SAFETY MEASURES FOR EMPLOYEES UNDER FACTORIES ACT: A CRITICAL ANALYSIS

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Introduction

The Factories Act,1948, as amended by the Factories (Amendment) Act, 1987, serves to assist in formulating national policies in India with respect to occupational safety and health in factories and docks in India. It deals with various problems concerning safety, health, efficiency and well-being of the persons at work places.

The Act is administered by the Ministry of Labour and Employment in India through its Directorate General Factory Advice Service & Labour Institutes (DGFASLI) and by the State Governments through their factory inspectorates. DGFASLI advices the Central and State Governments on administration of the Factories Act and coordinating the factory inspection services in the States.

The Act extends to whole of India and is applicable on any factory whereon ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or

Whereon twenty or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on,-

But does not include a mine subject to the operation of the Mines Act, 1952, a mobile unit belonging to the armed forces of the Union, a railway running shed or a hotel, restaurant or eating place.

Industrial revolution took place in the 18th century and later reached India. During this era no industrial laws were in place and young children as old as twelve and women were exploited. 12 hours of shifts and working conditions with no safety welfare or health in mind of the

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employer. Thus, few employees came together to form a labour legislation and India got its first Factories Act in 1881.

Increasing number of accidents involving workers has drawn our attention towards safety measures in the factories. Accidents not only affect workers loosing their livelihood but also employers in terms of compensation to be paid to the workers. Accidents are a significant cause of dispute between workers and management. With the coming in of new set up of industries e.g., steel production, engineering, fertilizers, chemicals and petro-chemicals, oil refining etc., and increasing use of machine power, industrial complexities in terms of process of production have increased. This has given rise to hazards and risks. Safety measures are to be adopted against such risks and hazards. The Factories Act, 1948 has laid down certain measures for the safety of workers employed in the factories.

Need for safety measures

Safety measures result in improving the conditions under which workers are employed and work. It improves not only their physical efficiency, but also provides protection to their life and limb. Inadequate provision of safety measures in factories may lead to increase in the number of accidents. Human failure due to carelessness, ignorance, inadequate skill, and improper supervision have also contributed to accidents, and the consequent need for safety measures. Other factors giving rise to the need for safety measures are:

— rapid industrialization with its complexities in manufacturing process and layout;
— expansion or modifications in existing factories;
— setting up of new industries involving hazards not known earlier;
— lack of safety consciousness on the part of both workers and management;
— inadequate realisation of the financial implications of accidents.

Safety Provisions under the Act

Chapter IV of the Act contains provisions relating to safety. These are discussed below:

(i) Fencing of machinery

Fencing of machinery in use or in motion is obligatory under Section 21. This Section requires that following types of machinery or their parts, while in use or in motion, shall be securely

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fenced by safeguards of substantial construction and shall be constantly maintained and kept in position, while the parts of machinery they are fencing are in motion or in use. Such types of machinery or their parts are:

1. every moving parts of a prime-mover and flywheel connected to a prime-mover. It is immaterial whether the prime-mover or fly-wheel is in the engine house or not;
2. head-race and tail-race of water wheel and water turbine;
3. any part of stock-bar which projects beyond the head stock of a lathe;
4. every part of an electric generator, a motor or rotary converter or transmission machinery unless they are in the safe position;
5. every dangerous part of any other machinery unless they are in safe position.

(ii) Safety measures in case of work on or near machinery in motion

Section 22 lays down the procedure for carrying out examination of any part while it is in motion or as a result of such examination to carry out the operations mentioned under clause (i) or (ii) of the proviso to Section 21(1). Such examination or operation shall be carried out only by specially trained adult male worker wearing tight fitting clothing (which shall be supplied by the occupier) whose name has been recorded in the register prescribed in this behalf and who has been furnished with a certificate of appointment and while he is so engaged.

No woman or young person shall be allowed to clean, lubricate or adjust any part of a prime-mover or any transmission machinery while the prime-mover or transmission machinery is in motion or to clean, lubricate or adjust any part of any machine if the cleaning, lubrication and adjustment thereof would expose the woman or the young person to risk of injury from any moving part either of that machine or of any adjacent machinery [Section 22(2)].

(iii) Employment of young persons on dangerous machines

Section 23 provides that no young person shall be required or allowed to work at any machine to which this section applies unless he has been fully instructed as to dangers arising in connection with the machine and the precautions to be observed and (a) has received sufficient

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training in work at the machine, or (b) is under adequate supervision by a person who has a thorough knowledge and experience of the machine.

(iv) Striking gear and devices for cutting off power

Section 24 provides that in every factory suitable striking gears or other efficient mechanical appliances shall be provided and maintained and used to move driving belts to and from fast and loose pulleys which form part of the transmission machinery and such gear or appliances shall be so constructed, placed and maintained as to prevent the belt from creeping back on the fast pulley. Further, driving belts when not in use shall not be allowed to rest or ride upon shafting in motion.

Suitable devices for cutting off power in emergencies from running machinery shall be provided and maintained in every work-room in every factory. It is also provided that when a device which can inadvertently shift from 'off' to 'on position in a factory', cutoff power arrangements shall be provided for locking the devices on safe position to prevent accidental start of the transmission machinery or other machines to which the device is fitted.

(v) Self-acting machines

Section 25 provides further safeguard for workers from being injured by self-acting machines. It provides that no traverse part of self-acting machine in any factory and no material carried thereon shall, if the space over which it runs is a space over which any person is liable to pass whether in the course of his employment or otherwise, be allowed to run on its outward or inward traverse within a distance of forty five centimeters from any fixed structure which is not part of the machines.

However, Chief Inspector may permit the continued use of a machine installed before the commencement of this Act, which does not comply with the requirement of this section, on such conditions for ensuring safety, as he may think fit to impose.

(vi) Casing of new machinery

Section 26 provides further safeguards for casing of new machinery of dangerous nature. In all machinery driven by power and installed in any factory

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(a) every set screw, bolt or key on any revolving shaft, spindle, wheel or pinion shall be so sunk, encased or otherwise effectively guarded as to prevent danger;

(b) all spur, worm and other toothed or friction gearing which does not require frequent adjustment while in motion, shall be completely encased unless it is so situated as to be so safe as it would be if it were completely encased.

The section places statutory obligation on all persons who sell or let on hire or as agent of seller or hire to comply with the section and in default shall be liable to punishment with imprisonment for a term which may extend to 3 months or with fine which may extend to Rs. 500 or with both.

(vii) Prohibition of employment of woman and children near cotton openers

According to Section 27, no child or woman shall be employed in any part of factory for pressing cotton in which a cotton opener is at work. However, if the feed-end of a cotton opener is in a room separated from the delivery end by a partition extending to the roof or to such height as the inspector may in any particular case specify in writing, women and children may be employed on the side of partition where the feed-end is situated.

(viii) Hoists and lifts

Section 28 provides that in every factory:

(i) every hoist and lift shall be of good mechanical construction, sound material and adequate strength. It shall be properly maintained and thoroughly examined by a competent person at least once in every period of six months and a register shall be kept containing the prescribed particulars of every such examination,

(ii) every hoist way and lift way shall be sufficiently protected by an enclosure fitted with gates and the hoist or lift and every such enclosure shall be so constructed as to prevent any person or thing from being trapped between any part of the hoist or lift and any fixed structure or moving part,

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(iii) the maximum safe working load shall be marked on every hoist or lift and no load greater, than such load shall be marked on every hoist or lift and no load greater than such load shall be carried thereon,

(iv) the cage of every hoist and lift shall be fitted with a gate on each side from which access is afforded to a landing,

(v) such gates of the hoist and lift shall be fitted with interlocking or other efficient device to secure that the gate cannot be opened except when the cage is at the landing and that the cage cannot be moved unless the gate is closed.

(ix) Lifting machines, chains, ropes and lifting tackles

In terms of Section 29, in any factory the following provisions shall be complied with respect of every lifting machine (other than a hoist and lift) and every chain, rope and lifting tackle for the purpose of raising or lowering persons, goods or materials:

All parts including the working gear, whether fixed or movable, shall be
(i) f good construction, sound material and adequate strength and free from defects;
(ii) properly maintained;
(iii) thoroughly examined – by a competent person at least once in every period of 12 months or at such intervals as Chief Inspector may specify in writing and a register shall be kept containing the prescribed particulars of every such examination;

(b) No lifting machine or no chain, rope or lifting tackle, shall, except for the purpose of test, be loaded beyond the safe working load which shall be plainly marked thereon together with an identification mark and duly entered in the prescribed register and where it is not practicable, a table showing the safe working loads of every kind and size of lifting machine or chain, rope or lifting tackle in use shall be displayed in prominent positions on that premises;

(c) While any person is employed or working on or near the wheel track of a travelling crane in any place where he would be liable to be struck by the crane, effective measures shall be taken to ensure that the crane does not approach within 6 meters of that place

(x) Safety measures in case of use of revolving machinery

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Section 30 of the Act prescribes for permanently affixing or placing a notice in every factory in which process of grinding is carried on. Such notice shall indicate maximum safe working peripheral speed of every grindstone or abrasive wheel, the speed of the shaft or spindle upon such shaft or spindle necessary to secure such safe working peripheral-speed. Speed indicated in the notice shall not be exceeded and effective measures in this regard shall be taken.

(xi) Pressure plant

Section 31 provides for taking effective measures to ensure that safe working pressure of any plant and machinery, used in manufacturing process operated at pressure above atmospheric pressure, does not exceed the limits. The State Government may make rules to regulate such pressures or working and may also exempt any part of any plant or machinery from the compliance of this section.

(xii) Floor, stairs and means of access

Section 32 provides that in every factory

(a) All floors, steps, stairs passages and gangways shall be of sound construction and properly maintained and shall be kept free from obstruction and substances likely to cause persons to slip and where it is necessary to ensure safety, steps, stairs passages and gangways shall be provided with substantial handrails,

(b) There shall, be so far as is reasonably practicable, be provided, and maintained safe means of access of every place at which any person is at any time required to work;

(c) When any person has to work at a height from where he is likely to fall, provision shall be made, so far as is reasonably, practicable, by fencing or otherwise, to ensure the safety of the person so working.

(xiii) Pits, openings in floors etc.

Section 33 requires that in every factory every fixed vessel, sump, tank, pit or opening in the ground or in a floor which, by reason of its depth, situation, construction, or contents is or may be source of danger shall be either securely covered or securely fence. The State Government

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may exempt any factory from the compliance of the provisions of this Section subject to such conditions as it may prescribe.

(xiv) Excessive weights

Section 34 provides that no person shall be employed in any factory to lift, carry or make any load so heavy as to be likely to cause him injury. The State Government may make rules prescribing the maximum weights which may be lifted, carried or moved by adult men, adult women, adolescents and children employed in factories or in any class or description of factories or in carrying on any specified process.

(xv) Protection of eyes

Section 35 requires the State Government to make rules and require for providing the effective screens or suitable goggles for the protection of persons employed on or in immediate vicinity of any such manufacturing process carried on in any factory which involves (i) risk of injury to the eyes from particles or fragments thrown off in the course of the process or; (ii) risk to the eyes by reason of exposure to excessive light.

(xvi) Precautions against dangerous fumes, gases etc.

Section 36 provides (1) that no person shall be required or allowed to enter any chamber, tank, vat, pit, pipe, flu or other confined space in any factory in which any gas, fume, vapor or dust is likely to be present to such an extent as to involve risk to persons being overcome thereby, unless it is provided with a manhole of adequate size or other effective means of egress. (2) No person shall be required or allowed to enter any confined space as is referred to in sub-section (1), until all practicable measures have been taken to remove any gas, fume, vapor or dust, which may be present so as to bring its level within the permissible limits and to prevent any ingress of such gas, fume, vapor and unless:

(a) a certificate in writing has been given by a competent person, based on a test carried out by himself that the space is reasonably free from dangerous gas, fume, vapor or dust; or (b) such person is wearing suitable breathing apparatus and a belt securely attached to a rope, the free end of which is held by a person outside the confined space.

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(xvii) Precautions regarding the use of portable electric light

Section 36A of the Act provides that in any factory (1) no portable electric light or any other electric appliance of voltage exceeding 24 volts shall be permitted for use inside any chamber, tank, vat, pit, pipe, flu or other confined space unless adequate safety devices are provided; and (2) if any inflammable gas, fume or dust is likely to be present in such chamber, tank, vat, pit, pipe, flu or other confined space unless adequate safety devices are provided, no lamp or light other than that of flame proof construction shall be permitted to be used therein.

(xviii) Explosive or inflammable dust gas, etc.

Sub-section (1) of section 37 of the Act provides that in every factory where any manufacturing process produces dust, gas, fume or vapor of such character and to such extent to be likely to explode on ignition, all practicable measures shall be taken to prevent any such explosion by (a) effective enclosure of the plant or machinery used in the process (b) removal or prevention of the accumulation of such dust, gas fume or vapor, and (c) exclusion or effective enclosure of all possible sources of ignition.

(xix) Precautions in case of fire

Section 38 provides that in every factory all practicable measures shall be taken to outbreak of fire and its spread, both internally and externally and to provide and maintain (a) safe means of escape for all persons in the event of fire, and (b) the necessary equipment and facilities for extinguishing fire.Effective measures shall be taken to ensure that in every factory all the workers are familiar with the means of escape in case of fire and have been adequately trained in the outline to be followed in such case.

(xx) Power to require specification of defective parts or test to stability

Section 39 states that when the inspector feels that the conditions in the factory are dangerous to human life or safety he may serve on the occupier or manager or both notice in writing requiring him before the specified date to furnish such drawings, specifications and other particulars as may be necessary to determine whether such building, machinery or plant can be used with safety or to carry out such test in such a manner as may be specified in the order and to inform the inspector of the results thereof.

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(xxi) Safety of buildings or machinery

Section 40 provides that the inspectors in case of dangerous conditions of building or any part of ways, machinery or plant requires the manager or occupier or both to take such measures which in his opinion should be adopted and require them to be carried out before a specified date. In case the danger to human life is immediate and imminent from such usage of building, ways of machinery he may order prohibiting the use of the same unless it is repaired or altered.

(xxii) Maintenance of buildings

Section 40-A provides that if it appears to the inspector that any building or part of it is in such a state of disrepair which may lead to conditions detrimental to the health and welfare of workers he may serve on the manager or occupier or both, an order in writing specifying the measures to be carried out before a specified date.

(xxiii) Safety officers

Section 40-B provides that in every factory (i) where 1,000 or more workers are ordinarily employed or (ii) where the manufacturing process or operation involves risk of bodily injury, poisoning or disease or any other hazard to health of the persons employed therein, the occupier shall employ such number of safety officers as may be specified in the notification with such duties and qualifications and conditions of service as may be prescribed by State Government.

(xxiv) Power to make rules to supplement this Chapter.

This is vested in the State Government under Section 41 for such devices and measures to secure the safety of the workers employed in the factory.

Critical Analysis:

The Factories Act 1948 is a piece of social welfare legislation governing

working conditions of people in factories. The Factories Act of 1948 replaced all previous legislation on labour welfare. It brought in many new concepts and may be considered as an important Milestone in factory legislation. The main provisions of the Act of 1948 are

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provisions regarding safety, guarding of machines, Provisions regarding health and cleanliness. It has been observed over the last sixty years that the leadership of the labour welfare movement has increasingly passed into the hands of the government and guided by the possibility of higher labour productivity, private employers too have done commendable work in this field.

Safety measures and efficiency of workers

There is a close relationship between safety measures and the efficiency of workers. Efficiency results in increasing the average output per worker. It is reflected in increased productivity. Safety measures are concerned not only with the physical efficiency, and safety of the workers, but also his general well being. Being related with welfare, lack of safety exposes workers to health hazards. It also involves occupational health risks. Indian workers are generally considered to be less efficient as compared to workers in other countries. Such a statement does not reflect any inherent deficiency on the part of workers. It is stated to be due to longer hours of work, low wages, and poor living conditions. Health and safety measures provided in factories are also of poor standard. This may be stated as the basic reason for the inefficiency of workers in India. Climatic factors, illiteracy, low standard of living may also affect the efficiency adversely, but the poor working conditions happen to be the main reasons. Working environment in the factory is not conducive to increased efficiency of worker. Under unhealthy surroundings, we cannot expect workers to put in hard and sustained work. Safety measures as listed above partly prevent workers from being exposed to the risk of accidents, and protection against dust and fumes and inflammable gases, etc. These are partly welfare in nature e.g., preventing employment of young persons on dangerous machines. Other safety measures reduce the strain from working under difficult conditions.

Statistics

Industrial Injuries[1]

• Total Injuries (fatal and non-fatal) have declined from 16432 in 2003 to 15020 in 2004 (Table-5 i).

• Frequency rate of injuries per one lakh man days worked declined from 2.50 during 2003 to 1.33 during 2004 (Table 5 i).

[1] http://labourbureau.nic.in/LS_FACT_2004_Summary.pdf

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• Incidence rate per thousand average daily employment has decreased from 3.33 in 2003 to 2.21 in 2004 (Table 5.1)

• About 98 per cent of men and about two per cent of women suffered from injuries (fatal and non-fatal). (Table 5.2 & 5.3). • Severity rate of mandays lost due to injuries per one lakh mandays worked has increased from 54.64 in 2003 to 78.99 in 2004. (Table 5.6).

3.2 Awareness of safety provisions[2]

• In all the three sampled units 70% workers are aware of the provisions related to fencing, 66.07% workers are aware of the precaution to be taken while working on machinery in motion, self- acting machines, lifts, hoists etc. and NFL showing the best implementation

• 40% workers are aware of the maintenance of floors, stairs and means of access. However, NFL has the largest number of satisfied workers.

• 86.7% workers are aware of the protection provided in case of eyes where as 76.07% are satisfied with the protection from explosive/ inflammables gas etc.

• Regarding fire control, 78.7% are aware of the precautionary measures.

• 80% workers in NFL and SM are aware of provisions of safety officer but there is no such officer in SPL. • The level of awareness regarding health provisions is the highest in NFL (77%) followed by SM (57%) and the lowest in SPL i.e. (46%).

Convictions • Excluding 'Others'the maximum numbers of convictions obtained were reported for the offences relating to Safety provisions . (Table 9.3)[3]

CHANDIGARH: The factories, equipped with power-aided machines, generally violated the provisions relating to Safety measures (section-21). Sometimes even workers did not take proper care in replacing the guard on the machine after work and sometimes this negligence resulted into accidents of various nature. However, the Managements have been cautioned to take suitable measures to avoid industrial accidents. The safety measures regarding protection from dangerous fumes and dust (section 35 and 36) are stipulated under the Factories Act, 1948. In cases where units which were involved in operation such as emission of dangerous

[2] http://iosrjournals.org/iosr-jbm/papers/Vol9-issue6/O096104110.pdf
[3] http://labourbureau.nic.in/LS_FACT_2004_Summary.pdf

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fume and dust etc., exhaust fans were provided while in other units precautions were taken to remove dust and fumes. Workers were issued safety goggles and other protection equipments. Managements are prosecuted if offences are reported. No violation was detected regarding employment of young persons on dangerous machines (section -23).[4]

[4] http://labourbureaunew.gov.in/UserContent/Statistics_of_Factories_2013.pdf?pr_id=ImARGu1KBDY%3D

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