Asian-Pacific Newsletter

ON OCCUPATIONAL HEALTH AND SAFETY

Volume 11, number 2, July 2004

YOUTH AND WORK

Asian-Pacific Newsletter on Occupational Health and Safety

Volume 11, number 2, July 2004
Youth and work

Published by the
Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FI-00250 Helsinki, Finland

Guest Editor-in-Chief
Suvi Lehtinen

Guest Editor
Inkeri Haataja

Linguistic Editor
Sheryl Hinkkanen

Layout of the cover pages
Tuula Solasaari-Pekki

The Editorial Board is listed (as of 10 March 2004) on the back page.

The electronic version of the Asian-Pacific Newsletter on Occupational Health and Safety on the Internet can be accessed at the following address: http://www.occuphealth.fi/Asian-PacificNewsletter

The issue 3/2004 of the Asian-Pacific Newsletter deals with occupational health services, community health and health profiles.

Photograph on the cover page:
© International Labour Organisation/ Crozet M.

Printed publication:
ISSN 1237-0843
On-line publication:
ISSN 1458-5944

Contents

Youth and work

The total number of young workers below the age of 25 years is about one billion (including child workers) and about 85% of them work in developing countries. In the 15 Member States of the European Union before the enlargement of 2004, the share of workers below 25 years of age was close to 18%, i.e. 30 million. Thanks to the strong dimension of EU legislation, the protection of young people at work is well secured. The situation in many other parts of the world is less satisfactory, however.

Adolescence is a poorly defined concept. Timing of growth and development is different for boys and girls. Usually the age group of 12–24 years is considered to belong to the group 'young'. On the other hand, many researchers of human growth and development count the second and third decade of human life as young.

Numerous studies have demonstrated that the successful integration of young persons into work life is very important for their overall management of life, health and well-being – not to mention its positive psychological, social and economic consequences. Therefore, ensuring decent work and safe and healthy working conditions for young people is an important objective which will benefit not only the young people themselves, but also the enterprises and the society as a whole. The successful entry of young people to work life is of crucial importance particularly now, as in many industrial countries the trend is toward an increase in the relative and absolute numbers of ageing workers, and a simultaneous shortage of young working people.

The International Symposium on Youth and Work was held in November 2002. The three main themes of the Symposium were: schooling youth to work life; transition from school to work life; and young workers and healthy work life. During the Symposium, a comprehensive picture was obtained of young people's occupational health and safety issues, and many needs were identified for future action in practice, in training and education, and in research and development.

In 2002 the Finnish Institute of Occupational Health launched the five-year Youth and Work Programme, designed for young people aged 15–29 years (http://www.ttl.fi/Internet/English/Thematic+pages/Youth+and+work/). The programme's aim is to promote the health and functional capacity of young people, to enhance their ability and potential to enter the labour market, and to build a safe and healthy work environment and work community together with the authorities, education institutions and research institutes.

Professor Matti S. Huuskonen
Finnish Institute of Occupational Health, and
University of Helsinki
matti.huuskonen@ttl.fi

Occupational safety and health for youth in the Philippines

Dulce P. Estrella-Gust, the Philippines

Photo by Charlie E. Solo

Background

At the invitation of Professor Rantanen of the Finnish Institute of Occupational Health, I attended the International Symposium on Youth and Work held in Finland in November 2002 (1). The Symposium provided a suitable forum for reviewing the critical steps to providing young people with a successful start in work life, the focus being on health, safety, competence and skills. This Symposium served as an inspiration for reviewing the relevance of the concepts and issues discussed at this international gathering within the national context of the Philippines.

In September 2003, the First National Youth Congress on Workplace Health and Safety was organized by the Occupational Safety and Health Center (OSHC) of the Department of Labor and Employment (DOLE), with support from the Friedrich-Ebert Stiftung (FES) (2). The Congress provided a setting for discussing occupational safety and health issues related to young workers and for developing possible responses through concerted initiatives by the public and private sectors. The Congress attracted some 200 practitioners and researchers from government agencies, the private sector and academia; 30 speakers shared their expertise and practical experience, as well as the findings of field studies and research.

The Congress covered a broad range of topics related to the occupational safety and health (OSH) of young workers, ranging from working conditions in various industries – i.e. the garment industry, hotels and restaurants, call centres, construction and entertainment. Another set of papers dealt with the trafficking of child household workers, child prostitution; non-sexual risk behaviour among adolescents, and sexual and reproductive health risks. Other papers were related to youth employment and vocational training, to integration of young workers at risk, to the elimination of child labour, drug-free workplaces, the informal sector, and the role of government, unions and the private sector.

The message of the Congress was strong and clear: **Prevention** is better than cure and rehabilitation. **Prevention** must start with the young. **Prevention means** good business. This message was echoed in the Congress Resolution (3), committing the participants representing the public and private sectors to:

- act urgently in support of the basic rights of the working youth and other disadvantaged young workers in the formal and informal sectors, e.g. through more and better jobs, removal of children from hazardous work and the worst forms of labour, effective social protection and the full participation of young workers in decision-making on social matters pertaining to them
- promote working conditions and a work environment conducive to improving the physical, mental and social well-being of all, including the young and other vulnerable workers, while also enhancing productivity and competitiveness
- increase public awareness on the concerns of young workers in the area of occupational safety and health; and
- work jointly in advocating for the formulation of coherent policies and programmes on "Decent Work and OSH for All".

The Philippines has a very young population. The following paragraphs contain a broad overview of trends on youth at work in the country, and highlights recent research done on OSH issues related to young workers.

Youth in the Philippines

According to the United Nations, the term 'youth' refers to persons between 15 to 24 years of age. The operational definition varies from one country to another. In the Philippines, 'youth' refers to the sector of population aged 15 to 30 years, as defined in Republic Act 8044 "The Creation of the National Youth Commission" (4).

In March 2004, the Philippine labour force reached 35.4 million, an increase of 1.6 million from the previous year (5). The bulk of the increase occurred among the young population and among male workers. Filipino youth make up 15.43 million.

According to the Department of Labor and Employment, the bulk of employed youth work in the agricultural and service sectors. More than 40 per cent are engaged in farming, fishing, and forest-related work, while an equal proportion (also 40%) can be found in a myriad of service occupations; i.e. information systems, hotels and restaurants (particularly fast food establishments), health services… Only about 18 per cent are employed in industry, although their share is increasing as a natural response to the country's emerging 'sunshine industries'. One 'sunshine industry' that continues to absorb and attract employment among young people is the call centre industry.

Photo by Charlie E. Solo

Most young men are engaged in agricultural and production jobs. Among the young women workers, 23 per cent are engaged in agriculture, while an equal percentage does sales and service work. A larger proportion of young women hold professional and technical positions: 9.2 per cent against 2.8 per cent among young men.

Youth, however, accounted for almost one-half (46%) of total unemployment, and their unemployment rate is double the national unemployment figure. A large share of unemployed young people has a high school education (27.5%) or has completed vocational or college education. The high level of unemployed young workers would be even higher were it not for the migration of young Filipino workers abroad. Nearly half a million youth are working in other countries.

Having less skills and on-the-job experience, young people are very vulnerable to the uncertainties of a struggling economy. They encounter difficulty in landing a job, and more often than not they are the first to be displaced when an enterprise decides to downsize. Combined with the chronic problem of out-of-school-youth, youth unemployment poses serious drawbacks for the development of individual talents and, generally, for the human resources development of the economy at large.

OSH problems of young workers

Data on occupational injuries occurring from 1999 to 2000 in establishments with 20 or more workers in Metro Manila showed that for 409 respondent companies, 3,228 cases of occupational injury were recorded. Of these cases, 15.5 per cent involved young people aged 19 to 24 years (6).

The majority of accidents occurred among 25 to 49 year-olds; the data on permanent incapacity and temporary incapacity were also reported to be the highest among this age group. Injuries occurred predominantly among plant and machine operators and assemblers (43.7%), those with elementary occupations (15.4%), and among service workers, shop assistants and market sales workers (14.9%).

It is possible that the frequency of accidents and injuries among youth was higher than reported, for various reasons: many young workers are contractual employees, or hold short-term employment, and therefore they may not have been included in the statistics; also, because of their precarious employment status, some young workers may not have reported their health problems and injuries to their supervi-

sors or to the health services.

There is general consensus that increased attention to the occupational safety and health of young workers is long overdue. Young workers have a much higher accident rate than adults; moreover, their accidents seem to be more serious and often result in delayed and long-term disabilities. In addition, two out of every five alcohol and drug abusers in the country are workers, mostly in their younger years (7).

Photo by Charlie E. Solo

Occupational safety and health conditions in the service sector

Case Study 1: Hotel and restaurant (8)

For this study on six five-star hotels employing 500 or more workers, focus group discussions (FGDs), key informant interviews and structured questionnaires were carried out. The study concentrated on examining the health and safety conditions in these hotels, and on developing technical OSH guidelines for the hotel and restaurant sector. For the FGDs, managers, human resource practitioners and teaching staff of hotel management schools served as respondents.

The most problematic departments in hotels were the kitchen, the laundry and engineering. The observed and perceived hazards were of a physical, ergonomic, chemical, and psychosocial nature. For policies on OSH, all respondent hotels claimed that they had policies on voluntary HIV testing and mandatory drug testing, as well as policies on sexual harassment. However, the policies and programmes were well coordinated in only one hotel; in the others, a comprehensive approach for their integration was needed.

Training and information programmes were largely limited to emergency procedures. Although a majority of the respondents conducted briefings on manual handling (e.g. safe lifting operations), no controls were in place to reduce the risks of manual handling tasks.

Control measures implemented to reduce risks covered the provision of ventilation systems, personal protective equipment, noise monitoring and emergency plans such as fire safety and earthquake drills. All respondents said that they were performing accident investigations and reporting, and that they were implementing corrective measures. They also submitted annual accident reports to the Department of Labor and Employment.

The study recommended, in particular:

1. stepping up of orientation, education and training for all hotel workers, especially the young and new workers
2. reviewing inspection data on the implementation of the OSH standards in hotels
3. reviewing hotel management school curricula with regard to OSH
4. studying the OSH situation in smaller hotels
5. developing technical guidelines on safety and health in the hotel and restaurant sector
6. reviewing existing OSH standards applicable to the hospitality industry, with emphasis on preventive strategies.

Case Study 2: Risk assessment of fast-food service crews (8)

Eating in fast-food restaurants has become a regular habit for Filipinos. To provide efficient services, fast-food chains hire crew members between 18 to 25 years of age. These are mostly students doing part-time work.

One agency conducted a job risk assessment based on the physical structure, equipment used, and the tasks performed on the premises of a leading fast-food chain. The safety risks identified included: exposure to heat/risk of burns; abrupt changes in temperature; exposure to harmful chemicals; waste; and possible injuries due to slippery floors. The workers' ability to address these risks was assessed primarily on the basis of the safety gear that was provided to them. The health and safety complaints of fast-food service crew members included burns, minor lacerations, fatigue, muscle pains, and slips and falls.

Conclusions and outlook

Young workers are exposed to multiple hazards in manufacturing, construction and services. Young workers, who are often unaware of workplace risks, experience a relatively high accident rate. The spectrum of workplace risks is enormous, and it is increasing with technological change in the formal sector. Manufacturing currently uses some 26,000 chemicals, and the use of pesticides in agriculture is expanding. In small-scale mining, young workers are exposed to mercury and cyanide. In home-based footwear manufacturing, young workers are vulnerable to the effects of toxic fumes released by adhesives. Physical hazards – such as radiation, heat, illumination, vibration and high levels of noise – abound in many

workplace situations. In the care-giving professions, young workers are exposed to biological hazards which may result in illnesses such as hepatitis, SARS, TB and other infectious diseases.

Young people working in call centres and doing other office work are vulnerable to ergonomic as well as psychosocial hazards; the latter including harassment, mobbing, exploitation and violence at work. The sad consequences include drug abuse, unsafe sex and unplanned pregnancies.

Prevention of work-related accidents and injuries is always better than cure and rehabilitation after an accident. Prevention of work-related injuries, advocacy, inspection and training is being led by the Occupational Safety and Health Center of the DOLE, in cooperation with other government agencies and the private sector. The Philippine Medium Term Youth Development programme identifies the needs and interventions for the working youth. The Department of Education and the Commission on Higher Education are collaborating with the National Youth Commission on developing OSH applications for schools.

Research on occupational safety and health concerns are underway in specific jobs with high concentrations of young workers, such as call centres, entertainment, and sales assistants. The findings of these studies are being integrated into technical guidelines, policies, and basic and specialized OSH training courses. Despite numerous government-led initiatives, awareness concerning workplace safety and health issues has reached only a small proportion of the working youth. While companies in the formal sector are stepping up their OSH programmes, the informal sector suffers from serious OSH deficits. Unable to go alone in promoting the welfare and protection of workers, the government is enlisting the private sector and the community, as they are the prime beneficiaries of safety and health efforts for young workers. OSH for the youth has been firmly placed on the map of public policy, and programmes, monitoring and evaluation mechanisms are being put in place for continued networking and follow-up.

Literature

1. International Symposium on Youth and Work, 20–22 November 2002, Hanasaari Cultural Centre, Espoo, Finland.
2. The First National Youth Congress on Safety and Health, Theme: Young Workers for Safety and Health, 30 September – 1 October 2003, Occupational Safety and Health Center, Department of Labor and Employment (DOLE), Philippines.
3. Proceedings of the First National Youth Congress on Safety and Health, 2003.
4. Republic Act 8044 "The Creation of the National Youth Commission".
5. Labstat Updates, Vol. 8 No. 5, Highlights of the January 2004, Labor Force Survey, Bureau of Labor and Employment Statistics, DOLE.
6. Occupational Injury Survey BLES-DOLE, 2000.
7. National Survey on Drug Use, Dangerous Drug Board, Philippines, 1999.
8. Research Studies of the Occupational Safety and Health Center for Publication 2004.
9. Gust, Gert A. Youth Employment, March 2003, for publication by the ILO.
10. ASEAN, "Manila Declaration on Strengthening Participation in Sustainable Youth Employment" adopted at Fourth ASEAN Ministerial Meeting on Youth, Manila 3–4 September 2003.
11. The Philippine Medium Term Development Plan, 1999–2004, Manila.
12. Department Order No. 53-03 – Drug-Free Workplace.
13. National Comprehensive Workplace Policy on STD/HIV/AIDS.
14. Republic Act 8504 The National AIDS Law.
15. Republic Act 9231 Special Protection of Children Against Child Abuse Exploitation and Discrimination.
16. Republic Act 9125 Comprehensive Drugs Act of 2002.
17. Occupational Safety and Health Standards, 1978.
18. Department Order (DO) 13 – Construction Safety.

Dr. Dulce P. Estrella-Gust
Executive Director
Occupational Safety and Health Center
Department of Labor and Employment
North Avenue Corner Science Road, Diliman, Quezon City
The Philippines
E-mail:
oshcenter@oshc.dole.gov.ph

Asian-Pacific Newsletter in 2005 – Proposals for themes are welcome

The themes of the Newsletter issues to be published next year will be selected in September/October 2004.

Readers are encouraged to send their proposals for the themes they would like the Newsletter to discuss. Kindly send your suggestions by 15 September to:
Ms. Suvi Lehtinen, Editor-in-Chief (E-mail: suvi.lehtinen@ttl.fi).

When deciding the themes, the editors will consider the proposals sent in by readers.

If you are interested in contributing an article dealing with occupational health and safety in Asia, please do not hesitate to contact us.

Contact information:
Asian-Pacific Newsletter
c/o Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FI-00250 Helsinki, Finland

Fax: +358-9-2413 804
E-mail: inkeri.haataja@ttl.fi or inkeri.haataja@occuphealth.fi

Corrigendum

An article entitled **Safety and health in construction work** by **Dr. Alberto López-Valcárcel, ILO**, was published in the Asian-Pacific Newsletter 2004;11(1):4–7.

On page 5 the paragraph related to Figure 4 should read:

Figure 4 shows the trend in occupational fatalities in the construction industry for several countries. As we can see in the case of Japan and in the European Union (EU), the number of fatalities has decreased; *while in the case of the US, there was a slight increase in this number. In the US, this slight increase in the number of fatalities corresponds with a similar increase in the construction workforce. In Japan, the sharp fall* in the number of fatalities corresponds with just a slight decrease in the number of construction workers.

Youth and Work Action Programme 2002–2007

of the Finnish Institute of Occupational Health

Timo Leino, Carita Lehmusmetsä, Matti S. Huuskonen, Finland

During the next few years, the large age groups will reach retirement age in Finland. It is thus important that schooling and further education provide young people entering the labour market with the knowledge, skills, expertise, values and attitudes they need for a successful career. The transition between school and work life has also proved important. There is every reason to assume that, from the perspective of young people, business and the community, vocational training is a good investment for the future. For over 20 years, the Finnish Institute of Occupational Health (FIOH) has focused on ageing workers' capacity to work and to cope. Now it is time to place similar emphasis on the development and study of young people on the labour market. It is important to ensure that, with labour shortages looming, both young and old alike can be successful members of the labour force.

Objectives of the programme

In 2002, the FIOH launched a 5-year action programme, called Youth and Work, designed for young people between the ages of 15 to 29. The action programme follows the strategy of social and health policy of Finland set until the year 2010 by the Ministry of Social Affairs and Health. The objectives of the action programme include the promotion of the health and functional capacity of young people, the promotion of the ability and potential of young people to enter the labour market, and the development of a safe and healthy workplace and work environment. The objectives are pursued jointly with the authorities, educational and research institutions, occupational health and safety organizations, and other parties in the field. The methods used in achieving the objectives are research, dissemination of information, specialists' services, and education and training.

Activities aiming at the maintenance of working capacity include the measures taken by the employer together with employees and the collaborating organizations at the workplace to promote and support the working capacity and functional capacity of all people active in the work life throughout their working careers. All in all, 19 research and development projects are planned and included in the action programme. In addition, there are 26 support projects for this particular programme run by the FIOH.

Networking

Another objective of the action programme is to achieve social impact by networking with different bodies working in close co-operation with young people and their networks. These bodies include, for example, authorities, research and educational institutions, and youth associations. The networks created plan and organize research, development work, and education and communication aimed especially at the target group.

During 2003, two national networks were built. The national support and follow-up network for the Youth and Work action programme is made up of 31 different organizations including the FIOH, the promoter and co-coordinator of the network. Each of the organizations involved has appointed a contact person to take care of communication in the network. The operational fields of the network include youth policies, legislation, research and development work, and the collection and transmission of information. The support and follow-up network also operates as a network for other networks.

The network assembles for a national forum once a year. In 2003 the main theme of the forum was Youth Policy, which was divided into four components: One Million Workplaces, The Young Person at Work, A Healthy Person at Work, and Provisions for Working Capacity. In 2004 the name of the national forum is From School to a Healthy Work Career. The themes of the forum include the well-being of young workers, entering work life and the support of management of the work careers.

Another network brought together in 2003 is called the *Network for the Health, Working Capacity and Work of Young People.* This network brings together different bodies that make surveys, statistics and barometers of young people and their health, working capacity, work environment, occupational safety and work itself. The network comprises 12 different organizations, including the FIOH. The aim of the network is to gather information on surveys, statistics and barometers made by the organizations, and to discuss the data collection methods, as well as the

Photo by Antero Tenhunen

co-ordination and content analysis of research work. The network participants meet three to four times per year.

International symposia

In order to gather different parties together to discuss and handle matters concerning youth and work, the action programme organizes both national and international fora. The first International Symposium on Youth and Work was held in November 2002. The Symposium formed an overview of the occupational health and safety issues of young people and identified the needs for further research and development (1).

The second international forum, the *International Symposium on Youth and Work Culture 2005*, will be held in Espoo, Finland, on 30–31 May 2005. The aim of the Symposium is to provide a forum for the discussion of different aspects of the youth and their work culture, and to enhance co-operation and create partnerships between research, education and business establishments in this field. The main themes of the Symposium are young workers on the labour market – policies, enforcement and safety and health at work, young people entering the work life, development of excellent vocational skills, healthy work culture and innovativeness, corporate social responsibility, health and safety promotion, accidents and work-related ill-health – as well as workplace and community responses. More information on the Symposium can be found on the Internet at http://www.ttl.fi/ywculture.

Scientific results

A state of the art type review on subjects concerning youth and young adults was published in 2003 (2). The subjects covered in the review included attitudes towards work life, participation in work life, readiness for work life, education, working capacity and occupational safety. One of the main results of the studies presented in the publication is that a group method targeted at young pupils graduating from junior high school markedly helped the young people in their career planning and in entering the labour market.

Another publication issued in 2003 was a survey on occupational safety education (3). The aim of this survey was to study the inclusion of occupational safety in study programmes, teachers' readiness to teach matters concerning occupational safety, the inclusion of occupational safety issues in practical training forming part of the studies, the use of occupational safety material in teaching, and the need for safety material and information. The survey covered all the different levels of the Finnish school system and was carried out in the form of a questionnaire. The survey discovered gaps in teachers' occupational training and the educational materials available at all levels of education.

In June 2004, the Youth and Work 2003 barometer (4), the first barometer of its kind, was published. The barometer was compiled by means of telephone interviews. Altogether 939 young people aged 15–29 years were interviewed in summer 2003. The results of the barometer indicate that young people especially value human relations, well-being and possibilities for self-development in their work. They trusted their own capabilities and skills, and wanted to learn new things in work life. Young people often hold temporary jobs. Half of those interviewed had ergonomic problems and physical strain in their work. One-third mentioned that they had to hurry in their work. One out of five had a marked risk for occupational accidents. In general, young people felt that their working capacity is good. However, neck and shoulder problems, allergic symptoms, tiredness and headaches were common. One out of four smokes daily, and half of the interviewed men and one-third of the women drink heavily at least once per month.

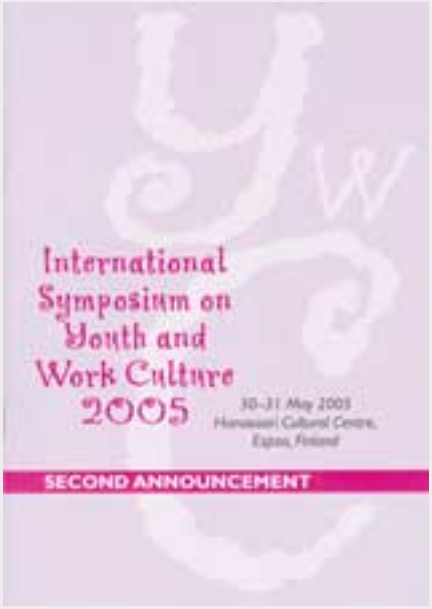
All in all, the barometer showed that the conditions for improving health, working capacity and well-being are important already from the beginning of the work career. Young people need guidance in occupational safety and health matters as well as in the use of general and occupational health services.

Tools and action models

The strategy of the FIOH states that the Institute contributes by producing information and operational models, the application of which improves health and safety in work life. For this reason, the Youth and Work action programme also strives to produce tools and action models for use in work life. The goal is to produce products that are easy to use and then to market them for the different sectors of work life. Since the programme was started, several contributions have been made in this field.

A group model to support the career control and development of young people was launched during 2003. The model, based on theories concerning motivation and on career management strategies, is aimed at pupils completing their comprehensive school education. The project resulted in the publication of a study book, a workbook and a video (5, 6).

Minimal publicity and the difficult attainability of occupational safety methods are seen as problems in devel-



Symposium Secretariat

Youth and Work Culture 2005
Ms. Taina Pääkkönen
Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FI-00250 Helsinki, Finland
Tel: +358 9 4747 2910
Fax: +358 9 2413 804
E-mail: ywculture@ttl.fi

Ms. Carita Lehmusmetsä
Finnish Institute of Occupational Health Topeliuksenkatu 41 a A
FI-00250 Helsinki, Finland
Tel: +358 9 4747 2608
Fax: +358 9 4747 2015
E-mail: ywculture@ttl.fi

http://www.ttl.fi/ywculture

Organizers

The Symposium is organized by the Finnish Institute of Occupational Health in cooperation with the association Skills Finland.

Important dates

Deadline for submitting abstracts:
31 January 2005
Deadline for early registration:
15 April 2005

oping the work environment. In order to help the situation, the FIOH decided to publish a guide to tools for the occupational accidents programme. The guidebook contains descriptions of ten different occupational safety tools together with information on the suitability and attainability of these tools (7). This tool guide is free of charge and can be downloaded through the FIOH's homepages.

References

1. Rantanen J, Lehtinen S, Vuori J, Taskinen H, Huuskonen MS, Leino T. (eds.) Proceedings of the International Symposium on Youth and Work; 2002 Nov 20–22; Espoo, Finland. People and Work. Research Reports 58; 2003. Finnish Institute of Occupational Health, Helsinki 2003.
2. Työ ja ihminen 4/2003. Finnish Institute of Occupational Health, Helsinki 2004.
3. Palukka P, Salminen S. Turvallisuuskoulutuksen valtakunnallinen selvitys. Valtakunnallinen työtapaturmaohjelma, Helsinki 2003.
4. Launonen M, Leino T, Viluksela M, Hirvonen M, Mäittälä J. Nuoret ja työ 2003 -barometri, Finnish Institute of Occupational Health, Helsinki 2004.
5. Koivisto P, Mäkitalo M, Larvi T, Silvonen J, Vuori J. Koulutuksesta työhön, Ohjaajan käsikirja, Työterveyslaitos, Helsinki 2002.
6. Koivisto P, Mäkitalo M, Larvi T, Silvonen J, Vuori J. Koulutuksesta työhön, Työkirja, Työterveyslaitos, Helsinki 2002.
7. Kitinoja J, Korhonen P, Tamminen A, Palukka P, Rajala H-K. Työvälineitä turvallisuuteen. Työtapaturmaohjelma, Helsinki 2003.

Timo Leino
Carita Lehmusmetsä
Matti S. Huuskonen*
Department of Research and Development in Occupational Health Services
Finnish Institute of Occupational Health (FIOH)
Topeliuksenkatu 41 a A
FI-00250 Helsinki
Finland
timo.leino@ttl.fi
* FIOH and University of Helsinki

Le Van Trinh, Vietnam

Occupational safety and health (OSH) is an important issue that is being paid great attention by the Party and Government of Vietnam in the socioeconomic development strategy, especially in light of the country's industrialization and modernization. Sustainable development calls for the formulation of a united and synchronous action programme so that developments to increase production also ensure OSH. Unless there is a proper OSH policy, the country's economy will suffer and its economic development will be unsustainable. In the Government's viewpoint, "The main objective and driving force of development should be considered as being for people and by people, first of all for the working people".

Occupational health and safety education

at universities, colleges and technical schools in Vietnam

Universities and colleges

At present Vietnam has 230 universities and colleges as well as 300 technical schools with a total of two million students. More than half are either vocational universities or related to production. As the country is industrializing and modernizing, and the number of manufacturing trades is increasing, risks of accidents and occupational diseases appear and are having an impact on the community's work life.

OSH at universities – historical view

The universities, colleges and technical schools have paid attention to, and have invested in, OSH education. Since in future the students will work directly in production, service provision or management agencies, and research-designing institutions that have impact on the OSH, they must be educated in OSH while they study, not after they have graduated. During their course of study, students' knowledge develops, their moral and other concepts are formulated and their personality stabilizes – processes that involve many changes in their motivation and social values. Therefore, it is necessary that students receive knowledge and are taught proper attitudes concerning OSH so that they gain a good understanding and can later make their contribution in work life.

Since 1954, when the country was still at war, the Government of Vietnam has paid attention to OSH education. The Ministry of Education has coordinated efforts to establish a teaching programme on OSH at universities, colleges and technical schools.

The early days of university-level education in Vietnam met with many difficulties and suffered from a lack of materials and human resources. Thus, even though attention had been paid to OSH education, it faced the same difficulties as other educational efforts. In the period 1954 to 1964, there was no separate OSH curriculum; instead, visiting teachers were in charge. In general, the OSH education that was given only brought out the characteristics of promotion and dissemination, but it did not delve deeply into the field of OSH.

In the next period, 1964 to 1975, many changes took place. The war became fiercer. Vietnam had to fight against foreign aggressors while also building up and developing the national economy; but the Government still paid much attention to education. The OSH education programme at universities had more features, but it lacked resources and was not comprehensive. The OSH teachers were still only visitors in charge, and the subject of OSH was extracurricular. During this period, only the National University of Hanoi provided OSH education as a subject, although it was still considered extracurricular. The original OSH curriculum was based on OSH documents from the former Soviet Union. At other universities (such as the Mine Geological University, Hanoi Construction University and the Architectural University, which had been separated from Hanoi Technological University), and some technical schools (chemical, electrical, mine, and geological technical schools, etc.), the subject of OSH was taught but it was still extracurricular and limited to the field of safety engineering education only for the particular industry in question (safety in the electrical, mine, mechanical, or chemical industry, for instance).

In the period of 1975 to 1994, Vietnam was unified, creating good conditions for socioeconomic development. Especially during the period of renovation (from 1996 to the present), practical demand required a united OSH education programme for the young generation, particularly students at universities, colleges and technical schools. In 1976, the first OSH curriculum for Vietnam was published. It consisted of 200 pages divided into seven chapters (a general introduction, occupational hygiene, hygienic techniques, safety engineering, safe use of machinery, electrical safety, personal protective equipment) and has been used for teaching at universities.

In 1994, the National Assembly of the Socialist Republic of Vietnam adapted the Labour Code, which is the country's highest legislative instrument on labour. Chapter IX of the Labour Code has 14 Articles dealing with OSH. Soon after enactment of the Labour Code, the Government of Vietnam promulgated Government Decision 06/CP of 20/01/1995, which regulates in more detail some Articles of the Labour Code pertaining to OSH. These legal tools provide for many circulars, directives and national standards

on OSH, and set up a rather adequate system of labour legislation and policy.

In 1998, the Prime Minister enacted Directive 13/CT-TTg of 23/6/1998. This document emphasizes that the Ministry of Education and Training (MET) collaborates with the Ministry of Labour, Invalids and Social Affairs (MOLISA); together the two official bodies coordinate the OSH programme, preparing the curriculum and textbooks for students at universities, colleges and technical schools. As the follow-up of Directive of 13/CT-TTg, for the past few years the Ministry of Education and Training has, in accordance with a regular plan, coordinated and monitored the establishment of safety engineering and the programme and curriculum for OSH at universities, colleges and technical schools.

Photo by Nguyen Quoc Hung

Prof. Le Van Trinh presenting a report at the Seminar on Occupational Safety and Health in Small and Medium-sized Enterprises.

Curriculum for OSH

Since 1994, research and establishment of the programme and curriculum for OSH have led to considerable results. Although OSH education was mostly an addition to the study syllabus, it did not remain a separate subject but instead it has been widely disseminated throughout the educational and training system.

In their operations, management agencies, universities, colleges and technical schools have worked together with scientists in the field of labour protection and OSH research in Vietnam. Bilateral and multilateral cooperation have also been carried out with international, governmental and non-governmental organizations in order to learn and exchange experiences and to apply their knowledge, financial support and material assistance in Vietnam, thereby contributing to the promotion of labour protection and OSH in the country.

Parallel with their focus on scientific research, investment, monitoring and guidance of labour protection campaigns, the key OSH organizations in Vietnam have strongly developed the promotion of, education in and responsibility for basic OSH knowledge, helping employers and employees to implement measures to prevent accidents and occupational diseases and risks at workplace, as well as contributing to better productivity, quality and efficiency of labour.

Being the central organization of the Vietnamese working class and the sole trade union organization in Vietnam, the General Confederation of Vietnam (VGCL) plays a significant role in labour protection, taking part in the establishment and implementation of policies on labour protection, organizing mass involvement in labour protection, putting forward initiatives and technical renovations, carrying out research into technical measures and providing guidelines on OSH monitoring. The General Confederation also makes recommendations concerning OSH policies and regulations to the Party and the Government, thus serving the cause of workers' health care and protection in a timely manner.

In addition, the Government has assigned the management of the National Institute of Labour Protection (NILP), a leading focal point national institute on OSH, to the VGCL. The NILP has over 200 staff members, including 20 people with a doctorate in science, 25 master's degree holders and six associate professors. During its more than 30 years of activity, the NILP has presided over and implemented 50 state level subjects of science and technology on OSH, and 200 topics at the ministerial and city level; it has put thousands of research results into use in production; it has participated in the compilation and promulgation of many national standards; etc. The NILP has been distinguished by the Government of Vietnam for its achievements.

Trade Union University

The Vietnam trade union organization, with the permission of the Government of Vietnam and the Ministry of Education and Training, enrolled students for the first term of OSH engineer training at Trade Union University (TUU) in 1993–1994. Up to June 2003, in six terms, TUU has trained 397 OSH engineers, who provided resource for management and research staff involved in OSH throughout the country.

Aside from the basic subjects taught within the OSH engineering programme at TUU – i.e. the fundamental scientific and social subjects and compulsory technical subjects – the in-depth OSH professional programme encompasses 23 subjects distributed into the following groups:

1. labour legislation and OSH policies, grouped into four subjects: introduction to OSH; social medicine and medical insurance; labour protection inspection; and scientific basis for formulation of safety norms.
2. safety engineering, grouped into 11 subjects: pressure equipment and safety of pressure equipment; safety of lifting machinery; enterprise electricity provision; mechanization; automation; electrical safety; radiation and irradiation safety; safety in special environments; fire and explosion prevention; lighting engineering; industrial construction and personal protective equipment.

3. occupational hygiene: occupational health; occupational diseases; and ergonomics.
4. hygienic technique and environmental protection: environmental protection; ventilation techniques; chemical pollution treatment; noise and vibration prevention.

In addition to the basic programme, TUU offers a master's degree level training programme in OSH. The university also provides in-service OSH engineer training.

The number of students enrolled in the OSH faculty accounted for 28% out of the total of 204 during the period 1993–2003 (about 840/3,075 training periods). The training period of an OSH engineer is 4 academic years. TUU divides the training programme into three in-depth specific professions: training of OSH engineers for enterprises; training of OSH engineers to be involved in labour protection within the trade union system; and training of OSH engineers to serve as teachers at vocational and technical schools.

In Ho Chi Minh City, the City Confederation of Labour established in 1998 a faculty of Labour and Environmental Protection under Ton Duc Thang Technical University. This faculty offers the same training programme as TUU Hanoi. At present, about 120 students have graduated from this faculty.

General evaluation of the quality of the OSH engineer training during the ten past years has shown that the OSH engineers who have graduated from Trade Union University have contributed considerably to OSH management. They have improved labour protection and the socialization of labour protection, and they have increased OSH awareness among employers and employees in Vietnamese enterprises. However, with regard to both quality and quantity, the country's demand for socioeconomic development during the current period still has not been met adequately.

Increasing awareness

Moreover, OSH awareness needs to be raised among those who are not OSH professionals; i.e. among young people, especially pupils and students at the universities, colleges and technical schools, the main labour force of the future. Therefore, implementing the Directive 13/CT-TTg of 23/6/1998, the Ministry of Education and Training established a Committee including scientists and OSH experts to compile a new textbook.

After two years of work, the Committee published the ***Textbook of the Science and Technology of Labour Protection,*** in two volumes, one for universities and colleges and the other for technical schools. The curricula were discussed in detail in several national seminars. This textbook was compiled in collaboration, with the participation of the Department of Science and Technology (MET), NILP, Hanoi Technological University, and all the country's other universities, colleges and institutes.

Before it was made available to the public, this textbook was used in teaching, as a test, at universities and colleges in different branches. This test application led to many comments on how to adjust, supplement and complete the textbook. The new book has been available to the public since October 2003, and is now used as a model textbook of science and technology on labour protection in all universities, colleges and technical schools, where it serves as a reference for compiling a more appropriate OSH curriculum.

Besides its use as a textbook for students at universities, colleges and technical schools, the textbook serves as a reference book for managers, employers, employees and OSH professionals in agencies and businesses.

The *Textbook of the Science and Technology of Labour Protection* used in universities and colleges has four parts with ten chapters:

Part I: Foreword and introduction to Vietnamese legislation on labour protection (Chapters I and II)
Part II: Occupational hygiene (Chapter III)
Part III: Safety engineering (including Chapters IV–IX)
Part IV: OSH activity at enterprises (Chapter X).

The textbook used in technical schools also has four parts with ten chapters, but the content of the text is simpler and easier to understand:

Part I: General issue of safety engineering and labour protection
Part II: Occupational hygiene
Part III: Safety engineering
Part IV: Labour protection activity at enterprises.

These textbooks deal systematically with the scientific theoretical basis and method for the implementation of safety engineering measures and labour protection in industries. They are being applied experimentally in teaching until 2005 and will then be adjusted and amended in order to be enacted officially for use in Vietnamese universities, colleges and technical schools.

Conclusion

Ever since the country was founded, the Government of Vietnam has paid much attention to OSH education for working people in general and for the young labour generation of Vietnam in particular. The Government's efforts are seen in many areas: in the provision of OSH education and training; in the practical effectiveness of health care for the community in general, and for workers in particular; and in reduction of work-related accidents and occupational diseases, thereby ensuring safety and hygiene to workers in the period of renovation.

The OSH education programme for students at the universities, colleges and technical schools has also received much attention. The results are the *Textbook of the Science and Technology of Labour Protection* and a system for educating labour protection engineers at two universities. These have made a major contribution to the socioeconomic progress that has recently been achieved by the Vietnamese people.

Despite these important steps forward, OSH education needs to be strengthened and spread more widely in order to raise OSH awareness among everyone, as this will bring happiness to all the people and workers of Vietnam.

Prof. Dr. Le Van Trinh
Member of the VGCL Presidium
Director of the National Institute of Labour Protection (NILP)
216 Nguyen Trai St
Thanh Xuan
Hanoi, Vietnam
trinh-le@hn.vnn.vn

Training of workplace health promotion facilitators in Thailand

Surintorn Kalampakorn, Sunee Lagampan, Orawan Kaewboonchoo, Tassanee Nontasorn, Buppa Punpeng, Thailand

Introduction

In Thailand, according to the Social Security Act and the Workmen Compensation Act of 1990, the provision of protection and security for employees who are injured, sick, or disabled owing to work-related or non-work-related illness has been the responsibility of the Social Security Office, Ministry of Labor (1). Because of the rapid increase of health service utilization and health expenditure, *workplace health promotion initiatives* were started in 1999–2000 by the Social Security Office of the Ministry of Labor, in collaboration with the Health System Research Institute (2). A pilot project was conducted in Samutprakarn Province, Bangkok Vicinity. The project called for the participation of both enterprises and the main contract hospitals responsible for providing insured workers with health services, the aim being to develop workplace health promotion. When the pilot project was evaluated, the need for workplace health promotion facilitators who would advocate, coordinate, and provide technical assistance for the enterprise was observed (3).

In consequence, the Social Security Office commissioned a training project on workplace health promotion, which was planned and implemented by the Health System Research Institute. The training project was carried out as part of the national "Workplace Health Promotion" project that was implemented by various partners in 2001–2002. Other components of the national project were; training worksite representatives (known as the 'workplace health promotion core group'); fostering a health promotion network at the local level; developing health promotion media for the workplace; and hosting a national meeting on workplace health promotion. The main component of the national project, however, is "reorienting health services" by training health care personnel from the main contract hospitals primarily responsible for providing employees' health services so that these health practitioners would be able to work as workplace health promotion facilitators. The aim of the training project was to equip Thai health practitioners with a more effective approach for promoting employee health. This particular study was done in order to describe the development of the training programme and to examine workplace health promotion facilitators' knowledge and competencies following their training.

Methods

Development of the training programme

The Thai Health Promotion Foundation appointed a group of experts to develop a training programme for workplace health promotion facilitators. The content of the programme was based on lessons learned from the evaluation of "Health Promotion Initiatives (1999–2000)", extensive literature reviews and on analysis of the curricula of similar training programmes in other countries. Then, another group of experts – which consisted of representatives from the Ministry of Public Health, the Ministry of Labor, the Ministry of University Affairs, the Industrial Council, and employers – was invited to provide feedback on the programme before it was taken into use.

The content of the programme encompasses WHO health promotion strategies (4), including all measures taken by the employer, the employees, health personnel and co-operative organizations. 'Selling' workplace health promotion to management as well as planning, implementation and evaluation of workplace health promotion projects are also emphasized. The detailed structure of the five-day training programme is as follows.

Day 1: Workplace health promotion concepts; Roles of workplace health promotion facilitators

Day 2: Strategies to promote workers' health (physical exercise, nutrition, prevention of sexually transmitted diseases, mental health, accident prevention)

Day 3: Behavioural modification strategies; Organization assessment for workplace health promotion

Day 4: Management of a workplace health promotion programme; Site visit for a healthy workplace

Day 5: Workplace approach; Wrap-up and planning of activities.

The training methods are lectures, group discussion, practice, problem-based learning, and site visit.

Subjects

The target populations were occupational health practitioners working for the main contact hospitals primarily responsible for providing employee health services. Invitations to participate in a comprehensive and integrative five day-long training were sent to 20 hospitals located in major industrial parks

in Bangkok Vicinity and in northern, central, and eastern regions. A total of 67 workplace health promotion facilitators from four provinces – Pathumthani, Lampoon, Saraburi, and Rayong provinces – were trained.

Instrument and data collection

The instrument used for data collection was a self-administered questionnaire. The participants' knowledge of workplace health promotion was measured by means of five open-ended questions. The perceived workplace health promotion skills were measured by means of a 28-item scale using a 10-point rating scale ranging from *least* to *most*. The instrument was tested for content validity by a panel of experts before data collection. All training participants were asked to complete the test before the training started. Their answers to the questionnaire were then evaluated in order to determine the participants' level of knowledge and perceived skills in workplace health promotion. In order to assess the impact of the project, a follow-up questionnaire was sent out and mailed back to the researcher one month after the training.

Results

As shown in Tables 1 and 2, the participants' knowledge and perceived workplace health promotion skills improved significantly ($p<0.01$).

Discussion

The findings suggest that the training project has provided workplace health promotion facilitators with a useful basis for building up their own expert activities. However, the outcome at the workplace level needs to be evaluated in order to obtain feedback on the training project. Development of a workplace health promotion network is necessary, so that knowledge and experiences can be exchanged among workplace health promotion facilitators after their training.

Acknowledgement

This research was supported by the Health System Research Institute and the Thai Health Promotion Foundation, Thailand.

Paper presented at the 10th Congress on Occupational Health Services, 13–16 November 2002, Amsterdam, The Netherlands

Table 1. Comparison of the participants' knowledge of workplace health promotion (WHP) before and after training

Knowledge	Test before the training (N= 65)		Test after the training (N= 48)		Paired diff. Mean	t-value
	M	SD	M	SD		
Importance of WHP	3.71	2.18	6.28	2.05	2.37	5.781**
Strategies of WHP	2.15	2.08	7.21	3.47	4.86	8.261**
Roles of WHP facilitators	1.82	1.31	5.44	1.74	3.67	11.057**
Partnership in WHP	2.08	1.60	4.98	1.61	2.83	10.195**
Factors related to WHP	2.75	1.64	4.23	1.39	1.49	6.640**

** p-value < 0.01

Table 2. Comparison of the participants' perceived skills of workplace health promotion (WHP) before and after training

Perceived skills	Test before the training (N=65)		Test after the training (N=48)		Paired diff. Mean	t-value
	M	SD	M	SD		
Management of the WHP programme	3.65	1.76	7.16	1.29	3.67	11.529**
Organizational assessment for WHP	3.84	1.84	7.10	1.28	3.24	10.026**
Implementation of WHP programme	3.94	1.78	7.14	1.18	3.40	10.038**
Approaching enterprises for WHP	3.95	1.85	7.22	1.35	3.17	8.583**
Evaluation of WHP	3.95	1.82	7.19	0.98	3.26	9.988**
Behavioural modification	4.02	1.96	7.34	1.39	3.44	10.939**
Planning WHP	4.07	1.80	7.30	1.29	3.22	9.169**
Allocation of resources for WHP	4.19	1.78	6.97	1.09	2.92	8.278**
Promotion of physical exercise	4.75	1.98	7.47	1.39	2.77	8.631**
Promotion of good nutrition	4.48	1.89	7.58	1.35	3.02	9.658**
Mental health promotion	4.68	1.89	7.70	1.19	2.98	11.501**
Accident prevention	4.86	1.95	7.53	1.40	2.63	8.719**
Alcohol reduction/ quitting smoking	4.97	2.02	7.42	1.26	2.60	8.854**
Prevention of sexually transmitted disease	5.52	2.15	7.53	1.33	2.14	5.670**

** p-value < 0.01

References

1. Social Security Act 1990. Social Security Office, Ministry of Labor and Social Welfare. Bangkok, 1990. (in Thai)
2. Social Security Office, Ministry of Labor and Social Welfare. Workplace Health Promotion Initiatives, Nonthaburi, 2000.
3. Health System Research Institute. Evaluation of the Workplace Health Promotion Initiatives. Nonthaburi, 2000.
4. WHO Regional Office for the Western Pacific Region. Guideline for Development of Healthy Workplace, Oct, 1999.

Surintorn Kalampakorn, Assistant Prof.
Sunee Lagampan, Associate Prof.
Orawan Kaewboonchoo, Associate Prof.
Tassanee Nontasorn, Associate Prof.
Faculty of Public Health
Mahidol University
Bangkok, Thailand

E-mail: phskl@mucc.mahidol.ac.th

Buppa Punpeng
Social Security Office
Ministry of Labor, Nonthaburi
Thailand

Hazards in the ship breaking industry:

A status report

M.H. Fulekar, India

Introduction

In this era of globalization, about 45,000 ships are finding their way in the world's seas. After an average service life of 29 years at sea, some 700 ships are taken for decommissioning every year; of these, 350–450 ships are scrapped in India. Alang in Gujarat is the largest ship breaking yard in the world, occupying 182 plots within a 10 km area along the seacoast. The ship breaking industry disposes of old ships and recovers the usable materials for recycling. In India, in the 1960s, ship breaking was confined to the dismantling of small barges and costal wrecks. The activity grew into a full-fledged industry by 1979, when the Government of India recognized it as small-scale industry. These shipyards employ 40,000 skilled and unskilled workers, and decommissioning of ships accounts for 10–15 percent of the country's steel production. The employees who dismantle ships and who undertake the reprocessing and recycling operations do so without the appropriate safety standards. The procedures and processes associated with decommissioning for scrapping and disposal or recycling cause exposure to toxic substances and create hazardous situations in the surrounding environment (1,2).

Historical background

When a ship has become obsolete on the market it serves, or noncompliant for other reasons, and hence reaches the end of its useful life, it is usually offered for sale to a ship breaker. At present there are no feasible alternatives to disposing of the current number of ships. A ship consists mostly of steel. The waste and materials recovered following demolition are distributed and transported from the scrapping site to local enterprises for resale, remanufacturing or recycling. Since its start as an industrial activity, the process of breaking ships for the extraction of scrap steel to supply to steelworks has migrated geographically from the USA and Europe to Asian countries, reflecting the trend of economic development. Today, ship breaking on the beachheads of Asian developing countries is claimed to be one of the world's most dangerous and hazardous occupations, endangering the safety and the lives of thousands of workers. More than 90 per cent of ship breaking activities takes place on the beaches of Bangladesh (Chittagong), India (Alang), Pakistan (Gaddani estate in Baluchistan), and in China (1).

Gas cutting operation

In India, ship breaking activities are carried out at various places along the sea coasts of the country, including at Alang in Gujarat, Sachana in Gujarat, Tadri in Karnatka, Maipe in Karnataka, Baypore in Kerala, Cochin in Kerala, Azhical in Kerala, Vishakhapatnam in Andhra Pradesh, Valinokan in Tamil Nadu, and at Tuticorin in Tamil Nadu. However, the main ship breaking centre lies on the west coast at Alang, Gujarat. The larger tidal and geomorphological characteristics of the beach at Alang make it an ideal location for ship breaking. The ship breaking activity at Alang began in 1982 and currently, 141 plots are in operation and Alang is considered to be the largest ship breaking yard in the world (3).

Ship breaking operations

In India, the ship to be decommissioned is first examined by:

1. the officials of the Gujarat Maritime Board
2. the Custom Department, and
3. the Explosives Department in pursuance of Rule 43 (C) of the Petroleum Rules, 1976.

These three authorities issue the certificates necessary for beaching the ship in the ship breaking yard concerned. The Explosives Inspectorate issues a Gas Free Certificate which states that "the vessel is fit to enter a dry or wet dock or to beach". A competent person inspects the ship and issues a naked light certificate, before the start of gas cutting operations.

In the process, the ship's wire ropes and the horizontal and vertical winches located at the ship breaking yard are used to haul the ship to the beach; subsequently the ship is kept in position. The ballasting also keeps the ship position stable. The cutting starts from the bow portion of the ship; sufficient openings are made in the ship's hull and structures to facilitate natural ventila-

tion. This process prevents the accumulation of dangerous gases and does not pose a risk of fire or explosion. Thereafter, the bare ship structure is tentatively lined for cutting in a three tier system by gangs of Mukaddams, gas cutters, and helpers separately. The unit is completely gas cut in this way. The last activity of the ship breaking operation is to cut the propeller shaft and detach it from the propeller (2).

All usable materials – such as furniture, refrigerators, cables, the communication system, fire extinguishers, lifting tackles, etc. – are removed from the ship before decommissioning. The ship-borne machinery and equipment – for instance, the compressor, D.G. sets, the evaporation pump, art part of the ship structure, etc. – are progressively detached from the ship's structure and sold.

A ship for decommissioning

Decommissioned material for disposal or recycle

The available data indicate that a total of 2,453 ships have been broken, amounting in 1999 to 17,265,250 LDT (17.3 million tonnes). The materials obtained from breaking different types of ships vary with the size (LDT) and type of ship and include: (a) steel plates, structures, pipes, beams, angles, channels, etc; (b) engines and spare parts; (c) refrigerators and washing machines; (d) wood (doors, panels, furniture, etc.); (e) cables (PVC coated, copper and aluminium cables); (f) glass wool, Thermocole (sheet form); (g) oils (furnace oil, lubricating oil, transformer oil and oil sludge); (h) lead acid batteries. These items are auctioned off or sold to recycling or re-rolling mills and other associated industries. The industry generates steel scrap, which is directly used by the re-rolling industries. Currently, it produces around 2 million tonnes of re-rollable steel per annum. The industry is energy-saving and recycling in nature, adding considerable quantities to the availability of steel and iron without going through the process of extracting metals from the ore, thus saving the country's mineral resources and energy to some extent (3,4).

However, it has been observed that various solid wastes – some of which are hazardous or highly toxic in nature – are generated during the ship breaking process. These are mainly: (a) paint chips; (b) scale generated during the gas cutting of steel; (c) ceramic tiles; (d) glass wool and fibrous insulation materials; (e) asbestos sheets, ropes and insulation; (f) oil sludge, waste oil; and (g) Thermocole, plastics, fibre glass, linoleum, Sunmica, etc.

Some of these materials – such as paint chips, asbestos and oily wastes – are conventional contaminants associated with ships. Also, some ships may be contaminated with hazardous substances, including radioactive materials. The available data indicate that approximately 4,000 tonnes of these wastes are generated each year. These wastes require proper treatment and disposal; at present they remain scattered on the seashore and contaminate the marine environment. The improper storage, handling, transport, treatment and disposal of hazardous waste results in adverse impacts on ecosystems and the human environment (3,4).

Safety, health and environment

Safety

The working conditions are influenced by surroundings that are characterized by large, unsafe structures and the introduction of several simultaneous operations within a small area that involve many individuals. Accidents leading to injuries or deaths are caused by the lack of skill among labour, inappropriate plans and unsuitable working conditions or procedures. There are no safety standards or guidelines for ship breaking, appropriate personal protective equipment are not used, there is a lack of facilities and safe working platforms and tools. A serious matter to consider is the large number of industrial accidents that occur every year. It is often common that workers die or suffer severe injuries during ship breaking operations. An average of up to 40 deaths has been reported every year. Such high fatalities are unacceptable. Steps must be taken to ensure better safety standards in the industry (3).

Health

There are little or no available data or reports on workers' health. This suggests that there is no systematic monitoring of health among workers engaged in ship scrapping in these regions, nor has there ever been any. It has been observed that workers are exposed to: (a) torch cutting without protection (eye injuries); (b) heavy lifting (wear and tear, back injuries); (c) noise (hearing defects); (d) chemicals (PCB, i.e. polychlorinated biphenyl, polyvinyl chloride PCV, polycyclic aromatic hydrocarbons PAH, tin-organic compounds (TBT, i.e. tributyltin), oils and gas); (e) asbestos; (f) heavy metals; and (g) fumes (dust, fume/gas components: dioxins, isocyanates, sulphurs, etc.)

Environment

The major environmental concern is lack of containment to prevent toxins from entering into the water, sediment

or ground and/or the air. The present scrapping facilities are located in the direct vicinity of significant fisheries. It has been reported that fish stocks are seriously depleted following the establishment of ship breaking activities. Pollution resulting from these activities has both immediate and long-term effects.

Hazardous waste management

The research studies and surveys conducted highlight the presence of higher concentrations of hazardous and toxic substances in the environment. Among these substances are: (a) PCB; (b) PVC; (c) PAHs; (d) TBT; (e) oils-hydrocarbons; (f) asbestos; (g) heavy metals; and (h) other substances, such as isocyanates, sulphuric acid, radioactive material and ballast tank sediments.

The environmental concerns are first and foremost related to the harmful substances involved and the lack of containment, allowing toxins to enter the environment and the food chain. There are no data available on the long-term effects on the environment (1). Therefore, the exact status of the environmental concern with regard to ship breaking operations is not known.

Regulations for improvements

The High Power Committee appointed by the Government of India is of the opinion that if the ship breaking activities at Alang are to be continued, the facilities must be modernized and equipped with proper control measures. The following provisions have been incorporated in the Acts and Rules (5–9):

- The Gujarat Maritime Board has prepared regulations under the Gujarat Maritime Board Act, 1981, for the Safety and Welfare of Workers.
- The Gujarat Maritime Board (Prevention of Fire & Accidents for Safety and Welfare of Workers and Protection of Environment during Ship Breaking Activities) Regulations, 2000, were notified on 31 August 2000. The notification deals with ship breaking plots, beaching permission, cutting operations, supervision, action to be taken by the Port Authority, action to be taken in the event of accidents, environmental measures and housekeeping – which includes solids waste management.
- The Hazardous Waste (Management and Handling) Rules, 1989, introduced under Section 6, 8, 25 of the Environmental (Protection) Act of 1986 provide provisions for the control of generation, collection, treatment, transport, import, storage and disposal of wastes. The Rules are implemented through State Pollution Control Boards and Pollution Control Committees in the State and Union Territories.
- Strict compliance with the Basel Convention, 1989 on the control of Transboundary Movement of Hazardous Wastes and their Disposal is required (10).
- The State Government covered ship breaking yards under the Factories Act, 1948 and notified welding/cutting operation with the use of LPG/Acetylene/Argon as from 2 February 1987. A special schedule on this operation was introduced in the Rules.
- Further, the State Government notified Rule 68-H on ship breaking, ship repairing and ship breaking under the Factories Act, 1948 on 19 February 1995. This is an elaborate Rule with 23 sub-Rules covering almost all aspects of safety in ship-breaking operations.

Recommendations and suggestions

1. Ship breaking operations should comply with the relevant provisions of the Acts and Rules.
2. Periodic monitoring should be carried out, to investigate the level of toxic contaminants in the work environment.
3. The generation, collection, treatment, import, storage and disposal of hazardous waste should comply with Hazardous Waste Management Rules of 1989/2000.
4. The occupier should establish a system of reporting, recording and investigating all fatal accidents and reportable lost-time injuries, as well as all dangerous occurrences.
5. The authority may set up an emergency response centre at Alang.
6. Training courses on safety, health and the environment, including standard methods of practices and procedures in ship breaking operations, should be designed and conducted for all personnel.
7. Workers' health status should be determined by medical examinations.
8. Safety audits and environmental audits should be conducted on a regular basis, to ensure the required modifications and/or improvement in the work situations.
9. The export of hazardous ships-for-scrap to ship breaking yards shall be in compliance with the Basel Convention.

References

1. Andersen AB. Workers' Safety in Ship Breaking Industries. Geneva: International Labour Office; 2001:1–65.
2. Directorate General Factory Advice Service & Labour Institutes, Central Labour Institute. National Tripartite Workshop on Ship Breaking and Safework; 14–15 May, 2001:1–31.
3. Menon MGK. Report of the High Powered Committee on Management of Hazardous Wastes, Volume I (p. 1–350), Volume II and Volume III (p. 1–245); 1995.
4. Teri. Hazardous Waste Management in India – A Policy Discussion Forum Base Paper; 2003. p. 1–17.
5. Gujarat Maritime Board Act; 1981.
6. The Gujarat Maritime Board (Prevention of Fire & Accidents for Safety and Welfare of Workers and Protection of Environment during Ship Breaking Activities) Regulations; 2000.
7. The Environment (Protection) Act; 1986.
8. The Hazardous Waste (Management & Handling) Rules; 1989/2000.
9. The Factories (Amendment) Act; 1987.
10. The Basel Convention, 1989.

Prof. M.H. Fulekar
Life Sciences Department
University of Mumbai
Kalina, Vidyanagari, Santacruz (E)
Mumbai 400 098
India
E-mail: mhfulekar@yahoo.com

Congresses

2nd China International Forum on Work Safety
China International Work Safety and Occupational Health Exhibition

Beijing, P.R. China
1–4 September 2004

Organizers: State Administration of Work Safety (SAWS), P.R. China, and International Labour Organisation (ILO)

Main themes:
Safety, health and development

Secretariat:
Ms. Sun Jiaohua
National Center for International Exchange and Cooperation on Work Safety
21 Hepingli Beijie
Beijing, P.R.China
Tel: +86-10-64229939
Fax: +86-10-64463003
E-mail: cws@Chinasafety.gov.cn.
www.Chinasafety.gov.cn

International Conference on Health, Occupation and Environment in Unorganized Sector – Problems and Road Maps

Lucknow, India
1–3 November 2004

Theme: Managing occupational hazards and risk factors through epidemiological tools

Information:
Dr. S.K. Rastogi
Organizing Secretary, ICHOE 2004
Deputy Director & Head
Epidemiology Section
Industrial Toxicology Research Centre
P.O. Box 80, MG Marg
Lucknow - 226 001, India
Tel: +91-522-2220206, 2220207, 2220107, 2213786 extn 282, 283
Fax: +91-522-2228227, 2211547
E-mail: subhodhrastogi@yahoo.com
www.itrcindia.org/ichoe2004

International Conference on Occupational Health Services 2005

Helsinki, Finland
25–27 January 2005

Organizers:
The Finnish Institute of Occupational Health and the Ministry of Social Affairs and Health

Secretariat:
OHS2005, Finnish Institute of Occupational Health
Ms. Taina Pääkkönen
Topeliuksenkatu 41 a A
FI-00250 Helsinki, Finland
Tel: +358-9-4747 2910
Fax: +358-9-2413 804
E-mail: ohs2005@ttl.fi
www.ttl.fi/ohs2005

10th International Conference on Occupational Respiratory Diseases (10th ICORD)

Beijing, P.R. China
19–22 April 2005

Organizers: The International Labour Office (ILO) in collaboration with the Ministry of Health of China, with the participation of the World Health Organization (WHO), the International Commission on Occupational Health (ICOH) and the International Occupational Hygiene Association (IOHA)

Theme: Occupational Respiratory Hazards in the 21st Century:
Best Practices for Prevention and Control

Information:
The 10th International Conference on Occupational Respiratory Diseases (10th ICORD) Secretariat
c/o International Health Exchange and Cooperation Center (IHECC)
Ministry of Health, P.R. China
1 Xi Zhi Men Wai Nan Lu
Beijing 100044, China
Tel: +86-10-6226-1874/ 6226-1738/ 6226-1735
Fax: +86-10-6226-1849
E-mail: executive@icord2005.com
www.ICORD2005.com

28th ICOH International Congress on Occupational Health

Milan, Italy
11–16 June 2006

"Renewing a century of commitment to healthy, safe and productive working life"

The scientific programme will include: Plenary lectures, symposia, workshops, debates, educational courses and poster sessions.

Preliminary list of topics to be discussed during the Congress sessions:
- Chemical factors
- Air-borne particles and respiratory system effects
- System health effects
- Physical factors
- Industries and occupations
- Occupational health services
- Prevention and education

Information:
Department of Occupational Health
Via San Barnaba, 8
20122 Milano, Italy
Tel: +39-02-50320110
Fax: +39-02-50320111
E-mail: sabrina.braiati@unimi.it
www.icoh2006.it

Editorial Board

as of 10 March 2004

Price of the Asian-Pacific Newsletter USD 6