BOHS London & SE Regional Meeting

Wednesday 19th September 2018
Occupational Hygiene & Occupational Health
John Dobbie

Regional Industrial Hygiene Director – Europe, Russia, AGT & S. Africa
BP Group Safety & Operational Risk

Chartered Occupational Hygienist (BOHS CMFOH)

38 years experience in Occupational Hygiene
   18 years in Chemical Industry (Monsanto/BASF)
   20 years in Oil & Gas (BP)

2018 – 2019 BOHS President-Elect
What does OH mean?

OH = Occupational Health

OH = Occupational Hygiene
Where do they fit into Health?

- Work Activity
- Exposure
- Disease
- Death?

Occupational Hygiene
Occupational Health
Occupational Medicine

- Prevent ill-health?
- Treat/Cure?
Occupational or Industrial Hygiene?

- The terms Occupational Hygiene and Industrial Hygiene are synonymous.
- Industrial Hygiene is the name favoured in the USA, whereas Occupational Hygiene tends to be used everywhere else.
- BP uses Industrial Hygiene because its acronym IH cannot be confused with that of OH, which is seen as representing Occupational Health.
The International Occupational Hygiene Association (IOHA) defines Occupational Hygiene as:

'The discipline of anticipating, recognising, evaluating and controlling health hazards in the working environment with the objective of protecting worker health and well-being and safeguarding the community at large.'
# Health Hazards

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical agents</td>
<td>Gases, vapours, solids, fibres, liquids, dusts, mists, fumes, etc.</td>
</tr>
<tr>
<td>Physical agents</td>
<td>Noise and vibration</td>
</tr>
<tr>
<td></td>
<td>Heat and cold</td>
</tr>
<tr>
<td></td>
<td>Electromagnetic fields, lighting etc.</td>
</tr>
<tr>
<td>Biological agents</td>
<td>Bacteria, fungi, etc.</td>
</tr>
<tr>
<td>Ergonomic factors</td>
<td>Lifting, stretching, and repetitive motion</td>
</tr>
<tr>
<td>Psychosocial factors</td>
<td>Stress, workload and work organisation</td>
</tr>
</tbody>
</table>
Occupational Hygiene

• Occupational hygiene focuses on a preventative approach through minimisation of exposure to chemical, physical and biological agents and adoption of good ergonomic practices

• Other health protection disciplines
  – Occupational Health
  – Occupational Medicine
  – Epidemiology
  – Toxicology
Control of risks to health

• Effective control is the most important factor in reducing risk and preventing ill-health at work.
  – Risk must be eliminated or reduced “so far as is reasonably practicable”
  – Risk assessments should identify when additional control measures are required
  – Development of appropriate controls using ‘the hierarchy of control’
  – Often a number of controls are used in conjunction
  – Making sure controls work/are used as intended
Controlling risk – hierarchy of control

1. Elimination / substitution

2. “Safe place” options
   - Containment / segregation
   - Engineering controls
   - Ventilation (LEV)

3. “Safe person” options
   - Administrative controls
   - Personal protective equipment
Prevention or Early Warning of ill-health

• Occupational Hygiene – monitors the effectiveness of control or risk mitigation measures e.g. personal exposure measurements

• Occupational Health – uses health surveillance techniques to identify early signs of physiological change caused by exposures before the effects more irreversible e.g. audiometry

Both are complementary steps towards disease prevention
To work effectively both disciplines must work closely together
Working Together

• In my past life I worked in the High Hazard Chemical Industry in the North East of England. Both Occ Health and Occ Hygiene were represented in the E,H&S Leadership Team.

• Developing integrated training approaches to deliver to the workforce

• Feedback on any areas of concern that the other discipline can further investigate

• Taking the “pulse” of the organisation and informing leadership of trends, concerns etc.

• Mutual support to Health Surveillance techniques – e.g. clinical and biological monitoring.

• Occupational ill-health case investigations

• Supporting epidemiological studies etc.

• Supporting Emergency response & planning
Case Study Demonstrating Importance of working together

• Washing Machine Manufacturer – uses metal presses to form back and sides of washing machine case.

• Press uses metal working fluid (MWF) as lubricant and release agent – single use only – not like reservoir use for lathes, drills etc.

• Complaints received from workforce about dermatitis

• Castrol had recently introduced their MWF into factory

• Management commissioned independent occupational hygiene consultancy to investigate. They suggested it was formaldehyde identified from Castrol SDS as the agent involved

• Castrol asked us to intervene….
healthmap

- **healthmap is not a risk assessment tool**
- **healthmap** is a web-based tool used to systematically identify and prioritise health and industrial hygiene hazards.
- The tool is used in a workshop format and only facilitated by a trained healthmap facilitator.
- **healthmap output**
  - The outcome of the process is a health plan based on the identified health hazards and their priorities.
  - The Health plan will also contain a set of actions necessary for ongoing health management.
  - health metrics and targets
- healthmap is aligned to OMS and as such is subject to the continuous improvement process.
- healthmap’s success depends on you
## HealthMap - What is health? – identifying hazards/Issues

### Chemicals
- Asbestos
- Benzene
- Gasoline
- REACH

### Physical
- Noise
- Radiation
- Musculo-skeletal
- HAV

### Biological
- Legionella
- Food Poisoning
- Tropical Disease
- HIV/AIDS

### Location
- Climate
- Medical Facilities
- Accommodation

### Psychological
- PTSD
- Fatigue
- Workload

### Resourcing/Fitness
- Fitness for Task
- Travel
- Case Management
- Drugs & Alcohol

### Other Hazards
- Asbestos
- Benzene
- Gasoline
- REACH
- Noise
- Radiation
- Musculo-skeletal
- HAV
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- PTSD
- Fatigue
- Workload
- Fitness for Task
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- Case Management
- Drugs & Alcohol
### Health Hazard Identification & Prioritisation

<table>
<thead>
<tr>
<th>CHEMICALS</th>
<th>PHYSICAL</th>
<th>BIOLOGICAL</th>
<th>LOCATION</th>
<th>PSYCHOLOGICAL</th>
<th>RESOURCING/FITNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>asbestos</td>
<td>noise</td>
<td>infectious disease</td>
<td>accessibility</td>
<td>stress</td>
<td>fitness</td>
</tr>
<tr>
<td>benzene</td>
<td>vibration</td>
<td>food hygiene</td>
<td>medical facilities</td>
<td>PTSD</td>
<td>drug &amp; alcohol</td>
</tr>
<tr>
<td>gasoline</td>
<td>musculoskeletal</td>
<td>potable water</td>
<td>medical staff</td>
<td>fatigue</td>
<td>travel</td>
</tr>
<tr>
<td></td>
<td>radiation</td>
<td>effluent</td>
<td>natural disasters</td>
<td>shift work</td>
<td>competence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>legionella</td>
<td>climate</td>
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</tbody>
</table>

- Customers / Others
- Community / Public
- Workforce [ Employees & Contractors ]
- Hazard Visualisation (use Boston Squares)
Hazard visualisation

- Introduce Boston square
Ranking/Prioritising the Hazard/Issue

<table>
<thead>
<tr>
<th>1 master profile</th>
<th>2 workshop details</th>
<th>3 plan details</th>
<th>4 select categories</th>
<th>5 assign hazards</th>
<th>6 rate hazards</th>
<th>7 plan summary</th>
</tr>
</thead>
</table>

**Chemicals/Products**
- Mercaptan
  - Cleaning Agents
  - Unauthorised and Expired Product

**Physical**
- Noise
- Manual Handling
- MH Office and Sales
- Company Car Drivers, Ergonomics
- Office Ergonomics

**Biological**
- Legionella
- Travel Health, Immunisations

**Psychological**
- Stress

**Resourcing/Fitness**
- Fit to Work

**Ranking**

<table>
<thead>
<tr>
<th>Key</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>WF</td>
<td>Workforce</td>
<td></td>
</tr>
<tr>
<td>C/O</td>
<td>Customer/Other</td>
<td></td>
</tr>
<tr>
<td>C/P</td>
<td>Community/Public</td>
<td></td>
</tr>
</tbody>
</table>

```
Hazard / What:
Mercaptan

Exposure / Who (WF):

Exposure / How much (WF):

Health / Effect (WF):
```

**Overall Priority**

**Hazard Description:**

Comments:
Hazardous substance, refer MSDS guidance. Use very limited, however potential health impact high. CARCINOGENIC

**Add An Action**

<table>
<thead>
<tr>
<th>Action title:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Date:</td>
<td></td>
</tr>
<tr>
<td>Action:</td>
<td></td>
</tr>
</tbody>
</table>

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BOHS The Chartered Society for Worker Health Protection
# Plan Output

## Plan Details

| Plan ID: | 2347 |
| Plan Name: | LPG Denmark (2004-Mar) |
| Plan Status: | Completed |
| Plan Status Notes: | 13/13 hazards prioritised 55/55 visualisations rated |
| Segment | R&M |
| SPU | International Business |
| Business Unit | LPG |
| PU or other | Northern Europe - Denmark |
| Site/Location | (no site) |
| Location of Workshop: | |
| Date of Workshop: | 22 Mar 2004 |
| Name of Facilitator: | Carter, Martyn M |
| Attendees: | |

**Plan Scope:**

- **No. of People covered by plan:** 10
- **Owners:** Nissen, Helene;
- **Readers:** Whitehead, Angela M
- **Auditable Entity:** |

### High Priority | 5 Hazards | 5 Actions | 5 Actions Completed

### Medium Priority | 5 Hazards | 5 Actions | 5 Actions Completed

### Low Priority | 3 Hazards | 3 Actions | 3 Actions Completed

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*BP* the Chartered Society for Worker Health Protection
More examples of collaboration

• Since 2006 an OH colleague and myself have been working together to assess the competence and capacity of the main health functions in BP and compiling quarterly reports for the VP Health.

• We now have a tool which tracks the results onto a Boston square
Psychosocial Issues

• The “Elephant in the Room”?

• Real opportunities for the most “people focussed” health disciplines to work together on these issues.

• Workforce trust our disciplines and we both see the “Real World”

• Often a combination of personal and workplace/work environment factors – both disciplines should work together

• A growing concern.
OHN’s working in Occupational Hygiene

- In Castellon Refinery in Spain we have 6 Occupational Health Nurses running their occupational hygiene programme.

- On all of our Offshore platforms and FPSOs we have Offshore Medics who are delivering occupational hygiene services.

- In AGT all our Occupational Hygienists started off from Occupational Health backgrounds.

- In Indonesia our OHN’s are cross-training in both disciplines.
Opportunities if you have more interest in Occupational Hygiene

- Visit the OH Learning Website [http://www.ohlearning.com/](http://www.ohlearning.com/)