The behavior-based approach to safety: a clear picture, an effective plan*

Patrick T. Killimett

Once employees take an interest in safety performance, benefits are felt throughout the workplace.

What is it about safety performance that makes it so difficult to manage? Whether we are considering a paper converting plant, a mill, or any manufacturing environment for that matter, it seems to me that safety is one of the most stubborn problems facing managers today.

Of course, managers face many other challenges: new equipment, new products, new production processes, new government regulations, and the like. However, once familiar with a new process, most people have a pretty clear picture of what they need to do even if the new work is difficult. Safety seems to be difficult in a different way. Where safety performance is concerned, it's hard to get a handle on the real problem. When we use traditional methods for improving safety performance, we rarely develop a clear understanding of the problem, let alone an effective action plan.

This unsatisfactory situation is the result of two things:

1. **Constant change arising from competitive pressure.** To remain competitive in the paper industry, constant change is necessary, and this can distract attention from safety issues.
2. **Reactive vs. proactive safety strategies.** Even with the best of intentions, management safety efforts are often blunted by reactive approaches that rely exclusively on disciplinary action, downstream measures such as accident frequency rates, and off-the-shelf programs with no staying power. Along with this goes the mindset that says, "We don't have a problem because we haven't had an injury yet"—a mindset with many implications for safety performance.

Competitive pressure

At the paper converting plant I managed we were continually changing our equipment or our product to gain an advantage over the competition—an advertising advantage if nothing else. For instance, in the disposable diaper market equipment innovation and changes in raw material are always in the works. One year we had five major changes of this kind:

1. We added super-absorbent material to the product. This meant a related change in the quality system as well, requiring people to learn new ways to check and adjust for quality. This change also required a complex storage and metering system that workers had to learn to operate, adjust, and repair.
2. An additional elastic component was incorporated into the diaper, which also had the operational ripple effect in quality and storage mentioned above.
3. We upgraded the humidity and dust control system. During the six months it took to install this new system, control of humidity and dust was irregular and caused operational problems. The result was additional pressure not only to increase production rates but to reduce waste and improve quality—both of which had also been adversely impacted during the installation of the new system.
4. The product dimensions were changed to better fit the user and to conserve raw materials. Equipment modification was only the beginning here. Because of the multiple raw materials and numerous in-process control points, the new process required higher levels of skill and alertness.
5. We introduced a new system to apply elastic raw materials. In this case, control of the web became even more critical because of the placement of the elastic materials.

My point in describing these competitive pressures is to say that they go with the territory. The marketplace pressure to innovate will not go away. If anything, it is likely to increase. Now the important question becomes, "Which safety approach is best suited to a constantly changing workplace?" The best answer to continuous change is continuous improvement in safety performance—a safety approach that operates as a system or process, not as a temporary program. Short-term efforts will necessarily fade whenever operational changes bring new priorities. Employee involvement is critical to sustaining continuous improvement in safety performance

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Killimett worked in the paper industry for 15 years: 5 years with Procter & Gamble, 10 years with Kimberly-Clark. Presently he is a consultant with Behavioral Science Technology, Inc., Ojai, Calif. 93023.

no matter what the changes in product and equipment.

This is why the behavior-based approach to safety seems to me to be an idea whose time has come. Among other benefits, the behavior-based safety approach is a long-term process that provides a vehicle for involvement and for workforce problem solving—skills that are very compatible with a leaner, continually changing, more competitive operation.

In fact, without well-focused, sustained attention to safety performance, production pressure usually determines where we place our efforts. The result is that we don't pay attention to safety until it's too late.

I. Behavior-based safety assessment is a two-step process

Analysis
- Describe unsafe behavior
- List current unsafe behavior

Implementation
- Identify unsafe behavior
- Create inventory of critical behavior
- Sample workforce behavior
- Encourage input from everyone
- Continue to sample workforce behavior

Hard lessons about safety performance

Each of the five equipment and product changes I mentioned earlier had an impact on our ability to operate safely. At the minimum, changes of this sort take a great deal of time and attention. The challenge is to make the necessary changes to product and equipment without losing sight of safety. And let's face it, given the many things calling for immediate attention, it's easy to lose sight of safety.

Why is safety so difficult to handle effectively? It's not easy to handle because as managers we tend to rely on methods that do not address the problem: unsafe behavior. Yes, behavior. The facts are in; human behavior is the final common pathway in 85–95% of all safety incidents. The data are there, but in most cases nobody really knows what to do about it. I certainly didn't.

So, in spite of the extra time I devoted to safety-related matters, I never felt that our plant achieved lasting improvements in safety performance. In the face of this kind of frustration it is tempting to blame the employees for their own injuries and accidents. However, since safety-related behavior is a function of management systems, blaming the employee is not only unfair, it is counterproductive. Besides, in statistical process control terms accidents and injuries are downstream, not upstream where we should be managing safety performance.

Though I was aware of these points in a general sense, I was still wrestling with how to apply them. Safety ownership and involvement, motivation, and attitude—these remained areas of concern.

Safety ownership

In the case of safety ownership, for instance, although people generally admitted that they were responsible for their own safety, their willingness to say this did not translate into more safe behavior. I didn't know how to change people's attitudes or motivation about safety. I increased enforcement of the existing rules and added some new rules for safety. I increased my own level of commitment to safety. These attempts were successful only for a short time, then people went back to the old way of thinking and doing things.

Motivation

I could never understand why people were not self-motivated to work safely. I tried to provide an environment that would cause people to be concerned about safety. I did manage to get across to supervisors that safety violations would be disciplined, and I also increased the level and number of contests and giveaways for crew and department safe man-hours. I personally attended safety meetings and discussed safety and my expectations. Overall, however, accidents continued to happen at the same frequency as before. In other words, although we experienced short-term improvements, we did not achieve long-term, sustained results.

Rules

Another thing I discovered was that the plant had a number of safety rules that did not make sense; they were contradictory, outdated, and they lacked credibility with the workforce. So I got the work groups together to review the rules and make changes. The goal was to draft a set of rules that were consistent and that people could understand. During this effort I also learned that many people did not even know the rules. Among other things I started a contest to encourage people to learn the new rules. This approach had some good effect but not as much as I had hoped. It was temporary in nature and tended to be seen by employees as "another program."

Attitude

Finally, I noticed when I talked to people that they simply did not care much about safety. It seemed to me that no matter what I said or did people thought that safety was merely being given lip service, that it wasn't really important. And in some sense, this perception was probably accurate. Everyone knew what was really important to the organization: production. Everything we did as an organization strengthened that impression. Positive strokes were given for good rates of production. The perception was that people were promoted based on production. Positive, on-the-spot feedback was given for fixing production problems. Safety only got that kind of attention when someone was injured. And then we had a flurry of activity. This is the accident-safety cycle. The negative impact of this cycle on productivity is too often neglected.

I think that my situation was fairly typical. Since I didn't yet know the relatively new behavior-based methodology, I fell back on the familiar, reactive approaches: contests, rules, disciplinary action, meetings, accident investigations, etc. I simply assumed that this was all I could do and that people must be responding to these measures somehow. The real problem for managers is that since the traditional methods do have some effect in the short term, when we use those methods we get the impression that

we have solved our safety problems. So we feel justified in moving on to some other problem area even though we have barely scratched the surface of proactive management and continuous improvement in safety performance.

In fact, I don't know of any other area of operations where we settle for measures that are as temporary or unpredictable as we do in safety. Consider the message that this sends. When I moved on to other problems before new safety measures had a chance to take root in the organization, it told people that safety was not really very important.

I worked hard on new quality assurance measures, not resting until they took root in the organization. It was the same with new production and maintenance procedures. I paid close and sustained attention to them, and I wasn't satisfied with my performance until they took root in the organization. One result was that people throughout the organization got the message: production-related problems are of the highest priority. Supervisors also got the message: there are plenty of rewards for handling production-related problems.

But what about safety? What reasons did supervisors have to pay attention to safety in a consistent, professional manner? The fact is there were almost no incentives for them to put themselves out for safety; it wasn't part of our culture. I did not have a clear enough picture about these matters. I also did not see the ways in which a production-driven organization sets the stage for accidents and injuries by rewarding workers for risky behavior.

Behavior-based safety assessment

Behavior-based safety assessment draws a very clear picture of the forces that are actually driving the safety effort at a given facility (**Table I**). Very briefly sketched, the steps of the behavior-based analysis are:

1. Draft an objective statement of each unsafe behavior that is at issue.
2. List the variance antecedents (things that trigger the behavior) and consequences (things that reinforce the behavior) that are present within the organization.

In the picture that usually emerges from this analysis, managers see clearly that the most powerful consequences delivered by the organization favor continued unsafe behavior. Such an assessment is often both sobering and stimulating—sobering because it presents an accurate portrait, warts and all, and stimulating because it shows the underlying logic of recurring safety problems and thus points the way to an effective action plan.

Implementing the behavior-based safety process

Implementation of the facility's action plan proceeds in five broad steps:

1. Identify a cluster of unsafe behaviors that account for a significant portion of the facility's injuries or near misses.
2. By formulating these behaviors in objective, observable terms, a site-wide representative committee of personnel arrives at an inventory of critical behaviors that will serve as leading indicators of the facility's safety performance.
3. Observers are trained to sample workforce behavior using the facility inventory. In this way they take a baseline measure of what percentage of the facility's behavior is safe (%Safe). This baseline measure offers both a key management tool and a powerful way of presenting the behavior-based approach to the workforce at large in the kickoff meetings.
4. At the kickoff meetings the presenters emphasize the input of hourly personnel in developing the inventory of critical behaviors. They also emphasize the nondisciplinary focus of the %Safe observations, emphasizing that the primary aim of the behavior-based approach is preventing injuries—something that benefits everyone.
5. After the kickoff meetings the observers continue to sample the facility's %Safe performance, generating data for charts posted in the workplace and written reports for use in safety meetings as feedback and for problem-solving efforts.

Benefits across the board

As the behavior-based safety process gathers momentum and people see that management is careful not to use the observations for disciplinary purposes, then the individual crews, departments, or shifts become interested in their %Safe performance ratings.

Supervisors notice a change. Where once supervisors had to nag their crews about safety, now the crew members initiate discussions about their own safety performance. When a crew's %Safe rating rises on the chart, they're proud of their record. When their %Safe rates drop off relative to their own past performance or relative to the chart of another crew, they want to know why. They engage the observers in serious discussion about which of the critical behaviors on the facility inventory are responsible for their declining %Safe rating. At safety meetings the crews learn how to solve problems to bring their %Safe ratings back into a rising profile. And these beneficial changes are just the beginning.

Because the behavior-based safety process addresses performance, in short order its effects are felt in many other performance-related areas of the workplace such as: employee involvement, training, responsiveness to change, motivation and ownership, communications, and attitudes.□

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