EDITORIAL

FREE FOR STARVATION

With the new industrial policy, it has become evident that the government has given a free
hand to industrialists to exploit the vulnerability of the labour. This opportunity has been
given in the name of productivity, market oriented economy, etc.

This industrial policy has two main components, one - to welcome Trans National
Corporations (TNCs) with open hands and two - to promote privatisation of public sector.
Both these moves are motivated to bring in new technology plus foreign investment and
increase productivity, all supposed to lead towards increased profitability of industrial
sector.

TNCs will be coming to India not just because of this new industrial policy but due to
the availability of cheap labour and very limited or almost nil safety requirements to follow.
In any case, whatever safety regulations we have in this country are not implemented due
to the ineffective implementation machinery.

Under these circumstances it seems we are inviting many more Bhopals, and it is not
that with simply this new move only health and safety of workers will suffer but (with such
an over emphasis on productivity and profitability) thousands of jobs would also be at stake.
This welcome to TNCs and privatisation of Public Sector is going to throw thousands of
workers jobless due to "inevitable technological changes" required for improvement in the
health of the industry. This fear of job-loss has been recognised even in the policy
document, but till date no clear policy has been outlined for the rehabilitation or
compensation to the workers who are going to suffer this onslaught of the new industrial
policy. This policy has given a sort of moral sanction for such a job-loss in the name of
sacrifice.

The total picture which emerges, considering this policy document, is one of increased
vulnerability of workers. In this situation, any issue of either occupational health and
safety or environmental pollution and degradation can be used by the industry to go
for closure, technological changes or retrenchment. The working class movement is
going to face a tough time ahead. In this period all of us involved with different
movements, i.e., environmental movement, occupational health and safety movement
or labour movement need to come together to think of ways and means to strengthen
the working class in its struggle for survival.
Ferozabad town, situated 35 km. from Agra, is famous for its Bangle Industry not only in India but abroad too. It has the unique distinction of being the town which supplies bangles and other glass items all over the world.

All the entrepreneurs of Ferozabad town are engaged in the glass industry, specially bangle-making. Seventy per cent of the town population is involved in it. In other words, Ferozabad is like one colossal bangle-making factory. Inspite of such a large number of workers, there is absolutely no organised workforce. This informal sector is totally unorganised and is represented by contract labourers, daily wage earners and casual labourers. There is simply no security of either the job or the life of a bangle worker.

There are about 250 bangle factories at Ferozabad. The process of bangle-production is carried out at two stages. The first stage is completed at the factory and the second at homes of contract labourers. The factory work entails the various steps of bangle-production right from melting the glass in the furnace to forming the large glass coil full of bangle cans. Most of the work is given on contract. The contractor assigns the remaining jobs (carving of designs, cutting, gold-coating, joining etc.) to piecemeal labour. These activities largely take place at their homes. This is how the process of bangle-making attains completion.

Businessmen from all over the country (as well as abroad) come to Ferozabad to purchase the finished bangles from these entrepreneurs. Interviews with the businessmen have revealed that the demand far exceeds the production of bangles. Even petty factory owners are earning millions.

**Plight of Workers**

On an average in a factory, about 100-150 workers are employed. Still, no worker is yet permanent. Any labourer could be thrown out, at the factory owner’s whim. The owner fully encashes upon the vulnerability of the labourers who, apart from facing the various risks involved, also have to face the situations where they do not receive full payment of wages on time.

The irony of the situation is that since the number of labourers is always more than their demand they are always underpaid and overworked.

There are no fixed wages for any task per se. The mode of payment varies drastically. The thumb-rule of payment is ‘more risk more money’.

The factory owners make their labourers sweat for 10 to 12 hours and pay them the wages for simply an eight-hour-shift. The tragedy remains that this twelve hours of work pays them just fifteen to thirty rupees on an average. The labourers are not even entitled to take rest or go out for meals. They have to gobble up food or tea, while working at the same time. The workers have to race against time to complete their endless quota of work.

Ferozabad has a Labour market where the agents of factory owners come to hire the labour for a day or two. This market is always full of such labourers who are either unemployed due to some factory close-down or have come in search for work from nearby villages. Though such labourers earn 25 to 40 rupees a day, they are exploited to the hilt. There is simply no other choice because if they do not get work even at this market then they cannot get work anywhere else. All the doors are closed to them and they may have to sleep hungry along with their whole family.

A lot of bangle-making is done on contract. The contractors (or rather middle-men) make a contract with people (young and old) who work at home, day and night, to somehow complete it. Even school children are seen helping their elders in their free time.

The vicious circle of poverty and lack of choice makes these labourers do strenuous work for ten hours to obtain not more than twenty to thirty rupees.

**Exploitation of Women and Children**

Children engaged in bangle-making suffer the most. The children constitute twenty to twenty-five per cent of the entire workforce of every single bangle factory. These children work no less than their elders. They undertake all kinds of risky jobs at all odd times, and still can not earn more than twenty rupees for it even after a full twelve hours of work. You will find school children (both girls and boys) who study as well as work.

Same goes for women labourers who cut bangles, join bangles and coat them with gold, apart from their daily house-chores. They too do not earn more than twenty to thirty rupees after putting in about ten hours of non-stop hard work, which is not possible for many of the women workers, considering the household responsibilities. As a result their earnings are generally to the tune of Rs. 10-12 a day.

Due to piece wage and temporary nature of employment one has to be always on one’s toes and the risk factor is so high that one member of the family is always
OCCUPATIONAL HAZARDS OF BANGLE INDUSTRY

An outsider can not imagine the dreadful life of a worker within the four walls of a Ferozpur-based bangle factory. Even if you dare to step inside such a factory then you are bound to be exposed to the intense heat, fumes and smoke emanating from the furnaces and the dazzling force of flame and crucibles.

When you get slightly acclimatized to the air and smoky atmosphere, then you can witness each process individually and observe every single hazard pertaining to this occupation.

The various steps involved in bangle making are as follows:

To begin with, pots (made of refractory material) full of glass-making chemicals are heated inside a furnace.

Raw materials used in glass-making are-
- Sand or crushed rock quartz
- Soda ash (Na₂CO₃)
- Potassium carbide
- Crushed silicon dioxide or glass
- Borax and lead
- Broken or crushed glasses

Two to three workers keep on continuously heating molten glass around the pots when moved over to others (by 3 ft to 4 feet) to shape the bangles. The first step towards making bangles comprises pulling out a continuous thread of glass from the molten mass and revolving it around a horizontal cylinder to give it the shape of a bangle. One worker holds the molten glass rod while another revolves the cylinder. Two workers prevent the sticking of two separate bangles into each other, anywhere along the entire length of the continuous glass rod wrapped around the cylinder. This glass coil is later cut into individual bangles which are then painted to form the complete bangle.

There is yet another set of workers who design, provide Anti-embalming and polish these bangles to acquire a shiny gloss and an aesthetic finish. These sets of workers work at home, engaging people from six to sixty including women as well as children, who also sort out the finished products and then classify them into different bangles for sale.

The entire process of bangle-making is full of occupational hazards and accidents. There is always the danger of getting cut by sharp, broken glass pieces, spread all over the place. Flying glass shavings penetrate wounds and cause eye injuries. Skin irritation is also caused in handling and holding the raw materials before putting them in furnaces.

Most of the workers complain of suffering from headaches, but since they are mainly used for glass-manufacturing, there is no direct contact in them, there is very high possibility of silicosis or a composition of both. (Silico-tuberculosis) Other occupational health hazards of workers are mostly related to their exposure to high heat. They get heat cramps, severe pains in the limbs, measures following hard work in hot environment without adequate fluid or rest breaks. Prolonged exposure, a state of very definite weakness produced by excess loss of normal fluids and salt, in form of sweat due to high temperature exposure to high heat, and heat related (potassium-potassium related) i.e. heat changes are secondary to heat affecting the kidney and urinary system.

Apart from these major hazards, workers always complain of paramental backaches and body aches like pain in the joints due to their long working hours and sedentary postures.

The details of these hazards for preventing a future of industrology are provided in the following chapter.

suffering either from accidents or is down with some occupational disease.

Workers' Union

One would imagine that with such a huge number of labourers, there must be a very strong lobby of workers' unions. But it is not so. The existing workers' unions are too weak to resist and encounter the rich and powerful factory owners. These industrialists apply all kinds of measures like having loyal workers to whom some favour is done among workers; employing musclemen; taking advantage of corrupt officialdom as well as greasing the palms of opportunist union leaders.

Corrupt Officialdom

One may think what the government is doing in this respect. Actually, the bureaucracy has neither made any effective policy nor has taken any positive step to curb this reign of terror, corruption and exploitation. No enquiry committee set up by the government could raise even a finger against these exploiters.

"All the governmental efforts of putting a ban on the violation of basic human rights seem a mere eye-wash" - as a worker puts it. It is an exercise in futility to seek help from a government with no teeth.
The bangle industry is full of occupational hazards as depicted below. Every single process in bangle making has its individual hazards. Here is a glimpse of it:

**FURNACE**
A pot made of refractory material full of chemicals (to make glass) is heated for full 12 hours during which the workers have to keep a constant watch over the boiling glass and keep on removing stray coal pieces falling into the drum. (Hazards: Intense heat, risk of burns, exposure to smoke and toxic gases)

**SEPARATING MOLten GLASS FORM THE ROD.**
The next process involves revolving the hot glass around an iron rod, cooling it and then revolving some more molten glass over the cold one. Repeating this process 2-4 times, a very thick layer of glass gets deposited over the rod. Finally, this rod, stuck with the entire mass of glass, is re-heated. (Hazards: Extreme heat, risk of getting burnt with the hot rod, fumes and smoke emitting from the furnace)

**HELPER**
The task of a helper is to take the rod all across the premises to another worker at the other end. (Hazards: Heat, smoke and fumes)

**SHAPING THE GLASS**
In this process, the worker provides an appropriate shape to the melted glass in order to facilitate pulling out a continuous thread of glass (to make bangles). (Hazards: Intense heat and hot rod)

**TYING GLASS THREAD TO SPINNING CYLINDER**
The adjoining worker takes the hot rod (after shaping the glass) and attaches the loose end of the glass thread to a horizontal cylinder with the help of another rod. (Hazards: Head, burns, cuts)

**SPINNING THE CYLINDER**
This horizontal cylinder has to be revolved continuously for hours together by a worker (Hazards: Heat, gas, terrible pain in the joints, hands and waist due to spinning the cylinder for four hours at a stretch)

**ARRANngING THE GLASS ON THE CYLINDER**
While the cylinder keeps revolving, one worker prevents the joining of two glass coils by continuously separating them with a sharp rod. A second worker keeps removing the entire glass coil and third one slips it over a rod and makes a bundle of it. (Hazards: Heat, smoke, fumes)

Then this large glass coil is sent outside the factory for carving different designs on bangles. Apart from designing, other activities like cutting, joining, coating, sorting and refining take place. These are carried out on piecemeal contract basis by labourers (including children, women and old people) at their homes.

**CARVING DESIGNS ON BANGLES**
The large glass coil is slipped on a horizontal cylinder which is continuously rotated. The designs are carved on bangles while the cylinder is still in motion. (Hazards: Risk of getting the hands cut and flying glass particles penetrating into eyes, causing serious injuries).

**CUTTING**
Here, the large glass coil is cut into separate bangles (Hazards: cuts, flying glass particles penetrating into eyes causing serious injuries)

**ALIGNING AND JOINING**
These ends are not properly aligned. A bangle is heated at the middle to align the ends. Then, these aligned ends are heated and joined to form the complete bangle. (Hazards: Heat, gas, risk of burning the hand, backache, strain on the eyes)

**GOLD COATING**
Here a solution of gold and other chemicals is prepared and coated over the spots carved for the purpose of designing. (Hazards: Strain on eyes and pain in the back joints and hands)

**REFIRING**
Bangles are refired individually in the furnace after coating them, to get a shine over the coating. One has to keep taking the bangles every now and then out of the furnace to check whether it is processed or not. (Hazards: Head, burns, cuts, strain on the eyes, heat cataract)

**SORTING**
Then, the bangles are sorted out where broken or unprocessed ones are removed from the lot. (Hazards: Risk of getting the hands cut, strain on the eyes, pain in the back and joints)
BANGLE INDUSTRY: A FEW STUDIES

CHRONIC BRONCHITIS STUDY

The study conducted by ITRC (1984) has revealed the prevalence of chronic bronchitis in 23.9% of glass bangle workers.

In a study conducted by Dr. A.K. Shrivastava et al. of ITRC (Indian Journal of Industrial Medicine, 1988, Vol 34, No. 1,) concluded that 7.2% of glass bangle workers, exposed to a number of metals, had radiological abnormalities. The abnormalities were similar to pneumoconiosis. Thus, a diagnosis of mixed pneumoconiosis is considered.

CARDIO-RESPIRATORY STUDY

In a study conducted by S.K. Rastogi et al. of ITRC (Int. Arch. Occup. Environ. Health, 1989, 6, 487-493) on Cardiorespiratory functions. For that, cardio-respiratory functions were recorded in 18 glass bangle workers (Belanias) who worked near the belan furnace continuously for 2 hours. The workers were exposed to high ambient temperature (tDB 38.2 degree Centigrade ± 3.4 degree Centigrade) and thermal radiation (tG 46.2 degree Centigrade ± 5.1 - degree Centigrade) during their work.

The incomplete recovery in heart rate revealed cardiac stress in the exposed workers. Besides the cardiac stress, the cardiac cost of the work under the prevailing hot conditions in the glass bangle industry was very high, adding further to circulatory strain in these workers. Almost all the exposed workers were found to have hyperventilation syndrome characterised by increased respiratory frequency and tidal volume resulting in ventilatory stress induced by physical and physiological heat.

OPHTHALMIC MORBIDITY IN GLASS WORKERS

In a study conducted by A.K. Shrivastava and B.N. Gupta of ITRC (IJIM, December 1988, pages 161 to 165) on ophthalmic morbidity in glass workers. 172 glass bangle workers from various sub-occupations of the industry were explored. About 45 percent of them were found to be suffering from some eye disease. About 23.5 percent suffered from only one ophthalmic disease while 21.5% suffered from more than one disease. Nearly 15% had opacities in the refractive media other than cataracts.

BANGLE MAKING - A DRUDGERY

Lot of workers seem to faint due to the unbearable heat and suffocation inside Ferozepur bangle factories. These factories neither provide fans nor exhausts. To top it all, there isn't even a thermometer to measure the temperature of the work place.

Inspite of the back-breaking work at scalding hot furnaces, workers don't even get clean drinking water leave apart ORS (Oral Dehydration Solution) which is a must to retain the salts of the body which keep on evaporating along with the sweat of the workers. Unclean drinking water causes cholera among workers.

The immense work-load does not allow a worker even to take a break for a cup of tea, forget about the lunch. There is absolutely no facility like bathrooms for bathing after a long, hot and tiresome day. Worst of all, factory owners do not even issue work dresses which protect against heat and fire.

Bangle workers suffer from diseases like T.B. and Cholera. Intense heat, pollution (specially polluted drinking water), lack of even minimal diet along with unhygienic work conditions make them highly prone to these diseases. Interviews with workers revealed that more than 10 percent of Ferozepur bangle workers suffer from T.B.

Since the number of workers far exceeds the demand, the employers exploit them in every possible way. Hence, a worker has to undertake very risky jobs e.g. attaching the extremely hot molten mass of glass on to a horizontal cylinder which keeps spinning continuously.

The entire work process is highly accident-prone, disease-prone and unhygienic. Workers gamble with their lives in such hazardous working conditions, basically for their sheer survival.
NOTIFIABLE DISEASES : DISEASES AT WORK - I

This reference sheet is an attempt to disseminate information about notifiable diseases among the citizens, workers, and others interested in this area. These sheets are based on the Encyclopedia of Occupational Health and Safety by the ILO (1983) and Chemical Hazards of the Workplace by Proctor and Hughes (1976). Attempt has been made to extract and incorporate as many points for detection as possible in these sheets. 1988 pp 36, Rs. 30.00

REFERENCE SHEETS ON DISEASES FOR WHICH COMPENSATION MAY BE CLAIMED : DISEASES AT WORK - II

This is the second set of reference sheets on diseases at work in which an attempt is made to disseminate information about industrial occurrences, signs and symptoms and diagnosis and special tests, if any, for each item in the schedule. The cumbersome steps and procedures involved in claiming compensation are covered separately in this set of reference sheets. This information will help to make better use of compensation laws covering occupational diseases. 1993 pp 80, Rs. 50.00

MISMANAGING HEALTH AND SAFETY AT WORKPLACE

This booklet attempts to list together some aspects of the management practices which damage the health of workers, primarily in the chemical industry. These practices of the management make it difficult for workers and their organisations to deal effectively with problems of Occupational Health and Safety. This booklet contains a brief account of some of these practices may create greater awareness on this issue and generate possible solutions to make the workplace healthier and safer. 1988 pp 22, Rs. 15.00

WHICH SIDE ARE YOU ON ? WORKER'S EDUCATION IN A CHANGING WORLD

This is a report of an International Seminar on "Workers' Education in Asia". This book attempts to pool together various issues discussed during the seminar as well as outline the key elements of the future programme on workers' education. 1987 pp 42, Rs. 35.00

BEYOND BRICKS AND STONES : THE VOICE OF CONSTRUCTION WORKERS (Hindi also)

This booklet briefly presents the deliberations and outcomes of the national seminar on "Construction Labour" organized by Tamil Nadu Participatory Research in Asia. It describes the nature of the construction industry. 1986 pp 20, Rs. 10.00

THE TAKE OVER (Hindi also)

This is a case study of the workers' takeover of Kamani Tubes Limited. This brief documentation is intended to serve as a vehicle of information and education to those who are interested in advancing the cause of the working class in general, and to the workers and unions of the other similar closing and sick units in the country in particular. 1989 pp 32, Rs. 10.00

OCCUPATIONAL HEALTH AND SAFETY: A MANUAL FOR ACTIVISTS (Hindi also)

This simply written and illustrated manual focuses on the problems of occupational health and safety in India. It informs the activists about the types of hazards and how to prevent them. It also suggests ways in which workers can tackle these hazards and how they can act to prevent them. 1984 pp 68, Rs. 30.00

NO PLACE TO RUN : LOCAL REALITIES AND GLOBAL ISSUES OF THE BHOPAL DISASTER

This report documents the disaster caused by the MIC leakage in Bhopal and its aftermath. Result of an international collaboration around the issue of Bhopal, this well-researched and documented report exposes the health and safety record of Union Carbide worldwide and analyses relevant issues that emerge from this disaster. 1985 pp 40, Rs. 30.00

Society for Participatory Research In Asia (PRIA) brings out a quarterly bulletin on occupational health & safety issues, apart from the above-mentioned publications.
COAL MINES OR DEATH DENES?

More than 150 workers were killed in the Dudi Chua Colliery Project of the Northern Coalfield Ltd. (NCL) in Singrauli district of Madhya Pradesh, according to the estimates of several sources. This mishap took place on June 8, when a conveyor belt snapped while a South Korean company was digging a tunnel. The tragedy became manifold with the flooding of the mine and submerging of the miners inside the tunnel due to heavy rains in the afternoon. The NCL authorities claimed that the real culprit was a heavy downpour which caused the platform to collapse as well as flood the tunnel underneath the coal handling plant under construction.

This explanation, however, seems to be far from the truth. Interviews revealed that the rains played merely a secondary role and were rather used as a scapegoat by the authorities to hide the reality. As a matter of fact, it was the design fault and inadequate construction material (for the sake of cutting a commission) which resulted into the loss of innocent lives. It seems a case of sheer negligence and nonsensivity on the part of the NCL authorities.

According to sources: “since it was lunch time, family members (including women and children) were also present at the site to provide tiffin to the labourers. Hence, some of them also got trapped during the mishap”.

For once, even if we believe that the tunnel collapsed due to the heavy rains, why did the authorities not take any preventive measures. Secondly, on top of not admitting their mistakes, they made no move to initiate the rescue operation even after 40 hours after this tragedy.

According to NCL, only 7 people were trapped in the tunnel whereas the facts reveal that only three out of the 165 labourers (on duty) escaped the wrath.

In a nutshell, this tragedy could have been easily avoided but for the greed, carelessness and wrong policies toed by the authorities.

This tragedy once again highlights that the “safety of workers” is still a neglected area of focus in our country.

The mine workers are not only vulnerable to such tragedies but also suffer from occupational diseases like pneumoconiosis due to prevailing unhealthy working conditions.

Problems of Pollution and its Control in Small Scale Industries

Industrial pollution is one of the many environmental hazards threatening the very survival of mankind in the long run. While it can be expected that in larger industries the pollution problems will be tackled, the situation in small scale units remains largely unresolved. Problems, such as lack of awareness and know how, financial constraints, difficulties in monitoring and the sheer number of units make it cumbersome to deal with the problem in small scale industries.

The book summarises the problems and proposes practical steps which inspire the hope for not only workers and environmental sake but also for industrialists from the fact that small scale industries might even benefit economically from the application of preventive measures for the reduction of pollution.

Written by Mr. K.P. Nyati, the book is available free of charge at: Friedrich Ebert Sitzung, 6 Basant Lok, Vasant Vihar, New Delhi - 110 057.

The Hazards of Welding: Welders Health Manual

This manual is about the hazards faced by welders in a number of ways. According to this manual there are two types of health hazards in welding: those hazards are well recognised which include the long term, insidious effects of welding fumes on the lungs and ultraviolet radiation on the eyes and skin. Apart from these, it also comprises the following hazards given in the sections viz. history of welding, health hazards, metals welded, gases in welding, other hazards (such as dusts, noise, radiation and solvents), types of hazards and control of hazards.

Gas Leak Kills 7 Miners

Seven gold miners were killed and 16 hospitalised after carbon monoxide leaked into the underground shaft at the Buffalo Mine in South Africa.

Statesman (New Delhi) June 5, 1991

Toxic Gas Kills 5 Employees

Five employees of a drug manufacturing factory in Kelapet near Pondicherry died and three others hospitalised after inhaling "toxic gas", said to have leaked from a pipe.

Indian Express (Chandigarh) April 26, 1991

Chlorine Gas Kills 5, Injures 500

An escape of chlorine gas killed five persons including two pregnant women and injured more than 600 in a residential area of Mexico city.

Patriot (New Delhi) May 24, 1991

147 Killed in Chinese Mine Blast

On April 21, an explosion in a Central Chinese Coalmine killed 147 miners. According to news agency no one working in the mine survived the blast at Sanjia as it was due to serious negligence. Four officials (directly responsible for this disaster) have been arrested.

News Time (Hyderabad) May 22, 1991

Fire in Carpet Factory

A carpet factory in Titak Gali, Kashmiri Gate, was destroyed in a fire that broke out last night. The fire described as minor was put out in an hour with the help of fire tenders.

The Hindu (New Delhi) June 11

Gas Leak

On June 11, fifteen people died due to a poisonous gas leak in Chitagong, South East Bangladesh. The victims were workers and officials who died on the spot after inhaling a poisonous gas from an engine room of a Japanese ship.

Hindustan Times (New Delhi), June 12, 1991.

50 People Hospitalised

On July 3, 1991, 50 people were hospitalised after inhaling the chlorine gas emitted by the oxidation plant of the state-owned Kerala Minerals and Metals Ltd. at Chavara, Culon.

Assam Tribune (Guwahati) July 5,

More than 150 killed in Singrauli Coalmine Mishap

More than 150 persons were killed in a mishap at Singrauli coalfields in Madhya Pradesh as sudden onrush of water trapped them in a tunnel they were digging.

Indian Express (New Delhi) June 11, 1991

Ladder Collapse Kills 9

On the 20th July 91, 9 workers died and 10 were injured due to collapse of a ladder in Indian Aluminium Company Pvt. Ltd at Hira-kund in Orissa.

The samaj (Orissa) July 21, 1991

Mineroof Collapse Kills 6

On 24 June, 6 workers died and 4 were injured when the roof of a mine located in Gidli at Ranchi collapsed. The dead included three women.

Jagran (New Delhi) June 25, 1991

Fire Killed 4

On 22 June, 91, four workers died in a fire in Samaypur budhy industrial area at New Delhi. The fire broke out in an incense manufacturing unit.

Nav Bharat Times (New Delhi) June 23, 1991

Tanker Gas Killed One

One Worker was killed when poisonous gas leaked from a Tanker at the Gujarat Industrial Development Corporation in Nandesara, Vadodara.

Observer (New Delhi) May 27, 1991

15 Injured In Fire

At least 15 workers were seriously injured in a fire in a west Delhi factory which dealt with chemicals and oils.