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“Ea EoE E Ea”

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FROM THE DESK

Change in safety and health culture among the organized industries under the sway of international competitions is the greatest achievement of modern phase of industrial growth. This change in culture is marked by willingness of management to conduct the OSH affairs under declared policies and confidence among the employees in following the written down procedures in which all the elements of safety and health of employees are well integrated. This has, to some extent, minimized the influence of personal behaviours of the employees on the day to day work.

The unending efforts of international organisations, evolution of more and more statutes all over the world have no doubt made a great improvement in the working conditions of employees. However, the enthusiasm and co-operation from the workers' side to enhance the enterprise preventive OSH culture have been luke-warm. Under such circumstances the role of workers and their representatives becomes very important to ensure that safety and health of workers is not compromised. If the safety interests of workmen are to be ensured under all the circumstances, the triangular strategy of tripartite concern, i.e. by the government, management and workers representatives is very essential.

Keeping the above points in view this issue is being dedicated to behavior based OSH and role of workers representatives, with a hope that it may bring about a positive change in building enterprise level preventive culture; this would definitely benefit in better communication between management and workers through empowerment to workers, enhanced relations and decision making for problem solving at bottom level.

S.G. Darvhekar
 Editor In-chief

OCCUPATIONAL SAFETY AND HEALTH BEHAVIOUR: AN INDIAN PERSPECTIVE

Dr. Asis K. Chakrabarti

ABSTRACT

Declaration of National Policy on Safety, Health and Environment at Workplace has widened the scope of Occupational Safety and Health (OSH) from industrial fronts to every economic activity by people in India. Out of 1.025 billion people in India, 45.9 crores are economically active. Out of these 2.6 crores (5.7%) are being employed in the organized industries and 43.3 crores (34.3%) are engaged in unorganized sector. The agricultural workforce (62%) forms the major component among unorganized workforce. Such widening of scope of OSH in India calls for an enhanced efforts to evoke the issue of changing the OSH culture of the country for which focus has concentrated on human behavior. Recently published WHO report reveals that due to three chronic lifestyle diseases namely cardiovascular, stroke and diabetes, India will lose US 23 billion dollars annually over the decade 2005 and 2015. Lack of physical activity, dietary inclination from high nutritional food towards junk food, high calorie drinks, substance abuse and alcoholic drinks have contributed to lifestyle diseases. Lifestyle diseases are different from other diseases mainly because these are preventable. A study reveals that Indian employees are particularly stressed by the increased focus on profitability followed by the pressure to maintain excellent customer service. Seventy five per cent of working women who are exposed to long working hours have been found to be suffering from depression and anxiety disorders. 53 per cent of the women employees are compelled to opt for junk food. Agricultural workers are exposed to extreme climatic condition, natural calamities, solar radiation, hazards of using powered farm equipment and toxic exposure from insecticides, pesticides and fertilizers. A study in Southern India indicated that fatality rate due to usage of powered farm equipment is estimated as 22 per 100,000 farm workers. In Industries about 2 percent of the injuries are fatal. To attain and maintain a desired level of safety and health at the individual or at the organizational level the safety and health related behavior adopted by individual workers play a crucial role. In the present millennium researchers have focused on this issue of 'intention-behavior gap'. This problem needs to be further deliberated upon. In India, the prevailing safety and health culture mindset is to be predominantly programmed in a unique manner. Instead of owning up the need for maintaining and promoting safety at the individual or enterprise level, the prevailing Indian mindset communicating resorts to fatalism and quietism to absolve oneself from the rights of obligation for adopting sustainable proactive measures in OSH. This mindset needs to be changed by developing appropriate behavioral intervention model addressing the issue of owning up the responsibility for present action related to OSH without resorting to fatalism.

INTRODUCTION

Occupational safety and health (OSH) is emerging as a potential area of interest in India. It is evidenced from the current initiatives taken by the government, the industry and the increased attention paid by the media on OSH issues. In recent years, increasing number of industries have been obtaining certifications for OSHAS 18001, IS 18001:2000 etc., by establishing Occupational Safety and Health Management System to ensure effective safety and health measures in the workplace. These initiatives are over and above the statutory requirements. Government initiatives are exemplified by declaration of National Policy on Safety, Health and Environment at Workplace in 2009 and commemorating 2008 as Year of Industrial Safety and Health to mark 60th anniversary of enactment of Factories Act 1948. Declaration of the National Policy has widened the scope of occupational safety and health from the boundaries of mines, factories and ports to the vast agricultural farmlands spread through-out the length and breadth of our country including the tiny hutments wherein the home-based workers work to earn their livelihood. With such widening of the scope, there is an increasing interest and concern to focus on the safety and health behaviour of people at the workplace. This growing concern may be driven by the legal or economic compulsions for securing human resources vital for productivity. The driver could be the

altruistic value to preserve, protect and promote dignity and wellbeing of vast human resources while sustaining and promoting human productivity. The need may even be to create decent workplaces, design new tools and workstations or to evolve new technologies for humanizing the quality of work-life. Whatever could be the various driving forces behind the need to understand safety and health behaviour, the basic purpose is to protect the life and limb of the working population from the hazards in the workplace. Potential hazards lurking in the workplace combined with unsafe behavior at work make the person at the workplace vulnerable to bodily injuries or ill health. The vulnerability will remain unabated unless hazards are harnessed and appropriate safety and health behaviours are adopted. There is an increasing awareness of serious implication of human behavior at the workplace with respect to the state of safety and health in the long run. Knowledge and expertise of practitioners of human sciences in general and behavioral scientists in particular need to be focused on the behavior exhibited by people in their respective occupations which are contrary to their safety and health. There is a need to modify those behaviors to commensurate the desired level of safety and well-being with understanding of the Indian psyche with the knowledge and technology of the modern human sciences.

Demography of working population and OSH regulations in India

India is a vast country spread over 3.3 million square kilometers with a population of 1.025 billion. According to a survey carried out by National Sample Survey Organisation during 2004-5 the economically active population in India is estimated to be 45.9 crore of which 2.6 crore (5.7 per cent) are employed in the organized sector while 43.3 crore (94.3 per cent) are engaged in the unorganized sector (Ministry of Labour & Employment, 2009). 26.9 crore people engaged in the agriculture sector comprises a significant proportion (62.1 per cent) of the unorganized sector workers. A large number of unorganized sector workers are employed in construction, trade and transport, communication and services. Workers in this sector also include home-based workers engaged in tailoring, embroidery work or in making beedi, agarbatti, papad to earn their livelihood.

At present there are at least eighteen legislations on occupational safety, health and environment pertaining to various economic activities and 27 labour laws to cover exclusively safety, health, welfare and social security for various segments of workers in India (Garg, 2008). In spite of having so many legislations the OSH scenario in the country is far from encouraging. India is traditionally known for its public health problems ranging from epidemics, communicable diseases, malnutrition, high morbidity and mortality rates, poor sanitation etc. With globalization, rapid industrialization, greater activism by OSH interest groups and periodic OSH monitoring done by international bodies, India is becoming known for various contentious OSH related issues in recent times (Saiyed & Tiwari, 2004). Vastness of the country with varied terrain, burgeoning population, poor literacy, lukewarm political will and inadequate infrastructural facilities are few of the contributory factors to the prevalent OSH scenario in the country.

Life Style Diseases in Indian Industries

The scenario of health is really grim. A 2006 WHO report on *Occupational Health in India* authored by Abegunde and Stancoide estimates that as a result of three chronic lifestyle diseases namely cardiovascular, stroke and diabetes India will lose US 23 billion dollars annually over the decade 2005 and 2015. Lifestyle diseases are a result of the way we lead our lives. These are also known as diseases of longevity or diseases of civilization or industrialization. Lifestyle diseases are the result of ill relationship of people with their environment which is contrary to their state of physical and mental wellbeing. Lack of physical activity and dietary inclination from high nutritional food towards junk food and high calorie drinks, substance abuse and alcoholic drinks have contributed to lifestyle diseases. Lifestyle diseases are different from other diseases because they are potentially preventable, and can be lowered with changes in diet, lifestyle, and environment. These diseases include Alzheimer's disease, atherosclerosis, hypertension, hypercholesterol, chronic backache, spondylitis, sleep-disorders, asthma, cancer, chronic liver disease or cirrhosis, Chronic Obstructive Pulmonary Disease, Type 2 diabetes, heart disease, metabolic syndrome, nephritis or chronic renal failure, osteoporosis, acne, stroke, depression and

obesity. Unlike other diseases, lifestyle diseases can be barred by changing lifestyles, improving diets, adopting behavior commensurate with positive health and making the environment healthier.

Prevalence of diabetes among adults in urban India is 12 per cent and the existing 35 million diabetics in India is slated to reach 75 million in 20 years. Cardiovascular diseases are also in the rise in India. 9.2 million people lost their lives in 2000 due to cardiovascular diseases in India and it will lead to 6-fold rise in urban India in four decades. Obesity is another lifestyle disease which has affected over 30 per cent of adult urban Indians between the age 30 and 65 years. It is estimated that 50 per cent of 35 plus age-group women are overweight. India has attained the dubious distinction of being one of the top 10 obese nations in the world. Indians seem even more destined to become heavier and more vulnerable to the lifestyle diseases that are triggered by obesity, inactivity and genetic factors.

In a 2007 study conducted by the Indian Council for Research on International Economic Relations (ICRIER) it is reported that rapid economic growth and corporate profits boosted employee incomes but has also resulted in workplace stress and lifestyle diseases. The study predicts shift in disease profile from infectious to lifestyle diseases in near future. Very soon these lifestyle diseases will affect the poor due to low resilience to infections, malnutrition and stress. Such a situation needs to address the demand for new skills such as lifestyle counseling and psychiatric care.

Another recent International Survey conducted by Regus Business Tracker (www.regus.com) in 2009 reveals that Indian employees are particularly stressed by the increased focus on profitability followed by the pressure to maintain excellent customer service. Around 57 percent of the Indian workers reported increase in stress 'higher' or 'much higher' over the past 2 years. Company size also matters in experiencing intensity of stress. It is observed that greater rise in workplace stress is experienced by employees in the mid-sized firms (50-249 employees) followed by employees in the smaller businesses. Threat of redundancy looms large among these employees and very often they are forced to opt for more responsibilities and longer working hours without any additional reward. A study conducted by Associated Chambers of Commerce and Industry of India (Assocham) stated that 27 per cent women in urban India are employed. Seventy five per cent of working women who are exposed to long working hours under strict deadlines found to be suffering from depression and anxiety disorders. It is found that work pressure and deadlines compelled 53 per cent of the women employees to skip meal and opt for junk food. The study reveals increase of stress induced lifestyle diseases such as heart problem, hypertension, diabetes, obesity, chronic backache, spondylitis, sleep-disorders on the health graph of 2.24 million IT and ITES sector employees in India. IT and ITES, BPO employees are vulnerable to musculo-skeletal problems like carpal tunnel syndrome, thoracic outlet syndrome; visual fatigue, low-back and neck pain, headache, disturbed sleep etc.

Workplace stress can seriously impair employee productivity, damage motivation level and it may lead to conflict between colleagues which can undermine professionalism. Stress at the workplace arising from longer working hours, meeting the deadlines coupled with sedentary work, lack of physical activity, poor work-life balance, irregularity in taking meals, intake of fast food, and poor sleeping pattern including inadequate and disturbed sleep, smoking and drinking alcohol may snuff out lives and take away productive years. All these are precursors of lifestyle diseases. The future looks menacing with the changing face of modern India.

ICRIER study findings demonstrate investment in employee wellness contributes to company bottom-line. There is a need to recognize preventive health care for employees as investment expenditure rather than as consumption expenditure. This change in mind-set is essential since company's earnings will be critically dependent on quality of labour force in the years to come. The preventive wellness care focuses on health behavior modification of employees through comprehensive lifestyle management programmes to prevent lifestyle diseases. Comprehensive lifestyle changes include better diet, proper exercise, stress management techniques, management of emotion, rational thinking and spirituality. It allows a vast scope for creating the need for behavior modification among the employers and working population and appropriate intervention by the human sciences.

Occupational Injuries and Safety Behaviour in India

India has been undergoing a unique transition through contrasting features of co-existing local medievalism and multinational modernization in technology, consumer products, lifestyle and mind-sets of people. India is basically an agro-based economy in which more than sixty per cent people are economically engaged in agriculture sector. Agricultural workers are exposed to extreme climatic condition, natural calamities, solar radiation, hazards of using powered farm equipment and toxic exposure from insecticides, pesticides and fertilizers. Along with the modernisation of farm equipment there is proliferation of local 'cut and weld' type crude farm equipment manufacturing technology with scant regard to the equipment safety standards. In a study conducted in South India the fatality rate due to usage of powered farm equipment is estimated as 22 per 100,000 farm workers (Nag & Nag, 2004).

In a meta-analysis of the injury data of the accident surveys carried out by All India Research Coordinated Research Project on Human Engineering and Safety in Agriculture during 1995-1999 it was estimated that farm machinery and tools related accidents amounted to 2.67 lakh causing 0.19 fatalities and 2.48 lakh injuries in a year which in monetary terms lead to a national loss of Rs 1143 crores. In a study on agricultural machinery safety in Asian countries including India it was observed that the major cause of farm equipment injury is due to operators' attitude with regard to safety. Major behavioral factors leading to injury in agricultural works include tendency to ignore warning, taking short-cut to save time, failure to read operator's manual, lack of maintenance of the

equipment and flouting safety rules. It was further pointed out that there is a tendency to solve the incidents already occurred by neglecting proactive measures against future incidents or preventive measures by providing periodic training or incident aftermath education (Mukherjee & Ping, 2008).

In India 2 per cent of the occupational injuries are fatal in nature. In one study it was estimated that annually per 100,000 workers 19 culminate into fatal and 1930 non-fatal injuries in industries (Nag and Patel, 1998). According to 2004 report of the Central Statistical Organisation the incidence of injuries among industrial workers was 9 per thousand with a frequency of 2.6 per 100,000 man-days work. The 2001 Report of the National Crime Record Bureau indicate that 667 people were killed in factory accidents.

In a study of safety measures in a steel plant it was found that most of the unskilled contract workers were victims of industrial injuries. Vast majority of injuries occurred due to human error like lack of attention and while working alone instead of working in a group. Inadequate training of workers and absence of any procedure to correct unsafe behavior contributed to the causation of injuries among the steel plant workers.

In the absence of inadequate national data base and surveillance system of occupational safety and health in the country, fragmented OSH data are obtained through various government departments or the published survey and study reports. Nevertheless from the perspective of OSH behavior few of the findings of the study are pretty interesting. In a KAP (knowledge, attitude and practice) study on salt workers a significant gap was found between knowledge and practice of personal protective equipment (PPE) as only thirty three per cent of workers were found to be using the PPE (Haldiya, Sachdev, Mathur and Saiyed, 2005).

In an overview of the achievements accomplished with labor standards, health, safety and environment in eight participating companies under a Danish government aided project an observation was made on the workers' reluctance to use PPE. The reluctance was attributed to 'cultural issues' as some workers find it embarrassing to use PPE in a macho environment (Paramsivam et al, 2007)

In a cross-sectional study on 216 workers employed in cutting, stitching and finishing sections of a garment manufacturing industry it was found that in spite of high level of knowledge of health problems a negligible number of workers were using PPE indicating a wide gap between their knowledge level and practice with PPE. In a study of knowledge, attitude and practice of sugarcane crushers towards hand injury prevention 38 per cent were found to be resorting to fatalism (God's will) and 50 per cent felt that injuries were due to bad luck.

Safety and health behavior at workplace vis a vis Indian mindset

It goes without saying that to ensure safety and health at the workplace the behavior of workers related to safety

and health plays an important role. To attain and maintain a desired level of safety and health at the individual or at the organizational level the safety and health related behavior adopted by individual workers play a crucial role. The fact that one is to mind his own safety and health is an essential precondition for anyone at the workplace even if proper occupational safety and health systems are at place. In western culture sustained efforts are made through socialization process especially through education and public health campaigns to ingrain a mindset to make them responsible for their own health and safety. However, several studies have shown that in spite of such awareness and intention to maintain good health and safety standards even the people who are already motivated find it hard to maintain those due to temptations of modern life, personal convenience and avoidance of hassles for following the rules for safety and health. The reason behind difficulty to fulfill the good intentions for improving or maintaining health and safety had attracted the attention of researchers for a long time. In the turn of the present millennium researchers have focused on this issue of 'intention-behavior gap' which led to several models and theories on Self-regulation which have been very well document in a recently published treatise in 2006 (Rider & Wit, 2006).

In the Indian context, the issue of 'intention – behavior gap' needs to be deliberated upon because of the unique characteristics of Indian culture. The intention to maintain and promote health in the workplace can generate only if people are aware of the hazards involved in the workplace. The awareness level regarding occupational safety and health issues is poor in our country except among professional and skilled working population in a handful of progressive organized sector industries and service sector establishments. There is a need to create occupational safety and health awareness among working population in the formal and informal sectors of economy. In creating well researched learning packages for occupational safety and health awareness on various topics for various occupational segments of the working population care need to be taken to create knowledge as well as intention to promote and maintain one's own safety and wellbeing at the workplace.

One of the roadblocks in creating a sense of owning up the need for maintaining and promoting safety at the individual or enterprise level is the Indian mindset that resorts to fatalism and quietism at the earliest opportunity by 'accepting fortune and misfortune alike without complaint' and ascribing it to fate. Unfortunately, many of the owners and managers who are responsible for providing a safe and healthy workplace for the employees absolves themselves of any moral responsibility in the case of any safety and health aberrations leading to injury, death or illness of the workers by resorting to handy rationale of fatalism. This rationale becomes very convenient to absolve oneself of any obligation in the context of weak inspection system and limited statutory provisions. Most unfortunately, the workers who are very often victims of unsafe and unhealthy working conditions at the workplace tend to give-in to the prevailing conditions at the earliest rather than making sustained efforts to bring in desired changes in the circumstances

through negotiations or collective efforts due to deeply ingrained sense of fatalism and quietism. Interestingly, fatalism is so much associated with the safety and health issues in India that one can hardly ever cite any documentary evidence of collective bargaining primarily on safety and health matter in spite of workers working in extremely unsafe and unhealthy conditions. Therefore it is all the more necessary that in formulating any awareness drive in matter of occupational safety and health for the employers and more importantly for the workers either in formal or informal sector the issue of fatalism and the resultant impulse of self denial need to be addressed appropriately in a subtle but definite manner.

Apart from the fatalism, quietism and self-denial, the doctrine of karma deeply ingrained in the Indian psych plays a vital role in matters of safety and health. The doctrine of Karma which prevailed from the Upanisadic times was included in Buddhism and Jainism. According to the doctrine of Karma, through the deed or work done the 'body of the next life, divine, human, animal or hellish was acquired; and on previous karma depended a man's character, fortune and social class, and his happiness and sorrow. Every good act sooner or later brought its result in happiness and every evil act in sorrow" (Basham, 2004, pp. 324-325). In fact, the doctrine of Karma does not involve fatalism. Most of the proponents of Karma doctrine condemn any fatalistic element in Karma doctrine because in the long run of the trail of birth and rebirths, one decides his life by his deed only. Therefore, by judicious determination one can utilize the law of karma to one's own advantage. However, for the ordinary mortals with scanty knowledge of the Karma doctrine picked-up in bits and pieces from here and there, the very karmic fact that our present condition is the outcome of the past deed leads to a train of rationale amounting to fatalism. Thus, the ordinary mortal who is overwhelmed by multitude of problems and difficult situations in the day to day life finds it almost impossible to have a long-term perspective of after lives and think beyond his present life. It makes one to misinterpret Karma doctrine and mentally as well as behaviorally succumbs to the present condition as a part of fate which has to be endured due to his past deed inherited from the past life. This wrong interpretation of the Karma doctrine which is deeply ingrained in the mind of the people across the population be it rural or urban needs to be addressed while formulating interventions in creating awareness regarding occupational safety and health to ensure the awareness is percolates down to practice without resorting to any rationalization that excludes the individual to own up the responsibility for his present action related to safety and health.

CONCLUSION

The increased focus on OSH at workplace has led to the realization that apart from the investment on the engineering measures it is worth investing on improving safety and health behavior in order to ensure safety and wellbeing of people at the workplace. Various factors like increasing vulnerability of working population to lifestyle diseases, lack of awareness regarding workplace hazards, lack of initiatives to do the things in the right way to safeguard against workplace hazards, tendency to

attribute all fatal, non-fatal injuries or illnesses to the Act of God or bad-luck of the victim, tendency of not owning up the responsibility and externalizing the faults and work failures (Geykye, 2006) create a context with enormous opportunities for the social and behavioral scientists to formulate intervention strategies to modify safety and health behavior of the working population in the formal as well as the informal sector of Indian economy. It is critical for any intervention strategy to modify safety and health behavior of working population in India to develop model incorporating the unique characteristics of Indian psyche which comprises of the cultural part of the identity. To bring forth this critical element of the model or theory which needs to be developed, I am tempted to quote here from the seminal treatise titled, "The Indians: Portrait of a People" the following extract:

"The culture in which an infant grows up constitutes the software of the brain, much of which is already in place by the end of childhood.Like the proverbial river one never steps into twice, one also never uses the same brain twice. Even if our genetic endowment were to determine fifty per cent of our psyche and early childhood experiences another thirty per cent, there is still a remaining twenty per cent that changes through the rest of our lives" (Kakar & Kakar, 2007 pp. 2).

The expertise of Indian social and behavioral sciences are needed to take the advantage of the 'remaining twenty per cent that changes' through the rest of life of the working populace of India to make a difference in their safety and health behavior for promoting and sustaining occupational safety and health in India.

REFERENCES

1. Agnihotram, R.V. (2005) 'An overview of occupational health research in India', *Indian Journal of Occupational Environmental Medicine*, 9: 10-14.
2. Basham, A.L. (2004) *The Wonder That was India*. London: Picador
3. David, S.S. and Goel, K. (2001) 'Knowledge, attitude and practice of sugarcane crushers towards hand injury prevention strategies in India', *Injury Prevention*.
4. Gyekye, S.A. (2006) 'Causal attribution for industrial accidents: A Culture Comparative Analysis', *Jn. of Intercultural Communication*, 11. <http://www.immi.se/intercultural/>
5. Haldiya, K. R., Sachdev, R., Mathur, R.L. and Saiyed, H.N. (2005) 'Knowledge, Attitude and Practice Related to Occupational Health Problems among Salt Workers in the Desert of Rajasthan, India', *Jn. of Occupational Health*, 47: 85-88.
6. Kakar, S. & Kakar, K. (2007) *The Indians: Portrait of a People*. New Delhi: Penguin/Viking.
7. Mukherjee, A. & Ping, C. (2008) 'Agricultural Machinery Safety – A Perpetual Theme of Human Society'. Paper prepared for *Global Agricultural Safety Forum*, Rome Italy, 25th September, 2008.
8. Nag, P.K. & Nag, A. (2004) 'Drudgery, Accident and Injuries in Indian Agriculture', *Industrial Health*, 42: 149-162.
9. Nag, P.K. & Patel, V.G. (1998) 'Work Accidents among Shift Workers in Industry', *International Journal of Industrial Ergonomics*, 21:275–81.

10. Paramshivam Parimalam, Narayani Kamalamma and Ganguly Anindya (2007) 'Attitude and Practice Related to Occupational Health Problems among Garment Workers in Tamilnadu', *Jn of Occupational Health*, 49: 528-534.
11. Ridder, D.T.D. and Wit, J.B.F. (2006) 'Self-regulation in Health Behavior : Concepts, Theories, and Central Issues' in *Self-regulation in Health Behavior* edited by Denise, T.D. de Ridder and John, B.F. de Wit, John Wiley & Sons Ltd.

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DGFASLI AT A GLANCE

The Directorate General Factory Advice Service & Labour Institutes (DGFASLI) is an attached office of the Ministry of Labour & Employment Government of India. DGFASLI organization was set up in 1945 under the Ministry of Labour Government of India to serve as a technical arm to assist the Ministry in formulating national policies on occupational safety and health in factories and docks and to advise State Governments and factories on matters concerning safety health, efficiency and well-being of the persons at workplace. It also enforces safety and health statutes in major ports of the country.

The Directorate General Factory Advice Service & Labour Institutes (DGFASLI) comprises:

- Headquarters situated in Mumbai
- Central Labour Institute in Mumbai
- Regional Labour Institutes in Kolkata, Chennai, Faridabad and Kanpur

Vision of DGFASLI: DGFASLI envisions emerging as an organization of excellence in creating knowledge, formulating policies, standards and practices to ensure safe and healthy workplaces for all in factories and ports.

Mission of DGFASLI: The mission of DGFASLI is to render its expertise in occupational safety and health for evolving safe and healthy workplaces in factories and ports through a process of partnership, guidance, regulatory activities in specific sector and information sharing.

DGFASLI organization comprises of its Headquarters situated in Mumbai, Central Labour Institute (CLI) in Mumbai, four Regional Labour Institutes (RLI) in Chennai, Faridabad Kanpur & Kolkata and eleven Inspectorate of Dock Safety (IDS) offices located at different ports situated all over the country. DGFASLI organization consists of a multidisciplinary team of around 129 officers (engineers, physicians, industrial hygienists, physiologists, ergonomists, industrial psychologists commercial artists etc.) and 81 technical staff members. Various specialty divisions/cells under DGFASLI office and Central Labour Institutes in Mumbai include a) Factory Advice Service, b) Dock Safety, c) Construction Safety, d) Awards, e) Statistics, f) Industrial Safety, g) Industrial Hygiene, h) Industrial Medicine, i) Industrial Physiology & Ergonomics, j) Staff Training, Productivity & Small Scale, k) Industrial Psychology, l) Major Hazards Chemical Safety, m) Management Information Services; n) Environmental Engineering and o) Communication Division. The Regional Labour Institutes are a scaled-down version of the Central Labour Institute. Armed with the technology, good will of the industrial society and the strength of the dedicated staff, the organization is well prepared to meet the challenges of tomorrow. Visit us at: www.dgfasli.nic.in

ROLE OF TRADE UNIONS IN OCCUPATIONAL SAFETY & HEALTH OF EMPLOYEES

S.S. Gautam & R. Sibhanand

ABSTRACT

Trade Union is an association of employees in a particular industry or a sector, whose aim is to negotiate with employers on the matters related with the interests of the workmen. Safety and health of workmen is an important issue for the industrial employees, yet, it has seldom acquired the due position among the forces that direct the workmen to seek supports of trade unions. If the trade unions participate with the management in their Occupational Safety and Health activities in order to ensure that hazards have been sincerely identified and all reasonably practicable measures to prevent the accidents have been taken, the interests of their members will be better served. In order to involve the participation of the workers, the provisions to ensure participation of workers in management of safety in hazardous industries has been incorporated in Indian Factory Act. A similar provision for formation of safety committees exists in Indian Dock Workers Safety, Health and Welfare Act 1986 and the regulations made there under. The paper refers to the work done by DGFASLI in Indian ports and presents the findings and the recommendations of the studies carried out in Major Ports of India and suggest that similar studies should be carried out in different categories of industries. The paper recommends that the trade unions should also have experts in the field of OSH in their rolls to serve the workmen better.

INTRODUCTION

Trade Union is an association of employees in a particular industry or a sector, whose aim is to negotiate with employers on the matters related with wages, security, working hours, economic, social and political interests etc., using the collective bargaining power of its members. In general the Unions function to ensure the interests of their members, and may even engage in political activities whenever the legislations affect the interests of their members. At present the important forces that direct the workmen to join a union are different for different employees. Some of such forces are to get greater bargaining power, to minimise discrimination, to have the sense of security, to develop the sense of participation, to have the sense of belonging, to get a platform for self expression, to create betterment in relationships etc.

Safety and health of workmen is an important issue for the industrial employees, yet, it has seldom acquired the due position among the forces that direct the workmen to seek supports of trade unions. Use of bargaining power of trade unions is, however, often used to get more and more compensation when an industrial accident occurs. This indicates that if the trade unions participate with the management in their Occupational Safety and Health activities in order to ensure that hazards have been sincerely identified and all reasonably practicable measures to prevent the accidents have been taken, the interests of their members will be better served. The intervention of the Government in the form of various statutes to prevent OSH problems is quite useful, yet their effectiveness can be increased if due concern is shown by the trade unions.

The International Labour Organisation takes the commitments of the Governments in prevention of all kinds of atrocities inflicted upon the workmen by their employers. The coverage of ILO in all the spheres of labour welfare is becoming more and more exhaustive. At many situations the discretionary powers have been laid on the Government authorities to relax the rules. In order to prevent misuse of the discretionary powers in favour of

employers ILO conventions insist on presence of worker's representatives while granting such exemptions.

The Indian Factory Act⁽¹⁾ has provided for formation of safety committees for dealing with safety related decisions. These committees include equal number of members both from the management as well as from the worker representatives. It is obvious that the purpose of such a participative forum is to ensure that all the decisions taken in connection with OSH are with the satisfaction of the workers.

The Factories Rules⁽²⁾ provide that the workers representatives should be elected by the workers. It is commonly observed that in most of the industries, the worker-representatives in the safety committee are nominated by the heads of departments or by the elected office bearers of the unions. In some factories the departmental committees have the workers representatives but central safety committees include only the heads of departments. Such conditions, which are not in line with the statutes, are required to be eliminated by intervention by the enforcement authorities and by creating proper awareness among the workmen about the purpose of safety committees and the responsibilities of worker-representatives in it.

A similar provision for formation of safety committees exists in Indian Dock Workers Safety, Health and Welfare Act 1986 and the regulations made there under.

The Indian Dock Workers Safety, Health and Welfare Regulations 1990⁽³⁾ provide the operating details of the safety committee which include various aspects like:

- The Port Safety Committees (PSC) should be headed by an officer not below the rank of Deputy Chairman of the port.
- The PSC should be comprised of port officials, representatives of port users, recognized trade unions and the Chief Inspector.
- The committee should meet once in three months with recording of minutes. Port authorities, port users

and the employers of dock workers are required to comply with the decisions of the committee.

- The functions of the committee have been spelled out which include:
 - Investigation of the accidents to identify unsafe practices and conditions.
 - Motivational programmes to inspire the workers in Safety, Health and Welfare.
 - Occasional inspection of port activities to assess the Safety, Health and Welfare conditions.
 - To promote training activities.

Chakrabarti et.al.⁽⁴⁾ present the findings of study carried out in major ports of India in 1996 with an objective to assess the structural and functional effectiveness of Port Safety Committees of all the Major Ports in India and present working conditions of these participative forums. The various aspects that may have impact on the effectiveness of the safety committee have been considered in details in the study. Based on the discussions on the statutory provisions, existing conditions and literature survey, suggestions had been given, which included:

- Safety committees existed in all the Major Ports in the country, but the chairpersons of the committees in three of them were not in line with the provisions of the Dock Workers (Safety, Health & Welfare) Regulations 1990.
- There was lack of uniformity in size and in proportion of representation from various components i.e. port-management, port-unions and port-users. Effectiveness of safety committees in various ports were getting affected due to:
 - High rate of absenteeism
 - Irregular holding of the meetings
 - Inadequate procedure for preparing agenda
 - Lack of information dissemination on OSH issues
 - Non-implementation of the decisions.

The study team recommended that:

- There should be equal representation from the management and worker representatives,
- redefining the functions of the safety committees,
- improvement in procedure for developing agenda for better involvement of all the members,
- dissemination of safety, health and environment related information to the committee members,
- defining the size of the committee,
- quicker implementation of decisions taken in the meeting.

Chakrabarti, A.K. & Mohanti, P.K.⁽⁵⁾ carried out a follow up study in the ports during the year 2003 to study the impact of the recommendations made during the earlier study. The findings of this follow up study revealed that:

- The chairpersons of all the safety committees were found to be deputy chairman of the port which is in line with the applicable statute.
- The variations in the sizes of the safety committees of different ports had reduced.

- There were equal numbers of representatives of the management and of the worker in one of the ports. In

other ports there had been an average increase of about 10% in the number of workers representatives.

- There had been some overall reduction in the absenteeism in safety committee meetings.
- There had been some overall improvement in the regularity in holding the safety committee meetings. Three of the ports had conducted four meetings in a year as required under the statutes.
- The secretary ship of the committees had been changed from the Dock Safety Inspector to the representatives of the ports. This has also promulgated workers participation in contributing the points for agenda of the meetings.
- There had been about 10 times increase in the implementation of the decisions taken by the committees.
- The report lists another set of recommendations with an objective to render the safety committee as ideal forums for participative management of OSH in ports.

NEED FOR SIMILAR WORK IN OTHER SECTORS

It is obvious from the studies carried out in the major ports that the studies have enlightened about certain lacunae in the Port Safety Committees. The adoption of the recommendations has shown definite improvements in the systems. There is a need for a similar exercise in other sectors of the industrial activities.

NEED FOR CHANGE IN CULTURE

Any effort to increase the role of workmen or their representative gets implemented only slowly, but later on when this results into change of culture, the good effects of such systems are observed. Proper awareness about the rules and regulations and basic concepts of safety among the workers representatives make them better equipped to perform their responsibilities effectively. It is also their responsibilities to create right type of attitude about OSH among the workmen. There are many cases in which the workers are more satisfied with some monetary benefits to balance the hazards they are exposed to. Even today many organisations compensate the hazards in the form of hazard allowance, milk allowance, heat allowance, etc. Such compromise with OSH is a result of either lack of adequate awareness about the seriousness of the hazards or due to their priority to economic needs over the safety and health matters. It is the responsibility of the trade unions to not yield to such demands by their members and try their best to implement adequate preventive measures to avoid precipitation of OSH problems.

Some of the main trade unions of the country take independent advice of the experts on occupational safety and health. There is a need for expert cells in the trade unions that may provide expert advice to the trade union officials. Even now the representatives are deputed to tripartite meetings while taking important decisions connected with OSH, but their effectiveness can be increased to a large extent if the representative are abreast with the technical information on safety and health matters.

REFERENCES

1. Indian Factories Act 1948.
2. Maharashtra Factories Rules made under Indian Factories Act 1948.
3. Indian Dock Workers (Safety, Health and Welfare) Regulations 1990
4. Chakrabarti, Asis K.; Raja, G.A.; Singh, Dr. A.; Mohanti, P.K. (1996), "A study on Structure & Functioning of safety committees in Major Ports of India", Industrial Psychology Division, Central Labour Institute, Government of India, Ministry of Labour, Sion, Mumbai 400022.
5. Chakrabarti, Asis K.; Mohanti, P.K. (2003), "Port Safety Committee revisited – a Follow up study on the Structure and Functioning of Port Safety Committees in Major Ports of India" Industrial Psychology Division, Central Labour Institute, Government of India, Ministry of Labour, Sion, Mumbai 400022.

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SAFETY POSTER



INDOSHNEWS

INDOSHNEWS is a quarterly newsletter that facilitates exchange of ideas and data developed through research, study and surveys in the areas of occupational safety and health. DGFASLI invites articles from individuals, industry, industrial associations, trade unions, professional bodies etc. having information on OS&H and willing to share the same with others at the national and international level.

1. Manuscripts for publication should be typed in double space within 3 to 4 A4 size sheets only on one side of the paper and sent in duplicate to the Editor-in-Chief.
2. Once the manuscripts are accepted for publication, publisher reserves the right to make editorial changes as may be necessary to make the article suitable for publication; and publisher reserves the right not to proceed with publication for whatever reason.
3. Authors should take care to ensure the accuracy of data and reference.

INVITING ARTICLES FOR INDOSHNEWS

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TECHNICAL MEET OF THE SAFETY AND HEALTH PROFESSIONALS



Seated from left to right: Shri P.R.Gaikwad, Chief Welfare Officer, Mumbai Port Trust, Shri Srikant Singh, IAS, Dy. Chairman, Mumbai Port Trust, Shri Rahul Asthana, IAS, Chairman, Mumbai Port Trust, Shri S.G. Darvhekar, Director General and Chief Inspector of Dock Safety, DGFASLI, Mumbai and Shri GMEK Raj, Director (Safety) and Incharge Dock Safety Division, DGFASLI, Mumbai.

The 1st National Technical meet of the Safety and Health Professionals in the Port Sector was held from 3rd December 2009 to 4th December 2009 in the Conference Hall of Mumbai Port Trust, Mumbai. The objective of the technical meet was to discuss various challenges in terms of cargo handling activities, lifting appliances, plant and machinery, medical examination of dock workers and their health records etc. and also to provide a forum for Safety and Health Professionals to interact with each other and learn from each other's experiences as well as the issues of concern and problems faced by the safety and health professionals in each port. Total fifty two participants attended the above meet.

The Meet was inaugurated by Shri Rahul Asthana, I.A.S., Chairman, Mumbai Port Trust, Mumbai. In his inaugural address he stated that this first technical meet has been organized at Mumbai jointly by DGFASLI and Mumbai Port Trust for the improvement of safety and health standards in the port sector. He further stated that the port sector is developing speedily over the years but the cargo handling methods remains unchanged. The size of the cargo handled has now increased. He further stated that in the meeting like this it is important that we acquire advanced knowledge to meet the new challenges since it is necessary to update ourselves and share knowledge and experience in creating safe atmosphere and to create accident free port.

The welcome address was delivered by Shri Shreekant Singh, IAS, Dy. Chairman, Mumbai Port Trust. In his address, he stated that the idea of conducting the National Meet of Safety and Health Professionals of Port Sector was originated in the 7th Advisory Committee Meeting to get exposure and awareness of safe practices followed in the ports and to share their experiences and knowledge related to dock work. Shri S.G. Darvhekar, Director General and Chief Inspector of Dock Safety, DGFASLI delivered the keynote address and in his address he mentioned that he is very glad to be present

amongst the delegates of over 50 Safety and Health Professionals from the port sector from all over the country. Further, he mentioned that fatal accidents in the ports are a matter of concern though Port Trust is taking sincere efforts in controlling the accidents. Majority of fatal accidents are caused by the transport equipments, which is a matter of serious concern at national level.

Ms. Ingrid Christensen, ILO expert from ILO, New Delhi presented a presentation on *Safety and Health in Ports* highlighting the efforts made by ILO and the code of practice publish by ILO on Safety and Health in Ports. Best practices on Safety and Health were also presented by different ports. Shri GMEK Raj, Director (Safety) and In-charge Dock Safety Divn .DGFASLI delivered the Vote of Thanks.

A SEMINAR ON OCCUPATIONAL SAFETY & HEALTH IN CHANGING INDUSTRIAL ENVIRONMENT ON 26th OCTOBER 2010 IN DEHRADUN (UTTARAKHAND)



Seated from right to left Shri S.S. Gautam Director (IH) CLI, Mumbai, Shri S.B. Mathur Director (S) & Incharge, Regional Labour Institute, Kanpur, Shri Prakash Pant Hon'able Minister of Labour, Uttarakhand, Dr. Dil Bag Singh IAS, Secretary, Department of Labour, Uttarakhand, Shri R.K. Singh, Incharge & Deputy Director of Factories, Uttarakhand and Dr. Brij Mohan, Deputy Director (IH), RLI, Kanpur.

Regional Labour Institute, Kanpur in Collaboration with Government of Uttarakhand, Factories & Boilers, Department of Labour, Uttarakhand organized a Seminar on Occupational Safety & Health in Changing Industrial Environment on 26th October 2009, at Dehradun (Uttarakhand). The seminar was attended by eighty two delegates from forty nine stakeholders.

Hon'ble Labour Minister, Shri Prakash Pant, Government of Uttarakhand, inaugurated the seminar. During the inauguration Shri Pant addressed the delegates and said that the implementation of safety & health provisions in the factories of Uttarakhand is the responsibility of Factories & Boilers Section of the Labour Department.

However, the Factories Act clearly indicates the duties of occupiers under Section 7A. Hence, occupiers of the factories should take all measures to ensure safety & health in their factories. Dr. Dil Bagh Singh, IAS, Secretary to the Ministry of Labour, Uttarakhand, presided over the inauguration and asked the industries

CENTRAL LABOUR INSTITUTE: MUMBAI

During the quarter from October 2009 to December 2009, Central Labour Institute carried out several activities of which the important ones are given below.

**Studies**

Safety Audit in an Air Conditioning and Refrigeration Products Manufacturing Plant in Maharashtra (Dr. Elangovan, R. K., Safety Division, Central Labour Institute, Mumbai)

Safety Audit at LNG Receiving, Storing, Processing and Pumping Plant in Gujarat (Dr. Elangovan, R. K., Safety Division, Central Labour Institute, Mumbai)

Assessment of Airborne Chemical Contaminants in the Work Environment of an Automotive Coatings Manufacturing Plant in Karnataka (Metkari, M.A., Industrial Hygiene Division, Central Labour Institute, Mumbai)

Assessment of Airborne Chemical Contaminants in the work environment of a Plant Manufacturing Dyes and Dispersions in Karnataka (Metkari, M.A., Industrial Hygiene Division, Central Labour Institute, Mumbai)

Assessment of Airborne Asbestos Fibres in the Work Environment of a Pharmaceuticals & Health Care Products Manufacturing Plant in Maharashtra (Metkari, M.A., Industrial Hygiene Division, Central Labour Institute, Mumbai)

Radiological Study of Ship Recycling Workers in Gujarat (Dr. Raidas, R.B., Dr. Lanjewar, P.P., Industrial Medicine Division, Central Labour Institute, Mumbai)

Preliminary Hazard Analysis (PHA) of an Electric Motor Manufacturing Plant in Maharashtra (Gautam, S.S. & Sharma, S.C., Major Hazard & Chemical Safety Division, Central Labour Institute, Mumbai)

Maximum Credible Accident Scenario Analysis of a LPG Storage System at an Electric Motor Manufacturing Plant in Maharashtra (Gautam, S.S., Sharma, S.C., Major Hazard & Chemical Safety Division, Central Labour Institute, Mumbai)

Ventilation Study at a Factory Manufacturing Heavy Vehicles, Earth Movers & Bull Dozers in Maharashtra (Subhash Chandra, Markar, V.M. Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

Assessment of Noise at a Factory Manufacturing Heavy Vehicles, Earth Movers & Bull Dozers in Maharashtra (Subhash Chandra, Markar, V.M., Environmental Engineering Division, Central Labour Institute, Mumbai)

Heat stress & Ventilation Study at a Fertilizer and Chemicals Factory in Gujrat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

Assessment of Noise at a Fertilizer and Chemicals Factory in Gujarat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

Assessment of Adequacy of Illumination at a Fertilizer and Chemicals Factory in Gujrat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

Assessment of Vibration Level in Selected Locations at a Fertilizer and Chemicals Factory in Gujarat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

Training Programme

Learning centre has conducted the following eight three-days training programmes. The details are as below:-

Monitoring of Work Environment in Industries from November 09 to 11, 2009. The programme was attended by nine participants from seven organisations.

Productivity & Quality Improvement through Effective Employee Participation from November 17 to 19, 2009. The programme was attended by twenty four participants from seven organisations.

Storage, Handling & Management of Hazardous Substances in Process Industries from November 18 to 20, 2009. The programme was attended by ten participants from seven organisations.

Handling Problem Behaviour of Employees from November 18 to 20, 2009. The programme was attended by twenty participants from seven organisations.

Impact of Environmental Pollutants and Their Control at Work Place from November 24 to 26, 2009. The programme was attended by sixteen participants from ten organisations.

Industrial Hygiene Techniques from December 07 to 09, 2009. The programme was attended by ten participants from seven organisations.

Effective Leadership for Safety, Health & Productivity from December 16 to 18, 2009. The programme was attended by twelve participants from five organisations.

Ergonomics - A Tool for Ensuring Safety, Health and Productivity at Ship Building Works from December 22 to 24, 2009. The programme was attended by nineteen participants from four organisations.

Safety Division conducted second training programme of two weeks duration for the second batch of *The Approval of Safety Auditors* from December 15 to 28, 2009. The training program was attended by twenty six participants.

Industrial Hygiene Division conducted three day training programme on *Industrial Hygiene Techniques* from December 07 to 09, 2009. The training programme was attended by ten participants of seven organizations.

Industrial Medicine conducted one week training workshop on *Occupational Health Practice for Nurses and Medical Assistants* from December 07 to 11, 2009. The workshop was attended by twenty seven para-medicals from nineteen industrial units.

Dock Safety division conducted three day training programme on *Construction Safety* from December 21 to 23, 2009. Twenty five participants from engineering construction industry attended the programme.

Workshops/Seminars/Conference

Safety Division coordinated & organized a national seminar on *Emerging Trends in Process Safety and Risk Management* at Anna University, Chennai from October 7 to 8, 2009. The seminar was attended by two hundred forty participants from various organizations all over India.

Safety Division coordinated & organized National Symposium on *Occupational Safety and Health Management Systems (OSHMS) – A Self Regulatory Mechanism for Industries* at Central Labour Institute on December 01, 2009. The national symposium was attended by hundred participants from various organizations all over India.

Safety Division coordinated & organized a workshop on *Positive Culture Building through Behaviour Based Safety* at West End Hotel on December 02, 2009. The workshop was attended by thirty five participants from various organizations all over India.

Safety Division coordinated & organized a National Seminar on *Occupational Safety and Health in Textile and Engineering Industries* at Government College of Technology, Coimbatore from December 10 to 11, 2009. The national seminar was attended by one hundred and fifty participants from various organizations all over India.

Major Hazard & Chemical Safety Division conducted a one day National Seminar on *Sustainable Environment* at Veermata Jijabai Technological Institute (VJTI), Matunga, Mumbai in collaboration with VJTI on December 20, 2009. The seminar was attended by sixty delegates from forty organizations.

Paper/Presentation/Talks

Dr. R.K. Elangovan, Director (Safety) presented a paper on *Regulatory Perspectives of Process Safety & Risk Management in India – Current Thinking* at the National Seminar on *Emerging Trends in Process Safety and Risk Management* at Anna University, Chennai on October 08, 2009.

Dr. R.K. Elangovan, Director (Safety) presented a paper on *Lifting Appliances and Lifting Gears – Latest Techniques for Inspection, Examination & Testing* at the National Conference on *Competent Person's Role in*

Strengthening Inspection Mechanism under Factories Act at Goa on October 30, 2009.

Dr. R.K. Elangovan, Director (Safety) presented a paper on *Industrial Risk Insurance Management – A Tool for Enhancing Occupational Safety and Health in Industries* at the GLOGIFT Conference, NITIE, Mumbai on November 13, 2009.

Dr. R.K. Elangovan, Director (Safety) presented two papers on *Manual & Mechanical Material Handling and Electrical Safety* at the National Seminar on *Occupational Safety & Health in Textiles and Engineering Industries* at Govt. College of Technology, Coimbatore from December 10 to 11, 2009.

Dr. R.B. Raidas, Director (Industrial Medicine) and Dr. S.S.Waghe, Director (Industrial Medicine) presented papers on *Updates on Establishment of OHS in Manufacturing Sector* during EHS Conference

Dr. P.P. Lanjewar, Deputy Director (Industrial Medicine), delivered a lecture on *ILO Radiographs and Pneumoconiosis* on December 11, 2009 at a seminar organized by ACC Cement.

Shri S.S. Gautam, Director (Industrial Hygiene), presented a paper on *HIRA IN Process Industries* on October 26, 2009 at a one-day seminar on *OSH in Changing Industrial Environment* at Dehradun.

Shri S.S. Gautam, Director (Industrial Hygiene), presented a paper on *Environmental Emergencies from Industries with Special Reference to Conditions in and around Mumbai* on December 20, 2009 at a one-day seminar on *Sustainable Environment* at VJTI, Mumbai.

REGIONAL LABOUR INSTITUTE, KANPUR

During the quarter from October 2009 to December 2009, Regional Labour Institute carried out studies, training programmes etc. which are described here.



Studies

Follow Up Study of Work Environment at a Chemical Plant in Uttarakhand (Dr. Brij Mohan, Industrial Hygiene Division, Regional Labour Institute, Kanpur)

Training Programme

The institute conducted one month certificate course on *Safety & Health for Supervisors of the Hazardous Industries* from November 03, 2009 upto December 01, 2009. Total nine participants from five organisations participated.

The institute conducted a training programme on *Process Safety for Inspectors of Factories* from December 14 to 18

2009. The programme was attended by fourteen Inspector of Factories from eight different States viz. Bihar, Jharkhand, Kerala, Maharastra, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh.

Workshops/Seminars/Conference

The institute conducted a seminar on *Occupational Safety & Health in Changing Industrial Environment* on October 26, 2009. The seminar was presided over by Hon'able Shri Prakash Pant, Government of Uttarakhand. The seminar was attended by eighty two participants from forty nine stakeholders.

The institute conducted a workshop on *Monitoring of Work Environment & its Control* from October 07 to 09, 2009. The workshop was attended by ten participants from five stakeholders.

Paper/Presentation/Talks

Dr. Brij Mohan, Dy. Director (IH) presented a paper on *Application of Industrial Hygiene Practices for the Improvement of Industrial Environment* during seminar on *Occupational Safety & Health in Changing Industrial Environment* at Dehradun on October 26, 2009.

Shri S.B.Mathur, Director (Safety) presented a paper on *Safety Management in Changing Industrial Environment* during seminar on *Occupational Safety & Health in Changing Industrial Environment* at Dehradun on October 26, 2009.

REGIONAL LABOUR INSTITUTE, CHENNAI

During the quarter from October 2009 to December 2009, Regional Labour Institute carried out following technical activities.



Paper/Presentations/Talks

Shri A. Sree Ramalu, Dy. Director (IH) presented a paper on *Occupational Safety and Health in Brick Kiln Industry Sector* in a seminar organized by the ILO in Hotel Grand Palace, Chennai on December 01, 2009.

REGIONAL LABOUR INSTITUTE, KOLKATA

During the quarter from October 2009 to December 2009, Regional Labour Institute carried out studies and training programmes etc. which are described here.



Training programmes

Safety Division conducted five day training programme on *Industrial Safety* in two groups for the students of Post Graduate Diploma in HRD & Labour Welfare for the students of State Labour Institute, Govt. of W.B., Kolkata from October 20 to 23, 2009 & November 3 to 6, 2009. Twenty eight students in first group and twenty three students in second group attended the programme.

Safety Division organized five day training programme on *Safety in Construction Industries* from October 26 to 30, 2009. The training programme was conducted exclusively for the Management and Executive level participants who are working in the construction sites. Twenty nine participants attended the programme.

Safety Division conducted two-day In-house training programme on *Safety for Safety Volunteers* at Sankrail Unit of Ambuja Cement Ltd., Howrah from October 12 to 13, 2009. Twenty participants attended at the programme.

Safety Division conducted training programme on *Hazard Identification and Assessment Techniques in Chemical Industries* from November 16 to 20, 2009. Twenty participants from Management and Executive level attended the programme.

Industrial Medicine Division conducted training programme on *Occupational Health & Environment Medicine* for medical & non-medical executives from December 07 to 11, 2009. Twenty one participants from Management and Executive level attended the programme.

Paper/Presentations/Talks

Shri U. K. Das, Director (Safety) & In-Charge, RLI, Kolkata delivered a talk on *Safety in Dock Work* at the *Annual Workshop on Safety in Dock Work* on October 22, 2009. The Workshop was organized by M/s. T. P. Roy Chowdhury & Company Private Ltd., Kolkata.

Shri H. Chattopadhyay, Deputy Director (Safety), RLI, Kolkata delivered talks on *Safe Operating Procedure for Container Handling* at the *Annual Workshop on Safety in Dock Work* on October 22, 2009. The Workshop was organized by M/s. T. P. Roy Chowdhury & Company Private Ltd., Kolkata.

Dr. S. K. Haldar, Dy. Director (Med), RLI, Kolkata has given a talk on *Occupational Health Hazards & its Control Measures in Construction Industry* on November 23, 2009 in a training programme conducted by M/s. Siemens for their Safety Officers engaged in construction works.

Quotable quotes

1. Safety rules are your best tools.
2. Safety can distinguish you. Lack of safety can extinguish you.
3. You can't get home, unless you're safe.

Safety Audit in an Air Conditioning and Refrigeration Products Manufacturing Plant in Maharashtra (Elangovan, R.K., Safety Division, Central Labour Institute, Mumbai)

Safety Audit was conducted for an air conditioning and refrigeration products manufacturing plant located in Maharashtra. The audit was conducted as per the BIS 14489: 1998 standard codes of practices on Occupational Safety and Health (OSH) audit systems. The Audit covered various management and technical elements of occupational safety and health system in the industry. All the occupational safety and health elements of the management systems were checked during the audit. The major recommendations of the audits were creation of standard operating and maintenance procedures, internal audit system, safety inspection, testing and other certification procedures, and emergency planning.

Safety Audit at LNG Receiving, Storing, Processing and Pumping Plant in Gujarat (Elangovan, R.K., Safety Division, Central Labour Institute, Mumbai)

Safety Audit was conducted at LNG receiving, storing, processing and pumping plant. The audit was conducted as per the BIS 14489: 1998 standard codes of practices on Occupational Safety and Health (OSH) audit systems. The Audit covered various management and technical elements of occupational safety and health system in the industry. All the occupational safety and health elements of the management systems were checked during the audit. The major recommendations of the audits were training for contract workers, safety inspection, implementation of process safety management in the plant and establishment of SOPs and SMPs for all type of emergencies.

Assessment of Airborne Chemical Contaminants in the Work Environment of an Automotive Coatings Manufacturing Plant in Karnataka (Metkari, M.A., Industrial Hygiene Division, Central Labour Institute, Mumbai)

The study was carried out in an automotive coatings manufacturing plant with an objective of evaluating airborne contaminants such as Xylene, Iso-butanol, Butyl acetate, Titanium Dioxide, Trimethyl Benzene in the work environment and suggesting preventive/control measures to minimize harmful exposures. The air borne concentrations of all the contaminants except Trimethyl Benzene (26.85 ppm against its TLV of 25 ppm) in Pot Cleaning Room were found below the respective Permissible Limits of Exposure (PLEs), as well as, Threshold Limit Values (TLVs). The recommendation, such as, enhancement of the exhaust system efficiency in Pot Cleaning Room, avoidance of the mismatch of PPE and the requirement of different industrial operations, etc. were given to the management.

Assessment of Airborne Chemical Contaminants in the Work Environment of a Plant Manufacturing Dyes and Dispersions in Karnataka (Metkari, M.A., Industrial Hygiene Division, Central Labour Institute, Mumbai)

The study was carried out in a plant manufacturing Dyes and Dispersion for evaluation of airborne contaminants

like Formaldehyde, Formic Acid, Chromium Sulphate, Acetic Acid, Styrene, Acrylic Acid, Acrylonitrile, Starch in its work environment and suggesting preventive / control measures. The air borne concentration of all the contaminants were found below the respective Permissible Limits of Exposure (PLEs) & Threshold Limit Values (TLVs). The recommendations, such as, covering the man holes of reactors as far as possible, repairs of the floor at some places in Dispersion Plant, training & education of employees in safety and health, etc. were given to the management for further improvement of health and safety at work.

Assessment of Airborne Asbestos Fibres in the Work Environment of a Pharmaceuticals & Health Care Products Manufacturing Plant in Maharashtra (Metkari, M.A., Industrial Hygiene Division, Central Labour Institute, Mumbai)

The study was carried out in a plant manufacturing pharmaceuticals and health care products. The objective of this study was to evaluate airborne Asbestos Fibres (Chrysotile) in the work environment of the plant and recommend preventive and control measures to minimize harmful exposures. The airborne concentration of Asbestos Fibres (Chrysotile) at all the locations where sample collection was made, were found to be within Permissible Limit of Exposure (PLE) & Threshold Limit Values (TLV) of Chrysotile. The recommendations, such as, substitution of Asbestos Cement sheets on the concerned sections with non-asbestos sheets, use of appropriate PPE and protective clothing by the workers, periodic medical examination of workers, etc. were suggested to the management for further action.

A Radiological Study of Ship Recycling Workers in Gujarat (Raidas, R.B., Lanjewar, P.P., Industrial Medicine Division, Central Labour Institute, Mumbai)

The study team carried out the field work in the ship recycling yards in Gujarat. A cross section of unbiased, random, representative sample of 316 workers from 21 ship yards was selected and they were called for radiological examination. However, out of 316 workers, 237 workers reported for the radiological examination. These workers were subjected to chest radiography under direct supervision of the study team. The chest radiograph was taken as per the guidelines of ILO radiographs on Pneumoconiosis, 1980. The radiography was supplemented by general medical examination and the observations were recorded in a pre-developed questionnaire. Seventy-five percent of workers were migrant workers hailing from the states of Uttar Pradesh, Orissa, Jharkhand and Bihar. Thirteen percent of workmen were identified to be affected due to Asbestosis and Asbestos related disorders in this radiological study of the selected sample of workers. The affected workers were mostly under the age of 40 years, with duration of employment/exposure under ten years. Prevalence of radiological abnormalities when compared with increasing age and length of employment established inverse relationship which could be explained by lower retention rates due to reduced work efficiency or higher employee turn over due to the disease or disabilities the results of the study showed more than 3.5 times prevalence rates of

Asbestosis disease and asbestos related disorders among the ship recycling workers compared to that among asbestos cement processing workers. This could be easily explained by the fact that asbestos waste from ship scrapping was of blue variety, which is not only highly toxic but also an established carcinogen for the lung. The findings gave indirect evidence of the fact that all the categories of workers were exposed to work environment in which the levels of asbestos fibre concentration were high and no safety precautions against asbestos exposure were scrupulously followed in this industry. Based on the results of the study, the preventive measures especially those requiring compliance to the provisions made in the Model Rule 80-M to 80-R under the Factories Act and in line with the directives of the Hon'able Supreme Court, have been suggested. Provisions under these rules are concerning setting up of Occupational Health Centre, appointment of qualified medical officers, conducting of medical examination, maintenance of medical records, decontamination facilities as per the scales laid down for these provisions based on the number of workers. When all the yards are operating at present the ship recycling industry has approximately 35000 workers hence it is the responsibility of the occupier to provide all such facilities in accordance with the scales laid down under the Factories Act and eliminate the incurable and disabling diseases such as those caused by the exposure to asbestos fibres.

Preliminary Hazard Analysis (PHA) of an Electric Motor Manufacturing Plant in Maharashtra (Gautam, S.S. & Sharma, S.C., Major Hazard & Chemical Safety Division, Central Labour Institute, Mumbai)

The process hazard analysis was carried out in a factory manufacturing electric motors (for home appliances). The team of officers visited various sections of the plant and all the hazardous substances and operations being used in the sections were subjectively analysed for the likely hazards in the sections. The experiences of the plant personnel were also sought during conducting the study. Various standards and statutes were also kept in view while carrying out the identification of hazards in the respective areas. The report describes the manufacturing process of the motor manufacture, rotor manufacture, assembly of the motors and overhauling of the recycled compressors. The important findings of the assessment include: need for proper guarding of power presses, lathe machines, drilling machines, etc., need for testing the efficiencies of hoods and ducts of the ventilations systems, need for breaking the ingots before pouring into the melting pots, need for interlocking the blower of the furnace with the working of the furnace, etc. The report includes sixty-three number of such suggestions.

Maximum Credible Accident Scenario Analysis of a LPG Storage System at an Electric Motor Manufacturing Plant in Maharashtra (Gautam, S.S., Sharma, S.C., Major Hazard & Chemical Safety Division, Central Labour Institute, Mumbai)

The analysis was carried out of LPG Storage System of an electric motors manufacturing company in Maharashtra. The credible scenario envisaged to cause

maximal loss includes the sequence of events like release of liquefied LPG on breaking of bottom pipe connection, gas diffusion in the direction of wind in the levels dangerous from toxic point of view and from explosion point of view, ignition of cloud leading to unconfined vapour cloud explosion, pool and jet fires under the tank, bursting of tank (BLEVE) and fire ball leading to heat radiation. The report includes quantification of distances of various types of damages under different wind weather stability classes and different wind speeds to assist the managements to take guidance from the report for emergency preparedness and for guiding the emergency actions under emergencies. The mathematical models have been used with the help of computers to carry out the analysis.

Ventilation Study at a Factory Manufacturing Heavy Vehicles, Earth Movers & Bull Dozers in Maharashtra (Subhash Chandra; Markar, V.M.; Bhawe, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

The ventilation study was carried out in a factory manufacturing heavy vehicles, earth movers & bull dozers in Maharashtra by the Environmental Engineering Division of Central Labour Institute, Mumbai. The unit is engaged in manufacturing of large and heavy size of earth mover's locomotive equipment. Fabrication and welding are the two main operations of the company. The objective of the study was to identify the ventilation and thermal conditions in different workplaces in the factory and to suggest the ways and means to improve the ventilation conditions for minimizing thermal stress. The equipment used during the collection of data was Area Heat Stress Monitor. Climatic parameters like Dry Bulb Temperature, Wet Bulb Temperature, Humidity, Air Movement and Radiant Heat were taken for assessment of the thermal stress. The observations were taken at different locations in the factory covering most of the welding and fabrication points. The results observed were compared with the standards provided Indian Factories Act, 1948, Maharashtra Factory Rules, 1963 and other national & international standards. It was noted that the generally thermal stress was within the permissible limits. However, recommendations have been made to improve the ventilation levels by different ways. Other means to overcome the heat like awareness program, use of PPE and rotation of workers have also been recommended.

Assessment of Noise at a Factory Manufacturing Heavy Vehicles, Earth Movers & Bull Dozers in Maharashtra (Subhash Chandra, Markar, V.M., Environmental Engineering Division, Central Labour Institute, Mumbai)

The study on measurement of noise level was carried out in the plant located in Maharashtra. The unit is engaged in manufacturing of large and heavy size of earth mover's locomotive equipment. The objective of the study was to identify the noise generated by the machineries and equipment in different areas of the plant. Data at selected locations were recorded for sound pressure level in acoustic and linier mode for dominating frequencies. The study revealed that the noise level was within permissible

values barring some few locations where hammering operations were done. The suggestions have been given for increasing the awareness towards PPE and other remedial measures for minimization of noise exposures at work place.

Heat stress & Ventilation Study at a Fertilizer and Chemicals Factory in Gujrat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

The study on measurement of Heat stress and ventilation conditions was carried out at various workplaces in the plant located in Gujarat. The unit is engaged in manufacturing of fertilizers and chemicals in bulk quantities. The objective of the study was evaluation of heat stress and ventilation at various work places. Climatic parameters like Dry Bulb Temperature, Wet Bulb Temperature, Humidity, Air movement and degree of Radiant Heat have been monitored at the work locations. The study reveals that the Heat stress indices were well within the recommended limits. The plant is open type i.e. there are large opening in the building therefore inside temperature is almost similar to that of outside temperatures. Recommendations include the improvement in general ventilation, launching awareness program to combat heat, use of necessary protective clothing and administrative measures to overcome the thermal stress exposures.

Assessment of Noise at a Fertilizer and Chemicals Factory in Gujarat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

The study on assessment of noise level was carried out at various places in a fertilizer and chemical manufacturing industry in Gujarat. The objective of the study was to measure the sound pressure limits and identify the dominating frequencies of sound in noisy areas in the factory and to suggest the ways and means to improve the working conditions. Measurement of sound pressure was done using Sound Level Meter with facilities octave band analysis. The document reveals that the sound pressure level is within permissible limit values as per Gujarat Factories Rules.

Assessment of Adequacy of Illumination at a Fertilizer and Chemicals Factory in Gujrat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

The study on assessment of illumination levels in a fertilizer and chemical manufacturing industry in Gujarat. Process covered was mainly manufacturing, loading/unloading, bagging, filling and packing. The instrument used was a digital light meter. The objective of the study was to measure illumination level and to identify the area with faulty illumination in the factory and to suggest the ways and means to render the illumination adequate. Measurement has been done at the different locations in the factory inside factory premises. The report reveals that the illumination was not satisfactory as per Gujarat factories rule and there was scope of improvement in the illumination level. Accordingly suitable suggestions have been recommended in the report.

Assessment of Vibration Level in Selected Locations at a Fertilizer and Chemicals Factory in Gujarat (Subhash Chandra, Markar, V.M., Bhave, R.P., Environmental Engineering Division, Central Labour Institute, Mumbai)

The study on assessment of vibration levels was carried out in a fertilizer and chemical manufacturing industry in Gujarat. Process covered was mainly power generating machineries, Generators, DG Sets, compressors, blowers and Heavy duty process pumps. The instrument used was digital vibration meter. The objective of the study was to measure vibration level and to identify the sources of vibrations in the machines. The levels were compared with safe recommended values for occupational exposures. It is revealed from the study that at few places like utility and cooling water pump area where the vibration levels are on higher side which ultimately responsible for increases of noise level which generates scope for improvement.

Follow up Study of Work Environment in a Chemical Plant in Uttarakhand (Brij Mohan, Industrial Hygiene, Regional Labour Institute, Kanpur)

The workmen in plant areas are likely to be exposed to different chemical agents therefore follow up study was carried out to assess the levels of contaminants in work areas. About 100 samples of airborne contaminants like PTA, Formaldehyde, Ethylene Glycol, Ethanol, Heptane, Aluminium were collected from the chips, film and saracote plants during the study. The levels of certain airborne contaminants like PTA in PTA Charging in chips plant and ethylene glycol in fluidised bed in film plants were exceeding the prescribed permissible limit of exposure in work areas therefore suitable control arrangement are recommended to bring down the levels to the desired levels. Suitable local Exhaust system at the die casting machine in chips plant, and on fluidised bed in filter cleaning area & acid and alkali baths in film plant, use of personal protective equipment at the time of work by the employees, isolation of mixing & storage room in saracote plant are some of the main recommendations of the study.

CIS: INTERNATIONAL OCCUPATIONAL SAFETY AND HEALTH INFORMATION CENTRE

CIS (from the French name, Centre International d'information de securite et d'hygiene du travail) i.e. International Occupational Safety and Health Information Centre, is a part of the International Labour Office, Geneva, Switzerland. The mission of CIS is to collect world literature that can contribute to the prevention of occupational hazards and to disseminate this information at an international level. CIS imparts to its users the most comprehensive and up-to-date information in the field of Occupational Safety and Health. The work of CIS is supported by a worldwide Safety and Health information exchange network, which includes over 91 Centres. Central Labour Institute, Mumbai has been designated as the CIS National Centres of India. CIS can offer you rapid access to comprehensive information on occupational safety and health through its abstracts on latest OSH publications, the CIS Thesaurus and ILO Bulletin 'Safety and health at Work'.

TRAINING CALENDER FOR THE YEAR 2010: DGFASLI

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| S.No | Title of the Programme | Period | Coordinator (Technical) |
|------|---|--|---------------------------|
| 1 | Advanced Diploma in Industrial Safety (ADIS) 2009-10: Continued | December 07, 2009 – April 30, 2010 | B.L.Bairwa |
| 2 | Behaviour Based Safety | January 20-22 | P.K.Mohanty |
| 3 | Personal Growth & Group Dynamics | January 27-29 | N.K.Rustagi |
| 4 | Industrial Fitness to Improve Safety, Health & Productivity at Work | February 09-11 | D.R.Krishna |
| 5 | Effective Participative Skills for Safety Committee Members | February 16-18 | P.K. Mohanty |
| 6 | Refresher Course for Safety Officers | February 17-19 | B.L.Bairwa |
| 7 | Recognition & Evaluation of Chemical Hazards at Work Place | February 22-24 | M.A.Metkari |
| 8 | Workshop on Dispersion Modeling and Impact Assessment Of Major Toxic & Flammable Releases | February 23-25 | S.S.Gautam |
| 9 | Impact of Environmental Pollutants & their Control at Workplace | March 08-10 | S.S.Gautam |
| 10 | Collaborative Training Programme with NSC-Maharashtra Chapter on Industrial Safety | March 10-12 | B.L.Bairwa |
| 11 | Management of Health Hazards in use of Computers and VDT's at Work Place | March 17-19 | D.R.Krishna |
| 12 | Collaborative Training Programme with NSC-Maharashtra Chapter on Industrial Safety | April 06-08 | B.L.Bairwa |
| 13 | Workshop on Hazards & Operability (HAZOP) Study | April 07-09 | S.S.Gautam |
| 14 | On the Job Counseling Skills | April 21-23 | P.K. Mohanty |
| 15 | Selection & Quality Assurance for Effective Use of PPE | April 28-30 | M.N.Mandre |
| 16 | Team - building for Health, Safety & Welfare at Work | May 12-14 | N.K.Rustagi |
| 17 | Productivity & Quality through Effective Employee Participation | May 18-20 | R.N.Meena |
| 18 | Workshop on Safe Handling of Chemicals for Safety Committee Members | May 19-21 | S.S.Gautam |
| 19 | Collaborative Training Programme with NSC-Maharashtra Chapter on Industrial Safety | May 24-26 | B.L.Bairwa/ S.Bharathi |
| 20 | Motivation for Safety, Health & Productivity | May 24-26 | P.K.Mohanty |
| 21 | Workshop on Industrial Ventilation | June 07-09 | S.S.Gautam |
| 22 | Workshop on Occupational Safety, Health & Environment for Safety Professionals – Innovation & Challenges | June 09-11 | S.Bharathi |
| 23 | Effective Supervision for Results | June 21-23 | N.K.Rustagi |
| 24 | Advanced Diploma in Industrial Safety (ADIS) 2010-11: First Teaching Term | July 01–2 nd Week of November | B.L.Bairwa/ S.Bharathi |
| 25 | Ergonomics-A tool for improving Safety, Health & Productivity at Ship Building Works | July 13-15 | D.R.Krishna |
| 26 | Occupational Safety & Health Management in Process Industries | July 21-23 | S.C.Sharma |
| 27 | Refresher Course on Occupational Health for Plant Medical Officers | August 09-13 | Dr. S. Waghe |
| 28 | Workshop on Industrial Noise | August 18-20 | S.Chandra |
| 29 | Making Safety Committee more Effective | August 25-27 | P.K.Mohanty |
| 30 | One Month Specialized Certificate Course in Safety and Health for Supervisory Personnel Engaged in Hazardous Process Industries | September 01-September 30 | Dr.M.Rajaram |
| 31 | Basic Course for Inspector of Factories | September 06-24 | B.L.Bairwa |
| 32 | Training Methodology for Trainers | September 07-09 | N.K.Rustagi |
| 33 | Training Workshop on Hazard & Operability (HAZOP) Studies | September 22-24 | S.C.Sharma |
| 34 | Ergonomics- A tool for improving services in Hotels, Malls and Hospitals | September 28-30 | D.R.Krishna |
| 35 | Training Programme on Occupational Health Nursing for Nurses & Paramedicals | October 04-08 | Dr. S. Waghe |
| 36 | Monitoring of Work Environment in Industries | October 06-08 | M.K.Mandre |
| 37 | Ergonomics for Machine operators/ Service/Maintenance Personnel | October 19-21 | D.R.Krishna |
| 38 | Handling Problem Behaviour of Employees | November 10-12 | P.K.Mohanty |
| 39 | Refresher Course for Inspector of Factories | November 15-26 | B.L.Bairwa |

TRAINING CALENDER FOR THE YEAR 2010: DGFASLI

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|----|--|------------------------------------|-----------------|
| 40 | Productivity & Quality through Effective Employee Participation | November 23-25 | R.N.Meena |
| 41 | Safety in Storage, Handling & Management of Hazardous Substances in Process Industries | November 24-26 | S.C.Sharma |
| 42 | Advanced Diploma in Industrial Safety (ADIS) 2010-11: Continued | December 01, 2010 - April 30, 2011 | B.L.Bairwa |
| 43 | Evaluation of Heat Stress to improve Productivity | December 07-09 | D.R.Krishna |
| 44 | Safety, Health and Environment Management in Chemical Industry | December 08-10 | M.A.Metkari |
| 45 | OSH-MS | December 14-16 | Dr.M.Rajaram |
| 46 | Impact of Environmental Pollutants & their Control at Work Place | December 20-22 | S.Chandra |
| 47 | Associate Fellow of Industrial Health (AFIH) | Dec.2010 - February 2011 | Dr. P. Lanjewar |

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| S.No. | Title of the Programme | Period | Coordinator |
|-------|--|------------------------|---------------------|
| 1. | Workshop on Safety Engineering & Management. | January 27-29 | G.S.Pandey |
| 2. | Orientation Programme on Occupational Health | February 15-19 | Dr. C. Bhattacharya |
| 3. | Management of Industrial Safety, Health & Environment in Industries | March 15-19 | S.K.Dwivedi |
| 4. | Training Programme on Prevention & Control of Fire in Industry | April 13-15 | Dr. Brij Mohan |
| 5. | Training Programme on Safety & Health in Sugar Industry | April 27-29 | Dr. Brij Mohan |
| 6. | Training Programme on Chemical Safety for Safety Committee Members | July 06-09 | Dr. Brij Mohan |
| 7. | Post Diploma Course on Industrial Safety 2010-2011 | July 2010 - March 2011 | S.K.Dwivedi |
| 8. | Training Programme On Testing & Examination of Lifting Machines & Pressure Vessels | August 16-20 | G.S.Pandey |
| 9. | Training Programme on Safety & Law | September 06-08 | A.K.Chakraborty |
| 10. | Orientation Programme on Occupational Health for Para-Medical Staff | September 13-15 | Dr. C. Bhattacharya |
| 11. | Seminar on "Emerging Issues on Safety and Health Management" | September 22 | Dr. Brij Mohan |
| 12. | Workshop on Monitoring of Work Environment and its Control | October 06-08 | Dr. Brij Mohan |
| 13. | One Month Certificate Course on Safety & Health | November 01- 30 | A.K.Chakraborty |
| 14. | Training Programme on Process Safety Management for Inspectors of Factories | December 06-10 | Dr. Brij Mohan |
| 15. | Workshop on Safety Audit | December 13-15 | A.K.Chakraborty |

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| S.No | Title of the Programme | Period | Coordinator |
|------|---|------------------------|-------------------|
| 1. | Workshop on Monitoring of Work Environment | February 16-19 | A.Sreeramulu |
| 2. | Lifting Machinery and Lifting Tackles | March 09-10 | C.M.Nigli |
| 3. | Diploma in Industrial Safety | July 2010 – April 2011 | C.M.Nigli |
| 4. | Occupational Safety and Health in Construction Industries | July 27-28 | C.M.Nigli |
| 5. | Safety Audit | August 24-26 | C.M.Nigli |
| 6. | Major Accident Hazard Control in Industries for Inspectors of Factories | September 21-24 | A.Sreeramulu |
| 7. | Management of Hazardous Substances in Chemical Industries | November 09-12 | A.Sreeramulu |
| 8. | Occupational Safety and Health in Construction Industries | December 07-08 | K.Balasubramanian |

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| S.No | Title of the Programme | Period | Coordinator |
|------|------------------------|--------|-------------|
|------|------------------------|--------|-------------|

TRAINING CALENDER FOR THE YEAR 2010: DGFASLI

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|-----|--|---------------------------------------|------------------|
| 1. | Refresher Course on Occupational Health for Plant Medical Officers | February 01- 05 | Dr. S.K.Halder |
| 2. | Safety Health & Environment at Workplace | February 08-12 | D. Bandhopadhyay |
| 3. | Management of Physical Hazards and Hazardous Wastes in Industries | March 08-12 | Dr.S.N.Banerjee |
| 4. | Safety & Health Awareness programme for Members of Safety Committee | April 19- 23 | H. Chattopadhyay |
| 5. | Safety in Construction Industry | May 03- 07 | U.K.Das |
| 6. | Fire Safety & its Management | June 21-28 | U.K.Das |
| 7. | One year Diploma in Safety Engineering Course | July 14 | H. Chattopadhyay |
| 8. | Faculty Development Programme on "Occupational Safety & Health" | July 26- 30 | H. Chattopadhyay |
| 9. | Identification, Evaluation and Control of Hazards in Industries. | August 16-20 | Dr.S.N.Banerjee |
| 10. | Training Programme on Chemical Safety | September 06-10 | U.K.Das |
| 11. | Safety in Construction Industries | September 27 - October 01 | U.K.Das |
| 12. | "Occupational Health and environmental Medicine for Medical & non-medical executives of the industries" | October 25-29 | Dr. S.K.Halder |
| 13. | Workers Development Programme | November 10- 11 | Dr.S.N.Banerjee |
| 14. | One Month Specialized Certificate Course in "Safety & Health" for Supervisory working in Hazard Industries | November 15 - December 14 | H. Chattopadhyay |
| 15. | Associate Fellow of Industrial Health | December 01, 2010 – February 30, 2011 | Dr. S.K.Halder |

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| S.No. | Title of the Programme | Period | Coordinator |
|-------|--|------------------------|-------------------|
| 1. | Human Factors in Occupational Safety Health and Environment and their Management | January 11- 13 | S.M.Chaugule |
| 2. | Chemical Safety at Workplace | February 17-19 | M.R.Rajput |
| 3. | Occupational Stress Management | March 10-12 | Dr. Avneesh Singh |
| 4. | Management of Safety Health and Environment at Workplace | April 21- 23 | Rajeev Shukla |
| 5. | Environmental hazards and their Management at work place | May 24- 26 | M.R.Rajput |
| 6. | Participative Approach for Safety & Health Management | June 23-25 | Dr. Avneesh Singh |
| 7. | Chemical Hazards and their Management at Workplace. | July 21-23 | M.R.Rajput |
| 8. | One Year Post Diploma in Industrial Safety (PDIS) | July 2010 – April 2011 | Dr. Avneesh Singh |
| 9. | Behavioral Approach for Positive Safety Culture | August 18-20 | Dr. Avneesh Singh |
| 10. | Management of Safety Health and Environment at Workplace | September 6-7 | Rajeev Shukla |
| 11. | Physical Hazards and their Management at workplace | October 20-22 | S.M.Chaugule |
| 12. | Occupational Safety and Health in Construction Industry | November 24-26 | Rajeev Shukla |

- Training programme brochures will be mailed sufficiently in advance, specifying the dates of commencement of course, its venue etc., to the organisations as per mailing list available.
- Course-coordinator may be contacted for details such as training programme dates, venue, programme contents, level of participants, course fee and its payment etc.
- Admission to the course will be restricted to 20 participants on First-Come-First-Served basis. Participants are not allowed to attend the training course without written confirmation by the course-coordinator.
- Limited Hostel Accomodation on sharing and chargeable basis will be available on 'First-Come-First-Served' basis.

Quotes to remember

Living with your mistakes is harder than you think.... wear your safety gear.

Hearing protection is a sound investment.

Arms work best when attached to the body.

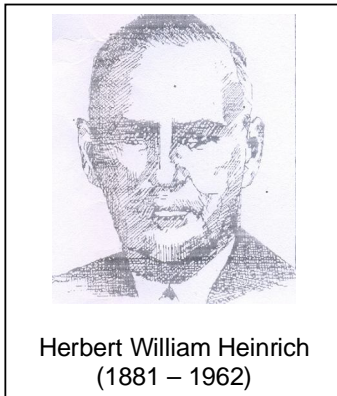
Are you part of the safety TEAM..... (Together Employees Accomplish More)

Eyes are priceless, eye protection is cheap.

Don't let the light go out, wear eye protection.

Disobedience of traffic rules exterminate the purpose of life.

HERBERT WILLIAM HEINRICH (1881 – 1962)



Herbert William Heinrich
(1881 – 1962)

Born : 1881
Died : 1962
Citizenship : American
Field : Occupational safety and health

Herbert William Heinrich was born in Bennington, Vermont in 1881. At the age of 16 he joined the Machinist Trade as an apprentice and became a third assistant engineer there. Later, he joined the Traveller Insurance Company in Hartford, Connecticut. He published his best known book *Industrial Accident Prevention: A Scientific Approach*, when he was working as Assistant Superintendent in the company. He worked with the company till his retirement in 1956. His work is the basis for the theory of Behavior-based safety, which holds that as many as 95 percent of all workplace accidents are caused by unsafe acts. Heinrich came to this conclusion after reviewing thousands of accident reports completed by supervisors.

Heinrich in his book has stated that accident prevention is both science and art. Then he stated: *As such, one expects to find and will find, clearly covered by the text, what accident prevention is, what it accomplishes, and how it is accomplished.*

As in all art and science, one should expect to find governing laws, rules, theorems, or basic principles. These exist. They are stated, described, and illustrated. After understanding comes application. What industry and its accident preventionists want most to know is how best to apply their knowledge. Examples showing practical application are given to supply this need.

Largely because of the recognition of basic principles, such as originally given in the first edition of this book and as herein reiterated, accident prevention has progressed from uncoordinated and arbitrarily selected activities, often ineffective and wasteful, to interrelated steps based on knowledge of cause, effect, and remedy, i.e., to an effective, practical, scientific approach.

Soundly established basic principles must withstand tampering, notwithstanding the natural temptation to discard the old, adopt the new, and to change merely for the sake of change. The amazing technological advances in the industries - in automation, metallurgy, chemistry, electronics, and nucleonics - provide an exacting test.

Heinrich did safety work across many industries, with published data, which gives guidelines of how to scale up from incidents and near misses to a good estimate of the probability of real accidents. 88 percent of all workplace accidents and injuries/illnesses are caused by "man-failure" is perhaps his most oft-cited conclusion, his book actually encouraged employers to control hazards. Heinrich's classic work has been revised into the more recent book, *Industrial Accident Prevention: A Safety Management Approach* which is widely accepted by safety professionals.

The safety triangle, commonly known as the safety pyramid or accident pyramid, serves to illustrate Heinrich's theory of accident causation: unsafe acts lead to minor injuries and, over time, to major injury. The accident pyramid proposes that for every 300 unsafe acts there are 29 minor injuries and one major injury.

Heinrich conducted safety courses for students at New York University for more than 20 years. In 1942, he was appointed chairman of the War Advisory Board, Safety Section, providing assistance to the U.S. Army safety effort. In 1956, he was appointed chairman and president of the Uniform Boiler and Pressure Vessels Laws Society, an organization promoting the uniformity of laws governing the safety of steam boilers and pressure vessels in the United States and Canada. Heinrich died in 1962. Heinrich's theory introduced decades ago, is still useful and widely quoted.

Source: 1) Wikipedia, The Free Encyclopedia,
2) Fred A. Manuele. *Heinrich Revisited: Truism or Myths.*
3) Heinrich H.W., Petersen Dan., Roos Nestor. *Industrial Accident Prevention: Safety Management Approach.* McGraw-Hill, New York.

T.K.Biswas
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& Labour Institute, Sion, Mumbai

ESTABLISHMENTS OF DIRECTORATE GENERAL FACTORY ADVICE SERVICE & LABOUR INSTITUTES

ESTABLISHMENTS OF DIRECTORATE GENERAL FACTORY ADVICE SERVICE & LABOUR INSTITUTES

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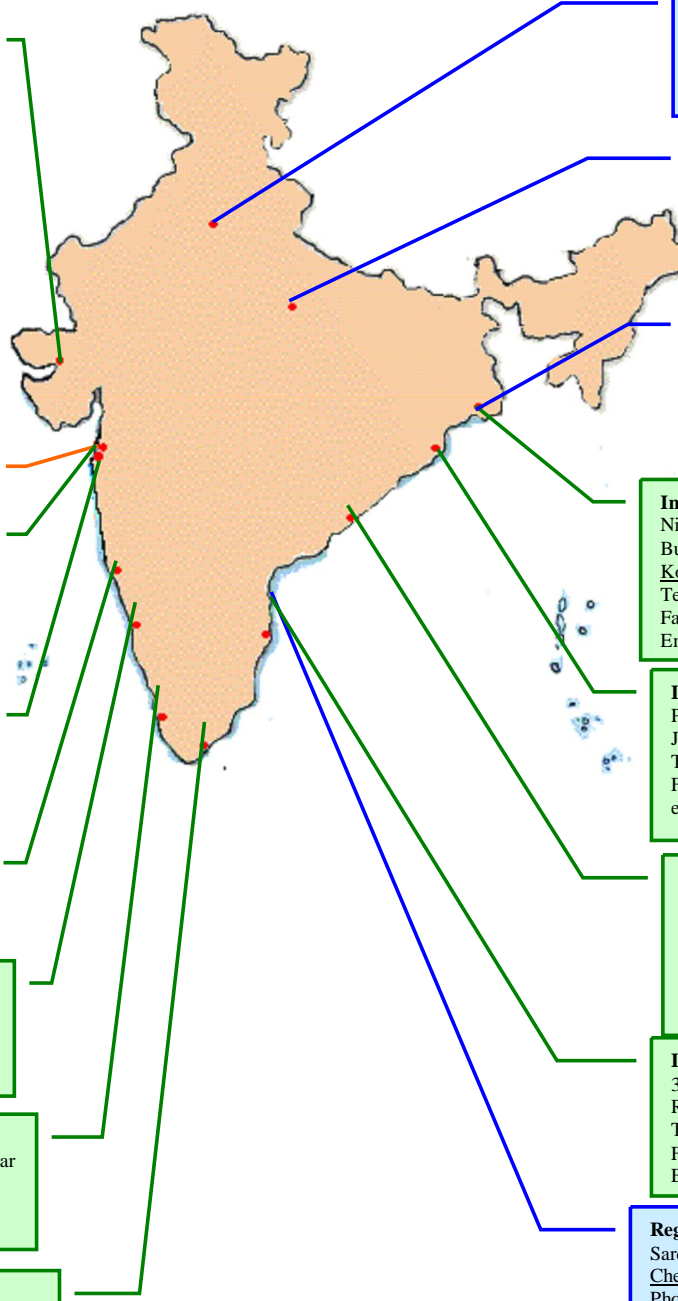
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