

## Chapter 1 : Lean Behavior-Based Safety: How the Process is Evolving to Survive in Today's Economy

*Behavior-based safety (BBS) is the "application of science of behavior change to real world safety problems". or "A process that creates a safety partnership between management and employees that continually focuses people's attentions and actions on theirs, and others, daily safety behavior."*

This approach is best for companies with limited internal resources for training, a rushed implementation schedule or companies who choose to outsource such activities. Advantages of this approach: This approach requires the least internal resources from the implementing site and offers the highest probability of success. ProAct Safety personnel bring expertise from hundreds of implementations to the site and leave the team with a wealth of ways in which they can improve safety. How ProAct Safety is different: Our success rate is the best in the industry, our consultants are the most experienced, and our pricing is very competitive. Multi-Site Implementations ProAct Safety specializes in offering cost-effective solutions for multi-site implementations. The goal of a consulting solution should be to internalize the skills and expertise needed to be successful in Behavior-Based Safety without creating an ongoing dependency on outside consultants. The primary opportunity for effectively internalizing the Behavior-Based Safety process while minimizing external costs is represented in our Hybrid Implementation Model. Hybrid Implementation In a hybrid implementation personnel are selected from multiple sites to be trained as Internal Consultants. A ProAct Safety consultant performs a 3-Day classroom training course to train the personnel on how to implement Behavior-Based Safety then a fully-supported implementation is performed with the Internal Consultants participating. This combination of classroom and hands-on training has proven to be a successful model for Behavior-Based Safety implementation. Who should use it: This approach is best for larger companies who want to maximize their own ability to do Behavior-Based Safety while minimizing outside costs. Companies using this approach should have good personnel and internal resources for training. This approach develops internal resources for implementing at multiple sites. It controls costs while not drastically sacrificing expertise or probability of success. ProAct Safety trains and certifies the internal consultant to train personnel at multiple sites without additional costs for the number of people trained. This flexible approach is unusual in the BBS marketplace and allows unparalleled opportunities for companies to save money on implementations. This intensive 3-day workshop prepares trainers to anticipate and handle the issues that can challenge the success of Behavior-Based Safety efforts. Many companies opt to have ProAct Safety perform a fully-supported implementation at one site and train trainers in conjunction. Training includes ongoing support from ProAct Safety while implementations are in process to ensure the greatest chances of success. Instructions are clear, training is easy to deliver, and our experienced consultants can tell you how to handle any problem that can arise. This approach is best for companies who want to maximize their own ability to do Behavior-Based Safety while minimizing outside costs. It is ideal for companies with several small sites or for single-site companies with good training personnel. This approach develops internal resources for implementing at a site or at multiple sites. ProAct Safety trains and certifies the internal consultant to train personnel at a site or multiple sites without additional costs for the number of people trained or additional site licensing. This flexible approach is unusual in the Behavior-Based Safety marketplace and allows unparalleled opportunities for companies to save money on implementations. You may have some "home grown" processes, a few from a consulting company or risk services company. How do you bring all these together into a coherent process that really belongs to your company and not the consultants? ProAct Safety has a program to integrate all your various processes into a single unit that meets the needs of each site while uniting all sites into a company-owned process that allows for communications, comparative data analysis, and independence from copyrights and licensing agreements. Every company that has multiple Behavior-Based Safety sites and methodologies. Improved communications between sites, compatible and comparative data, translatable terminology, and expandability without licensing fees. Difference between ProAct Safety and others: ProAct Safety is the only company that is really capable of objectively looking at a process implemented by any consulting company. ProAct Safety is familiar with all the major methods of implementation and all other

Behavior-Based Safety consulting companies. A model used by many organizations includes training internal consultants and having them shadow ProAct Safety consultants on fully-supported implementations before being asked to implement on their own. This hybrid combination of internal and external consultant models has been used successfully by many large organizations to contain the cost of global implementation while ensuring the highest quality of internal consultant functions. A ProAct Safety consultant would be happy to discuss your special needs and suggest options. Improve Existing Processes Organizations with existing Behavior-Based Safety processes often look for ways to re-energize old processes or to build increased uniformity among different types of Behavior-Based Safety at different sites. There is little gain and no motivating reason to simply switch from one method of Behavior-Based Safety to another. But Lean is not just another method; it is a way to make any method more effective and efficient. No need to change methods or terminology for the sake of change. Lean Behavior-Based Safety is all about making it work better with less use of resources. Different methods grow together through efficiency rather than conversion. Old processes learn how to re-energize their efforts through more effective strategies, and participants get motivated when they see renewed results in accident reductions. Most existing processes can integrate Lean Behavior-Based Safety principles and design their process changes in a two-day workshop led by ProAct Safety consultants. Organizations with multiple sites can also have internal consultants trained to facilitate each site conversion. The data is what enables continuous improvement and helps the observers keep score. Sometimes the reason workers are not improving in safety is because something is getting in the way. Identification of safety obstacles and barriers, and measuring their impact is a powerful tool in improving safety. Traditional safety tends to only focus on lagging indicators and failure rates. The percent safe provided by a behavioral safety approach, is a great leading metric for comparison to the downstream metrics of accident rates, severity rates, costs of accidents etc. To Purchase, or Create? There are several software options available to an organization looking to implement a Behavior-Based Safety process. They range from spreadsheet tools to installed or online databases. ProAct Safety is familiar with all major methodologies and applications currently in use throughout the world. Due to this unique position, our firm can play a support role in identifying, selecting and utilizing the most effective application that fits your needs. Many organizations choose to internally create an application. ProAct safety can provide the critical functional guidance necessary, to ensure a successful outcome. Data Management and Problem Solving It is critical for a steering team to design an effective data management and problem-solving technique, in conjunction with their behavior-based safety efforts. This data flows to the steering team and helps them to remove barriers to safety and change the influences that could tempt workers to take risks. Additionally, the ability to isolate problem areas increases the ability to focus corrective effort reducing wasted resources. The observations are most definitely a great tool for beginning the creation of a culture of safety awareness and development of a personal safety focus; however without a good Behavior-Based Safety data management strategy, the process may not be sustainable. The data usually reveals first the weaknesses of the data, i. Once the data gathering process is adjusted, the data starts to reveal where the greatest risks are and why workers are taking them. The observation data combined with the original Pareto Analysis data helps to prioritize the risk issues for the team to address. The steering team will need to be able to identify trends in the performance. It is important to know if risk taking is increasing, decreasing, or remaining relatively constant. Since the observers in a Behavior-Based Safety process cannot see every precaution taken or not taken at the site, it is important that the behaviors sampled are representative of what is happening across all times and locations at the site. If data is bunched into certain times or locations, the data may not be reliable. Behavior-Based Safety Process considerations when determining software needs: First define the paper trail of how the completed checklists get to the data entry person Determine who the data entry person s will be Does the application need to be within the corporate infrastructure, an installable application, or online?

### Chapter 2 : Behavior-Based Safety Professionals | Quality Safety Edge

*In conclusion, the six risks in implementing a behavior-based process surround a core of misunderstanding what a behavior-based safety process really is. The correct approach begins with an in-depth knowledge of how to change human behavior.*

For further information or assistance, contact Dr. The application of behavioral research to the solution of human problems is building and demonstrating the first effective and reliable technology of behavior change in human history. No other field of psychology or the behavioral sciences has been able to successfully do this. In workplaces with troublesome rates of unsafe performance, behavioral safety programs, properly implemented, produce significant improvements in safe performance and major reductions in workplace injuries and illnesses. Human suffering and financial costs are sharply reduced. Moreover, the costs of producing these gains in human performance are a good investment, paying for themselves many times over.

What is Behavioral Safety? The purpose of this section of the CCBS web site is to provide basic information about proactive approaches to increasing safety in the workplace and in the community. These approaches are based on sound, research-based, behavioral practices and are easy to use with minimal training. What makes the behavioral science approach to safety unique is: Thus, relative to traditional safety, Behavioral Safety is an employee-driven continuous improvement process. More specifically, the behavior-based approach to achieving safety improvements is a process of involving workers in defining the ways they are most likely to be injured, seeking their input, and asking them to observe co-workers in order to determine progress in the reduction of at-risk behaviors Petersen, Jan. The characteristics of each work culture determine which process will be most effective. Regardless, behavioral observations are the key to successful Behavioral Safety and are necessary for sustained safety improvements. Research has shown the behavior-based approach to be cost effective, primarily because behavior-change techniques are straightforward and relatively easy to administer. In addition, safety improvements can be readily assessed by on-site personnel monitoring target behaviors. Everybody who works to reduce accidents and improve safe performance is concerned with human behavior. While behavioral safety shares a concern with human behavior and safe performance in the workplace with other approaches, it is more than that. Behavioral safety is the application of behavioral research on human performance to the problems of safety in the workplace. This means that any safety program labeling itself as a behavioral safety program must meet the standards of behavior analytic research as practices are applied to the workplace. How does Behavioral Safety work? Behavior analysis is the science of behavior change. Applied behavior analysis is the application of the science of behavior change to real world problems, such as safety performance. As we do this, we are looking for functional or systematic relationships between Environmental changes, i. These relationships have been exhaustively studied in the laboratories. Applied behavior analysis applies the lessons learned in laboratory research to the challenges of human behavior in everyday life. In this case, to the challenge of building safe practices in the workplace. To do this, sound behavioral safety programs include the following basic steps: Behaviorally specify the desirable performance For example, if we want to improve safe practices in a certain workplace, we first specify as behaviorally as possible, those practices. For example, correct forklift operation or lifting behavior. Or, we may specify the outcomes that are achieved if safe practices are performed. For example, a shop floor that is free of hazards such as wires or oil slicks that could trip an employee and cause a fall. The process of specifying these criteria for good performance results in a measuring instrument that can be used to periodically sample safety performance in the workplace and measure human performance. Measure safety performance Using the criteria for safe workplace performance, we periodically sample and measure safety performance against those criteria. These measurements are recorded and become part of a data base; a cumulative log of performance for each workplace. Shape safe performance through feedback and other consequences Behavioral research on learning teaches us powerful lessons about how to teach and build performance improvement. First among these lessons is the power of consequences. One very powerful consequence is feedback on workplace performance. Properly designed and used, performance feedback will produce learning and positive

performance changes are often very dramatically. As a practical matter, once measurement takes place, a sound behavioral safety program will provide timely, usually immediate, feedback on workplace safety behavior to the employees whose workplace is being observed. It will not be delayed for lengthy periods of time. In addition, feedback will focus on positive gains in performance, not negative performance decrements. It will be predictable and certain. And, it will be delivered in ways that are meaningful to the people who are receiving it. The posting of graphs of the performance of work teams or departments in building safe performance over time is another form of feedback that sets the occasion for coaching and feedback on workplace safety performance. As teams and departments improve in their achieving high levels of safe practices in the workplace, celebrations are often held, further acknowledging and reinforcing safe performance. These are only a few highlights of a fascinating field, behavioral safety. We hope you will sample some of the applied research articles listed in the References. Perhaps they will be applicable to your work setting.

### Chapter 3 : Safety | Cambridge Center for Behavioral Studies

*Behaviour Based Safety (BBS) is an approach once learned, the process will be applied correctly and safely? This fails to take account of the many factors.*

It is important to recognize, however, that a BBS program does not attempt to change who a person is, and it most certainly is not a pop-psychology program. BBS is a process that helps employees identify and choose a safe behavior over an unsafe one. Much of the change is brought about by observing how people work, identifying at-risk behaviors and then following up, even if doing so could cause offense. It is equally important to identify behaviors that are exceptionally good and to make sure that people receive the appropriate credit. If an unsafe behavior is observed, a non-threatening discussion should follow. Problems are seen as opportunities to improve safety performance and to share concern, coach and learn. All persons, including company workers and contractors, create and follow a mind-set of "doing everything right". Much of the change is brought about by observing how people work and identifying at-risk behaviors, along with those actions that merit positive feedback. It also has a strong overlap with other programs such as "Stop Work Authority". As such it has the following features: It creates commitment and passion. It focuses on the human side of safety by involving all employees, contract workers and managers; It defines safe and unsafe behaviors; It then encourages safe behavior and discourages unsafe or destructive behaviors; It requires management to find out why incidents are occurring and then to spend the money to fix the problems before worrying about behavior. The most important point in the above list is the final one: The first step in the BBS process is to observe employees performing their routine tasks. Both safe and unsafe behaviors are noted and recorded with personal information omitted. The observer provides positive feedback on safe behaviors and non-threatening feedback on unsafe behaviors. Employees are provided with suggestions on correcting unsafe or at-risk behaviors. The employees are not reprimanded or disciplined for at-risk behaviors, nor are any findings reported to management. Employees are encouraged to comment on the observations; their comments are included with observations themselves, along with any suggestions for improvement. Results from the observation records are gathered and compiled in a single data base. Reports from the data base tell management which types of at-risk behavior are most prevalent and in which locations they are taking place. Based on the insights generated during the review and analysis phase, recommendations for overall improvements can be made. Citation Further information to do with behavior-based safety is provided in the 2nd edition of the book Plant Design and Operations.

### Chapter 4 : Custom Lean Behavior Based Safety Programs from ProAct Safety from ProAct Safety

*Behavior Based Safety* ≠ *Behavior based safety (BBS)* is a process that helps you and your coworkers identify and choose a safe behavior over an unsafe one.

Even a proven technology with documented results such as Behavior-Based Safety must eventually evolve with the prevailing business climate. Sites considering Behavior-Based Safety are concerned about both the internal and external costs. Sites that have already implemented are straining to provide the resources necessary to continue the process. Other sites have decided not to implement because of the costs and inefficiencies. A leaner approach that remains true to the original principles has proven to be the answer to all these problems. Early Behavior-Based Safety processes involved as many people as possible in an attempt to maximize employee ownership and participation. Many of the founders of Behavior-Based Safety utilized resource-intensive techniques such as overtraining, inside-out cultural change, and high levels of employee involvement to boost their probability of success. The whole thing worked. It was effective; but it was not efficient. Behavior-Based Safety had another problem that did not manifest itself immediately; it was amateur. In the zeal to "empower" employees, Behavior-Based Safety entrusted every aspect of the process to workers who had only minimal training to do technically demanding tasks such as leadership, identifying behavioral targets, coaching, behavioral observation, and data analysis. Teams of workers did remarkably well given the challenge, but many opportunities for further gains were missed. The heavy reliance on employee involvement was done purposefully to get the maximum impact on the site culture; but it resulted in other problems. Behavioral targets were not expertly identified. Feedback was not given effectively. Observation strategies ignored good sampling technology. Observation data often contained rich leading indicators of upcoming accidents and their underlying causes; but the data was not expertly analyzed and utilized. Problems remained unidentified, identified problems were not shared with the proper problem solvers, and organizations missed countless opportunities to learn how to prevent future accidents. The results were slow, but improvement was noticeable. We all lived with the inefficiencies because accident rates were decreasing, Behavior-Based Safety was new, and we had not yet discovered alternatives. These problems were not universal. Some sites developed the expertise to run their processes and analyze their data well. But an alarming number of processes failed or plateaued due to lack of data analysis expertise. Changes in the Business Climate Since the early s the business climate has changed significantly. Most sites have experienced dramatic downsizing and reengineering and are beginning to adopt new practices such as lean leadership and lean manufacturing. The manpower available to do anything other than production in industrial America is at an all-time low. During this same period labor unions saw some of the more poorly-implemented Behavior-Based Safety processes and decided that management was using Behavior-Based Safety to abdicate its safety responsibilities and simply blame workers. They also noted isolated cases of discipline and punishment attached to Behavior-Based Safety observations and decided that it was wrong to ask union members to "spy" and "snitch" on other union members. The startup time is too long, the external costs are too great, unions resist the process and the internal resources needed to maintain the process are simply not available in many companies. This leaves us with three choices: Training -Most Behavior-Based Safety processes take many employees many days of training to learn and start the process. The strategy of overtraining has to go. All training has to be delivered in an efficient manner, minimized, with only enough philosophy to support the basic principles and a lot of "step 1, step 2" mentality. Training must be focused and shortened for maximum effect in minimum classroom time. It must be memorable, delivered just-in-time, and reinforced through non-classroom techniques. Leadership - Most Behavior-Based Safety processes are led by teams of employees. This team or committee often is the target of the overtraining, wasting countless amounts of manpower. The team is sometimes used for design purposes to help make the process more site specific. The team is asked to interpret the data from the observations and recruit and train new observers. All of these tasks require expertise that many teams lack. Teams can be replaced with facilitators or smaller teams which can both decrease the number of people in training and the overall training time and increase the expertise of the

smaller group or individual. Using site personnel who are already expert in some or all of these tasks can also lead to greater integration of the Behavior-Based Safety process into the site structure and management culture.

**Subject-Matter Experts** - The focus should not simply be on using fewer people, but on using the right people with the right skills. For example, most sites have someone with data-analysis expertise. Why not utilize this person to analyze data or to facilitate the team? Gathering data is combined with giving feedback in every instance. The number of observers can be drastically reduced and feedback can be focused only in areas where it can make a difference. The observers can do S. Seeing Without Explaining to Every Person observations that give all the advantages of traditional "upstream" metrics without the outrageous expenditures of manpower. The fewer observers can be better trained and many workers who would rather not have to confront their fellow workers about some safety issue can be spared the pain. The few people with good coaching skills can be used for the focused feedback. The whole process becomes both more lean and more expert.

**Focus** - Checklists in many traditional Behavior-Based Safety processes possess 20 or more "critical" behaviors. Observing and giving feedback can become very time-intensive. Also, long checklists can actually create a dependence on the observations to maintain the consistency of behaviors. When the frequency of observations goes down, the workers tend to quit doing the checklist behaviors. Shorter checklists take shorter times to observe and gather data; they create habitual competence; they minimize dependence on ongoing observations; they are more easily remembered by workers; and they tend to produce quicker and more focused results. They also take a lot less manpower.

**Data Distribution** - Much of the data generated in traditional Behavior-Based Safety is seen only by the steering committee or leadership team. The data could be better analyzed at the management level or outsourced. Many world-class safety organizations have reduced accidents to very low-probability risks that often repeat at intervals marked in years rather than days or months. These accident cycles and repetitions are only recognizable in large sets of data. Often, this is best done at the corporate or even multi-corporate level. The data managed by employee teams rarely sees this kind of analysis and many lessons that could prevent disastrous accidents are never learned by corporations.

**Other Opportunities** Another "lean" technique is to implement Behavior-Based Safety internally without relying on completely on outside consultants. Real training and resources for DIY Behavior-Based Safety is a new technology that is badly needed and whose time has come. Lean Behavior-Based Safety is a good alternative for sites with union resistance to traditional Behavior-Based Safety. The lean process eliminates management omission and can minimize or even eliminate using union members as observers. SWEEP observations can be done by safety professionals or safety representatives. Sites that have already implemented Behavior-Based Safety can use lean techniques to put their own processes on a diet. Checklists can be focused on fewer behaviors. The best traditional observers can become the safety coaches sent to the "hot spots" identified by the SWEEP observations. Data can be redistributed or even outsourced for analysis and distribution in the organization. Many sites have found that the diet not only helped their Behavior-Based Safety process to reduce the use of resources, but actually re-energized the process. New, leaner processes are being implemented or retrofitted in many US firms and the trend is spreading to other parts of the globe.

**Case Study** Sites have been implementing this leaner version of Behavior-Based Safety since and have, in general, gotten equal or better accident reductions than sites implementing traditional Behavior-Based Safety. But there was not a study of side-by-side implementations at the same site until Two manufacturing sites implemented two simultaneous Behavior-Based Safety processes, one traditional and one lean. The sites using the lean approach achieved slightly better results with significantly less use of both internal and external resources. The first-year statistics are in table 1. Studies at three sites that have reduced their traditional processes to lean began in January of and mid-year results will be available in by August Firms that have traditional Behavior-Based Safety processes have a way to reduce manpower requirements without sacrificing effectiveness. Simply using parts of the technology without opting for the whole process may prove effective for those with specialized needs, difficult logistics, and cultural complications including union resistance.

*Behavior-based safety is a promising technology for industry. It is an excellent tool for collecting data on the quality of a company's safety management system. It is a scientific way to understand why people behave the way they do when it comes to safety.*

### Chapter 6 : Behavior-based safety - Wikipedia

*These challenges can be overcome by implementing Behavior-Based Safety (BBS). BBS is a scientifically-based set of strategies designed to help workers engage in safe behaviors more reliably. It involves observations (usually peer-to-peer), real-time feedback and recognition for improvement.*

### Chapter 7 : Behavior Based Safety Programs | Process & Training

*Adopting a holistic approach to understanding worker behavior helps to increase safety awareness and improve safety practices. First, by observing worker behavior, managers can use workflow design and task analysis to evaluate and identify mechanical, physical, and ergonomic hazards of job duties.*

### Chapter 8 : Behavior Based Safety, Behavioral Safety and Safety Leadership

*"We chose Quality Safety Edge because we spent time with their team at their Behavioral Safety Now conference and were impressed with their experience and expertise. QSE helped us design and implement a Behavior-Based Safety process tailored to our particular, challenging environment (nuclear generation).*

### Chapter 9 : Behavior Based Safety - Safety Training PDF Files

*Safety and health advocates are divided on the effectiveness of behavior-based safety, an approach that targets changes in worker behavior as a means of preventing occupational injuries and illnesses.*