Case Study: Parts Distribution Centers (PDCs)

Abstract
In 1999, O/E was approached by an automobile manufacturer and its union to help them improve the safety of their Parts Distribution Centers (PDCs) as part of a larger effort to become the safest workplace in heavy industry. While the company's manufacturing arm had a dismal safety record, the PDCs had relatively low injury levels. But despite the relatively few injuries, the PDCs had a disproportionately high severity rate—while there were far fewer injuries, the injuries that did occur were much more serious. This document chronicles O/E's development of a revolutionary new Safety Management System that dramatically reduced the number and severity of worker injuries at the PDCs, and transformed the automobile manufacturer into one of the world's safest companies.

Background
The auto industry has become increasingly competitive over the past 30 years and, to survive, automobile manufacturers must look for ways to reduce costs and increase productivity. One of these manufacturers saw the potential for furthering both of these goals and, in 1999, forged an alliance with its largest union to become the safest workplace in heavy industry.

One of the most significant challenges facing the company and union was the difficulty of developing a safety management system that would address the needs of the very real difference between manufacturing, engineering, administrative, and Parts Distribution Center (PDC) environments.

PDCs were particularly vocal in their opposition to implementing changes in their safety systems because:

- The relatively few injuries were not seen as a serious issue facing the PDCs (some of them had not had a single recordable injury for several years).
- The PDCs believed that it was impossible to create a safety system that could address the diverse needs of manufacturing and PDCs.

Benchmarking
In October of 1999, the company sought the assistance of O/E to benchmark the world's safest companies, which at that time included: Boeing, DuPont, General Motors, Harley-Davidson, and others. Each of the companies that were benchmarked had PDC operations.

The benchmarking revealed very clear differences between what the world's safest companies believed and did, with what the automobile manufacturer believed and did. Companies with the best safety records shared six common values:

1. *All injuries are preventable.* Prior to this intervention, many people at the PDCs felt that some injuries are inevitable and a cost of doing business. Additionally, the relatively low frequency of injuries at the PDCs created a false sense of security, and worker injuries were not seen as a serious issue. The world's safest companies, however, believe that they can always prevent injuries by removing the hazards that cause them, and that as long as anyone is injured there is a serious issue that needs to be addressed.
2. *Safety begins with compliance.* The world's safest companies comply with regulations because it's the right thing to do, not because they fear fines, negative press, or lawsuits. The automobile manufacturer and the union shared this belief, but lacked an appropriate infrastructure for ensuring compliance. Short cuts and violations of policy were common at the PDCs—even more so than in manufacturing.
3. *Prevention is more valuable than correction.* Safe companies believe that it's smarter in the long run to prevent accidents before people get hurt, and while the automobile manufacturer and the union shared this belief, many on both sides did not believe this was a reasonable or achievable goal in worker safety. Many at the PDCs believed that it was foolish to invest in preventive measures when there were so few injuries at their locations.
4. *Safety is everyone's job.* From the board room to the janitor's closet, everyone at the world's safest companies believes that safety is his or her job. This belief was not common at the automobile manufacturer. In fact, the relatively few employees that worked at PDCs meant employees often wore several hats, and safety tended to be neglected. While some at the company worked hard to ensure a safe workplace, many more believed that it was the job of plant safety professionals to ensure their safety.
5. *Safety is a strategic business element.* Safe companies manage safety as carefully and diligently as they do quality, production, or customer service. At the automobile manufacturer, the safety professional frequently reported to Human Resources and was seen as the policeman of safety in his or her facility. Additionally, there was no standard procedure for safety across PDCs.
6. *Safety is owned by Operations.* The surest way to create a safe workplace is to hold the people who **run** the business accountable for what they can control—the safety of the workers. At the benchmarked companies, safety was seen as the joint responsibility of first-line supervision and union representation, with the safety professionals coaching and supporting their efforts.

In addition to the values that the benchmarked companies shared, these companies used these values to guide how they approached four common safety-related activities:

1. *Safety Inspections*. The benchmark companies had a system for regularly inspecting work areas for identifying, documenting, and correcting hazards. For years, the automobile manufacturer and the union had been conducting similar regular inspections. These inspections differed from the benchmark companies' approaches because the benchmark companies were guided by the six common values, and had Operations personnel conducting these walk-throughs, instead of safety personnel or members of a voluntary safety committee conducting the inspections.

Additionally, most of the benchmark companies entered the information they collected during safety inspections into a database where the information could be trended and interpreted, but the automobile manufacturer and the union used a manual system to track and correct issues.

2. *Hazard and Incident Investigations*. The world's safest companies also approached the investigation of hazards and incidents far differently from the auto manufacturer. Like many organizations, the auto manufacturer tended to respond to hazards only after an employee had been injured. And, even then, the automobile manufacturer tended to focus on documenting the injury to ensure compliance with regulatory guidelines for investigating and reporting injuries. The benchmark companies typically had a team of Operations management and—where organized—their union counterpart. This team met weekly to monitor the outcomes of safety inspections, ensure that hazards were accurately identified and recorded, and that the appropriate course of action for containing and eliminating every hazard had been taken. This differed from the automobile manufacturer's safety committee meetings in several key respects:
    - The PDCs safety committees tended to be small groups that met irregularly and frequently devolved into a forum where individuals would not report safety concerns as much as they would voice grievances and gripe about non-safety issues of concern to individual members.
    - The benchmark companies' meetings tended to be action-oriented and focused on closing issues, whereas the PDC meetings often did not make much progress tracking and closing issues. The meetings were frequently canceled and were not seen as a productive use of anyone's time.
    - The benchmark companies' meetings were mandatory and led by each location's most senior Operations leadership, while the automobile manufacturer's meetings were typically chaired by the safety professional, and the attendance of Operations leadership was spotty at best.
3. *Safety Strategy Development*. The benchmark companies all had a forum for identifying strategic issues that could impact the safety of the workplace. Typically, that body met monthly to review and discuss trends in safety, including inspection and/or historical data to formulate and implement enterprise-wide safety initiatives. This body also set targets for safety, developed strategies for attacking the leading causes of injuries, and routinely reviewed the appropriateness of its policies for achieving these strategies. At the PDCs, safety targets were set by the corporate safety group and there was rarely a local strategy for achieving these targets. In those rare instances where a strategy did exist, it was typically owned and administrated by a safety professional, not Operations. There was a strong resistance on the part of the PDCs to the development of a safety strategy because it was seen as unnecessary.
4. *Integration of Safety Into Continuous Improvement Efforts*. The benchmark companies approached injuries in much the same way they approached quality defects—as process failures. While the PDCs had a thriving quality effort and a robust process for improving the quality of its products, it seldom applied these tools to solving safety concerns.

The Culture Needed to Change
Even though the PDCs believed that their workplaces were safe enough, while fewer people got hurt than in manufacturing, those that did get injured tended to get hurt much more seriously. Whatever action was taken needed to focus on changing the culture to raise awareness of the dangers endemic to PDCs. Also, PDC employees must shift their thinking from the belief that sometimes accidents just happen to the belief that **all** injuries were problems that needed by solved, and that hazard elimination must be a part of how the PDCs do business.

Flexibility Would Be Key
While the automobile manufacturer insisted that the PDCs follow the same structure as the other parts of the company, complete standardization with manufacturing would prove to be a daunting task for several reasons:

1. The smaller staff at PDCs meant that following an arbitrary standard for safety committees that might consist of 15 people in manufacturing might require 40% of the overall PDC staff. So for a PDC to meet the corporate requirement, it would have to shut down operations to have the required meeting.
2. The dual roles that many PDC members filled meant that following the corporate standard could result in a person meeting with him/herself.
3. The types of hazards endemic to manufacturing were rare or nonexistent in PDC environments.

The automobile manufacturer and the union soon recognized the folly in forcing the PDCs to adopt standards that were ridiculous or impossible to implement. O/E worked with the PDCs to create a system that was 90% compliant with the manufacturing standards, yet flexible enough to meet the unique needs of the PDCs.

The safety system that O/E developed for the PDCs contained three key tenets that would become the cornerstone not only of the PDCs' safety culture, but would also become the basis of the automobile manufacturer's safety philosophy which would guide all efforts at creating a safety culture:

1. An emphasis on prevention
2. Zero tolerance for injuries, and
3. The ownership of safety by Operations

The preventive aspects of the blueprint for the safety culture were in stark contrast with how the PDCs had traditionally approached worker safety. And, because the PDCs had participated so intimately with the design of the standards, they immediately began to foster an atmosphere where finding and correcting the root cause of a hazard that could potentially result in an injury was a top priority.

The second key aspect of the approach was the belief that a safety culture—where no injury is acceptable—must quickly evolve. Just as the quality revolution of the 1980s sought to shift workers' opinions from believing that a certain number of defects was acceptable to believing that no defect was acceptable, the automobile manufacturer and the union sought to convince people that injuries are preventable and that even one person getting hurt was absolutely unacceptable. While, for many, this thinking may

seem like common sense, these ideas were revolutionary for many in manufacturing. This belief, while a hard sell in manufacturing, was even more so in PDCs.

Figure 1: Safety Culture Model

Operations' ownership is the final tenet of the PDCs' new safety culture. Traditionally, the responsibility for safety rested with a small group of safety professionals who acted as police in the production areas. In the PDCs, the safety professional was often also responsible for other tasks not related to safety.

Communication Would be Key

Managing a cultural change of this size and scope would prove to be a daunting task. Incident Investigations were a relative rarity in PDCs since so few people were injured, so when injuries did occur, great effort needed to be made to communicate what had happened and the severity of the injury.

Four Standards Were Created

After extensive research, O/E, the automobile manufacturer, and the union developed four assignments that the manufacturer would give to all locations including the PDCs. These four assignments were to:

1. Conduct Weekly Safety Observation Tours.
2. Conduct Weekly Incident Review Board Meetings.
3. Conduct Monthly Safety Review Board Meetings.
4. Integrate Safety Into Continuous Improvement Workshops.

At the project's inception, the automobile manufacturer and the union had agreed that the culture change would be cascaded down from leadership.

The original four assignments were the activities the benchmark companies had been doing that were judged to be the most appropriate. These four assignments were quickly joined by two other safety initiatives: a point system for Powered Industrial Vehicle

(PIV) drivers (which was in direct response to the needs of the PDCs) and additional Energy Control/Lockout requirements.

The first of the assignments, Conduct a Weekly Safety Observation Tour, required shop stewards and supervisors to tour their areas and identify potential hazards, and correct them before an injury occurred. Both management and union personnel agreed that these tours must be conducted jointly. During a tour, stewards and supervisors used a specially designed tool called a pocket card to identify hazards, assess risk, and assign corrective actions. Using the pocket card, the tour participants chose from nine categories of hazards ranging from unsafe work practices to ergonomic and industrial hygiene issues. Once they had categorized a hazard, the tour participants used a guide on the pocket card to assess the risk of a particular hazard.

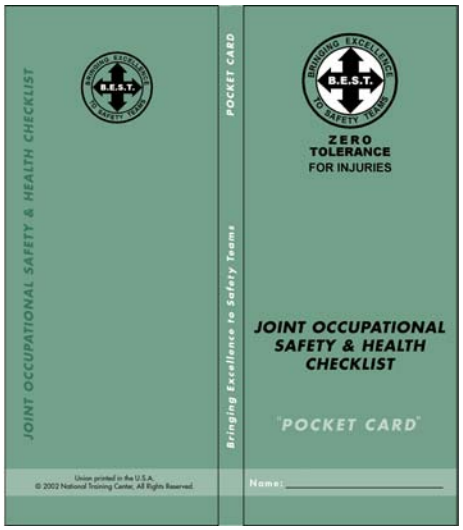

Figure 2: Pocket Card Front /Back Cover

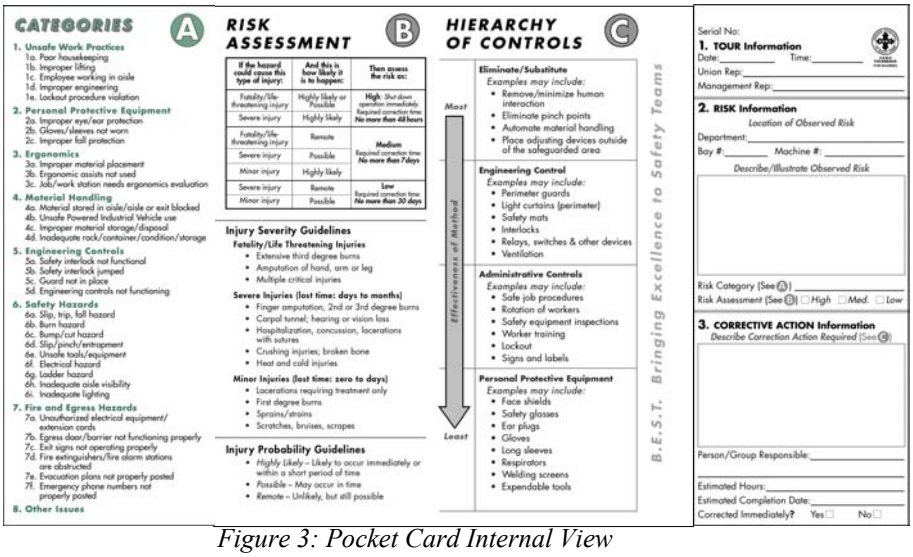

Figure 3: Pocket Card Internal View

The pocket card information was then fed into a custom-designed Hazard Data Tracking Tool, a database designed to organize and chart hazard and injury information. The

database organized data and created reports and trend charts on the hazards that were used in the other activities so joint leadership could make informed, data-driven decisions.

Information from the Weekly Safety Observation Tour fed the next assignment, the Weekly Incident Review Board Meeting. This meeting relied on the database reports and graphs to track incident and hazard data so joint leadership could determine the root cause of injuries. Having a Weekly Incident Review Board Meeting afforded a location the opportunity to place a greater focus on employee safety, required corrective action be taken to correct hazards early, and highlighted data that was used to identify safety "hot spots." The Weekly Incident Review Board is part reactive—any injury that had occurred in the past week was carefully scrutinized to ensure that it never recurred—and part proactive—the participants often shared the steps they took to correct a hazard before anyone was injured. The meeting was also crucial in surfacing and resolving conflicts or disagreements about the level of risk a condition posed.

While the Weekly Incident Review Board Meeting focused on the tactical, the third assignment—the Monthly Safety Review Board Meeting—focused on the strategic. The Monthly Safety Review Board Meeting was designed to look for trends in the safety data and to make strategic and policy decisions. The monthly meeting was chaired by senior joint leadership and had a decidedly different focus than the Weekly Incident Review Board meetings.

The automobile manufacturer and the union felt the inclusion of safety professionals in Continuous Improvement activities was essential to creating and maintaining a safe workplace. Without the inclusion of safety in the Continuous Improvement activities, safety could be inadvertently sacrificed in the pursuit of process improvement. The addition represents a slight, but important, shift in the culture of the automobile manufacturer. Continuous Improvement teams now include a safety professional who helps to ensure that any change in the process does not create a safety concern.

While the number of injuries from powered industrial vehicle accidents and lockout violations was relatively small, the severity of these injuries was alarmingly high. Nowhere was this more true than at the PDCs where the majority of injuries were related—either directly or indirectly—to unsafe use of Powered Industrial Vehicles (PIVs). The automobile manufacturer and the union decided to add assignments aimed at addressing these two very important areas. The first of two safety initiatives to become assignments, the Powered Industrial Vehicle (PIV) Driver Point System, is a method for identifying PIV drivers who are most likely to create a hazardous condition through poor driving behaviors. PIVs include hi-los, lift trucks, fork lifts, and similar vehicles. The PIV Driver Point System functions in much the same way as most state driver's licensing rules. Drivers that operate a PIV in an unsafe manner are issued a ticket. Each ticket carries with it a specified number of points and, when a driver accumulates too many points, his or her license can be suspended or revoked. The PIV Driver Point System is a way to raise the awareness of the relationship between PIV driver behavior and injuries.

The final assignment was related to Energy Control/Lockout. The number one cause of serious injury and fatalities among skilled trades is a failure to correctly lock out the energy of a piece of equipment before working on it. Energy Control/Lockout refers to the practice of controlling all forces at work in a piece of mechanical equipment.

Typically, Energy Control/Lockout is completed by cutting power (electrical, hydraulic, pneumatic, and even gravity), bleeding off the stored energy, placing safety devices (chocks, wedges, or similar devices) into key points of the equipment to prevent unexpected movement, and placing a padlock on the power panel to prevent someone from unknowingly restoring power to the equipment and injuring or killing the worker or a bystander. For Energy Control/Lockout to be successful, only those persons trained to lock out a particular piece of equipment are allowed to work on it, and everyone must universally and without exception follow the proper Energy Control/Lockout procedures. The Energy Control/Lockout assignment prescribes that each location maintain a database that tracks the personnel trained to lock out a particular piece of equipment to facilitate the appropriate assignment of personnel to maintain the equipment. This assignment is a relatively small—yet very important—piece of the automobile manufacturer's overall Energy Control/Lockout efforts.

Results

The efforts at the PDCs were incredibly successful. The company began seeing improvements in its safety metrics almost immediately, including a steady decrease in its Incidence Rate that culminated in a 74% reduction within five years.

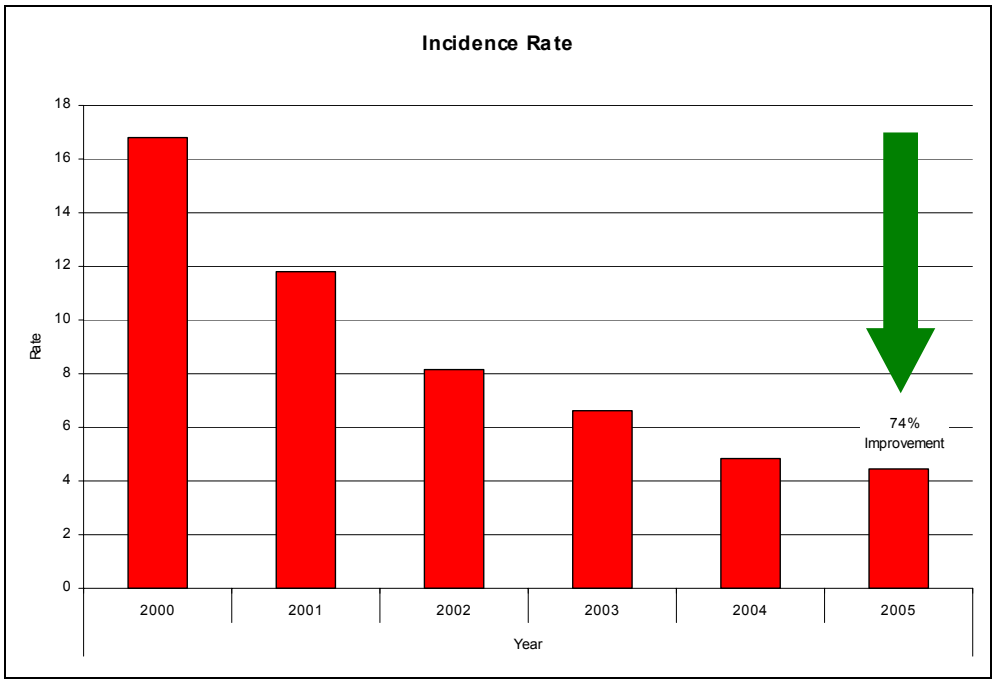

Figure 4: Recordable Incidents

The PDCs saw similar successes in reducing its Lost Work Day due to Injury rates, this time realizing an average improvement rate of more than 30% for five consecutive years, cumulating in an 85% five-year improvement. This reduction was significantly higher than the company's overall average of only 20% annual improvements.

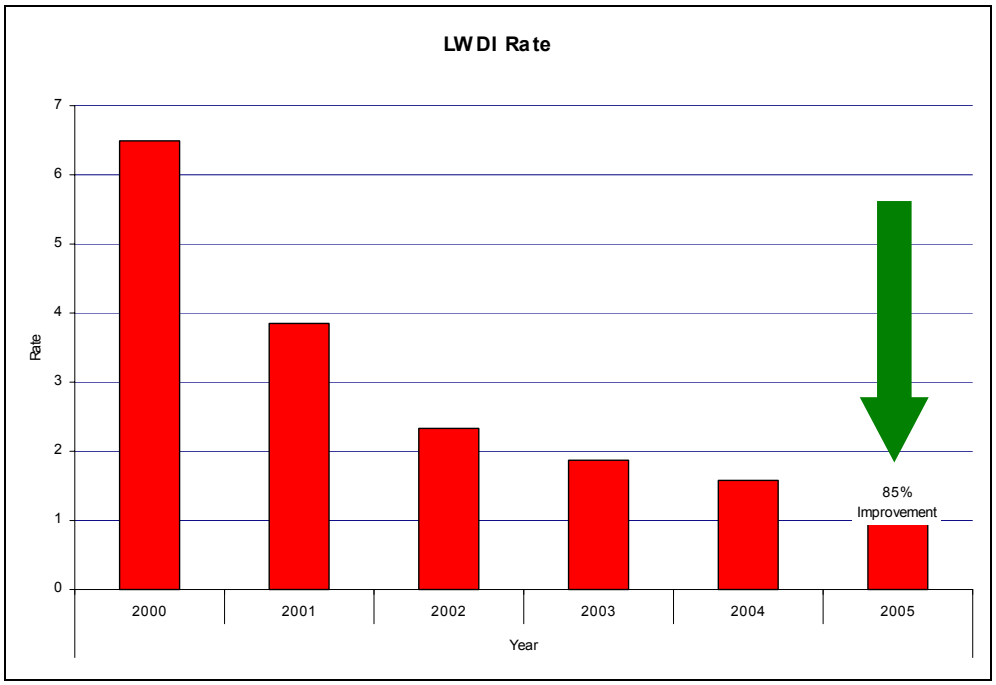

Figure 5: LWDI

These improvements, while impressive, weren't the most impressive gains that the PDCs made. The severity of the injuries (measured by the number of actual days that were lost because of worker injuries) dropped remarkably.

Cultural Results

This initiative had a profound effect on both the corporate culture and the PDC subculture. Prior to this intervention, it seemed highly unlikely that the PDCs would ever be able and willing to adopt a safety system that was also implemented in manufacturing. Today, almost all of the PDCs have won numerous awards for workplace safety and for safety improvements.

By adopting integrated benchmark practices including: safety inspections, hazard investigations, workshops to identify root causes of injuries, and safety strategy deployment, the company was able to foster a corporate culture where no injury was viewed as inevitable or unavoidable.

The new safety culture shifted the responsibility for safety to Operations, most notably union stewards and first-line supervisors. This shift allowed the safety professionals to be a resource to production and act more like a consultant in matters of safety. The automobile manufacturer's team believes that by placing the safety professionals in a supporting role, it breaks down some of the "its okay if I don't get caught" thinking that had long plagued its safety efforts.

Summary
In 1999, the automobile manufacturer and its union agreed that dramatic and decisive action was required to improve the safety of its workplace. Injury rates were too high and both sides shared the visionary goal of becoming the safest workplace in heavy industry. In the case of PDCs, many employees believed that efforts to reduce worker injuries was costly and a complete waste of time. With the help of O/E, the PDCs soon led the manufacturer's safety improvement efforts and had outstanding results, and the automobile manufacturer—and its PDCs—continue to be an industry leader in employee safety.