

# **The Changing Roles of Occupational Hygienists in Hong Kong**

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# Hong Kong at Present

- Special Administrative Region (SAR) of China since 1 July 1997
- Population: 6.8 million , Predominantly of Chinese descent 95%
- Total number employed: 3.2 million
- Area: 1 102 square kilometres
- Climate: Sub-tropical

# Socio-economic Changes of Hong Kong in the Past 50 Years



# Socio-economic Changes of Hong Kong in the Past 50 Years

- Population increases from 2.4 million in 1950s to 6.8 million now
- From labour intensive manufacturing to servicing, finance, tourism, import/export trades
- From no stock market to Asia's 2nd biggest stock market
- H&S legislation from prescriptive to comprehensive self-regulatory

# The Different Periods in the Development of Occupational Hygiene

- Can be divided into 4 periods
- Each characterised by
  - dominating industries,
  - current health and safety legislation,
  - hygiene expertise available, in both government and private sectors
  - What hygienists do

# The Pre-Hygienist Period

(1955 to 1977)



# Economy & Industries

- Light industries started to appear
- Farming and fishing disappearing
- A few highly polluting industries
  - e.g. ship breaking, metal die-casting, quarrying, bleaching and dyeing, dry battery manufacturing
- Education level of workers generally low, employers mostly unaware of health hazards
- Working environment generally not well controlled
- People more concerned about making a living than the health hazards







# Legislation and Enforcement

- The Factories and Industrial Undertakings Ordinance enacted in 1955
- First medical doctor appointed by Labour Department to advise on occupational health matters
- Hygiene matters assisted by two laboratory technicians
- Enforcement on health and hygiene matters was minimal
- Occupational hazards would not be known until diseases reported to Government

# Work of the Hygienist

- Most classical occupational hazards
  - Metal fumes and asbestos (ship breaking)
  - silica, noise and heat (quarrying)
  - Cotton dust (spinning and weaving)
  - Solvents (artificial pearl)
  - Manganese dioxide (battery making)
- Monitoring equipment for hygiene survey often not available
- Hygiene assessment often relied on signs and symptoms, and interviews with workers







<b>Reported Occupational Diseases - 1958</b>	<b>Number of cases</b>
Dermatitis	33
Silicosis	12
Pneumonitis (metal fumes)	1
Lead Poisoning	1
Aniline Poisoning	5
Insecticide Posioning	4
Gassing (hydrogen sulphide)	4
Hyperidrosis palmae	2
Erythema Nodosum	1
Total	63

# Work of the Hygienist

- Radiation work in gas mantles and watch dials (thorium and radium compounds)
- Test for radioactivity on outside surfaces of landing aircraft (Russia's nuclear test in 1961)
- Test for sulphur dioxide and particulate matters in ambient air from stack emission



# Roles of the Hygienist

- Medical doctor with laboratory technician doing the hygienist's job
- Dealing with classical hazards in polluting industries
- Limited air monitoring because of lack of equipment
- Hygiene expertise confined to the government
- Hygienists (de facto) doing other “non-hygiene” work e.g. radiation, environmental protection
- Occupational hygiene still not well known as a profession

# The Government-Led Period

(1977 to mid-1980s)



# Economy & Industries

- Economy growing very fast
- Hong Kong becoming highly industrialised
- Industry from labour intensive to high-value added products with automation
- Electronic products, toys, watches, jewellery, garments replacing polluting industries
- Standards of living raised, health and safety started to catch attention



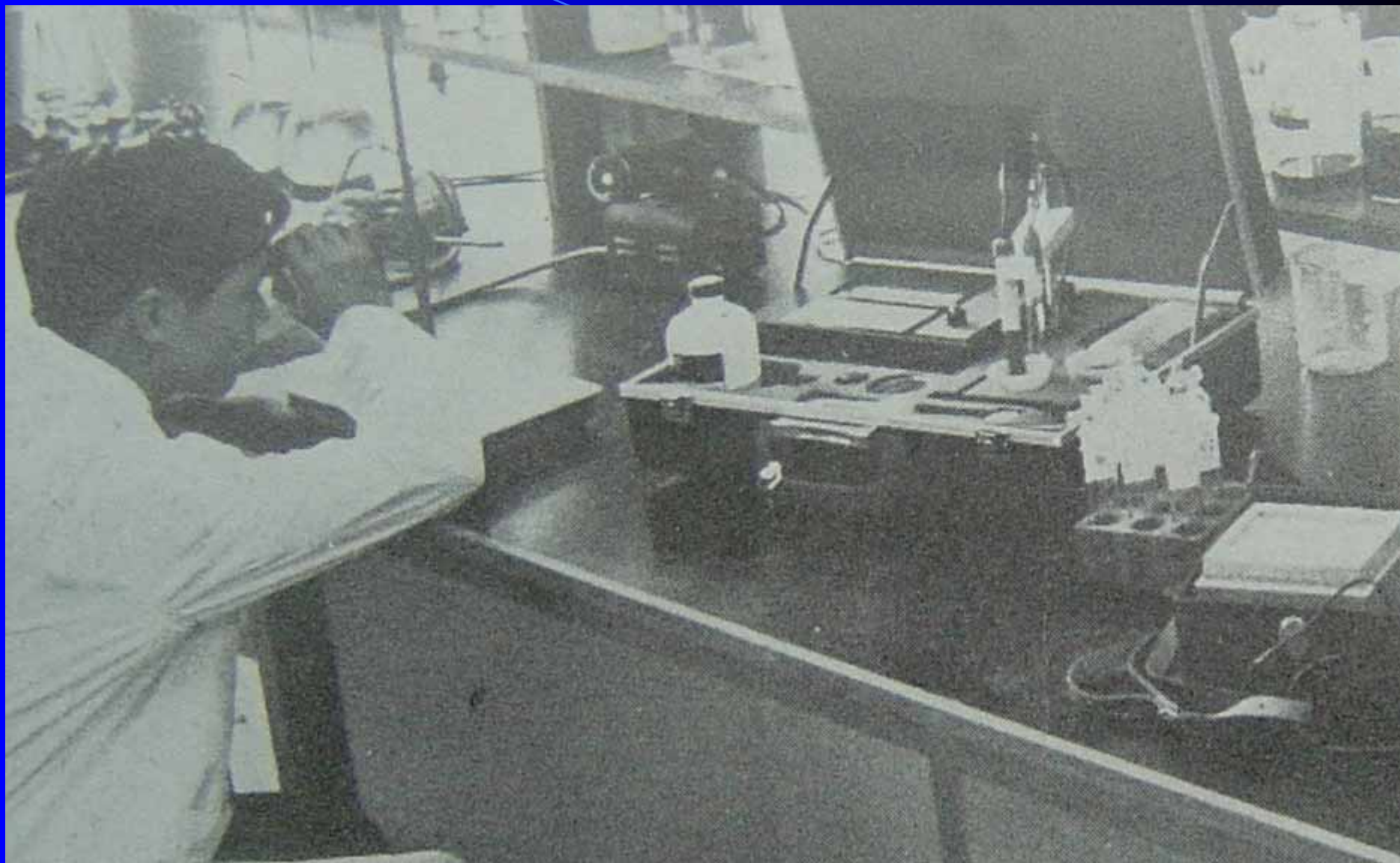




# Legislation and Enforcement

- First two hygienists appointed to the Labour Department (LSHTM trained) in 1977
- Industrial hygiene unit established
- More sophisticated monitoring equipment acquired
- Rapid increase in hygiene surveys, from 550 surveys (1977) to 1626 surveys (1986)
- Governmental hygienists increased from 2 to 10 during the period
- Worked closely with Factory Inspectors and Occupational Physicians







# Work of the Hygienist

- More complex health hazards in new industries
  - Styrene monomer (fibreglass manufacture)
  - TDI (PU products)
  - Cadmium (electronic industry)
  - Chlorinated solvents (printed circuit boards)
  - Occupational asthma in hair dressing
  - neurobehavioral symptoms among screen-printing workers

# Work of the Hygienist

- More specialised in core hygiene matters, work on ambient environment and radiation shifted to the environmental protection officers and health physicists
- Involved in promotion of occupational health, running seminars and training sessions workers in high-risk industries

# Roles of the Hygienist

- Confined to the government
- Profession better recognised in the government
- Able to deal with complicated health hazards with modern equipment
- Professionally separate from environmental protection, and radiation safety
- Still relatively unheard of in private sector
- Little direct implementation of occupational hygiene programmes in industry

# The Maturing Period

(mid-1980s to 1997)



# Economy & Industries

- Economy continued to grow rapidly, but undergoing structural changes
- Manufacturing disappearing due to high land and labour costs, moving across the border to Mainland China
- Service industry emerging
  - banking and finance,
  - retailing,
  - import/export, trading,
  - tourism and hospitality
- Standards of living further raised, health and safety taken more seriously by industries









# Legislation and Enforcement

- Common occupational diseases became notifiable under current legislation
- Number of hygienists in government continued to grow to about 20
- Occupational Hygiene establishment in Labour Department well resourced with sophisticated monitoring equipment

<b>Reported Occupational Diseases (1992)</b>	<b>Number of cases</b>
Dermatitis	11
Silicosis	211
Gas poisoning	7
Others	19
Total	248

# Work of the Hygienist

- New economy brought new hazards and concerns
  - visual display units
  - indoor air quality in the office environment
  - manual handling
  - biological hazards in hospitals
  - radon in underground workplaces
  - asbestos-containing building materials in public housing





# Work of the Hygienist

- First non-government hygienist in a local university in mid-1980's,
- Followed by more in power stations, public utilities, hospitals and large multi-national companies
- Profession widely known among safety practitioners
- Direct participation in health and safety management in private sectors
- Consulting firms appear for small to medium-sized companies
- Hong Kong Institute of Occupational and Environmental Hygiene founded in 1991

# Roles of the Hygienist

- Well recognised specialised professionals
- In both government functions and direct implementation of H&S programmes in non-government sectors
- Capable of investigating and handling highly technical environmental issues, providing expert opinions to other professionals e.g. medical doctors and factory officers
- A mature profession, has same professional standards with their fellows in other countries

# The Multi-Skilled Period

(1997 to present)









# Economy & Industries

- Economic re-structure has largely completed
- Asian financial turmoil that started in 1997 left a devastating impact on the economy
- Property and stock markets crashed, unemployment surged
- Financial pressure felt in both government and private sectors
- Economy suffered another blow from Severe Acute Respiratory Syndrome (SARS)
- Signs of economic recovery apparent this year

## Major employment sectors

**% of total  
employment**



Wholesale, retail and import/export trades, restaurants and hotels	31%
Community, social and personal services	28%
Finance, insurance, real estate and business services	15%
Transport, storage and communications	11%
Construction	9%
Manufacturing	5%

# Legislation and Enforcement

- Enactment of the Occupational Safety and Health Ordinance (OSHO) in 1997
- A wider range of health hazards became regulated e.g. manual handling, display screen equipment (DSE)
- A even wider range of hazards covered under general duty of employers
- Unfavorable economic conditions made introduction of new legislation on health and safety difficult
- Occupational hygiene establishment in both government and non-government sectors remained largely unchanged



# Work of the Hygienist

- New legislation, new economic structure and new technologies mean new challenges
  - Ergonomics
  - Indoor air quality in non-industrial settings
  - Nano-technology, bio-technology
- Higher expectation on hygienists both technically and on people skills
  - Lower concern levels in ppb
  - Knowledge in new technologies essential
  - Better people skills need to articulate work to wider audience



# Work of the Hygienist

- Financial consideration makes it difficult for hygienists to stay specialised in their niche
- Hygienists need to diversify to other areas e.g. environmental protection and industrial safety
- The outbreak of SARS in 2003 got some hygienists involved in public health and infection control in health care sector



# Roles of the Hygienist

- A modern professional who is able to
  - Provide expert advice and service
  - Communicate effectively with an growing audience on increasingly complex health issues
  - Broaden his/her professional areas to accommodate emerging needs
  - Be sensitive and adapted to socio-economic changes
  - Be multi-skilled if necessary
- Titles like Health, Safety, Environment and Quality Manager not uncommon



# Overview

- The Pre-Hygienist Period (1955 to 1977)
  - Profession not quite defined and established
  - Hygiene work done by medical doctors and chemists
- The Government-Led Period (1977 to mid-1980s)
  - Mainly on enforcement work
  - Little direct implementation role in H&S
- The Maturing Period (mid-1980s to 1997)
  - Fully grown profession in both government and private sectors
  - Professional society founded
- The Multi-Skilled Period (1997 to present)
  - Becoming multi-skilled to cope with expanding needs
  - A professional as well as a manager

# Fate of the Hygienist?



*Thank You*

