; to motivate, supervisors must understand "where their workers are."

In 11 of 20 categories, composite scores indicate that a major chasm exists between supervisors and workers. The primary problem involves the daily performance of supervisors. In short, they simply are not as effective as they think they are. (In fairness, this is usually not their fault; their plates are more than full.)

CONCLUSION

These results suggest that many companies have in some way "missed the boat" on safety. Historically, firms have taken what can be called an "islands of safety" approach. To comply with laws and standards, they create various programs (islands), such as a process safety program, a lockout program, a fall protection program, a HazMat program, an ergonomics program. By creating these "islands," however, a company establishes no main channel of solid *management* performance—where everyone from CEO to first-line supervisor takes some action each day which reflects that safety is a core value.

As a result, many people come to believe that these islands are "safety." They are not. These programs are important components of the overall safety effort, but when a company believes that they satisfy corporate safety responsibility, trouble is on the horizon.

As these data reveal, many safety efforts have lost their focus. The true focus should be integrated safety, not individual programs that staff can create, thus relieving the line organization of its responsibilities.

Safety excellence only occurs when supervisors, managers and executives demonstrate their values through actions and then, being credible, ask hourly workers to help improve the system. This

requires daily proaction by line managers and supervisors—a missing link that can only be corrected when the system holds these managers, supervisors and executives accountable.

Research and benchmarking clearly indicate where safety performance should be. Surveys reveal where performance levels actually are. As these data show, a large discrepancy exists between the two. ∎

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