

Birmingham Health, Safety



& Environment Association

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Secretary: *Liz Prohett BA (Hons) CMIOSH CIPD*

# ***Newsletter***

## ***December 2014***



### ***SEASONS GREETINGS***



## ***Monthly Meeting – 8 December 2014***

### **New Members**

George Allcock, Chair, welcomed all to the final session of the year and invited new members and guests to introduce themselves:

- Paul Salisbury of Fire Safe International based in Shrewsbury. One of their areas of expertise is respiratory protection and they also specialise in face mask assessment tests.
- Jim Clifford of Environ, a local EHS consultancy, with ten offices around the UK.
- Duncan Thomson, Training and Health and Safety Manager for We Clean Limited, a premier Midlands cleaning company.

### **Guests**

- Ian Doyle of B H Leake & Sons in Stirchley, a rubber manufacturer of wheels and rollers. Ian is recently appointed to the role and keen to expand his health and safety knowledge.
- Julian Fountain has just taken up a role with Axa Insurance, based in Cambridgeshire and was previously with the Fire Service.
- Nick Brown has just taken on the safety role for Lincoln Security, a nationwide lock fitting, CCTV and alarm systems company, based in Lincoln.
- Graham Tiplady, who is a safety trainer for NHBC.

George then introduced the main guest speaker for the day:



***Alan McArthur, Technical Services Specialist, 3M  
Personal Safety, 3M United Kingdom PLC***

**Are you fit enough? A practical guide to fit testing and competency**

### **Presentation Agenda**

- Why and when to fit test
- Fit testing methods
- Hints and tips
- Dealing with failures
- Competence and the Fit2Fit Accreditation Scheme

Alan first established that most of the audience were aware of the need for face fit testing in the workplace and had adopted this practice.

### **Why Fit Test?**

COSHH 2002 Regulation 7(9) (and also the asbestos and lead regulations) states that PPE shall be “suitable for purpose”. The ACoP linked to this regulation says a respirator must provide an adequate seal to the wearer’s face. The best way to determine this is to do a face fit test.

### **Types of RPE to be Fit Tested**

**Tight-fit** disposables or reusable rubber half or full face masks, including Powered and Supplied Air versions, all work on the principle of negative pressure. The mask is fitted to the face, the wearer then breathes the air within the mask which creates a negative pressure – a partial vacuum - and the outside air rushes in to equalise that pressure via a filter. To be effective the mask must provide an adequate seal to the face as inward leakage of contaminated air will reduce protection.

Respirators that rely on a constant flow of compressed air through the headtop and have a **loose-fit** to the face, eg helmets and hoods, do not require fit testing.

### **What is Fit Testing?**

It is a means of assessing how well a respirator fits the face. It has to be an individual test because one model will never “fit all”. Several tests will be required if different models are being worn for different tasks.

There are two main methods used:

- **Qualitative Taste Test** - used with disposable or reusable half masks. This method tends to be used by those companies undertaking the fit testing in-house. Kits are around £120 and straightforward to use.
- **Quantitative Particle Counting Test using Portacount** - a device made by TSI which costs around £7/8,000. Some large companies will purchase these but they are generally purchased by external consultants.

A question put to the audience found that around 4-5 do in-house testing , 2-3 use consultants but no one had a Portacount machine.

### Respirator Performance During a Fit Test - What to look for

The test is to judge how much of the contaminant gets to the inside of the mask. For half masks, disposable or reusable, particles have to be reduced by a factor of at least 100 during the 7 minute test. So for every 100 particles outside, only one can be allowed in through leakage which is quite a tough test and twice the level of protection required to achieve the CE mark.

However, when wearing a FFP3 half mask fitted with a P3 filter, over the period of the working day you would expect a protection factor of 20 but you are looking for five times this rate over the 7 minute test.

### Fit Test Methods

#### Qualitative Taste Test – A Particulate Test

If using half masks with gas and paper filters you will need to change them for the purpose of the test.

The result is either a Pass or a Fail and is based on the response from the wearer and works on the principle of taste. Mist is delivered into the hood from a hand delivered nebuliser. If the person tastes the substance, which should have been captured by the filter, then we say it is an inadequate fit and therefore a fail.

The taste comes from two versions of a solution; one is a sweet saccharin solution and the other a bitter one which contains a substance similar to that painted on children's nails to stop them being bitten.

George asked whether it was inevitable that there will be some amount of leakage between the respirator and the skin and thus a fail. Alan responded that it is not about a 100% seal but an "adequate" seal and at very low levels there would be no taste. There is no such thing as 100% efficiency – something will always get through, even with self-contained breathing apparatus.

The test is in two parts. The first is a sensitivity test without the respirator to check whether the person can indeed taste the solution as not everyone is able to do so – especially the sweet one, in which case they would be tested with the bitter version. This part also establishes the person's threshold over three bands. If someone should need more than 30 squeezes of the solution then the test is not suitable for them.

A Member asked whether there would be a delay prior to the actual test to remove the taste. Alan confirmed there is usually a short break to clear the palate, clean the lips, drink water and, whilst waiting, to become familiar with the respirator and how it should be applied.

### **3M Fit Tests**

The 3M test kit consists of:

- Hood and collar
- Sensitivity nebuliser and solution
- Fit test nebuliser and solution
- Spare jet and cleaning pin
- Instruction book

The actual fit test uses a stronger version of the sensitivity solution.

### **Quantitative Particle Counting Test**

Tubing comes out of the respirator going down to the machine. The tubing is in two parts, one part stops outside the respirator and the other reaches in to the breathing zone. The machine takes samples from outside and inside and counts the particles in the air. In clean air conditioned buildings it is necessary to increase the particles for the machine to operate. The machine then compares the ratio between the two. The HSE sets the fit factor ratings for each device: 100 for half masks and 2,000 for full face masks.

The non-disposable masks have a space for the tube which sits between filter and mask and in some cases there are adapters available to facilitate the tubes but it would be necessary to puncture a hole in the disposable mask for the purpose of the test.

### **Fit Testing Exercises – Quantitative Test**

Some form of exercise is required whilst wearing the respirator. This is normally:

- ✚ Stepping up and down to get the breathing rate up
- ✚ One minute normal breathing
- ✚ One minute deeper breathing
- ✚ One minute slowly moving head from side to side to simulate the stresses a wearer might encounter
- ✚ One minute moving head up and down
- ✚ One minute talking out loud
- ✚ One minute bending forwards
- ✚ One minute normal breathing

A fit test takes 20-30 minutes for most people and half an hour is typical. So you need to allocate an hour's labour ie half an hour for the assessor and half an hour for the wearer.

A failure will be as a result of the wearer being able to taste the solution or the machine recording a number that is lower than the fit factor.

First examine the seal before the wearer takes off the respirator and ask them whether they were aware of any change to the fit at any point. If there is nothing obviously wrong then simply repeat the test and ensure that the nose clip especially is fitting correctly. If they fail a second time, and nothing is wrong with the test, try another model which may better suit the person's face.

### Preparation for Fit Testing

- + Timeslots should be scheduled to allow some flexibility ie for repeating the test.
- + People need to be briefed re shaving, eating, smoking, drinking.
- + **Good ventilation** is necessary to remove the mist from the room prior to each test taking place so people are unable to detect it as they enter. If it is an air-conditioned room then there needs to be sufficient particulates in the air.
- + **Privacy** is necessary to avoid embarrassment and ridicule from work colleagues.
- + For the taste test it is important to have a **clean palate** so schedule tests half an hour before eating, drinking or smoking.
- + The person also needs to be **clean shaven** to ensure a good seal.

A Member pointed out that some men in construction may start a shift so early in the morning that they have not shaved before leaving home and that they could be on jobs quite late in the day. Alan's response was that as a guide they should have shaved within the 8 hours prior to a shift starting but HSE guidance is that the individual should be clean shaven – certainly on the day they intend to wear a respirator and it may be necessary to enforce a clean shaven policy if issuing these devices. However, if it is not practical to enforce the policy – say if someone has facial hair for personal or religious/cultural reasons - then it would be necessary to use a powered respirator.

Do not expect one size or model of face mask to suit every face, so have some alternative models/sizes available in the event of failure.

### Fit Test Records

Records should be made of all tests. There is HSE guidance as to what to record, eg make and model of respirator, name of assessor etc.

### Who can do a Fit Test?

- A competent person
- HSE guidance lists 14 competencies

### How to Judge Competence

HSE working with British Safety Federation established an accreditation scheme called Fit2Fit. There is a large syllabus on the Fit2Fit website, a multiple choice examination and a practical assessment.

### Roles and Responsibilities

- The employer must ensure that, where staff are using tight-fitting respirators as a control measure, they are fit tested by competent staff.

- Fit testers must ensure fit testing protocol is adhered to and must possess competencies as listed in HSE 282/28.
- Employees must wear the model of respirator they were tested on.

Buying departments should buy the models most of the people will have to wear but stores need to be aware of the other types in use so they may keep sufficient stock. Note that a change of mask manufacturer will require a repeat of the fit testing process and purchasing departments need to be aware of this.

Re-testing will be required for factors which may affect the seal such as a significant gain or loss of weight, scarring, major dentistry, etc but there is no set time for general re-testing.

Fit testing is only a starting point to confirm that you can achieve an adequate fit with that form of protection. You will still need to do a Risk Assessment to determine the correct equipment for the risk and also to train employees in how to use and look after it, to be clean shaven when wearing it, to keep it on during all forms of exposure, and to notify you of any changes which might require re-testing.

3M do train people using their fit testing kits. There is also a more detailed half-day workshop, which is chargeable.

For further guidance go to:

[www.hse.gov.uk](http://www.hse.gov.uk) [www.fit2fit.org](http://www.fit2fit.org) (Steve Parton highlighted a really good video clip on the website.) [www.3m.co.uk/fittestrespirator](http://www.3m.co.uk/fittestrespirator).

George invited the audience to thank Alan for his most interesting and informative presentation and then handed over to the first of two Members' Corner speakers:

## **Members' Corner**



***Colin Hailing – Head of Group Health, Safety, Environmental, Quality & Training, Parkstone Group Ltd.***

### **Face Fit Testing**

Colin explained that as a construction company they have to prove they are doing all they can for their operatives from

an HSE point of view regarding occupational health.

Parkstone has a policy and procedure which requires new employees following their induction to have a face fit test before going out on site. All Site Managers, Works Managers and Supervisors undertake the testing so as to assess the staff

on site. There is also a kit on every site. The majority of clients insist all their employees are fitted and the assessors have certificates as evidence they are trained.

### Face Fit Records

They use all three sizes of the Moldex respirator and stock is kept on site. They have a computerised system so that when an employee is face fitted the information is scanned onto the computer so that a certificate can be produced if the employee moves site and is unable to produce a copy.

### Toolbox Talks

They provide their employees with Toolbox Talks. They are a member of Construct Concrete Structures Group and follow the Safe System of Work (SSoW) principles. Site managers regularly patrol the sites to check whether the masks are being worn correctly.

### Beards and Cultural Issues

From their experience, employees with beards for religious or other personal reasons can be a problem. Colin has even observed employees growing beards in an effort to avoid those tasks where respirators are required! He then has to either identify alternative methods of protection or move those who are clean shaven onto the tasks requiring respirators.

### Use and Abuse

In Parkstone's experience, trying to get their employees to look after their equipment is difficult and also costly when having to replace lost or damaged items. Getting the message across that the equipment is there to protect them is a major battle. Member Debra Wyatt, an HR professional from Peninsula, advised that issues relating to PPE can be addressed as part of the contract of employment. Such contractual conditions will make it easier to deal with those employees who persistently fail to wear their PPE. In the case of misuse/abuse of the PPE, a statement to the effect that charges may be levied in certain circumstances may also be covered in the contract.

George thanked Colin for the way in which he had delivered his presentation stating how useful it is to gain the perspective of the employer/user and not just the manufacturer. George invited members, as practitioners, to consider giving a 10 minute Members' Corner presentation to relate their health and safety experiences and specific problems encountered in their line of work. Such experiences can often be invaluable in helping others overcome similar problems, and sometimes of more value than a one day seminar. Anyone interested in doing a slot should get in touch with Liz Prohett.

Special thanks also to **Paul Salisbury**, Managing Director **Fire Safe International Ltd.** and a BHSEA Member. Paul dropped in to the meeting today on his way to Glasgow on business. Paul happened to have a selection of respiratory protection equipment in his car boot, and kindly offered to bring them in and put on display for Members to have a look at.



***Martin Secker of  
Evac + Chair International***

## **Sudden Cardiac Arrest (SCA): The risks involved**

Evac+Chair International has, for the last 35 years, been a national provider of evacuation chairs for the safe evacuation of people with mobility problems in the case of a fire or other emergency. Since January 2013 they have become heavily involved in the cardiac environment and are the UK's leading provider of defibrillators and especially the CardiAid defibrillator, Europe's number one unit.

## **What is Sudden Cardiac Arrest (SCA)?**

SCA is the condition in which the heart is no longer able to pump blood to the brain and the rest of the body. Consequently starved of oxygen, the brain begins to die. In about 80% of cases it is caused by a chaotic fast heart rhythm, which is called Ventricular Fibrillation (VF).

## **Some statistics**

- According to the British Heart Foundation, there were 74,000 premature deaths attributed to SCA in 2011. 1 in 6 males and 1 in 9 females died prematurely.
- Four times more women die from heart attack than from breast cancer.
- 12 people under the age of 35 die every week in the UK due to SCA.
- 70% of cardiac arrests occur outside a hospital environment, quite often in a hospital car park.
- Effective bystander CPR, administered immediately after SCA, can double a victim's chance of survival.
- Cardiac arrest is Europe's biggest killer – more so than cancer or crime.
- Around 270,000 people suffer a heart attack in the UK each year, with one third dying before reaching hospital.
- The Department of Health has a target of placing 3,000 new defibrillators in public places in England.
- Early defibrillation can triple the chance of survival.

Martin recalled the cardiac arrest of the young Bolton Wanderers' footballer Fabrice Muamba back in 2012. He had no record of previous heart defects or hereditary problems and regular heart tests had predicted nothing. His heart attack was brought on by extreme physical exertion. Groundsmen had used a



defibrillator and were able to revive him after 80 minutes, with no apparent mental or physical dysfunction.

### **Causes of SCA**

It is mostly unpredictable; regular heart tests can reveal no problem. SCA can be brought on by:

- heart attack
- respiratory arrest
- drowning
- trauma
- sudden emotional changes, such as job and financial worries
- electric shock
- stress
- drugs and alcohol
- excessive physical activity

### **Leading Risk Factors**

- 75% of SCA cases have had a prior heart attack. A person's risk of SCA is highest in the first six months following a heart attack.
- 50% of cases are related to Coronary Heart Disease, the risk factors for which include smoking, family history of cardiovascular disease, high cholesterol or an enlarged heart.

The only treatment of SCA is immediate defibrillation and CPR. Automated external defibrillators (AED) are designed to make immediate defibrillation possible.

### **Why is Early Defibrillation Critical?**

Chances of survival decrease by about 10% for every minute without defibrillation. With average response times for an ambulance currently at 18 minutes (or longer at peak times when traffic is particularly heavy) having equipment close-by – and someone prepared to use it - could mean the difference between life and death. After 5-6 minutes the brain has already started to die and the patient may be beyond all realistic chance of revival. For Fabrice Muamba, his recovery after 80 minutes was therefore simply amazing.

### **CardiAid**

Evac+Chair International offers CardiAid, an automated external defibrillator. It gives clear verbal and visual instructions and there are three very simple steps so that the layman can use it to keep the patient alive prior to the arrival of the emergency services.

### **Use of the CardiAid**

If you have basic CPR and chest palpitation knowledge it helps but it is not compulsory. You simply place the pads on the patient's body – as the unit is biphasic they don't have to be placed in an exact position and anywhere on the torso (not the patient's head) would still be effective. The machine will determine whether a shock is required to revive the patient and also the level of shock according to the patient's body size. It will give no more than is required and if the patient is choking or having an epileptic fit etc then no shock would be administered. Other equipment is also in the kit but rarely used in the emergency situation. The standard pads are suitable for ages from 7 upwards, with a paediatric size for smaller/younger persons.

## Battery Powered

The CardiAid defibrillator is powered by alkaline batteries which have a two year lifespan. However, the majority of defibrillators use lithium batteries, which have been known to deplete when a unit is inactive for a lengthy period of time and so will not work when needed. You are assured of the power being available with the alkaline batteries. The unit will self-test on a daily and a weekly basis, with a green flashing light to indicate the unit is fully functional. However, a flashing red light will confirm there is an issue or that the battery is flat.

## Training Requirements?

David Hughes asked about training. Martin explained that the defibrillator is designed so no training is required. However, there are training units available to get people used to the prompts but which stop short of the electric shock at the end. There are annual half hour refresher sessions which may also form part of first-aid training. There is currently no legal requirement for training. David remarked that often people with no first-aid training are reluctant to come forward to assist in an emergency situation and stated that having first-aid training helps you to overcome the initial shock of the situation and fear that you will be unable to help the person.

Martin referred to regular media reports of people who have died due to help not being available early enough. It is sobering to note that it is not uncommon for people witnessing someone having a heart attack to also go into cardiac arrest through the stress of the situation.

## And the Cost?

Another Member asked about the cost of the equipment, which is currently in the region of £1,000, including training. There are two versions available: a semi and a fully automated machine. Martin advised that although defibrillators are not yet a legal requirement he is confident that laws will be passed in the next two years for them to be available in all public access areas. Once laws are passed the cost of a machine is likely to quadruple.

Out of an audience of 49 today, 7 members had defibrillators within the workplace in the public areas. One member commented that in his experience some workers would not put themselves forward to administer the help unless they got paid extra for it!

George thanked Martin for his presentation and asked if anyone who has a defibrillator at their place of work and would like to do a 10 minute Members' Corner slot from a user point of view to contact Liz Prohett.

With that George wished everyone *SEASONS GREETINGS* and announced mince pies all round!

***Don't forget to check the BHSEA website for today's presentations at [www.bhsea.org.uk](http://www.bhsea.org.uk)***

## Announcements



- ❖ BHSEA are pleased to announce that they have once again been successful in winning the RoSPA Alan Butler Gold Award out of 70 or more groups within Safety Groups UK. We have again been recognised for our programmes like the monthly meeting and promoting Health, Safety and Environmental issues more broadly.

George gave particular thanks to Liz Prophett and Mark Hoare for the work in submitting the application for the Award.

- ❖ **BHSEA ANNUAL REPORT & ACCOUNTS** will be circulated electronically to Members this week (commencing 15 December). The style of this Report has been changed this year with the intention of making it simpler but at the same time more informative. Please take time to look through the two part Report (Financial and BHSEA) and please come back to the Secretary with any comments/questions. The Report will be presented at BHSEA AGM on 12 January 2015.
- ❖ **ELECTRONIC v HARD COPY** There has been some discussion with Members present at BHSEA meetings about electronic and hard copy of the BHSEA Newsletter. The default position is likely to be electronic copy unless a hard copy is specifically requested. Please confirm your preference with the Secretary [secretary@bhsea.org.uk](mailto:secretary@bhsea.org.uk) Don't forget that an electronic copy of the Newsletter (and back copies) are provided on BHSEA website [www.bhsea.org.uk](http://www.bhsea.org.uk).
- ❖ **60 YEARS OF WORKING WELL TOGETHER** will be celebrated in 2015 with a major event, the details of which will be announced early in the New Year. Watch this space!

## Job Opportunities

- ✚ Full time job vacancy for an experienced Health and Safety Manager, for immediate start at DHL Skelmersdale on the warehousing and distribution site of the supply chain business, near Wigan. You will require NEBOSH General Certificate as a minimum. The pay is around 30/35k. Please send your CV direct to Jon Neafcy at DHL on [jon.neafcy@dhl.com](mailto:jon.neafcy@dhl.com)
- ✚ A Birmingham based company who work in construction/civils - supplying labour and plant as required – has a vacancy for an HSEQ Manager. Based at the Birmingham office you will be required to maintain the systems and procedures and be prepared to visit the Farnborough area possibly once a week but definitely once a month.

The Company are prepared to be flexible with any interested party in terms of fees, hours/days worked and employment etc.

Contact Andy McCluskey on 07986169243 for further information.

**See BHSEA website on [www.bhsea.org.uk](http://www.bhsea.org.uk) for full details of this presentation.**

### **Free to a good home.....**

Anyone studying for Chartered Institute of Personnel and Development qualifications? Done mine and would like to see the back of....

- Employee Relations: Hollinshead, Nicholls, Tailby.
- Research Methods for Business Students: Saunders, Lewis, Thornhill.
- The Strategic Management of Human Resources: Leopold, Harris, Watson.
- HRM & Occupational Health and Safety: Boyd.
- Industrial Relations in Great Britain: Clegg.
- Behavioural Sciences for Managers: Boot, Cowling, Stanworth.
- Brilliant Interview: Jay.
- Uses and Abuses of Psychology: Eysenck.

Contact the Secretary for further details.

**Date of Next Meeting**  
**2.00 pm Monday, 12 January 2015**

at the Birmingham Medical Institute

***ANNUAL GENERAL MEETING***

**\*\*\*\*\***

***HSE Annual Progress Report  
and Future Plans***

**Samantha Peace, HSE Divisional Director,  
Wales, Midlands and South**

***Don't forget the buffet lunch at 1.15 pm***