

# Safety at Fort Dearborn Co.

*Transforming from “most wanted” to best in class*

*By Michael Saujani and Nick Adler*

**F**ORT DEARBORN CO. (FDC) is a privately held, family-owned corporation with multiple facilities and manufacturing systems around the world. The firm’s manufacturing systems provide cut-and-stack, film, pressure-sensitive and digital-printed labels for customers in the food, beverage, paint and retail industries. Most of the ergonomic- and materials-handling-related accidents have occurred at facilities that cut and stack labels.

Cut and stack labels are made by feeding rolls of paper through a machine that cuts sheets of paper to the desired dimensions. Palletized sheets of paper are used to print the desired labels on a printing press. The printed labels are cut using cutting machines, then stacked and wrapped with cellophane plastic material and shipped to customers via common carrier.

Shrink sleeve labels are made from rolls of plastic that are rolled into place on a flexographic press. Each press has several printing stations. As the plastic material is fed through each printing station, ink is applied to make the labels. The rolls of labels are slit, packaged and shipped to the customer.

FDC was on OSHA’s “most wanted” list of companies whose injury rates were higher than their industry average. At the beginning of 2002, two FDC divisions received letters from OSHA stating, “The agency used this [accident and injury] data to identify the workplaces with the highest lost workday injury and illness [LWDII] rates; your workplace was one of those identified. This means employees in your businesses are being injured at a higher rate than in most other businesses in the country.” The LWDII rate at these two facilities was 6.61 and 7.63, respectively. Actually, almost all FDC facilities had higher than average lost-workday incidence rates. Something had to be done—and fast.

The firm’s workers’ compensation (WC) insur-

ance company was not pleased with its loss records and decided to increase its rates significantly. To give an indication of the magnitude of the increase, in 1997-98, FDC paid a premium of more than \$220,000. By 2001-02, the premium had increased to \$1.2 million—a 491-percent increase (Figure 1). Obviously, FDC had to be aggressive in decreasing this cost. At the request of the insurance agency, the executive committee authorized the hiring of a professional safety director to turnaround the company’s poor loss experience.

This was a first for the company and some executives questioned the need for the additional overhead of hiring a professional. The general belief among the executives was that anyone with good common sense should be able to manage the company’s safety program, not taking into account that

the company had grown far beyond a small “mom and pop” plant. The insurance agency executive emphasized that all other important departments, such as quality control, accounting, finance, marketing and production, were being managed by qualified, experienced people. Why, then, should the important function of safety and protecting company assets not be managed by a qualified manager? Within one year of hiring a professional safety director, accident rates began to drop and these executives realized that safety makes a whole lot of business sense (Figure 2).

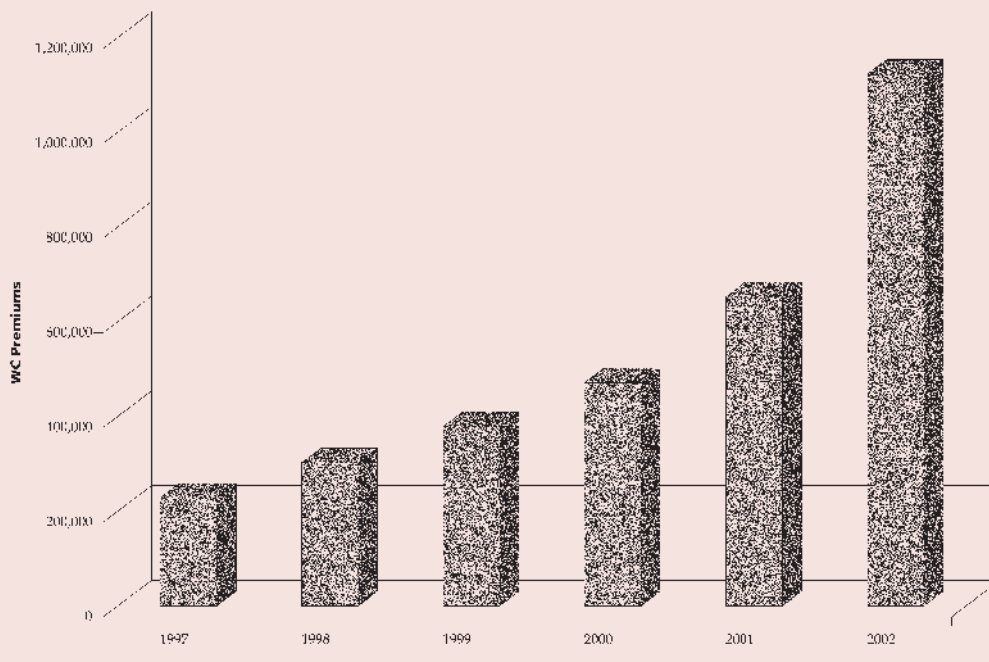
**Michael Saujani, CSP, CPCU**, is corporate safety director for Fort Dearborn Co., Niles, IL, where he has been since 2002. He has worked in loss control for Amerisure Cos., Hanover Insurance Co., Hartford Insurance Co. and Allstate Insurance Co. Saujani holds a B.S. in Mechanical Engineering, is a professional member of ASSE’s Northeastern Illinois Chapter, and is a member of Certified Property and Casualty Underwriters.

**Nick Adler** is an executive vice president in charge of all Fort Dearborn Co. (FDC) operations within the U.S., Europe and Mexico. He joined FDC in 1984, after earning a degree in Business Administration at Fort Lewis College. He spent his first year in sales followed by extensive hands-on technical training at FDC’s Fort Worth, TX, facility. Adler was plant manager for the Niles, IL, facility from 1986 to 1992, then was promoted to vice president of manufacturing.

**Figure 1**

## WC Premiums

FDC's WC insurance premiums steadily increased from 1997 to 2002. The number of employees did not increase by the same percentage.



This article shares how the firm was able to reduce its incidence rates and insurance costs significantly, so that other companies can initiate similar processes and reap the benefits of safer facilities.

### Preparing for Change

The first step was to determine the firm's current state and desired state, and develop the fishbone diagram (Figure 3) showing the systems needed to achieve the desired state. The results of that process are telling.

#### Current State

- Experience modification rate of 1.5 (i.e., the firm pays 50 percent more than the average commercial printer).
- WC premium had increased 425 percent, from \$284,000 to \$1.2 million, in five years.
- Property premium increased from \$39,750 to \$285,000 in five years.
- No effective, consistent safety policies and procedures were in place.
- Lack of a good accident investigation program.
- Monthly safety committee meetings were not held at all locations.
- Volunteers were serving as safety team leaders at each facility.
- No professional safety director was on staff.
- Associates and managers were not fully recognized for their safety efforts.
- All department managers were not fully involved in safety.
- All division presidents were not fully involved in safety.
- Safety was not a priority.
- The safety culture was inconsistent.
- Safety responsibilities were delegated to plant engineering.

- Hazards were not being corrected immediately.
- Associate training was inconsistent.
- Training and inspection records were not available.

#### Desired State

- Safe and healthful working conditions for associates. This will be measured by FDC having an accident record among the 10 best in the commercial printing industry.
- Full management and associate participation in safety.
- WC insurance cost no more than \$720,000.
- Maintain WC modification rate to no more than 0.9 in three years.
- Zero serious safety violations and fewer than three non-serious safety violations at all facilities.

- Zero lost-time incidents for the year and fewer than three no-lost-time incidents for every 100 employees.

Having determined the firm's desired state, the firm began to work on developing safety systems to achieve this state. The problem was tackled based on the structure needed, the safety processes that needed to be implemented, the staff needed at each division and the type of culture desired.

#### Roles & Responsibilities

Believing that safety is everyone's responsibility, the goal was to involve everyone—from shareholders to executives and managers, to union and nonunion employees. As such, a progress report was developed and attached to every payroll check defining the role of each associate.

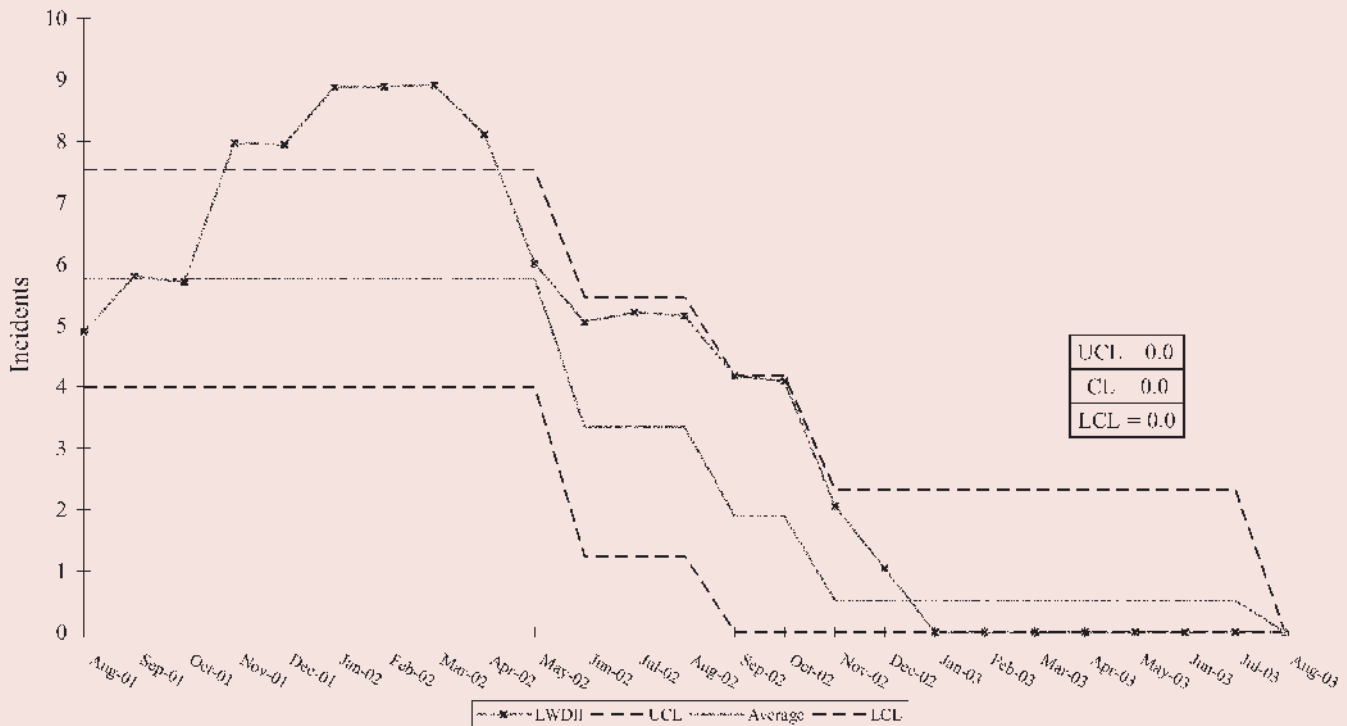
As the chief operating officer of the corporation, the role and responsibility of the FDC president is to furnish a place of employment free from recognized hazards that can cause injury of any type—serious or minor—to associates and visitors.

The roles and responsibilities of the corporate safety director, who is in charge of overall company safety-related goals and objectives, are to:

- 1) Plan and implement company safety policies and procedures to comply with government rules and regulations.
- 2) Coordinate companywide programs to ensure worksite safety practices.
- 3) Audit FDC facilities to detect existing and potential accident and health hazards and offer advice to prevent these hazards.
- 4) Help investigate lost-time accidents.
- 5) Analyze accidents and develop trends for the purpose of reporting corrective action.
- 6) Support safety team leaders to achieve company safety goals.

**Figure 2**

## Lake Forest: LWDII Annual Rate



7) Coordinate the development of programs and procedures to ensure safe behavior.

With regard to safety, the role and responsibility of each division president or general manager is to support, encourage and lead the safety team leader, department managers and associates in fulfilling the desired state of the company.

The roles of the division safety team leader, who also has other management responsibilities, is to:

- 1) Complete required safety training of associates and maintain records of the training.
- 2) Chair safety committee meetings.
- 3) Complete semimonthly safety inspections using a safety checklist.
- 4) Investigate all accidents and complete a report of the investigation with corrective action.
- 5) Motivate associates to work safely.

The role of each department manager within the division is to:

- 1) Complete weekly toolbox meetings.
- 2) Complete a daily safety inspection of the department.
- 3) Suggest improvements for the system.
- 4) Complete daily safety huddle.
- 5) Assist in accident investigations conducted by the safety team leader and safety director.
- 6) Train associates in safe work practices.
- 7) Observe associates working safely.
- 8) Coach and counsel associates to ensure safe behavior.

Each associate (employee) helps to ensure a safe workplace by working with managers and division safety team leaders to:

- 1) Obey all safety rules and regulations.
- 2) Participate in training.
- 3) Suggest improvements for the system.
- 4) Work safely as an individual and as a team.

5) Keep work area clean and hazard-free.

6) Report all unsafe acts and conditions to the immediate supervisor.

The authors held meetings at corporate and divisions to discuss these roles and responsibilities so that senior executives, managers and associates were aware of these expectations. At safety team leaders' meetings, discussion focused on the importance of developing division safety committees and ensuring that committee members complete all desired safety activities. At managers' meetings, discussion centered on the importance of ensuring that all managers are trained in root-cause analysis, accident investigation and OSHA's 10-hour certification program. During meetings with associates, safety rules were reviewed as was the safety observation program and how it would be used to comply with the rules.

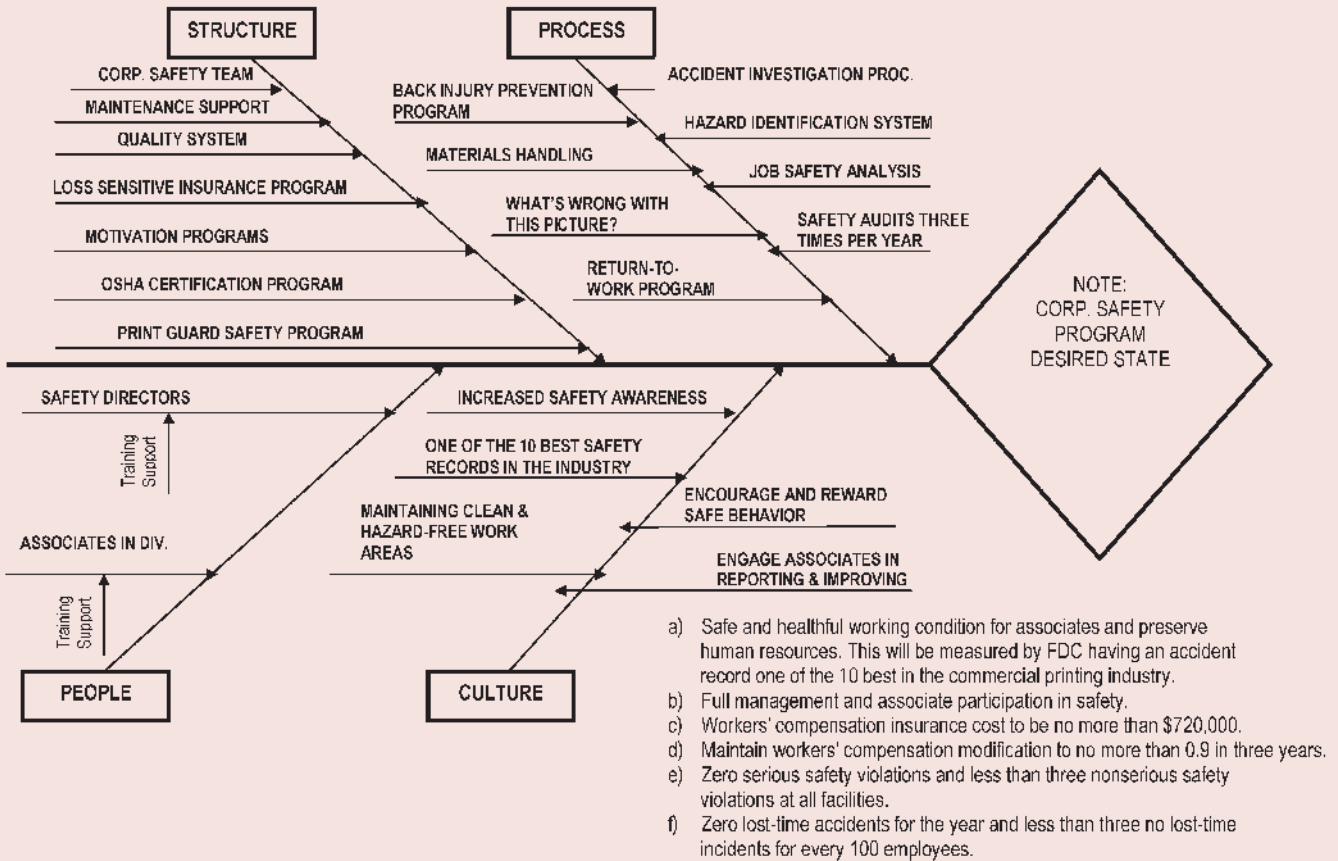
Gift certificates and safety products were used as awards for associates who offered safety observations and hazard prevention ideas. As of this year, the general manager's bonus (10 percent) will be determined by safety-related accomplishments—reduction in lost workday incidence rates and reduction in incurred cost of accidents versus the expected average cost.

Another meeting was held with union leaders to gain their buy-in to the safety initiatives. In addition, company executives agreed to change the method of charging each division with the WC insurance cost. Previously, each division paid a contribution to FDC corporate based on WC payroll. As a result, the division presidents (now general managers) had no real incentive to manage the cost of WC insurance.

To change this, the firm purchased a large-deductible insurance program, requiring FDC to pay a fee for insurance service and pay WC cost incurred

# Corporate Safety Program Key Projects

Fishbone Diagram: Corporate Safety Program Key Projects (10/21/02)



by the insurance company within 30 days of payment. Each division became responsible for its own WC costs. At the end of the year, each division was charged back a percentage of the service fee based on payroll and the total cost incurred for all injuries at that division for the policy year. As a result, division presidents monitored all claims and ensured that conditions or processes causing the injuries were properly managed. At each facility, a manager, instead of a volunteer associate, was designated as a safety team leader to manage the safety program.

### Monitoring the Safety Process

One vital responsibility of safety team leaders is to complete trending of employee injuries for each division they represent. They complete a trend report every month trending injury incidence rates (IR) and LWDII rates. The firm initially used the Process Control Chart Tool Kit (PCCTK) (developed by Sof-Ware Tools) and later began to use The QI Macros for Excel to monitor the safety process. These tools were already being used by the quality control and production departments to track various operations and processes throughout the organization. To monitor the safety process, the XbarR (Average and Range chart) and XmR (the individual and moving range charts) were used to evaluate the process stability (PCCTK 49; QI Macros 14-17). The XbarR chart provided average rates and upper and lower control limits while the XmR chart provided

process stability information. These charts helped indicate whether any "special causes" were influencing the safety process so such situations could be addressed quickly (Sholtes 28). Eight tests are conducted to analyze whether the process is stable and predictable (PCCTK 147). The four most important tests are:

- 1) one point above or below the UCL or LCL;
- 2) eight consecutive points grouped above or below the average;
- 3) six consecutive points ascending or descending;
- 4) 14 consecutive points alternating up and down.

If the data on the chart violate any of these four basic tests, the process is unstable and should be evaluated for special causes.

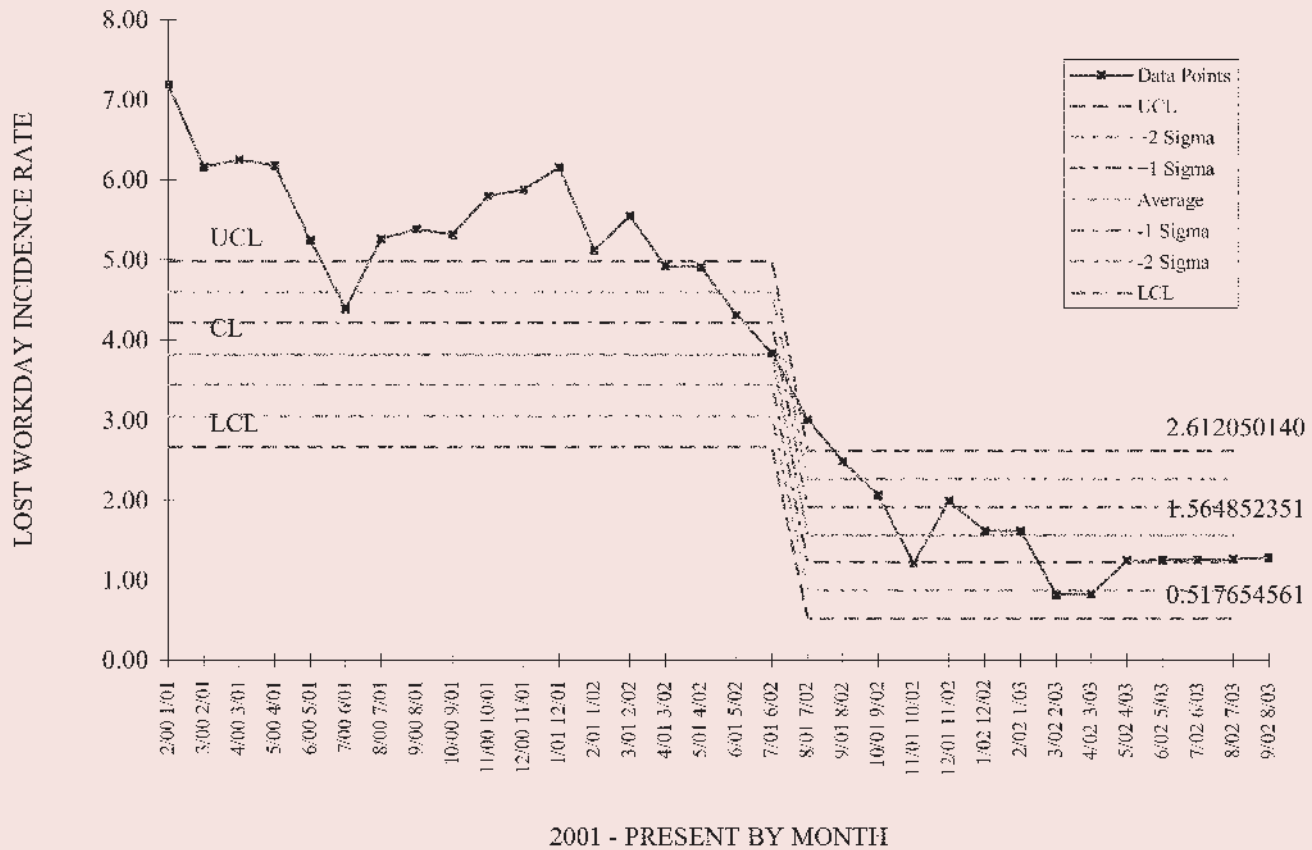
Figure 4 shows a lost workday rate chart from FDC's largest division. All divisions had similar data. A combined chart was developed in order to evaluate how the safety system was performing at each division and companywide. It was quickly discovered that what gets measured gets done. The company focus on safety was paying off.

### Achieving Results

FDC's injury incidence rates and lost workday incidence rates began dropping after the program was implemented. As of August 2003, the companywide lost workday incidence rate was 0.48, while the industry average is 2.7 for 200,000 workhours. The insurance cost dropped from \$1.2 million to \$619,076

Figure 4

## Lost Workday Rate, 2001 to Present



for the first year; for the current four months in the policy, the cost is \$83,515 (Commercial Loss Experience).

Three divisions achieved more than 200,000 workhours without a lost-time incident and received safety awards from Amerisure Insurance Co. These accomplishments demonstrate that working diligently as a team can achieve outstanding safety results.

The primary reason the firm was able to make such significant progress was because it developed safety policies and implemented them uniformly throughout the corporation.

- All divisions require monthly safety meetings that include associates from all departments. The members review accident reports and discuss how these accidents will be prevented in future. They review the results of monthly safety inspections and actions plant engineering has taken to prevent hazards and also monitor progress with regard to other safety-related activities. Safety meeting minutes are posted for all associates to read.

- Select members of the safety committee (now) complete monthly safety inspections using the PrintGuard Safety Self-Inspection Checklist (PrintGuard Comprehensive Safety and Health Program Manual A-1) to identify unsafe acts and conditions for corrective action by plant engineering departments.

- Managers complete informal inspections of their departments to identify and correct unsafe conditions. Each department manager has a checklist (4.1 Informal Self Inspections; "FDC Safety

Manual"), then initials it on the day on which the inspection was completed.

- The company invited Illinois OSHA inspectors during April and May 2003 to inspect its operations for hazards. One inspector had about 10 serious and more than 70 other-than-serious recommendations. The firm corrected all of these recommendations and requested a revisit to verify that the actions were appropriate.

- All divisions have been visited at least three times within the last year in order to inspect plant operations for hazards and make safety presentations (e.g., loss analysis, accident investigations, return-to-work program) at the managers' meetings. Reports of the surveys, along with recommendations, were submitted within a week of the survey to the general managers for corrective action. These recommendations have been promptly complied with.

- Three times last year, safety team leaders and human resources representatives attended one-day safety seminars. Topics covered during these sessions included ergonomics, hazard communication, lockout/tagout, accident investigation, property conservation, and fire safety and evacuation.

- All managers carry a 10-hour OSHA training certificate so they understand the importance of complying with OSHA standards and identifying and correcting hazards.

- FDC has implemented a return-to-work program to care for injured associates and make every effort to return them to meaningful employment. Managers are taught to think about an injured person's ability, rather than his/her disability, while

**Figure 5**

## FDC Inspection Log

### PRESSROOM DAILY INSPECTION

A daily examination of pressroom shall be made at the start of each operating shift. This examination will usually be made by the manager/supervisor and conditions adversely affecting the safety of the associates shall be reported and corrected.

- INSPECT**
- General housekeeping
  - Guards in place
  - Trip hazard
  - Slip and fall hazard
  - Use of PPE
  - Fire extinguishers available?

- INSPECT**
- No material on stairs to presses
  - Adequate lighting
  - Open electrical connections
  - Safety board updated
  - Safe lift truck operation
  - Other

Date/Shift	OK?	Initials	Date/Shift	OK?	Initials
1 _____	_____	_____	16 _____	_____	_____
2 _____	_____	_____	17 _____	_____	_____
3 _____	_____	_____	18 _____	_____	_____
4 _____	_____	_____	19 _____	_____	_____
5 _____	_____	_____	20 _____	_____	_____
6 _____	_____	_____	21 _____	_____	_____
7 _____	_____	_____	22 _____	_____	_____
8 _____	_____	_____	23 _____	_____	_____
9 _____	_____	_____	24 _____	_____	_____
10 _____	_____	_____	25 _____	_____	_____
11 _____	_____	_____	26 _____	_____	_____
12 _____	_____	_____	27 _____	_____	_____
13 _____	_____	_____	28 _____	_____	_____
14 _____	_____	_____	29 _____	_____	_____
15 _____	_____	_____	30 _____	_____	_____

Date	Deficiencies or Service Required	Date Corrected/Initials
_____	_____	_____
_____	_____	_____

attempting to bring that employee back to work. For example, when a first pressman strained his shoulder, an interview revealed that he had good computer skills. This associate was brought back to work to train other associates to use a computer program that was being installed to monitor processes.

•Safety is now discussed during managers' meetings, plantwide meetings and employee discussions. All general managers and department managers are involved in safety activities. When the general managers conduct their monthly plantwide meetings, safety accomplishments and issues are discussed first. Department managers discuss safety along with other production and quality issues at monthly

department meetings. In fact, associates have been overheard discussing safety topics during lunch breaks.

•One division installed an automatic lifting device to lift boxes in the palletizing area using vacuum power rather than associates' backs. One associate said, "Now I am very happy, satisfied, and I don't worry because the [device] is fast, reliable and safe to use. I would like to thank Fort Dearborn's management for the idea to use this device in our plant."

•Small rewards, such as mugs and keychains, were offered for job observations and associate safety participation.

•Twice a year, associates are surveyed to evaluate how engaged they are in the success of the operation. In addition, the corporate safety department completes an annual survey of how associates are engaged in safety. The team developed a checklist of 25 safety-related questions and provides a copy of the survey at random to about 12 percent of the total division population. Responses are mailed to the corporate safety department where they are tabulated and scored on a scale of one to five. Following are the results of the last survey:

- Fountain Inn: 4.3
- Niles: 4.1
- Lake Forest: 4.0
- Fort Worth: 3.7
- Flexible Packaging: 3.7
- Virtual Color: 3.6

Scores and comments are reviewed with each general manager for improving associate engagement scores.

### Conclusion

In retrospect, corporate staff, division managers and associates have accomplished a lot; but, more needs to be done. The firm needs to continually update its safety manual, select the safe division of the year, and increase associate awareness to plant hazards and necessary safety precautions. Increased awareness will ensure that employees look out for each other to prevent accidents. FDC's safety goal is to:

- have zero safety violations at all divisions;
- achieve zero lost-time accidents;

- increase safety awareness score by at least 90 percent;
- achieve recognition in OSHA Voluntary Protection Programs;
- achieve the best safety record in the printing industry.

FDC's CEO Rich Adler Jr. summarizes this achievement: "What sets apart the extraordinary results from the good results is that safe working practices have become interwoven within the culture of those facilities. Safe practices are how they get the job done rather than something they do in addition to their job." ■

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- 28 Yes
  - 29 Somewhat
  - 30 No

**Figure 6**

**FDC Safety Survey**

FDC asked employees to complete this brief questionnaire as part of its initiative to determine employee attitudes and perceptions. Employees were asked to be completely honest in their responses and were reassured that the responses were confidential. Names were not included on the questionnaire—only division and department information.

**Division:**

**Department:**

You will be presented with a series of statements about health and safety. Please indicate your response by marking the appropriate answer for each question:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Questions	1	2	3	4	5
1) Management operates an open door policy on safety issues.					
2) Safety is a priority in my mind when completing a job.					
3) Coworkers often give tips to each other on how to work safely.					
4) Safety rules and procedures are carefully followed.					
5) Management clearly considers the safety of employees of great importance.					
6) I am given enough time to get the job done safely.					
7) I am involved in informing management of important safety issues.					
8) Management acts properly when a safety concern is raised.					
9) There is good communication about safety issues that affect me.					
10) I understand the safety rules for my job.					
11) It is important to me that there is a continuing emphasis on safety.					
12) This is a safer place to work than other companies I have worked for.					
13) I am strongly encouraged to report unsafe conditions.					
14) Personally, I feel that safety issues are not the most important aspect of my job.					
15) In my workplace the chance of being involved in an accident is quite large.					
16) I do not receive praise for working safely.					
17) I can influence safety and health performance.					
18) When people ignore safety procedures, I feel it is none of my business.					
19) I am clear about what my responsibilities are for safety and health.					
20) A safe place to work has a lot of personal meaning to me.					
21) There are always enough people available to get the job done safely.					
22) In my workplace, managers/supervisors show interest in my safety.					
23) Management considers safety to be equally as important as production.					
24) Managers and supervisors express concern if safety procedures are not adhered to.					
25) I cannot always get the equipment I need to do the job safely.					