BEHAVIOUR BASED SAFETY IN INDIAN ORGANISATIONS

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ABSTRACT

This paper shall be useful in understanding and application of the concept and process of behaviour-based safety (BBS) for safety professionals and everyone who is concerned about correcting unsafe behaviours for reduction of accidents and promoting safe behaviours for developing injury-free culture in their organisations. The present paper is a part of an ongoing national action research project on the subject.

Keywords: Qualitative research, Unsafe and Safe behaviour, Feedback, Steering committee

Twenty-five safety awareness surveys (Kaila, 2008) of organisations in various locations in India reveal that the level of safety awareness among managers is within the range of 75-85 per cent and among non-managers it is within the range of 70-80 per cent. Hence, there is a scope of nearly 25-30 per cent improvement in safety awareness level of employees. Eighty to ninety per cent of accidents are triggered by unsafe acts or behaviours. Thus, there is a need to emphasise upon behaviour based safety (BBS).

A chief safety objective of every plant is to achieve zero accident. Since safety in the organisation cannot be less than 100 per cent; the participation of employees from every plant in safety also has to be not less than 100 per cent. That is what Behaviour Safety is all about.

We can accomplish this objective if we train every workman / employee on the concept and process of behavioural safety. Before training of employees, we need to sensitise or promote the concept of Behaviour Based Safety (BBS) among the front-line managers. Previous researches (Kaila, 2006; Kaila, 2008) indicate that:

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1. 90 per cent or more of the accidents are due to unsafe human acts or behaviours;
2. 50 per cent of the unsafe behaviours are identified or noticeable at any plant at any given point of time;
3. 25-30 per cent of safety awareness is lacking among employees, which gets reflected in their unsafe behaviours;
4. Unsafe behaviours are at the core of any near misses, injury, accidents. If we control unsafe behaviours, we may not even have near misses;
5. Job Satisfaction of Indian managers with safety in their respective departments range between 5.5 and 9.5 out of 10.

So we need to focus our efforts on unsafe and safe behaviours in safety. There is a dearth of studies on safety psychology especially behaviour based safety. Hence, it is postulated that the use of qualitative methods on the study of behaviour safety would broaden our understanding and provide us more depth in the field.

BBS Concepts

Behaviour-based safety (BBS) is concerned about correcting unsafe behaviours for reduction of accidents and promoting safe behaviours for developing injury free culture in their organisations (Algera, 1990). BBS touches the root cause of accidents. Unsafe behaviours are at the core of any near misses, injury, fatalities (figure 1). If we control unsafe behaviours, we may not even have near misses.
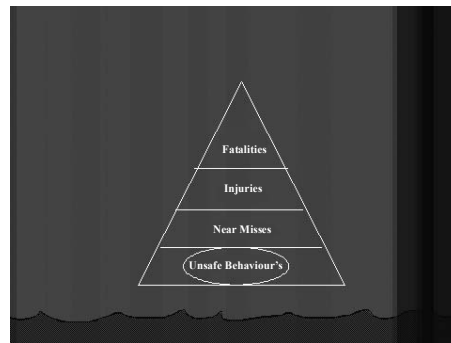
Figure 1*: BBS triangle*

BBS emphasises that employees need to take an ownership of their safe as well as unsafe behaviours. If they behave unsafe, they are not punished, instead they are repeatedly told to correct; and when they behave safe, they are encouraged. Both unsafe and unsafe behaviours are counted and displayed. BBS also discusses the unsafe conditions that influence unsafe behaviours.

BBS is a data driven decision-making process. BBS believes that what gets measured gets done and each employee can make a difference in organisational safety. Employees are

the basic source of expertise of behavioural change (observe and correct). BBS begins by briefing sessions for all work areas and depts. BBS is a teamwork; it is company wide, and people driven. BBS purpose (Pettinger, 2001) is not to enforce safety rules, force change, gossip about others, reporting to boss. Its purpose is to identify safe and at-risk behaviours, identify possibility for injury, communicating the risk, and helping to identify safer solutions. An implementation team or BBS steering committee monitors its progress. Essentially BBS is not a management driven tool for safety. It's an employee driven approach with management support (Skinner, 1974).

BBS Technique

BBS is BOFP (Kaila, 2008), *i.e.*, Behaviour Observation and Feedback Process. Its process of repeatedly going to an employee and making random observations till he reaches safe behaviours and learns the concept of self-observation and observing others for safe performance. Critical behaviours can be listed in checklist based on previous accident and injury records and also by brainstorming. Different observers will notice different safe and unsafe behaviours, which is why employees need to observe each other.

Feedback is an interaction based on genuine concern. Feedback is to be given one-on-one, immediate, specific behaviour to be reinforced, appreciate safe behaviour to set example. In Hindi language, BBS is all about *dekho* and *bolo* with sensitivity and concern. Individual name of an employee is not recorded in the BBS checklist (Reason, 1990).

Observers target observable safe and unsafe behaviours of co-workers. Observation and couching may take some time to be accepted by co-workers. Observation and feedback skills improve with practice and by using checklist. Observation sampling should be undertaken randomly (not on fixed timings) throughout week. Safety coaching fosters open communication about safety which serves as constant reminder for workplace safety (Reason, 1990).

METHOD

This is a qualitative survey of 1500 executives and 400 workers based on an in-depth personal interviews and structured questionnaire using open-ended questions in a period of ten years between 1997 and 2007 across Indian organisations (including petroleum, steel, cement, chemical etc.) in 55 organisations in order to review behaviour based safety in organisations.

The managers and workers were asked to narrate their safety experiences. They took time out of their really busy and hectic schedule to share their safety related problems and issues in organisations. A narrative approach was attempted in this survey in order to enrich the safety research.

Survey Findings

BBS is one of the best and latest safety approaches. Researches (Kaila, 2006) indicate that BBS has reduced 40-75 per cent accident rates within six to one year of its implementation.

In India, industrial groups such as Essar, ITC, Reliance, CFCL, Colortex, Sandoz, Ultratech, GAIL, RKHS, ICC, NPC, Jindal, M & M and Tata Motors are implementing BBS in different ways. Eight aspects of behavioural categories (Table 1) that have been used by these organisations in order to prevent unsafe behaviours and promote safe behaviours are:

- PPE
- Housekeeping
- Using tools and equipment
- Body positioning / protecting
- Material handling
- Communication
- Following procedures
- Visual focussing.

BBS is process of repeatedly going to an employee and making random observations till he reaches safe behaviours and learns the concept of self-observation and observing others for safe performance. With the help of a checklist (Table 1), BBS trained observers create data on the above eight critical behaviours to guide their observations. Each observer observes at least one of his co-workers daily. A minimum of 20 per cent of the employees in a department / organisation should be trained as BBS observers. If there are 100 persons in a department, there should be 20 observers. So accordingly, this many number of checklists are created per day on unsafe and safe behaviours in the organisation, this way safety becomes a daily reminder which in essence builds safety culture. We can almost daily check an increase or decrease in unsafe and safe behaviours by creating this database.

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Some characteristics of BBS observer are concern for others, self-initiation for correcting the observee, developing mutual insight on safe behaviour, and transforming the observee for self-observation on safe behaviour.

What does an Organisation Gain from Actively Caring?

An actively caring (listening, praising, acceptance) is one of the significant aspects of BBS, one needs to understand what does an organisation and its people gain from actively caring? Here are some responses of the survey participants (Kaila, 2008):

- Positive safety culture;   - Fearlessness;
- Increase in production;   - Actively care;

- Job satisfaction;
- Love and affection;
- Bonding;
- Ownership;
- Teamwork;
- Confidence;
- Feeling to help;
- Joy;
- Openness;
- Decrease in unsafe acts; and
- Positive response.

All the above responses clearly indicate that BBS helps enhancing safety awareness and building useful attitude towards safety and thereby building positive safety culture in organisations.

Table 1: Observers need a Checklist of Critical Behaviours to Guide their Observations

Observer _____   Date_____

Department / Job_____   Time_____

Behaviour Categories	*Safe*	*At Risk*	*Comments*
PPE Using PPE e.g., eye glasses, hearing protection, gloves, hard hat…			
Housekeeping Work area maintained appropriately, e.g., trash and scrap picked up, no spills, walkways unobstructed, materials and tools organized…			
Using tools and equipment Using correct tools for the job, using tools properly, and tool in good condition…			
Body positioning / protecting Positioning / protecting body parts, e.g. avoiding line of fire, avoiding pinch points…			
Material handling e.g., body mechanics while lifting, pushing and pulling, use of assist devices…			
Communication Verbal and non-verbal interactions that affects safety…			
Following procedures e.g., obtaining, complying with permits, following SOPs, lockout, tagout procedures…			
Visual focusing (attentiveness)			

Some Problems in Observing and Giving Feedback

There are some problems (Kaila, 2006) in observing and giving feedback as shared by the survey participants as below:

1. Handing over checklist to observee and asking him to do the job;
2. Only observing, not giving feedback;
3. Two observees may not agree with each other;
4. Observer may not allow an observee to speak;
5. Comments column kept blank;
6. Only criticism, not appreciation;
7. Inadequate time for BOFP;
8. Observee behaves smarter, does not accept observer.

Reasons on Why a BBS Observer may Fail in Observation and Feedback Process

- An aggressive way of responding.
- Giving feedback in front of others.
- He himself not following safe operating procedures (SOP).
- Improper communication and responding skills.
- Incorrect way to pass feedback.
- Lack of cordial relations.
- Lack of knowledge about the job of an observee.
- Lack of patience to correct an observee.
- Mentioning person instead of unsafe behaviour.
- No proper follow up.
- Personal grudge.
- Superiority complex.
- Unable to convey that we are concerned about injury free culture.

While taking care of the above points, a BBS observer should not formalise too much on the observation and feedback process; he should not dominate. An observer should be flexible and sensitive enough to interact with an observee (Kaila, 2008).

Some Problems in Developing BBS Checklist (Kaila, 2006)

There are some problems in developing checklist, and in observing and giving feedback. The participants who attended BBS training workshops pointed out some as below:

1. Behaviour categories not mentioned;
2. Checkpoints not mentioned in behavioural terms such as using, avoiding;

3. Some behaviour categories could have been clubbed such as work area and housekeeping, body mechanics and ergonomics;

4. Checklist not appropriately developed, some behaviour categories ignored.

What Problems do You Foresee When You are Going to Implement BBS in Your Organisation? (Kalia, 2008)

Responses of the survey respondents are as under:

*   Overstressed: the observer may feel that their workload has increased.
*   What will I get? The observer may feel that what he would get in return.
*   Whether observee will take in right spirit?
*   Fear of workers' buy-in to BBS;
*   Taking advantage of BBS – not doing regular work;
*   Remove existing unsafe conditions first;
*   Integrating BBS with other committees in organisation;
*   Manpower / extra-time for BBS;
*   Huge documentations;
*   Interpersonal communication; and
*   Launching problem in introducing BBS.

What Action Plan is Desirable in Launching BBS

The research participants (Kaila, 2008) pointed out as below:

1. Commitment from management;
2. Belief that BBS is implementable;
3. Make it known down the level;
4. Form steering committee;
5. Select and train observers;
6. Develop checklists;
7. Selection of areas / depts for BOFP;
8. Develop timetable;
9. Documentation, analysis and display;
10. Review to determine progress;
11. Allocate time for BBS observations and meetings etc.

BBS Implementation

BBS is by the people, of the people and for the people. It is based on the established principles of behaviour theory in Psychology. The implementation of behavioural safety project

gets started with every department the day after they complete one day training on BBS. The concept and process of BBS has quick application and easy to be understood by people at every level. Every department can produce a graph of unsafe and safe behaviours of their workmen every week, every month. So one can compare the decrease in unsafe behaviours and increase in safe behaviours month by month. Every quarter of the year, all the departments can be compared on unsafe and safe behaviours of their workmen or operators.

BBS Implementation problems (Krause, 1995) include lack of work force buy-in; unsafe behaviours not defined with precision; accident records / near miss injuries not analysed properly for targeting accident causing behaviours. BBS secret of success is that the safety control is in hands of each employee, they feel empowered and responsible. BBS speed of success depends upon existing injury / accident rate and readiness to implement it. BBS success depends upon a strong steering team, which clearly defines its roles and responsibilities.

Behavioural safety management support and leadership of first line and senior managers can be measured quantitatively (Stewart, 1991: 207-14). Management allows observers time to conduct observation tours, conduct feedback session, and organise data analysis to display, without which BBS will fail. People are asked to volunteer to either become observers or be a part of steering team. These people carry out responsibilities / duties.

CONCLUSION

Engineering solutions have been achieved to a great extent in organisations but behavioural engineering in managing safety is a lot more challenge to learn. To reduce accidents, the managements have taken safety interventions such as risk assessment, training, suggestion scheme, training, safety committee, auditing, motivational programmes (quiz, award, incentives), SOPs, plant inspection, work permit system etc. (Marsh, 1998). Most of these safety management systems have aimed at controlling unsafe conditions, whereas 80-95 per cent of accidents are triggered by unsafe acts or behaviours.

People behave unsafe because it saves their time and effort (taking short cuts or not using PPE). Environmental solutions don't work as effectively as people may remove guards and work in bad housekeeping. Punishment may lead to positive or negative effects. Attitude change does not help much, as it does not really convert into behaviour. So BBS can be tried for better safety results. BBS is based on behaviour theory which assumes that unsafe behaviour to be changed and safe behaviour to be reinforced require repeated external stimuli which is provided through BOFP.

BBS underlines that take active responsibility for safety of each other; target observable behaviour, focus on positive consequence we expect to receive *i.e.*, change unsafe to safe behaviour; monitor behavioural trends of each individual or group everyday / week / month in order to understand percentage of safe and at-risk behaviours across departments during the years (Mosteller, 1989: 399-403).

In case, PPE are not being used by 50-60 per cent of employees, it's an unsafe behaviour; but it's also a system failure, as it does not take action against violation of non-use of PPE. Total safety culture encompasses that safety mechanisms are in place and active, and then implementing BBS gives wonderful results. According to a senior safety professional, "punishment never works for sustainable results for safety in organisations" Another safety professional added, "BBS is going to be one of the best components of safety in the years to come". According to another senior safety professional, "you may have operational controls at the workplace; you may have told employees for safety, human beings still meet with accidents due to unsafe behaviours" BBS believes that psychological change can be achieved with repeated and active care of each other. BBS emphasises that when 80-90 per cent of accidents and injuries are due to unsafe behaviours; let us focus on unsafe as well as safe behaviours more than the unsafe conditions. Behaviour is objective, definable, observable, correctable and measurable (Pearse, 1997: 20).

BBS approach needs a visible presence and a clear management adoption and open communication down the line for its launch with full breath, failing which it is difficult to succeed (Kalia, 2006: 102-106).

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