

SAFETY FACTS & FINES

It is often the unexpected that causes the accident. When one of its employees plunged more than 40 feet to his death, a construction company in Tampa, Florida, was fined \$35,000. The company was charged with failure to provide fall protection gear for its employees. The employee was working on the top of a building that was under construction. At the time of the accident, he was releasing material from a crane when the material shifted, knocking off the roof. After falling more than 40 feet, the employee landed on a concrete slab. Had he been wearing a fall protection device or had the company erected safety nets, this tragedy might have been prevented.

to do well. The responsibility she felt toward other female employees at CPI only served to intensify her anxiety. Andrews felt that if she failed, other women might not get a chance to try in the future.

Before beginning work in the loading unit, employees must complete two days of training on proper lifting techniques. The use of back-support belts is mandatory for all loading dock personnel. Consequently, Andrews became concerned when the supervisor called her aside on her first day in the unit and told her to forget what she had learned in training. He said, "Jane, nobody wants a back injury, so be careful. But the key to success in this unit is speed. The lifting techniques they teach in that workshop will just slow you down. You've got the job, and I'm glad you're here. But you won't last long if you can't keep up."

Andrews was torn between following safety procedures and making a good impression on her new supervisor. At first, she made an effort to use proper lifting techniques. However, when several of her co-workers complained that she wasn't keeping up, the supervisor told Andrews to "keep up or get out of the way." Feeling the pressure, she started taking the same shortcuts she had seen her co-workers use. Positive results were immediate, and Andrews received several nods of approval from fellow workers and a "good job" from the supervisor. Before long, Andrews had won the approval and respect of her colleagues.

However, after two months of working in the loading unit, she began to experience persistent low back pain. Andrews felt sure that her hurried lifting techniques were to blame, but she valued the approval of her supervisor and fellow workers too much to do anything that might slow her down. One day, while loading a truck, Andrews fell to the pavement and could not get up. Her back throbbed with intense pain, and her legs were numb. She had to be rushed to the emergency room of the local hospital. By the time Andrews checked out of the hospital a

week later, she had undergone major surgery to repair two ruptured disks.

Jane Andrews's situation can be explained by the *epidemiological theory* of accident causation. The predisposition factor was her susceptibility to pressure from her co-workers and supervisor. The applicable situational factors were peer pressure and the priorities of the supervisor. These factors, taken together, caused the accident.

SYSTEMS THEORY OF ACCIDENT CAUSATION

A system is a group of regularly interacting and interrelated components that together form a unified whole. This definition is the basis for the systems theory of accident causation. This theory views a situation in which an accident may occur as a system comprising the following components: person (host), machine (agency), and environment.¹⁰ The likelihood of an accident occurring is determined by how these components interact. Changes in the patterns of interaction can increase or reduce the probability of an accident.

For example, an experienced employee who operates a crane may take a two-week vacation. His or her temporary replacement may be less experienced. This change in a component of the system (person or host) increases the probability of an accident. Such a simple example is easily understood. However, not all changes in patterns of interaction are this simple. Some are so subtle that their analysis may require a team of people, each with a different type of expertise.

The primary components of the systems model are the person, machine, environment, and information; decisions; risks; and the task to be performed.¹¹ Each of the components has a bearing on the probability that an accident will occur. The systems model is illustrated in Figure 3-5.

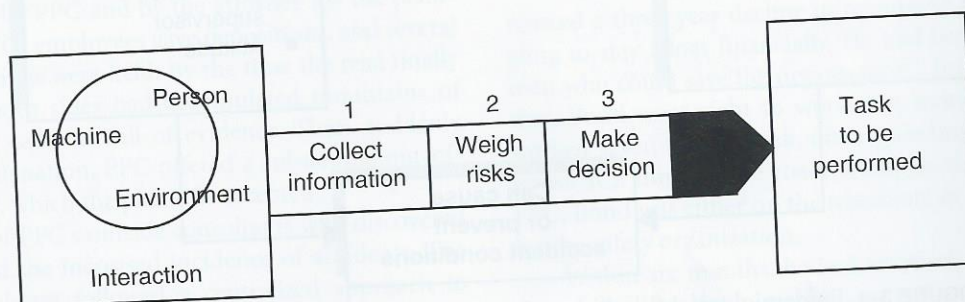


FIGURE 3-5 Systems theory model.