Politics of Establishing Working Hours

It is strongly and widely believed that eight hours of work and three shifts a day is a right and justified device to cater to the needs of the technical processes at work that demand continuity of production or require continuous personal involvement. To maintain the continuity of production and services, standard workshifts have been designed and are being practiced, worldwide. Usually, workshifts are of eight hours duration, irrespective of right or day, winter or summer, and begin sometime in the early hours of the morning, between 4 a.m. to 6 a.m. The second shift then starts eight hours later, between 12 noon to 2 p.m., and the night shift is any time between 8 p.m. to 10 p.m. This standardised norm is only in operation in the organised sector. Even today there are many areas of work in the unorganised sector like agriculture, household industry, construction, etc., where there are large systems of work which do not recognize day or night, but are ruled only by the output needed. For example, the sewerage workers in metropolitan cities like Bombay only work at night; the powerloom workers in Meerut (U.P.) are locked up from outside and forced to work throughout the night.

Whether it is the scheduled eight hours of shift work in the organised sector or the long hours of unscheduled work in the unorganised sector, working at night creates many health hazards. Apart from the occupational health problems, there are also socio-psychological problems which are a direct effect of shift work (see inside for details of Hazards of Shift Work). Is there any alternative or solution to this?

One of the alternatives can be if the process and criteria for determining the working hours is examined from the workers' perspective. At present, the standard which operates is set by the owners who calculate the amount of production required in direct proportion to the wages they pay. But the standard capacity of the human body to actually work through long stretches of time needs to be examined. Because the workers of both the organised as well as unorganised sector have no bargaining power as far as their working hours and conditions are concerned, they have no option but to be under the control of the owners who set the working hours according to their own priorities.

The other alternative can be sought from the legal perspective. The Indian Factories Act of 1881 and 1891 did not prescribe any fixed working hours for men. It did, however, prescribe that women should not work for more than 11 hours a day. This resulted in complete exploitation of male workers who were being forced to work over fifteen hours a day. This was finally amended in 1911, after a series of protests and uprisings, to 12 hours a day.

The solutions and alternatives, therefore, to establishing working hours which take the workers into consideration can only be sought in the framework of the above forces.

One of the solutions could be to reduce the working hours from eight hours to six hours, particularly in the area of continuous work. In some establishments like news agencies, for example, the present workshift system is of six hours duration. Along with the reduction of the working hours, efforts should also be made to make the working environment safe and pleasant to work in. It has been seen that most of the shop floors where continuous or semi-continuous work shift systems are in operation are poorly maintained. Such conditions aggravate the hazards associated with shift work, and night work in particular. Night workers need many kinds of protection, not only to compensate the disturbance of the body rhythm but also to compensate for their being unable to build social relationships. All this can only be ameliorated if we begin to evolve different hours of work for shift-work and night work. The eight hour shift work concept is not a sacred cow.
Shift Work

Industrial shift work is one of the many different systems of work which disrupts the natural human cycle of waking and sleeping. The principle characteristics of shift work are its continuity, the alteration of shifts and the special work schedule which shift work entails.

The effects of shift work on the individual and the consequent repercussions on the society are relatively new fields of study. Shift work is primarily undertaken in large industries, and issues involving shift work have not been adequately addressed in many industrialized countries, as production and profits usually take precedence over the health and well-being of the workers.

What is Shift Work?

Although many understand shift work to mean working odd hours, they have no idea of the variety of shift hours that exist and the large numbers of workers who work on a shift system. Many people also do not realize that some of these schedules are more harmful to health than other problems that the workers face at their work sites. The principal characteristics of shift work are its continuity, the alteration of shifts and the special work schedule. Shift work is said to be continuous when it involves alternate and successive teams that keep changing shifts 24 hours a day, every day, including Sundays and holidays. This requires a minimum of four teams of workers (three teams working eight hour shifts and one team resting) and is usually known as “4 X 6” continuous shift work. Shift work involving alternating or successive teams on a production schedule which is planned on a weekly basis is said to be semi-continuous. Normally, a shift lasts around eight hours, and this same work schedule is maintained for a number of days, and this determines the cycle of alteration or rotation of the team.

In the Indian context, shift work is usually divided into three categories: from 6 a.m. to 2 p.m., from 2 p.m. to 10 p.m., and then from 10 p.m. to 6 a.m. The shift change usually is after 7 days and the three shifts run continuously. Basically, since factories have machines and equipment that are required to run 24 hours a day, they need people to operate these machines and hence shift work becomes necessary.

Analyzing the effects of shift work and the workers’ tolerance to the system is not easy, since many different factors are involved. There are biological factors which require medical supervision in order to provide for subjective and objective clinical analysis. There are also psychological and social factors such as higher wages, bonus, compensatory rest days, living conditions, etc., which also need to be examined.

Effects of Shift Work

The effects of shift work on the workers are two-fold. One is at the workplace, which affects the physical well-being of the workers, and the other is in their personal life, which affects the mental well-being of the workers.

Shift work puts a lot of pressure on the human body which creates problems of ill health in the form of stomach and intestinal disorders as well as cardiac and vascular changes. One of the most frequent complaints that shift workers suffer from is gastrointestinal diseases. As a matter of fact, in all initial epidemiological studies, the most frequently occurring disorder has to do with the digestive system. One of the main reasons for this is the odd meal times which shift workers have, as a result of which the digestive system loses its own biological rhythm and hence these problems arise. Complicating the situation further is also the factor that their food has a high content of protein, carbohydrate and content.

Shift work also causes stress in the workers which is aggravated when conditions at work. A common complaint of people who frequently fly across different time zones is of “Jet lag”, which disturbs their mental physical performance. What shift workers suffer from is a similar syndrome which we can call “shift lag”, which has the same effects as jetlag, but is a more serious problem within the dreary surroundings of a factory at night and in circumstances when mistakes can cost not only money but a life or a limb. Shift lag affects the worker everyday, every week, every year, for the rest of his/her working life, as long as one is working on a shift.
Another factor that affects the workers during shift work is their sleeping pattern. Normal sleep patterns are approximately at 24 hours intervals. Sleep is a physiological phenomena which ensures that there is a period of rest between phases of activity, so that the body can function effectively. But with shift workers, the length and quality of sleep which they can manage to have varies according to their work schedule. If they are on the night shift, then they have to catch up on their sleep during the day. This is difficult to do because our bodies are more adjusted to sleeping at night. It is also difficult because the rest of the family of the worker follow a different sleep pattern, and hence during the day there is a lot of activity and noise in the house which disrupts the worker and affects his sleep. For workers who are on the early morning shift, their problem is that in order to lead a full family life, it is not possible for them to compensate for getting up early by going to bed early. As a result of lack of proper sleep, the mental alertness and performance of the worker is affected, and there is a general feeling of being “under the weather”.

The other effect of shift work is that of accidents at the workplace, particularly during the night shift. Although a number of studies show that the rate of accidents is significantly lower during nightshifts than for other shifts, but the severity of the accidents are much more than for the other shifts. And one of the classic examples of this is the Bhopal disaster, which occurred at night.

Shift work also affects the personal and social life of the workers. Most social activities take place the evenings: friends and relatives drop in; social visits have to be made, etc. But the worker who is on night duty continuously cannot plan his social activities, because when the workers are off, the other are at work. Gradually, over a period of time the worker begins to feel left out completely of all the social events around him, and begins to feel isolated.

Shift work also affects the private lives of workers, and their relationships with their wives and children. If the worker is on night shift, then when he is at home during the day the children are away at school, when the children are at home in the evening, then he is away at work. Gradually the children feel that they have an occasional parent, and the whole burden of socializing then falls on the wife. And, again, as a result of the shifts, her social life is also completely non-existent, as at night she has to look after the needs of the children and during the day she has to look after the needs of the house and the husband. In the whole process she hardly gets time to look after her own needs. If the shiftwork is not understood by friends and relatives then it can have an effect on the workers themselves who tend to be upset, tired, moody and depressed.

Alternatives

While looking for alternatives, it is the unions which can play an important role. They can pressurise the management to evolve decent hours of work, so that at least shiftwork should follow the sun and rotate gradually. There should be laws to govern shiftwork, protecting workers from excessive work hours; there should be a centralized data system that gathers information on shiftwork schedules and their relationship to workplace illness, accidents, and injuries. Shift workers should be monitored for health problems, especially those that are known or suspected to result from shiftwork. Unions should be involved at all levels in designing shift schedules and should call in their own health specialists for advice. Shifts should be scheduled on a yearly basis so workers can plan their lives accordingly. If weekend and holiday work are incorporated into shiftwork schedules, employees should be compensated in such a way that working on those days causes minimal hardship on their family and social relationships. Unions could suggest that humane shiftwork policies can boost productivity.

These are the types of reforms that are possible and should be pursued and it is the unions which can do this effectively - otherwise the issue will always be kept aside.

We are happy to announce that from our next issue, we will be starting a question-answer column for our readers on the different occupational health and safety problems which they experience in their workplace. In each issue we will choose at least two questions and answer them in detail. Please send us your questions as soon as possible and help us to make our Bulletin more relevant for our readers.
The Voluntary Health Association of India, New Delhi is organizing a 2-day core group meeting on Pesticides: Problems and Alternatives. The meeting has been scheduled for 20-21 February, 1989. Anwar Fazal, Regional Director, IOCU, Penang, Malaysia, will be addressing the meeting on the Global Overview of the Problems of Pesticides.

For further details, contact: VHAI, 40 Institutional Area, South of IIT, New Delhi 110 016.

Vivevasya Swastha Mandal of Beroda had organized a one-day exhibition on the Bhopal incident, in remembrance of the disaster which occurred three years ago. Many people from the nearby industries came for the exhibition and expressed their views on it. As a follow-up programme there was a meeting of the Mandal with some of the safety officers who decided to meet every third Sunday of the month and discuss issues on occupational health and safety.

A group of Turkish workers, doctors, engineers, medical practitioners and lawyers have come together to form the Workers’ Health and Occupational Diseases Association. The aims of the Association are to carry out research and issue publications on occupational health and safety. The Association also intends to devise a detailed education programme to train workers and trade union activists, and to enhance their knowledge on all aspects of health and safety at work.

The Association will be both a campaigning and research body. It will fight for the establishment of a workplace health and safety committee under the control of the workers themselves. It also aims to establish laboratories in order to conduct research on various occupational diseases and threats to health, as well as provide medical and legal support to workers who take action to eradicate health dangers.

The Association also requires information on various aspects of occupational health - scientific knowledge, publications, materials and laboratory instruments. They would also like to learn from the experiences of the international labour movement.

For further details contact: Isci Sagligi ve meslek hastalikar, Dernegi, c/o Kucukkalanca cad., Harbey apt, 37/1. aksay, Istanbul, Turkey.

The International Federation of Chemical, Energy and General Workers Union (ICEF) recently conducted a survey on shift work practices and working time among its affiliates. The survey revealed the lack of common international standards of comparison for such data. The need for developing a basis for comparability of statistics was raised by the ICEF group during the sub-committee sessions and was acknowledged by ILO officials to be a central problem.

The sub-committee concluded with a programme for ILO action to improve the collection and dissemination of comparable statistics and to encourage epidemiological studies on the health impact of shift work and night work, and the issuing of practical information on improved shift systems.
On October 8, 1988 at least 10 people were killed and four seriously injured in a devastating fire which broke out in a diamond cutting factory at Jamnagar in Anand district in Rajkot. The fire which engulfed the factory following a stove burst, caused a short circuit in the nearby factories.

On October 9, 1988 oil drums kept in the premises of the Bharat Petroleum refinery at Chembur in South-East Bombay caught fire.

On October 18, 1988, a cylinder containing chlorine leaked in the NDMC swimming pool near Gole Market in New Delhi. A fireman who was trying to plug the leak was affected by the gas and had to be hospitalized.

On October 19, 1988 two quarry workers were buried in the quarry in Mahipalpur, near Mehrauli in South Delhi. They were buried in a mound of sand while they were shoveling sand on to a truck.

On November 1, 1988, twenty people including 10 firemen were admitted to hospital as poisonous chlorine gas leaked from cylinders when a tempo carrying them was involved in a road accident at Corlaim near Panaji, Goa. The accident occurred when the tempo filled with the gas cylinder turned on its side after dashing against a bus which in turn knocked down a scooterist. Villagers who went to help the scooter rider fell unconscious due to the gas.

On November 6, 1988 at Madurai 42 residents of the Railway Colony including 10 children and 15 women were admitted to hospital following a leak in a chlorine gas cylinder used for purifying well water.
On November 1, 1988, sixteen people, eight firemen and an equal number of civilians, were admitted to a hospital after inhaling poisonous gas at a roadside residential locality of Thane on Corlim-Margao Road. The gas leak occurred when a truck bringing supplies of liquid chlorine to the Cibas Pesticides Unit at Corlim met with an accident. In a freak accident, involving a passenger bus and a scooter, which took place on the narrow roadway portion of the Thane Climb, the truck laden with gas barrels crashed below the roadway displacing the barrels. The dent caused in one of them produced the leak and soon the entire area was enveloped in fumes of the poisonous gas. Residents of nearby areas fled for safety but some who had crowded the spot fell unconscious.

On November 2, 1988, an inquiry was ordered into the accidental spillage of superior kerosene from a storage tank of the Indian Oil Corporation's Refinery at Noomati, Gauhati. Some of the refinery workers claimed that 300,000 litres of kerosene had spilled out while the tank was being modified. Kerosene started spilling out from tank No. 78 which has a capacity of two million litres and, according to a refinery employee, "kerosene flowed out for 4 hours".

On November 9, 1988, five people were killed and 17 others injured, when an explosion took place while a tanker was being filled with acid at the Indian Organic Chemical Plant at Khopoli in Raigad district in Bombay.

On November 11, 1988, raw material worth lakhs of rupees was gutted when a major fire broke out at the Rubber Industry at Kajipalam village. The fire broke out as a result of "mechanical heat" when waste rubber material consisting of condemned tyres and tyres stored at the factory premises caught fire.
One of the ugliest aspects of the industrial boom is the growing danger of industrial accidents, particularly in the chemical industry. These accidents are caused mainly by the rapid growth of illegal industrial units, laxity in inspection and enforcement of safety measures, ignorance of different types of industrial hazards, inadequate safety laws and lack of political will to ensure strict standards.

The Bharat Petroleum's plant in Mahul is one example of this condition. The plant recently faced one of the worst fires in their unit as a result of which a number of people were killed. This accident occurred due to faulty maintenance of certain essential equipment during a routine shut down. A Central Government Enquiry Committee has been set up, which is going to look into the matter.

The crucial spark that ignited the explosive cloud came from the nearby bitumen melting pit, where bitumen scraped off the road is melted down. The subsequent explosion ripped of the nearby gantry and killed a large number of contract labourers who were loading bitumen on to trucks, as well as two BPCL employees.

The fire that ripped across the gantry, which is about a 100 feet from the loading point, tore the roof. The blast also hit the naptha storage unit. The storage unit had about 400 tonnes of naptha which at once caught fire.

Refinery experts speculate that on the fateful day, the LPG may not have been totally extracted from the naptha because of some deficiency in the CDU and an LPG-naptha mix may have gone into the naptha storage tank. Subsequently, an LPG vapour cloud or even a LPG-naptha vapour cloud may have escaped and hung over the tank farm area.

Vapour cloud explosion takes place as the vapour cloud catches fire. There are always some immediate causes for vapour cloud formation. According to the ILO Encyclopedia (1983), "A hazardous situation, even if compounded by human factors, is not in itself the cause of an accident, but the indicator of some other deficiency and the end product of an underlying malaise". And in the case of the BPCL explosion, although the immediate causes reported use of mal-functioning and continued use of the naptha stabilizer, the underlying malaise was of overlooking complaints about the increasing impurities in naptha in the tank.

A spokesperson of the Process Technicians and Analysts Union of the BPCL said the company has had a long record of ignoring safety limits, and that in July 1988 the Union had submitted a memorandum to the Inspectorate of Factories about the leakage of benzene and toluene. The concentration of benzene in the atmosphere was sometimes so high that the operators became dizzy and began vomiting.

These are some of the factors that indicate the "malaise" of the underlying realities at the BPCL plant. This is something the Union has to go into at a deeper level and raise the following questions:

1) How is it that irrespective of repeated complaints about impurities in naptha, production continued as before?

2) Despite the hazardous aspects of the layout, why was it not changed earlier?

3) Why are there no fixed sprinkler systems?

There are many such questions which go beyond the immediate causes, and the answers to which are necessary in order to prevent similar disasters. This is one of the major tasks before the Union, since it is the only force which a) has the capacity, experience and expertise to ask relevant questions; and b) has the interest of the workers and of safe production as its base.
### The Language Of Risk: Conflicting Perspectives On Occupational Health

This project workers' own perceptions of occupational risks. The range of factors involved in the arena of occupational health is an increasingly visible and complex issue. It highlights the fact that attitudes have changed and, although the development of science and technology remained largely unquestioned during the World War II period and after, today there is a growing awareness of the risks involved in the technological progress.

Though most risk disputes have revolved around environmental issues, they are now increasingly focusing on workplace problems of health and safety. This book brings up the issue of political language of risk, about how much information the worker has about the hazards about conflicting journalistic ideologies, about ethical conflicts in occupational medicine, against the misuse of law and also about the sense and sentiment in occupational safety and health programmes.

Available from:
SAGE Publications,
M - 32, Greater Kailash 1 Market,
New Delhi 110 048

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### A Growing Problem: Pesticides and The Third World Poor

Pesticides are a growing problem for the Third World poor. They bring a promise of higher yields, more food for the hungry and freedom from the scourge of insect-borne diseases. But they also threaten the health and livelihood of the rural people.

This book by David Bell investigates the alarming facts about pesticides from the perspective of the poor. It suggests how to make the most of pesticides while minimising their danger. It concludes with a series of practical proposals for action by governments, industry and international organisations.

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OXFAM, 274 Banbury Road,
Oxford, OX2 7DZ, U.K.

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### Normal Accidents: Living with High-Risk Technologies

In this book, the author, Charles Perrow, examines how and why catastrophic accidents occur in high-tech industries - nuclear power, petrochemical and aerospace - and argues that they are becoming practically inevitable in our advanced technological society. He says that most high-risk technologies have some special characteristics, beyond their toxic or explosive or genetic dangers, that make accidents in them inevitable. This has to do with the way failures can interact and the way the system is tied together. And it is possible to analyse these these special characteristics and in doing so gain a much better understanding of why accidents occur in these systems, and why they always will. Risk will never be eliminated from high-risk systems, but if we can analyse the systems then we might stop blaming the wrong people and the wrong factors, and start trying to fix the systems in ways that will only make them riskier.

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