

# STRUCTURAL BUILDING COMPONENTS MAGAZINE (FORMERLY WOODWORDS)

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## "Modernizing Safety for the New Truss Plant" by Susan Harrelson of James Truss Company

The Truss Industry has come a long way in the last few years. Until the mid 1990's most would agree that our industry was behind the curve in automation, information technology and business practices. However, this is no longer true. Unprecedented advances in the delivery and processing of information have also lead to profound changes in the ways truss manufacturers and their employees think about doing business.

Safety in the workplace is also undergoing this same kind of change. Since safety can make a significant contribution—positive or negative—to a company's profitability, it is imperative that truss manufacturers evaluate and update their attitudes and beliefs about safety.

### UNSAFE CONDITIONS

In the past, safety was defined in terms of "conditions." The emphasis on conditions is understandable when considering the hazards that were daily realities in many American workplaces. This is the environment from which OSHA was created. The OSHA standards represented an immense improvement over the standardless workplace where workers had to accept "occupational hazards" in exchange for a paycheck. Although OSHA-style safety was probably necessary at the time, it was not sufficient. It had serious limitations including inflexible rules, one-size-fits-all mandates and an emphasis on measurements.

Unfortunately, workers continued to injure themselves, often because of ignored safety rules and dangerous shortcuts. OSHA responded by enforcing the minutiae of the standards, which in turn irritated employers who saw it as harassment and nit picking. Another shortcoming of the OSHA approach was an overemphasis on employer responsibility. One source of frustration for employers was the observation that, in many instances, employees caused the accidents in which they were injured, although the blame—and the citations—fell on the employer.

### UNSAFE ACTS

About ten years after OSHA set the "unsafe conditions" standard of safety in U.S. law, researchers discovered what employers already knew: many industrial accidents are not caused by conditions in the workplace but instead could be traced to the unsafe acts of employees. Estimates of injuries caused by unsafe acts vary but the most commonly quoted figure is 95 percent. Compared to the conditions-centered OSHA approach, the "unsafe act" concept was a huge step forward in injury-prevention thinking. Progressive companies instituted behavior modification programs designed to make workers think before they act. Employee training became an important component of safety programs. Even OSHA began to include more

employee training requirements in its newly promulgated standards such as Hazard Communication and Lockout/Tagout.

The “unsafe acts” model of workplace safety has been criticized for placing too much safety responsibility on workers. Some labor groups have categorically rejected behavioral approaches to safety, alleging that such programs blame the worker for getting hurt. Although this criticism is rarely justified, the reputation of behavior-based programs has suffered from the perception that they are unfair to employees and overly lenient to employers. Still, the “unsafe acts” concept has proven quite robust. The estimate that 95 percent of accidents are caused by the unsafe acts of employees has become commonly accepted.

## **SYNTHESIS**

Despite OSHA Standards and Behavior-Based Programs, injury rates in many industries are still far too high. Current thinking is that unsafe acts and conditions are the same thing. If a worker, for example, is injured while operating a radial arm saw, it is unlikely that either the saw or the worker is entirely responsible. The accident investigation should focus on:

### **1. Possible unsafe conditions, such as:**

- Was the saw's guard present and in good condition?
- Did its automatic return work?
- Was the blade sharp?
- Was the lighting adequate?
- Was housekeeping in the area satisfactory?
- Did the size, species, or characteristics of the material being cut deviate from normal?

### **2. Possible unsafe acts, such as:**

- Was the worker trying to cut too many pieces at one time?
- Was the worker authorized to run the equipment?
- Was he working too fast?
- Did the worker report any unsafe conditions that were present?

### **3. Possible circumstances that contributed to the unsafe conditions or unsafe acts, such as:**

- Why did the employee think it was necessary to work too fast/cut too many pieces? Was his supervisor pushing production over safety?
- Did the employee think it was useless to report unsafe conditions because her/his supervisor doesn't listen? Is a dull saw blade an unsafe condition or the unsafe act of the person responsible for changing it?
- Did he lack training? Did anyone realize he needed training?
- Was housekeeping poor because the employee was lazy or because the supervisor discouraged the employee from taking time to clean?

The questions in list #3 represent system failures that must be fixed before a change in the

company's safety performance is possible. Pushing production too hard, for example, may indicate a failure to properly schedule work and plan for contingencies. Maintenance and repair problems may indicate a failure of the maintenance program or worn-out equipment.

Drilling down to the failure in the system requires asking questions at every step in the process. If vital equipment is always breaking, is it cost-effective to keep repairing it or would new equipment be cheaper to run and better for smooth production? Does equipment downtime contribute to the supervisors' pushing for faster production to make up lost time? Does a lack of training indicate that the supervisors do not have time to give instruction, that they do not think it's important, or that they do not possess the skills to be good trainers? If the supervisors are experts at on-the-job training, have employees misrepresented their skills? If so, there may be a need to evaluate the company's hiring and screening procedures. The technique is not difficult, although it is important not to stop questioning before all of the contributing factors have been identified. Effective root cause analysis does not have to be a function of an expensive and complex software package. It can be performed with only an inquiring mind and persistence.

Addressing unsafe conditions and unsafe acts is insufficient because it is merely reactive. Reactive mode limits a manager to current concerns. This virtually guarantees that there will always be a new condition or behavior waiting to give the manager a nasty surprise. Recognizing and working on systemic issues enables management to proactively prevent accidents. Future injuries will be avoided, even though the specific conditions and acts involved may be quite different from anything management has previously confronted. Systems safety is the closest thing to a crystal ball most managers will get for predicting accidents and other failures. The benefits do not stop there. They continue to pay rewards in almost every department. For instance, the systems approach is less likely to involve placing blame on either the employer or the employee. By working together to fix a broken system or process, everyone gets to play on the same team with the common goal of improving safety, production, quality and management/labor relations.

A systems management view of safety can be adopted by any company, but management must be sure that none of the steps to a modern safety program have been skipped. Companies that are practicing 1980's style behavior modification and reacting to safety problems, will be able to move to systems safety by learning a few simple ways to be more effective in addressing failure. A company that's still stuck in the 1970's, chasing unsafe conditions and trying to achieve OSHA compliance, will need to address employee behavior before implementing systems management. And if there are any truss manufacturers out there who believe that accidents are the unavoidable cost of doing business, they run a grave risk of being left behind as the marketplace grows more sophisticated and competitive.

## **PARADIGM SHIFT**

Practicing systems safety will bring the truss industry in line with other manufacturing sectors and will assure that our safety practices are up to date. Over the last few years, safety professionals have been debating an anticipated "paradigm shift," in the way industry as a whole relates to safety. Systems safety will likely become a practice of the past.

Some of us can already make out the shape of the new safety paradigm coming for 2001 and

beyond. To be ready for it, however, the truss industry needs to work through the previous paradigm from start to finish. Companies that fail to make the effort will find themselves at a competitive disadvantage, because the changes on the horizon promise to be unusually suitable for implementation in the truss business. Companies that are able to take advantage of these changes will be far better prepared for whatever the future may hold.

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