Fact Sheets: The Origin and Fallacies of Behavior Based Safety

Origin of Contemporary Behavior Based Safety -- Behavior based safety programs are not new. In fact this approach to health and safety that assumes that the vast majority of injuries and illnesses are the result of unsafe acts by workers first became popular in the United States with the work of H. W. Heinrich. Heinrich was an Assistant Superintendent of the Engineering and Inspection Division of Travelers Insurance Company during the 1930's and 1940's.

The claim that 90% (or similar fraction) of injuries are due to unsafe acts is a repetition of Heinrich's "research." Heinrich's conclusion was based on poorly investigated supervisor accident reports, which then, as now, blamed injuries on workers. He concluded that 88% of all industrial accidents were primarily caused by unsafe acts. Companies that sell behavior based safety programs continue to mislead clients by perpetuating this folklore. Dupont says that 96% of injuries and illnesses are caused by unsafe acts. Behavior Science Technology (BST) has stated that between 80% and 95% of all accidents are caused by unsafe behavior.

Companies that cite Heinrich's "research" to justify behavior based safety program conveniently leave out the rest of his findings. Anyone who reads his original work can see that another of his conclusions, **"ancestry and social environment are factors in every accident"** is undisguised racism and class bias! Both findings are without merit.

Most behavior based safety programs are fundamentally Heinrich's outdated and erroneous theories repackaged for modern marketing.

Behavior based safety programs appeal to many companies because they make health and safety seem simple, do not require management change, focus on workers and seem cheaper than correcting health and safety hazards.

Where do injuries and illnesses come from? Injuries and illnesses are caused by exposure to hazards. Hazards include any aspect of technology or activity that produces risk. The level of risk is primarily the combination of two factors: the level of toxicity or amount of energy present and the degree of exposure. The level of toxicity and the amount of energy are reduced by substitution of materials and design. Exposure is most effectively reduced through the use of engineering controls such as guards, safety devices, enclosures and ventilation systems.

Selecting The Most Effective Methods To Control Hazards.
The method of selecting the most effective control measures is embodied in what is commonly called the "Hierarchy of Controls." The "Hierarchy" is a basic and widely accepted principle held by health and safety professionals which establishes an order of preference for the selection of controls to minimize risk associated with any hazard.

Hierarchy of Control

- Elimination or Substitution
- Engineering
- Warnings
- Training and Procedures
- Personal Protective Equipment

In 1950 the National Safety Council began describing the hierarchy of controls. It recognizes that design, elimination and engineering controls are more effective in reducing risk than lower level controls such as warnings, training, procedures and personal protective equipment.

The highest level feasible control should be used to control every hazard. When high level controls are not feasible or do not adequately reduce risk, lower level controls such as warnings, training,

procedures and personal protective equipment must be implemented. The hierarchy can be found in almost every competent manual on health and safety. I have not yet found it mentioned or referenced in ‘a behavior based safety manual.

Behavior Based Safety Programs Turn the Hierarchy Upside Down.
Behavior based safety programs turn the hierarchy upside down. Most programs begin with the identification of 'critical worker behaviors.' Critical worker behaviors typically include wearing personal protective equipment and following safety procedures.

Behavior Based Approach

- Identify Critical Worker Behaviors
- Inspect, Observe Compliance With Critical Behavior Inventory
- Warn, Coach, Reward, Punish

Remember that these methods of control are at the bottom of the hierarchy. Next the behavior based programs set up elaborate mechanisms to check inspect, observe, coach, reward an discipline workers.

There is a substantial difference between the approach described above and the behavior based safety approach. The first takes an objective and unbiased view of the workplace by identifying hazards and reducing risk according to the hierarchy.

System Approach

- Identify Hazards
- Estimate the level of risk for each hazards
- Control hazards according to the hierarchy

The behavior safety approach is biased because it ignores hazards and risk and focuses on critical worker behaviors' which would permit working in a hazardous environment. This almost always leads to the implementation of low-level controls, i.e. safety procedures and personal protective equipment instead of more effective engineering controls. Some behavior based safety programs give token lip service to engineering controls. However, ineffective low-level controls are emphasized in every behavior safety program. I have been to workplaces that implement behavior based safety programs that are hard on workers when it comes to safety rules and use of personal protective equipment but lack the most basic engineering controls. 'Staying out of the line of fire' replaces effective safeguarding and design. 'Proper body position,' has become a replacement for a good ergonomics program and well-designed workstations. And personal protective equipment becomes a substitute for noise control, chemical enclosures and ventilation.

Such programs undermine health and safety by excusing management's past shortcomings and directing attention to the workers who in most cases had little or nothing to do with the selection of machinery or processes, methods of safeguarding or the establishment of procedures and methods.

In such an environment workers know that if an injury or illness occurs they will be blamed. This strongly discourages workers from reporting injuries and illnesses.

Generating Fear and Driving Problems Underground.
During an after work meeting with a company that uses a well known behavior based safety program as well as safety incentives. Workers discussed many health and safety problems. During the meeting the workers were asked, "What can the company do to improve health and safety?" They said, l) stop emphasizing production over health and safety. 2) listen to the workers, 3) when the workers raise a health and safety problem correct it. Sound familiar?

The workers were asked if they were afraid to report injuries? Many said yes. Workers were asked for a show of hands. Fifty percent raised their hands and said that they would not report injuries. Realizing that fear was so widespread that some workers might have been afraid to raise their hands and admit to under reporting. Each worker was asked to write on a piece of paper if they were afraid to report injuries or not. The notes were anonymous -- workers were not required to include their name. Seventy percent marked the paper 'yes' that they were afraid to report injuries.

When asked why they would not report injuries or were afraid they made comments like, 'we know that we will face an inquisition, "be humiliated and be blamed for the injury."

Health and safety problems that we know about can be difficult to correct. Those that are driven underground will never be addressed and will certainly result in future injuries and illnesses.

Conclusion

Programs such as behavior based safety that generate fear, institutionalize the use of low level controls over higher level engineering controls, create conflict between workers and discourage the reporting of injuries and illnesses and drive problems underground have no place in a health and safety program.