

# Presentation on The Confined Spaces Regulations 1997, by Bob Cole, Group Chief Safety Officer, Miller Group.

Bob introduced his presentation by saying that he was going to divide it into the four distinct areas of **slides, Regulations, Miller Group procedures and safety equipment**. He started by showing some photographs he had taken through the years to illustrate hazards, working conditions and some control measures, such as:-

- Millers use shackles instead of hooks on cranes after a fluke malfunction dropped a load into a confined space.
- It is important to provide back-up rescue equipment.
- Pre-entry checks are imperative and must be done at suitable depth intervals in deep excavations.
- Training is a crucial part of safe working and Millers have permanent confined spaces training area to cater for all levels of staff.
- Drowning is a significant hazard in some instances.
- Eating in work areas is not allowed, now.

Regarding the Regulations, Bob said that they came into force on 28<sup>th</sup> January 1998, were goal setting, supported by an ACOP and guidance and were subject to all parties and works covered by the HASAWA. Exceptions were Diving Operations, work below ground in a mine and the Master or Crew of all Sea-going Ships.

The new regulations consolidate the general requirements of s.30 of the Factories Act 1961. The HASWA (ss 2 and 3), the Management of Health and Safety at Work Regulations 1992 and the Workplace (Health, Safety and Welfare) Regulations 1992 provide a general duty of care but do not contain specific requirements on confined spaces.

A Confined Space may be defined as

**Any:-**

- Chamber, Tank, Vat, Silo, Pit, Trench, Pipe, Sewer, Flue or Well,

**Or, an Other Similar Space which by virtue of its enclosure creates a specified risk from:-**

- Fire, or Explosion
- Loss of consciousness or asphyxiation arising from Gas, Fumes, Vapour or Lack of Oxygen.
- Asphyxiation from a free flowing solid.

The Principle Requirements of the Regulations, which apply to Persons(and/or works) done by others but within an Employer's control, are:-

- To avoid entry to confined spaces by working from outside.
- To work to a safe system of work, if **entry is unavoidable**.
- Before work starts, have adequate emergency arrangements in place which will also safeguard rescuers.
- Where resuscitation may be necessary, have resuscitation equipment readily available.

To be 'Suitable and Sufficient' the arrangements for rescue and resuscitation should include consideration of:-

- Rescue and Resuscitation equipment.
- Raising the Alarm and Rescue.
- Safeguarding the Rescuers.
- Fire Safety.
- Control of Plant.
- First Aid.
- Public Emergency Services.
- Training.

Regulation 7 provides the following two defences against a prosecution for breach of the requirements to use any emergency arrangements:-

- Prove that the breach was caused by someone not employed by the employer being prosecuted.
- Prove that the employer used "due diligence" to avoid the breach. It is worth noting that "due diligence" is difficult to prove to the satisfaction of the court.

In the introduction to the third section about the Miller Group procedures, Bob said that he made no claim that they were anything but a model for others to use, or modify. Their approach was based on a classification of **Confined Spaces** as follows:

- **Class A** Shallow manholes, Chambers or similar where the atmosphere is clear on entry and unlike to change.
- **Class B** Deep, and sometimes shallow, manholes, chambers, tanks or similar, where the atmosphere is clear on entry and is liable to change.
- **Class C** Where Gas or Harmful Atmosphere is known to exist.
- **Sewers**
- **Tunnels**

**Common Hazards** which should be considered are:-

- Toxic Gas, Fumes or Vapour.
- Explosive/Flammable Gas, Fumes, or Vapour.
- Oxygen Deficiency/Enrichment.
- Fire
- Collapse of Side, Roof, or Face.
- Falling Materials, particularly into access shafts.
- Biological, Toxic or Hazardous Contaminants.
- Flooding - Be sure to obtain as relevant weather report and remember that rainfall some miles away might affect your works.
- Injury Accidents.
- Medical Problems
- Power Failure - Darkness in confined spaces can be Total and catastrophic.

**Personnel Selection** is another critical function which should consider the following issues:-

- Whether the person is physically and mentally suitable.
- Is the person aged between 18 and 55 years?
- They should be considered to be unsuitable if they suffer from the following complaints:-
  - ◆ Fits, Blackouts, Fainting.
  - ◆ Heart problems.
  - ◆ Asthma, Bronchitis, Shortness of breath on exertion.
  - ◆ Deafness.
  - ◆ Epilepsy

**Common Control Requirements** which represent a minimum standard for all situations are:-

- Training needs.
- Establishment of confined space category.
- Risk Assessment/Method Statement.
- Communication of Control Measures.
- Provision of Protective Equipment.
- Entry Procedures
- No Smoking Area.
- Permits to work
  - ◆ Hot Work.
  - ◆ Hazardous Substances.
  - ◆ Internal Combustion Engines
  - ◆ Work on/near Electrical Systems.

The essential element for good control of safe working in Confined Spaces is an adequate Pre-Entry checks Procedure, which should address the following:-

- Communications.
- Provision of a 'Top Man'.
- Safety Equipment.
- Ventilation of the space.
- Barrired Access.
- Isolation and Locking-off Electrical/Mechanical Plant.
- Atmospheric tests at suitable levels/points.
- A secondary means of access.
- Tally Arrangements to monitor persons at work in the space.

In the final part, Bob referred to the display on the stage and itemised the major pieces of equipment as follows:-

- Radio Communication Sets (Intrinsically safe design).
- PPE - Helmet, Clothing, Boots, Gloves, Eye/Ear protection.
- Lighting - Normal/Emergency.
- Atmospheric Monitors
  - ◆ Flammable Gas
  - ◆ Hydrogen Sulphide
  - ◆ High/Low Oxygen
- First Aid.
- Tripod, winch, Full Body Harness.
- Life Lines.
- Self Saver Sets.
- Fresh Air Blowers.
- Rescue Back up Gear.

In concluding his presentation, Bob also emphasised the need for separate failure alarms on equipment supplying clean air for safety reasons, as opposed to fresh air for comfort. The Chairman opened the meeting for questions.

## *Members' Questions*

**Mike Hoare** of Birmingham University asked if any more jobs were done from outside confined spaces, now, in order eliminate the hazard. **Bob Cole** replied "None, because the range of work undertaken was not suitable for such an approach".

**Ray Hesson** asked how Miller Group assessed medical fitness. **Bob Cole** replied that they asked employees to complete a questionnaire for general work but used a doctor to carry out examinations for Compressed Air Work.

**Terry Fisher** from Land Rover asked what depth of trench was considered to constitute a Confined Space. **Bob** replied that any trench that was deeper than its width fell into the definition of Confined Space.

**Mike Wilkinson** asked what tasks were carried out under a Permit to Work (PTW) procedure. **Bob** quoted the following situations:-

- Hot Work - always.
- Work in Combustion Engines
- During pre-venting checks

**David Simkin** of Robinson Brothers mentioned the practice in the Chemical Industry to use a PTW for entry into all confined spaces.

**Terry Fisher** asked what the Miller approach was to competency training. **Bob** said that this was tailored to suit the role of the individual, as follows:-

- 1 Day            Basic training for all types of staff.
- 2 Day            Additional for Supervisors
- 3 Day            For Rescue Squads, in addition to the basic 1 day basic training.  
(These rescue squads were necessary because the emergency services were not fast enough, although it was vital to liaise with them over the general arrangements.

**Denis Walley** of South Staffs Water said that the Regulations were rather vague on when resuscitation equipment was needed and asked what the Miller approach would be? **Bob** answered that the risk assessment would be used as a guide and said that one of the factors could be the likelihood of fire causing asphyxiation.

**Dick Bell** of Kidderminster & District Training Company asked what refresher training was necessary. **Bob** replied that this was given after three years. **Dick** then asked if there was a practical skills test and **Bob** said that there was and that this was verified with a training card which was used as a tally in the pre-entry procedure.

**Ray Hesson** mentioned the use of the Meteorological Office to provide storm warnings to guard against flooded excavations. **Bob** agreed that this was a wise

precaution and added that problems could often be caused by rainfall some miles away from the work location.

**Mike Wilkinson** asked about cleaning the inside of a car with a solvent. Bob agreed that this could be classified as a confined space and it indicated how widely employers would have to think about the problem.

**Ken Talbot** enquired about the requirements for Health Surveillance. Bob answered that there was no health surveillance procedure and that monitoring relied on individual persons. Over the age of about 55 years it was considered that special attention was paid to individuals.

**Denis Walley** commented his company took a consensus of practices and that the Royal Navy procedure for Divers was that a medical examination was made as follows:-

- < 40 years old            Every 3 years
- 40 - 50 years old        Every 2 years
- > 50 years                Every 12 Months

**David Hughes** asked about the invocation of the First Defence under Regulation 7 and illustrated his question with an example of a cupola cover which fell down and injured another party. Bob said it was difficult to generalise about what could be a complex situation without more details.

**Bill Parker**, a visitor from the **Marches Safety Group**, asked about deciding on levels of Competency required for work in Confined Spaces. Bob replied that this was decided by the Risk Assessment which determined the working methods and the training needed to carry it out safely. Persons who had been on the appropriate courses, as previously described in the presentation, were deemed to be 'Competent'. **Bill Parker** then asked about working in Flammable/Explosive atmospheres. Bob replied that if this developed while work was in progress, staff would be evacuated. It would then be treated as a Class C space and a special method of working would be developed - it was not covered by a 'Generic' assessment.

**Roy Gill** of John Laing asked about awareness training for Senior Staff. Bob said that this consisted of a Base Module course, 3 Day General Courses, together with 1 Day courses on Confined Spaces, Scaffolding and Cranes.

As there were no more questions, the chairman thanked Bob for his excellent presentation and closed this part of the meeting. He then announced that BHSA had obtained a copy of the new Construction Safety Manual which had been produced on an improved format.