

THE



QUARTERLY

July - Sept 2006

Happy Deepavali &

Selamat Hari Raya

Assalamualaikum and greetings!

President's Message

Welcome again to our quarterly newsletter. With the festive holidays around the corner, I would like to take this opportunity to wish all my Hindu friends Happy Deepavali Valthukkal and my Muslim brothers and sisters Selamat Hari Raya Aidilfitri, Maaf Zahir dan Batin. Please be safe when driving back home. Think safety, drive defensively. I wish for your happiness and please enjoy the festive holidays with your beloved families.

I would like to congratulate Marina, our Publication Committee Member for coming out with this edition promptly. I hope you will enjoy reading the articles and the information in this newsletter. A few courses have been lined up towards the end of year. MIHA members should seize the opportunities to update and deepen their knowledge in IH. I am also urging everyone to actively contribute to our next newsletter by submitting articles, news and any interesting information that you would like to share with other members.

Again, I wish you and your families a safe journey home and a great holiday.



DOSH IAQ ROADSHOW - 5 September 2006, Sabah



Alfred Manai, second from right.

The IAQ Roadshow, was successfully carried out by the Department of Occupational Safety and Health (DOSH), the National Institute of Occupational Safety and Health (NIOSH), in collaboration with MIHA. The attached picture was taken in Tang Dynasty, Sabah, where our very own Alfred Manai Luang represented MIHA in presenting a paper during this half-day seminar.

This half-day roadshow included papers such as Code of Practice on IAQ by DOSH, Managing and Controlling Biological Issues Toward a Better IAQ by NIOSH and Preparation Prior to IAQ Assessment by MIHA. These papers were followed by a fruitful question/answer session.

For your information, the roadshow planned for Kelantan/Terenggan/Pahang date and venue has been postponed till further notice. For latest info, go to <http://dosh.mohr.gov.my/iqa-rev.htm>.

5 DAY **Fundamentals of Industrial Hygiene** Course is here!!!

Date/Venue: 6 - 10th November 2006, Corus Hotel, Kuala Lumpur

This 5-day course is extremely important for anyone assuming Industrial Hygiene responsibilities within his/her organization with limited prior training or experience. This course is designed for beginner/budding Industrial Hygienists, OSH/EHS Practitioners, Safety professionals, OH nurses, Plant Managers, Research Chemists, Supervisory personnel, Union representatives, Personnel Managers, Physicians and anyone with Industrial Hygiene Responsibilities. Organized by MIHA and co-sponsored by Social Security Organization (SOCSO), MIHA is obtaining approval from ABIH for CM points and also DOSH for Continuing Education Points for Assessors, SHO's, Hygiene Technicians and OHDs.

Hurry!! Enrollment is limited to the first 35 people only!! (*MIHA Member: RM 1200, non-MIHA member: RM 1400, Foreign Participants: USD 410*). All participants will receive a copy of AIHA's 2nd Edition White Book CD—The Occupational Environment—Its Evaluation and Control by Salvatore R. Dinardi (courtesy of AIHA).

5 DAY **IAQ Assessor** Course

Date/Venue: 27th November—1st December 2006, Corus Hotel, Kuala Lumpur

The Indoor Air Quality Assessor Course is coming to you - very soon! A very dedicated team has put together the finalised material after having carried out the Pilot Workshop on Indoor Air Quality Assessor, 12-14th April, 2006, facilitated by Dr Jas Singh, CIH. This course is approved by the Department of Occupational Safety and Health (DOSH) as well as the American Board of Industrial Hygiene (ABIH) for Certification Maintenance (CM) Points. So hurry all you interested participants! Enrollment is limited to the first 20 people (*MIHA Member: RM 1800, non-MIHA member: RM 2100*)!! Look out for registration forms via our mailing list, future newsletters or on our website!

ANNOUNCEMENTS

2nd National Industrial Hygiene Seminar

The above mentioned seminar is currently planned for April 2007. We wish to invite all members to participate and contribute, in hope of making our second seminar, bigger and better than the first in 2005. Look out for the confirmed date and mark your calendars! Also, please contact any of our committee members if you would like to be a part of the seminar committee.

Registration for Interested CIH Exam Takers

For all those interested in sitting for the infamous Certified Industrial Hygienist Exam, please notify any of the committee members. Also, we have a wide selection of reference books that may be helpful for the exam, on our publications for sale list (e.g. The Industrial Hygiene Reference & Study Guide). *Good luck* to the Exam Takers!!!



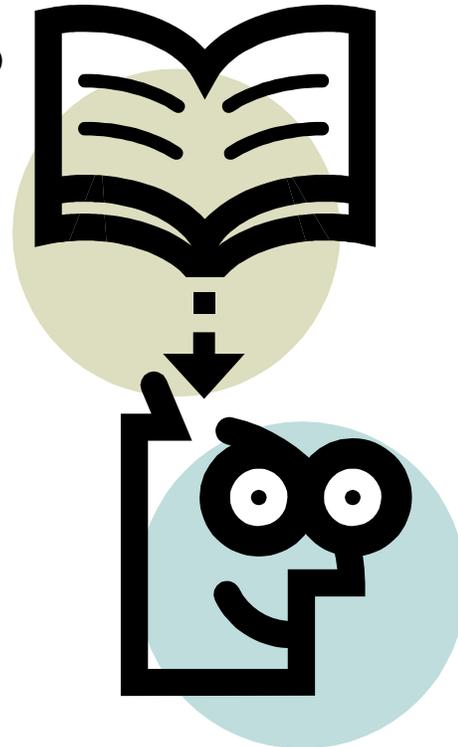
Did any of you submit your proposal for this upcoming event? Do share with us for those unable to attend. We would very much appreciate a synopsis of your paper, and possibly a short write-up on your trip to the American Industrial Hygiene Conference and Exhibition (AIHCE) 2007, this year located where they filmed National Treasure starring Nicholas Cage, and the title of Bruce Springsteen's song - the streets of Philadelphia.

*** Publications for SALE/READING ***

Now you can buy Industrial Hygiene books through MIHA! Our stock includes many topics of interest, and of those not for sale, you can come by to our main office and lounge while reading.

Books currently available for sale include:

1. AIHA 2006 Emergency Response Planning Guidelines (ERPG) and Workplace Environmental Exposure Level Guides (WEEL) Handbook (AIHA) *USD 25*
2. Assessment, Remediation, and Post-Remediation Verification of Mold in Buildings (AIHA) *USD 45*
3. Industrial Hygiene Reference & Study Guide 2nd Ed (Allan Fleegeer & Dean Lillquist) *USD 80*
4. Industrial Hygienists Guide to IAQ Investigations *USD 50*
5. Mathematical Models for Estimating Occupational Exposure to Chemicals (Charles B Keil) *USD 64*
6. Occupational Environment—It's Evaluation and Control (Salvatore R DiNadini) *USD 179*
7. Recommendations for the Management, Operation, Testing and Maintenance of HVAC Systems *USD 50*
8. The IAQ Investigator's Guide, 2nd Edition *USD 60*
9. Welding Health and Safety: A Field Guide for OEHS *USD 85*
10. A variety of brochures/booklets



Besides some of the above, there are also available for reading , at the MIHA office the books as follows (also available for order):

1. A Strategy for Assessing & Managing Occupational Exposure (J Mulhaussen & J Daminano)
2. Burton Field Guide for Industrial Hygiene (D Jeff Burton)
3. Calculation Methods for Industrial Hygiene (Salvatore R DiNadini)
4. Guidelines for the Decontamination of Chemical Protective Clothing and Equipment (AIHA)
5. Guidelines for the Development of Personal Protective Equipment Programs for Small Business Owner
6. Radio-Frequency & Microwave Radiation (Non-ionizing guide series) (AIHA)
7. The Noise Manual (AIHA Rev. 5th Edition)
8. The Noise-Vibration Problem-Solution Workbook (Larry H. Royster & Julia Doswell Rouster)
9. Useful Equations—Practical Applications of OH & S Math 1st Ed. (D. Jeff Burton)

We are working on bringing you other AIHA Publications upon request. For orders, please select publication of interest at <http://www.aiha.org> and contact us.

Happy reading!

KEEPING WORKERS HEALTHY—The Star Careers (Education)

SUNDAY 29 January 2006 The industrial hygienist checks out how a job and the workplace affect a person's health and work productivity, writes TAN SHIOW CHIN. THERE is a group of people out there who have made it their business to care about how your work affects your health. *Zainal Mubarik Zainuddin*, an industrial hygienist, is one of those people. Currently working with Exxonmobil, he is the Regional Industrial Hygiene Advisor for the Asia Pacific region. Although Zainal did not start out in this line originally, he has since developed a strong passion for his job. For those who are interested in a job that marries health and engineering, industrial hygiene is the way to go, he said. One thing he pointed out was that an industrial hygienist is not an occupational safety and health officer. "The occupational safety and health officer is more concerned with how the physical infrastructure of the workplace might immediately cause an accident, whereas the industrial hygienist takes an overall view of how the job and workplace affects a person's health for the rest of his life, even after he retires."

My job involves all the factors in the workplace that might affect a worker's health. These can range from the physical - noise, vibration, radiation - to chemical and biological factors, not forgetting ergonomics and psychosocial factors as well. We get involved early on in the planning stages of a project, where we review the overall plan, and try to anticipate and recommend modifications to eliminate or control potential health hazards. We also do a lot of site visits to constantly evaluate and identify potential health risks. During the site inspections, we assess the impact of exposure to any health hazards present, through both qualitative and quantitative methods. Through the assessment, we can then determine the severity of health risk involved in exposure to a particular element, as well as the level of compliance to workplace regulations. Once that's done, we come up with suggestions to control or eliminate those risks. It is important to note that we don't just look at the immediate future, but also at how factors affect workers' health in the long term. We also conduct training for both workers and the management to enhance awareness on health risk control and management. In addition, we help identify individuals with predisposing health conditions who might not be suitable to work in certain environments.

My morning starts off with different things, depending on whether I am in the office or out in the field. In my job, I have to travel quite frequently, as I need to go to worksites to conduct evaluations of the environmental factors at the workplace to determine the health risks to the workers. I get to play with a lot of cool measuring gadgets to determine the level of exposure to any particular hazardous element like noise, vibration or any chemicals. Then, there are training sessions I need to conduct for the workers to inform them on the health risks they face and the appropriate risk control measures that can be taken. If I am in the office, my day usually begins with checking email. I have to deal with a lot of correspondence as everyone - from senior management to the regular workers - has the right to bring any work related health concern to my attention. Then I might have meetings, either with my team, or management, to come up with risk management plans or to discuss issues at hand.

To qualify, you need either an undergraduate degree in industrial hygiene, science or engineering, a postgraduate degree in industrial hygiene, or a recognized certification from an international industrial hygiene body. Practical experience is also very important. As a graduate, you need at least five years working experience in the field before you can qualify as an industrial hygienist. With a postgraduate degree, you need at least three years working experience.

The best person for the job is someone who is meticulous and has good technical knowledge. As you are expected to anticipate potential health hazards, you need to be open-minded and think outside the box. You also need to be familiar with the operational aspects of the project, which is where technical knowledge comes in useful. In addition, you must have good people's skills as you are constantly dealing with people, whether they are the senior management or the workers at the sites.

Prospects for the future The prospects, I think, are quite good. More and more companies are realising the importance of occupational safety and health. As time goes by and awareness increases, the demand for industrial hygienists should definitely increase. Industrial hygienists can work for multinational companies like Exxonmobil, the Department of Occupational Safety and Health (DOSH), the National Institute of Occupational Safety and Health (NIOSH) or as health, safety and environment consultants.

I love my job because I get to affect people's health in a positive way. It is very satisfying to be able to help improve the working conditions for workers and enhance their awareness of health issues. I also enjoy the technical aspect where I get to play around with sophisticated and cool measuring equipment, which we use during site inspections.

What I dislike most is having to negotiate with the management to implement controls or protocol to decrease health risks. Although they are usually concerned about health risks, they have to bear in mind other considerations as well, like time and financial constraints. But they understand that in the long run, unhealthy workers mean decreased productivity, which results in the company not doing well.

Will I be a millionaire by 30? Highly unlikely. The starting pay is similar to that of any other executive. But you can do well in this field. With time and experience, you can work your way up to senior management level, or branch out into consultancy. There is scope to work regionally, even globally. Industrial hygienists travel frequently to worksites like factories and oilrigs to evaluate health hazards and train workers on health risk management.

*** World Health Organisation Backs DDT to Fight Malaria ***

Contributed by Khairul Bariah

WASHINGTON, DC, September 15, 2006 - The World Health Organization has recommended wider use of the controversial pesticide DDT to battle malaria. WHO officials announced the plan as part of its bid to strengthen efforts to combat the infectious disease, which kills more 1 million people each year.

The new WHO policy calls for more indoor residual spraying of DDT and other insecticides in areas where malaria remains an epidemic and in areas with constant and high malaria transmission.

Widespread indoor use of the controversial insecticide was phased out over the past three decades, but the WHO said its analysis shows that DDT is a safe, effective and cheap option for countries struggling to control the deadly disease.

Developed during the early 1940s, DDT helped eradicate malaria in the United States and Europe. The WHO launched a plan to battle the disease in 1955 and DDT was at the center of those efforts for three decades. Concerns about the health and environmental effects of the insecticide prompted bans on DDT in many developed countries and in the early 1980s the WHO stop promoting its use.

Views about the use of insecticides for indoor protection from malaria have been changing in recent years. Environmental Defense, which launched the anti-DDT campaign in the 1960s, now endorses the indoor use of DDT for malaria control, as does the Sierra Club and the Endangered Wildlife Trust.

But some are unconvinced and believe WHO's change in policy well-intentioned, but misguided.

"Given the well-documented adverse health effects associated with DDT's toxic properties and its persistence, the international community has a social responsibility to reject the use of this chemical and practice sound and safe pest management practices at the community level that prevent insect-borne diseases like malaria," says Jay Feldman, executive director of Beyond Pesticides.

Dr Arata Kochi, director of WHO's Global Malaria Program, said the revised position is based on "the science and the data."

"Of the dozen insecticides WHO has approved as safe for house spraying, the most effective is DDT," Kochi said.

Indoor residual spraying is the application of long-acting insecticides on the walls and roofs of houses and domestic animal shelters in order to kill malaria-

carrying mosquitoes that land on these surfaces.

Recent research and testing has demonstrated that well-managed indoor residual spraying programs using DDT pose no harm to wildlife or to humans, the WHO said.

The WHO said it would continue to also strongly promote widespread use of insecticide-treated mosquito nets. Newer nets remain effective for up to five years without retreatment.

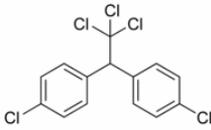
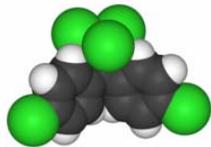
New evidence from India and South Africa, where DDT is used for indoor residual spraying, shows that correct and timely use of indoor residual spraying can reduce malaria transmission by up to 90 percent.

Fourteen countries in sub-Saharan Africa are using indoor residual spraying and 10 of those are using DDT, but these efforts are hampered by a lack of funding - this could change with the WHO's new policy.

What is DDT?

DDT was the first modern pesticide and is arguably the best known organic pesticide. It is a highly hydrophobic colorless solid with a weak, chemical odor that is nearly insoluble in water but has a good solubility in most organic solvents, fat, and oils. DDT is also known under the chemical names 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane and dichloro-diphenyl-trichloroethane (from which the abbreviation was derived) and trade names Anofex, Cesarex, Chlorophenothane, Dedelo, p,p-DDT, Dichlorodiphenyltrichloroethane, Dinocide, Didimac, Digmar, ENT 1506, Genitox, Guesapon, Guesarol, Gexarex, Gyron, Hildit, Ixodex, Kopsol, Neocid, OMS 16, Micro DDT 75, Pentachlorin, Rukseam, R50 and Zerdane.

In addition to the p,p isomer pictured in this article, the o,p isomer, in which one of the chlorine atoms is shifted around the benzene ring, is also known. When necessary to distinguish between them, these two compounds are sometimes abbreviated "ppDDT" and "opDDT", respectively.

DDT	
	
	
Chemical name	4,4'-(2,2,2-trichloroethane-1,1-diyl)bis(chloroben-
Chemical formula	C ₁₄ H ₉ Cl ₅
Molecular	354.49 g/mol
Melting point	108.5 °C
Boiling point	260 °C
CAS number	50-29-3

*** The Long and Short of Indoor Air Quality ***

Contributed by Wan Sabrina Wan Muhamad

The term "indoor air quality" (IAQ for short) refers to the general breathability of air in office buildings or any indoor environment occupied by people. As long as no odors are present and breathing remains relatively easy, IAQ isn't something most of us often think about.

A term often used in conjunction with IAQ is "sick building syndrome" (SBS for short). SBS describes a wide range of symptoms—headache, nausea, fatigue, and eye and respiratory irritation—that are often relieved when workers leave the building in which they are working. SBS should not be confused with "building related illness" (BRI for short) which is a physical reaction to one specific, identifiable contaminant in the environment. The National Institute of Occupational Safety and Health (NIOSH for short) prefers the lesser used term "indoor environmental quality" (IEQ) to describe IAQ problems.

Either way, IAQ or IEQ, awareness of the problems that degrade the quality of our indoor environments was heightened around the time of the oil embargo of the 1970s. As fuel prices rose, conservation efforts accelerated. Buildings were insulated more effectively and as a result, fresh air was exchanged much more slowly. Keeping warm air from leaking out of buildings cut heating costs, but with fewer exchanges of fresh air for stale, people started getting sick.

To regain an acceptable level of IAQ, the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE for short) revised its ventilation standard to an exchange volume of 15 cubic feet per minute (cfm for short) in reception areas and 20 cfm in office spaces in a standard office setting. In areas set aside for special uses, such as smoking lounges, required air volume could be as high as 60 cfm. ASHRAE suggests cfm rates for various types of occupancy. These suggestions are available in Appendix B: HVAC Systems and Indoor Air Quality (see page 16).

Most indoor air pollutants come from sources inside the building: adhesives, new carpeting and copy machines. But chemical contaminants can also come from outdoor sources. Building exhausts, air from plumbing vents and vehicle exhaust can enter through poorly located fresh air intakes. To help building owners alleviate these problems, NIOSH has materials available to help, including *Building Air Quality: A Guide for Building Owners and Facility*

Managers, a publication that tells you how to assess your building, identify IAQ problems and take the appropriate steps to remedy them. NIOSH also offers a Building Air Quality Action Plan, a simple easy-to-understand process designed to work in conjunction with the guide to bring maintenance of building air quality up to best management practices.

FYI: Business Planning for Pandemic Flu

We're accustomed to missing a co-worker or two during flu season, but a pandemic means many more than a few. Recent outbreaks of avian flu, though limited, have raised the possibility of a new, virulent strain of influenza developing, one that could cut a very wide swath through cities and societies around the world. Such an outbreak could potentially cause a significant economic slowdown or even major financial disruptions in many industries.

According to the U.S. Chamber of Commerce, the flu kills between 36,000 and 40,000 Americans every winter, and forces more than 200,000 into hospital beds. A pandemic influenza outbreak would multiply those numbers by a factor based on the disease's severity.

No business can keep running for long without at least a core staff.

In the event that a contagious disease reaches pandemic proportions, businesses would be well advised to have a contingency plan in place designed to protect the health and safety of employees. The Department of Health and Human Services (DHHS) and the Centers for Disease Control and Prevention (CDC) have developed a pandemic outbreak planning checklist for businesses. The steps it outlines can be applied to other catastrophes as well.

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*** NIOSH USA - Q & A on CONTROL BANDING ***

CONTROL BANDING is a process in which a single control technology (such as *general ventilation* or *containment*) is applied to one range or band of exposures to a chemical (such as 1–10 mg/m³) that falls within a given hazard group (such as *skin and eye irritants* or *severely irritating and corrosive*).

Four main control bands have been developed for exposure to chemicals by inhalation:

(See Table 1 for more in-depth model)

Band 1: Use good industrial hygiene practice and general ventilation.

Band 2: Use local exhaust ventilation.

Band 3: Enclose the process.

Band 4: Seek expert advice.

For some activities, processes, tasks, or jobs, experts can specify that respiratory protective equipment (in combination with other control approaches) is always necessary.

The most developed model for control banding has been established by the Health and Safety Executive (HSE) of the United Kingdom.

The control banding approach focuses resources on exposure controls and describes how strictly a risk needs to be managed. This qualitative risk assessment and management tool is intended to help small businesses by providing an easy-to-understand, practical approach to controlling hazardous exposures at work.

The principle of control banding was first applied to dangerous chemicals, chemical mixtures, and fumes. The control banding process emphasizes the controls needed to prevent hazardous substances from causing harm to people at work. The greater the potential for harm, the greater the degree of control needed to manage the situation and make the risk “acceptable.”

Control banding is a complimentary approach to protecting worker health that focuses resources on exposure controls and describes how strictly a risk needs to be managed. NIOSH considers control banding a potentially useful tool for small businesses. Control banding has been evaluated in various settings, particularly in the United Kingdom. NIOSH is currently evaluating its utility for the United States.

Why is control banding useful?

The occupational exposure limit (OEL) is the marker that shows the level of control needed for a chemical. Repeated daily exposure by inhaling a chemical at an airborne concentration below its OEL is unlikely to lead to harm in most workers. However, many thousands of chemicals are in use, and it is not possible to have an OEL for every chemical, chemical mixture, fume, or emission. Nonetheless, it is possible to determine the broad hazard group to which a chemical belongs (Table 1) and on that basis to determine the necessary level of control, or control band.

Can the control banding concept be applied beyond chemicals?

Efforts are under way to develop control banding approaches for ergonomics, safety hazards, psychosocial factors, and environmental applications.

What are the control bands for health risks from chemicals?

The control bands for exposures to chemicals by inhalation are listed in the following table:

Band No.	Target Range of Exposure Concentration	Hazard group	Control
1	>1 to 10 mg/m ³ dust >50 to 500 ppm vapor	Skin and eye irritants	Use good industrial hygiene practice and
2	>0.1 to 1 mg/m ³ dust	Harmful on single	Use local exhaust ventila-
3	>0.01 to 0.1 mg/m ³ dust >0.5 to 5 ppm vapor	Severely irritating and corrosive	Enclose the process.
4	<0.01 mg/m ³ dust <0.5 ppm vapor	Very toxic on single exposure, reproductive hazard, sensi-	Seek expert advice.

*Exposure to any concentration of a sensitizer requires expert advice.

Does control banding remove the need for consultants?

No. Control banding does not replace industrial hygiene expertise. Sometimes the control banding advice directly guides employers to seek such advice. Specific operating knowledge and professional judgment are required to implement the best combination of controls that are “reasonably practicable” and to minimize risks to workers.

Where is control banding already in use?

An international example of control banding concepts in use is the procedure for the transportation of dangerous chemicals. These chemicals are classified with United Nations (UN) codes that are used for identifying safe storage rules, permitted types of transport container, and actions to take in an emergency. Another example of control banding is the implementation of controls and work practices for safe handling of new drugs and materials in the pharmaceutical industry.

In Europe, a combination of the hazard and the amount of chemical stored are banded, leading to a range of duties to prepare formal safety assessments. In the United Kingdom, the HSE has developed a scheme for banding the control of health risks associated with chemicals. This scheme, or control banding tool, is called COSHH Essentials. Other European countries are exploring similar schemes and ideas.

What situations are not currently appropriate for control banding?

Control banding is not currently appropriate for many situations, including “hot” processes, open spray applications, gases, and pesticides. These situations involve more complex explosives requiring additional considerations that are not yet fully addressed by current control banding strategies. In addition, control banding does not yet cover safety hazards, environmental issues, or ergonomic issues. Researchers are exploring ways to integrate these additional workplace issues into the control banding concept.



Something interesting you wish to share amongst all of us? With the aim of sharing knowledge and experience within our fraternity, we invite all those interested in contributing to MIHA's Quarterly Newsletter, to please email your write-ups to the committee. We would like to increase the voice of this publication to not that of one, but all who make up this association.

Check out the latest news on
<http://www.mymiha.org>



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