

INCIDENTS AND ACCIDENTS TO DATE

<i>Incident</i>	<i>Type</i>	<i>Date</i>
Fall from platform	Fatality	1997
Gas exposure	Hospitalisation	1998
Fall through fragile roof	Near miss Hospital treatment	2000
Scaffold collapse	Near miss Equipment damaged	2000
CO exposure at steel works	Near miss	2000
Steam release by sampling platform	Near miss	2000
Fall from ladder	Hospitalisation	2000
Fall through platform	Fatality	2000
CO exposure	Near miss	2001
Handrail collapse	Near miss	2001



Scafftag Categories

Very light duty	to 0.75 kN/m ² (75kg/m ²)
General purpose	to 2.0 kN/m ² (202kg/m ²)
Heavy duty	to 2.5 kN/m² (252kg/m²)

HEALTH & SAFETY *BULLETIN*

Source Testing Association

Source Testing Association

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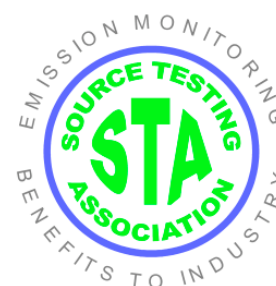
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The Health & Safety Bulletin is a means of disseminating important issues relating health and safety of professionals involved in air emission monitoring and allied fields.

To contribute to this publication please e-mail H&S@s-t-a.org with your suggestions or article

STA Guidance Notes are available on the web site.

Visit WWW.S-T-A.org



Health and Safety Briefing

The STA is subscribing to this fortnightly newsletter produced by Croner.CCH Group Ltd. In each newsletter we will publish the contents list of each newsletter that is on file. If you would like copy of any particular issue please contact Samantha.

STA Doc No	Issue	Contents
HS1108-02	227	Revised proposals for asbestos management Case law: level of fines (part 1) Assessing risks for young workers (part 1)
HS1109-02	228	CDM ACOP and guidance Case law: level of fines (part 2) Assessing risks for young workers (part 2) Road risk management (part 1) Building inspections for asbestos containing materials
HS1110-02	229	Civil liability proposals Case law: negligence (part 1) Employers' liability insurance (part 1)
HS1111-02	230	Company fined for unsafe system Employers' liability insurance (part 2) Machinery safety: fixed guards Risk assessment and hazardous substances
HS1112-02	231	Stress awards dismissed Case law: negligence (part 2) Machinery safety: interlocking guards
HS1114-02	232	Safety bill - part 1 Machinery safety - safety devices Workplace adaptation for the disabled
HS1116-02	233	Health and safety fees Case law: place of work Machinery safety: systems of work
HS1117-02	234	Overhaul of OELs proposed Types of asbestos and health effects Road risk management (part 1) Insurance for homeworkers
HS1120-02	235	EU health and safety strategy Case law: manual handling update Road risk management (part 2)
HS1121-02	236	Confined space fine Common law of negligence Employment tribunals (part 1) Ionising radiation at work
HS1122-02	237	Derailment investigation Case law: contributory negligence Night workers
HS1123-02	238	Introducing Croner Consulting Fairchild case: House of Lords judgment Road risk management: part 3 Emergency planning management: part 1
HS1126-02	239	Insurance overhaul planned Case law: risk assessment (part 1) Employment tribunals (part 2)
HS1128-02	240	New CHIP regulations Glass and glazing hazards Employers' liability insurance: part 3 Safety bill: part 2
HS1129-02	241	Fire safety reform Case law: manual handling Road risk management (part 4)
HS1130-02	242	Rail transport of radioactive material Asbestos in the environment Emergency planning management (part 2) Workplace hazards (part 1)
HS1131-02	243	Six pack amendments Case law: disability discrimination Workplace hazards (part 2)
HS1133-02	244	Client/contractor relationships Stress must be taken seriously Emergency planning management (part 3)



SCAFFOLDING—Unknown dangers

When is scaffolding safe

Read on!!!!!!!

One of our main concerns is that our members are safe in all aspects when carrying out their job. We know you may think we keep on banging the same old drum but there are real concerns for your safety.

We recommend that at a minimum all scaffolding should be scaff tagged and before embarking on any work an inspection should be carried out to make sure that the team is confident that the platform is safe and secure.

What happens when there is no scafftag and no records.

Some members carry out their own inspection and then deem it safe but we is this person qualified to carry out inspections. Do you understand the mechanical constraints on the loading for scaffolding?

The association point on this is very clear - IF THERE IS NO SCAFFTAG OR OTHER RECOGNISED DOCUMENTATION DON'T USE THE SCAFFOLDING. If this brings you in dispute with a client suggest that he contacts us, we are here to help you. Make sure you give every client a copy of the yellow book, even though we have distributed over 7000 copies free keep giving them out it helps defend your position in having a safe place to work.

Fatal Injury Statistics for UK industry from HSE

Type of DEATH	1999/2000	2000/2001
Falls from height	68	73
Struck by moving vehicle	34	64
Struck by moving/falling object	35	52
Trapped by something col-lapsing or overturning	16	37
Total Deaths	220	291

CARBON MONOXIDE—The Hidden Killer

What is Carbon monoxide?

Carbon monoxide is a gas produced by incomplete burning of organic (carbon based) substances, this occurs when the amount of oxygen to support burning is insufficient. Carbon monoxide, which is odourless and colourless, is a dangerous gas that can and does cause death. Many deaths have occurred as a result of poorly maintained heating appliances.

Carbon monoxide is dispersed by wind and destroyed by photochemical processes in the atmosphere over a period of months.

Certain people may be exposed to carbon monoxide through their work e.g. those working in coal mines or heavy industry.

Carbon monoxide concentrations in outdoor air are highest next to busy urban roads and lowest at remote rural locations. Carbon monoxide concentrations are greatest in the winter (especially on cold, windless days) and lowest in the summer months.

Sources of Carbon monoxide

The majority of carbon monoxide found at ground level in the northern hemisphere is likely to have resulted from human activities:

- burning from motor vehicle engines
- burning from gas cookers, paraffin heaters, bottled gas heaters in poorly ventilated rooms
- badly installed or maintained flued gas, oil or solid fuel heating appliances
- burning of oil, wood etc.
- coal mining and other industrial processes, gas leakage
- cigarette smoking (the major exposure source for tobacco smokers)

Air quality standard

The level recommended by the Expert Panel on Air Quality Standards for carbon monoxide is 10 parts per million (ppm) measured as a running 8-hour average. The running 8 hour average is calculated by taking the recorded carbon monoxide level a number of times over an hour and dividing by the number of readings. These hourly averages are then taken consecutively in groups of eight and the 8 hourly averages calculated for 0-8 hours, 1-9 hours and so on. Smokers, in general, have elevated levels of carbon monoxide in their blood stream and will not be influenced by additional exposure to carbon monoxide levels normally

found in ambient air. In fact, they may be air pollution sources for carbon monoxide.

Health effects of Carbon monoxide

Carbon monoxide is easily absorbed into the body when breathed into the lungs. Uptake depends on the concentration of carbon monoxide in the breathed air and the amount of physical activity a person is undertaking (uptake increases with increasing carbon monoxide concentrations and increasing exertion). Carbon monoxide binds more easily than oxygen to the protein in the blood which normally carries oxygen. After a certain period of time a steady state will be reached where the protein cannot bind any more carbon monoxide without releasing some which is expelled in exhaled air. The effect of carbon monoxide exposure is to reduce the amount of oxygen available to the tissues of an exposed person. Carbon monoxide also interferes with biochemical reactions within the body's cells.

The binding of carbon monoxide to the protein which usually carries oxygen in the blood (carboxyhaemoglobin) provides a convenient method for monitoring exposure using a blood sample. Most people are exposed to varying concentrations throughout the day and a steady state is often not reached. Uptake of carbon monoxide from multiple sources, smoking and traffic, is not additive. Smokers who have a level of carbon monoxide bound to protein in the blood above the steady state value that would be reached by breathing the air in their surroundings are liable to act as "sources", breathing out carbon monoxide rather than absorbing more.

Those most at risk from carbon monoxide include people with a disease which impairs the delivery of oxygen to the heart or brain such as established cardiac and lung disease or anaemia. The unborn child, young infants and the elderly may also be susceptible.

Short term exposures

The first sign of severe poisoning is loss of consciousness and further inhalation leads to death. Among those who recover from accidental or deliberate carbon monoxide poisoning, brain damage of some degree is common.

In healthy people breathing carbon

monoxide may reduce their ability to reach their maximum level of physical activity. However, carbon monoxide levels in the blood stream rising to 6-9% have not produced any significant effect on exercise performance. At carbon monoxide levels of more than 5% healthy volunteers have shown subtle changes in sustained attention and in sustained hand-eye co-ordination performance.

In people with cardiac problems lower levels of carboxyhaemoglobin (2-4%) shorten the amount of exercise which can be done before chest pain occurs and may lead to electrocardiogram changes.

Long term exposures

Of most concern is the effect of long-term exposure to carbon monoxide. This can lead to lethargy, persistent headaches, unconsciousness and death. Making sure that domestic heating appliances e.g. gas boilers, hobs, ovens and fires are regularly serviced, and the use of carbon monoxide detectors may prove life saving, especially for those people who are likely to spend much of their time indoors.

What are the medical effects of carbon monoxide and how do I recognize them?

Carbon monoxide inhibits the blood's ability to carry oxygen to body tissues including vital organs such as the heart and brain. When CO is inhaled, it combines with the oxygen carrying hemoglobin of the blood to form carboxyhemoglobin. Once combined with the hemoglobin, that hemoglobin is no longer available for transporting oxygen. How quickly the carboxyhemoglobin builds up is a factor of the concentration of the gas being inhaled (measured in parts per million or PPM) and the duration of the exposure. Compounding the effects of the exposure is the long half-life of carboxyhemoglobin in the blood. Half-life is a measure of how quickly levels return to normal. The half-life of carboxyhemoglobin is approximately 5 hours. This means that for a given exposure level, it will take about 5 hours for the level of carboxyhemoglobin in the blood to drop to half its current level after the exposure is terminated.

The following table describes the symptoms associated with a given concentration of COHb:

SAFER Driving at Work



Did you know;

Although the industry is waiting for a court case to prove it, legislation is effectively already in place which could hold employers liable under Health and Safety regulations if lack of correct training was proved to be a contributory factor in a road traffic incident.

Many of our members are now providing training for staff. One company that has been used is;

Drive & Survive UK PLC from Derby,
Tel. 01332 546500,
Fax 01332 546584,
e-mail : enquiries@drivesurvive.co.uk,
website : www.driveandsurvive.co.uk

The STA web site now has a booklet available to download from UNISON on SAFER DRIVING AT WORK. Available in the members area in Health & Safety Guidance notes

Vacancies on the STA's Health and Safety Task Group

We are looking for additional members to join the task group. If you would like to be involved in this very important area of our industries market and are able to attend four meetings per year,

Please contact Dave Curtis for further information. 01462 457535

Permits to work and reporting of accidents

There are very few cases now when permit to work systems are not part of our every day occurrence. It is important that it is established with your client what there procedures are, if they do not have an explanation of the consequences and a possible implementation program would help your client and you. There will be an extensive guidance note available very soon on this topic to all our members.

What to do if things go wrong?

If an accident occurs on site no matter how trivial full details should be logged. Accident reporting forms are available on the RIDDOR site:

www.riddor.gov.uk/reportanincident.html

You can report an incident in accordance with the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 by selecting the appropriate form from this page.

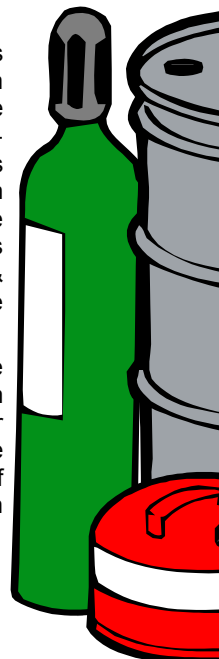
A link is provided on the STA web site on the related sites page.

% COHb	Symptoms and Medical Consequences
10%	No symptoms. Heavy smokers can have as much as 9% COHb.
15%	Mild headache.
25%	Nausea and serious headache. Fairly quick recovery after treatment with oxygen and/or fresh air.
30%	Symptoms intensify. Potential for long term effects especially in the case of infants, children, the elderly, victims of heart disease and pregnant women.
45%	Unconsciousness.
50%+	Death.

Since one can't easily measure COHb levels outside of a medical environment, CO toxicity levels are usually expressed in airborne concentration levels (PPM) and duration of exposure. Expressed in this way, symptoms of exposure can be stated as follows:

PPM CO	Time	Symptoms
35	8 Hrs	Maximum exposure allowed by OSHA in the workplace over an eight hour period.
200	2-3 Hrs	Mild headache, fatigue, nausea and dizziness.
400	1-2 Hrs	Serious headache-other symptoms intensify. Life threatening after 3 hours.
800	45 min	Dizziness, nausea and convulsions. unconscious within 2 hours. Death within 2-3 hrs.
1600	20 min	Headache, dizziness and nausea. Death within 1 hr.
3200	5-10 min	Headache, dizziness and nausea. Death within 1 hr.
6400	1-2 min	Headache, dizziness and nausea. Death within 5-30 min.
12,800	1-3 min	Death

The Safe Use of Gas Cylinders



A new booklet is available from HSE on the safe use of gas cylinders and this is now available on the STA web site in the members area in Health & Safety Guidance notes (HSGN015)

Don't forget we also have trim cards any other updated guidance on transport of cylinders also on the web site.

In the NEXT ISSUE.....



MCERTS, site specific protocols and safety.

The Risks of Occupational Driving

The following statistics are given in a PowerPoint presentation given by the RAC on the risks of occupational driving:

- 65% of all company vehicles will be in an accident in the next 12 months and of these 95% will be due to human error
- 25 to 30% of the 3500 fatalities on Britains roads in the last year were work related. This equates to 875 to 1050 people dying per year at work through driving.
- The economic cost of an accident is on average 53 times more than the 'bent metal' costs.

The problems associated with driving at work can be divided into a number of key areas

Training - The instruction received in preparation for a driving test is the only driver training the majority of people have all their lives.

Experience – The range of experience staff have may range from newly qualified drivers to 30000 miles per year staff with 10 years experience

Loading – The quantity and size of equipment required in stack emission monitoring is generally increasing with new techniques introduced, greater range of on-site calibrations required. This can involve more and bulkier equipment and more gas cylinders, and more power requirements and therefore more transformers and cables.

Vehicle condition – the company car culture is being discouraged and so personal cars are used, as are pool vehicles, hire vehicles and as equipment complexity increases mobile laboratories are becoming essential.

Human factors – I would prefer not to call these human errors as they part of the human condition. Humans will always make mistakes. All we can do is identify the contributing factors and reduce wherever possible.

All these problems are magnified by the mileage covered these days. With many consultancies quoting for work outside their immediate areas, mileages of in excess of 1000 miles per week are not uncommon. International work is set to increase with the opening of markets in mainland Europe.

What's the solution?

A number of organisations are addressing the problems of occupational driving risks and are introducing spe-

cific **training courses**. In particular the Institute of Advanced Drivers and the Roadsafe organisation. The Health and Safety Executive are also looking closely at this area of occupational risk. Training courses currently available include occupational driving course, towing training and advanced driving training. Fact sheets on subjects such as driving at night, driving on motorways are available.



An **individual driving assessment** is offered by the Institute of Advanced Drivers as a means of evaluating the skills of a new member of staff or some one who continually crashes the pool car. This may also be used as evidence of driving standard for risk assessment purposes for compliance with ISO 9001 and the Management of Health and Safety at Work Regulations 1999. As a minimum all newly qualified staff should have a driving probationary period where their driving is restricted to less demanding situations. Licence checks are common in most companies and are essential for insurance purposes.

Loading – There is little guidance on the loading of vehicles other than ensuring that it is evenly distributed and below the maximum weight the vehicle is authorised to carry. Refer to the vehicle handbook. Loads should be secure and heavy loads should be in the centre of the vehicle between the axles. Avoid a heavy load by the back door. Those transformers that go in last! Ensure the layout of the van does not encourage lopsided loading i.e. gas cylinders all down one side.

Regular Vehicle checks – are an essential part of vehicle management. This is particularly important for pool vehicles and mobile laboratories where one specific person may not be responsible for the vehicle.

Checks should include:

- Tyres – pressure and tread depth. Correct pressures should be identified on the side of the vehicle above the tyre inc. units.

- Fluids- coolant, brake fluid, oil, power steering fluid, windscreen washer
- Windscreen – check for cracks , chips, cleanliness
- Next service date
- Tax and MOT dates

The **human factors** need to be addressed by all staff at all aspects of the job from the quotation stage to job allocation and scheduling to undertaking the job. Good planning is essential to ensure enough time is allowed to get to the job on time. This includes allowing sufficient time in the quotes and during the scheduling of work. Identifying these human factors is important to help avoid them. The factors may include being away all week wanting to get home before your wife leaves you, taking and making phone calls on the move, being late and lost, being demotivated about the job, more road

congestion, last day of the week and the plant goes down till midday. The pressure to complete the work is such that you work late and travel back that night. Fourteen hours on site then a three hour drive. You need to ask yourself 'are the pressures real?' Would your manager want you to risk crashing the mobile laboratory? Or is it appraisal time and you just want to impress?

Anger and frustration are mind debilitating emotions that will block simple thought patterns and cause the red mist of road rage to descend. Fatigue is known to be a major killer on the road. According to UNISON's publication Safer Driving at Work, fatigue is a factor in 15% of road traffic accidents. Most motoring organisations recommend drivers take a 5 to 30 minute break every 2 hours, ideally away from the vehicle.

The risk of driving to a job is accepted but is often far higher than risks encountered on-site which may not be accepted. The Management of Health and Safety at Work Regulations 1999 requires that employers identify risks involved at work and review preventative and protective control measures. This is recognised by the HSE and they have set up a Work-Related Road Safety Task Group to discuss these issues. Their discussion document 'Preventing At-Work Road Traffic Incident' gives details of what a company road risk policy should include and how road risk assessments can be undertaken.

STA Health & Safety Guidance Notes

The complete list and download facility are available on the STA web site

Below is the third in the serialisation of an old document originally supplied by Air Products.

Never smoke
when dealing with gas.
Never use direct heat
on a cylinder.
Keep cylinders cool.



Did you know?

No gas cylinder should be vented into the atmosphere except under controlled conditions by qualified personnel.

The
right
way



Never
subject
cylinders
to abnormal
shocks.

Did you know?

A full cylinder can become a rocket if the valve is sheared off. Despite weighing 145 lb it can accelerate to 34 mph in 1/10th of a second.



**Health & Safety Booklet
VERSION 6
NOW THE INDUSTRY
STANDARD**

The little **YELLOW** book in its expanded form is to become the industry standard and referred to in the new EA guidance documents. The booklet is available free to all. *Have you got your copy yet?*

Do you give them out to **YOUR** clients?

HAVE YOU BEEN ON THE HEALTH AND SAFETY AT HEIGHTS COURSE ?

If not contact Samantha telephone 01462 457535 for the next available dates, cost is only £110.00 per delegate.

Health & Safety CREDIT CARDS

Have you got your card yet?

Contact Samantha for the **free** cards and issue them to all involved in stack testing within your organisation.