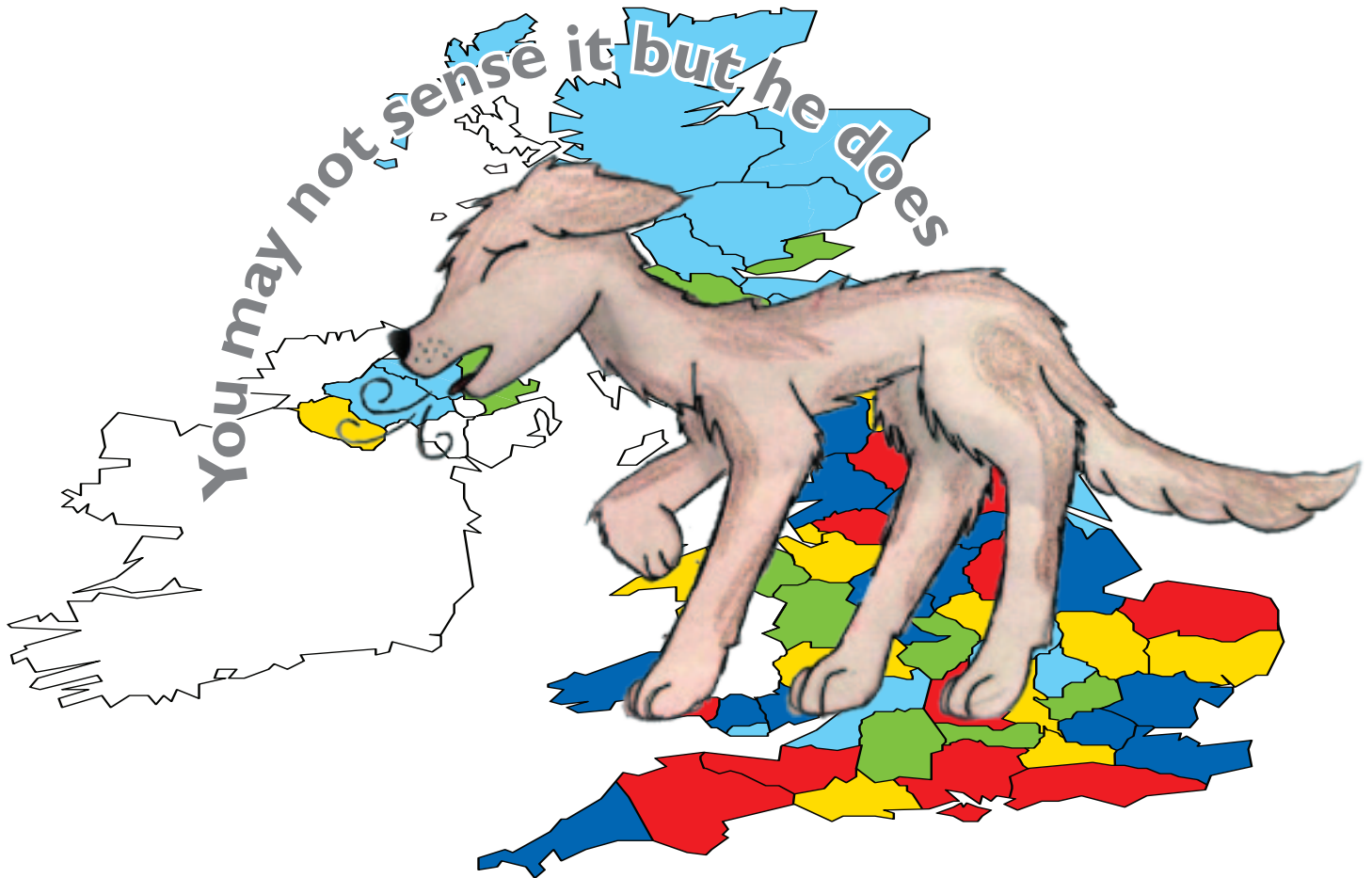




# CO-Gas Safety's Prize Giving Charity Tea at the House of Lords

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&

18 Years of Data on Deaths and Injuries  
from Unintentional Carbon Monoxide Poisoning  
01.09.1995 – 31.08.2013



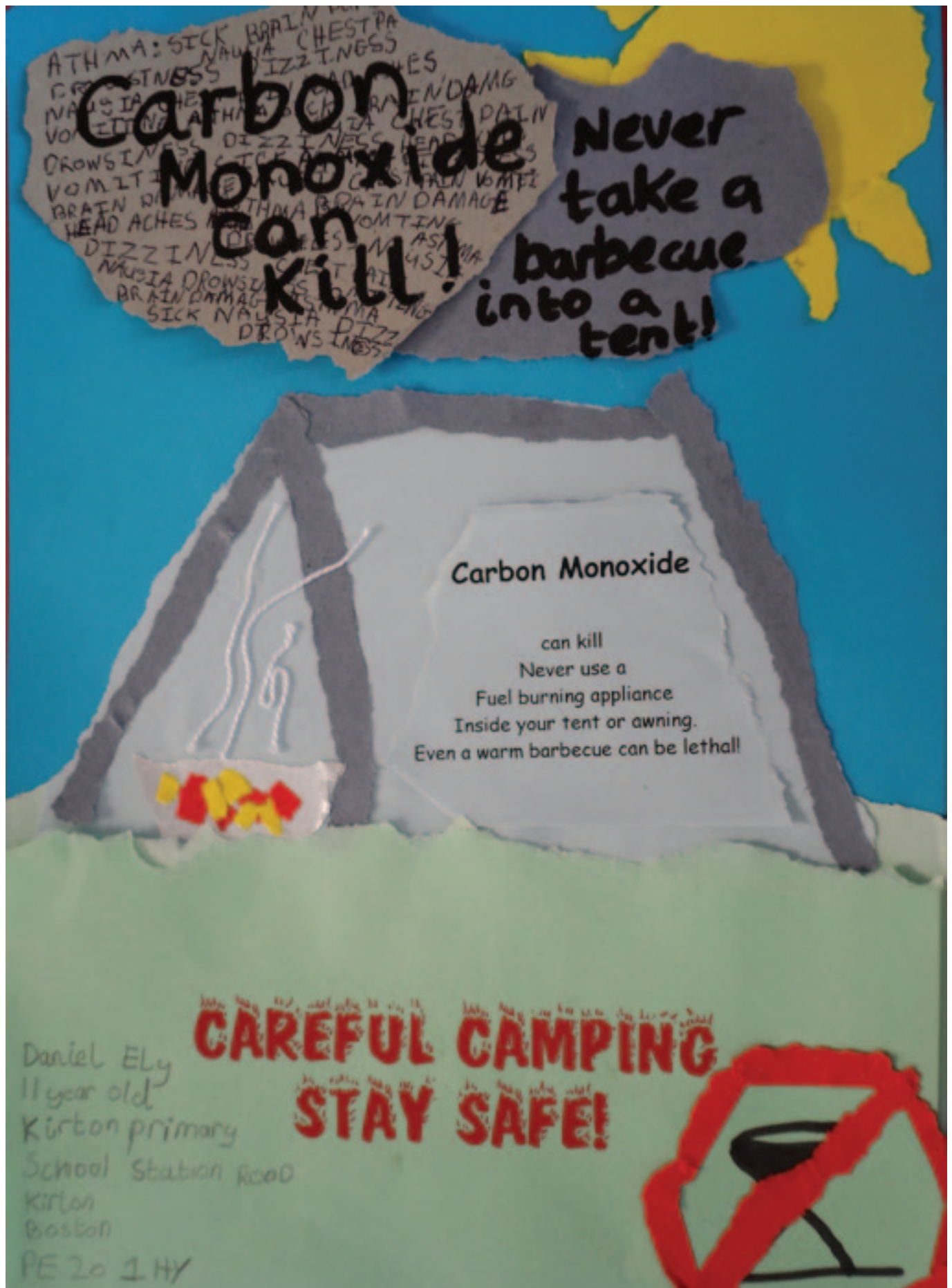
**Make sure YOUR child is SAFE by asking your child's school to enter  
CO-GAS SAFETY'S SCHOOL POSTER COMPETITION.**

Closing date for entries 31<sup>st</sup> July 2014  
(i.e. end of July every year)

**Help us to stop these unnecessary deaths from CO and other fuel toxins**

**Press Pack kindly sponsored by  
Northern Gas Networks**





### North of England

Daniel Ely. Age at entry 11

School: Kirton Primary School, Boston, Lincs

Teacher: Mrs Sharon Clarke



## The Carbon Monoxide & Gas Safety Society

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The Carbon Monoxide & Gas Safety Society (CO-Gas Safety) is an independent charity committed to reducing accidents from Carbon Monoxide and other gas dangers worldwide and supporting gas related accident victims.  
Company Limited by Guarantee,  
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Registration No. 03084435.  
Charity Registration No. 1048370

## CO-Gas Safety's 18 years of data on deaths and injuries from Unintentional Carbon Monoxide poisoning 01.09.95 – 31.08.2013 & Schools Poster Competition

### Press Pack 2014

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## Summary

There has been some progress. The Energy Bill is now an Act. Baroness Finlay has succeeded in obtaining some amendments with regard to carbon monoxide (CO) and smoke alarms in rented property. Baroness Finlay is to be congratulated. However, the Regulations have not yet been drafted and it is not yet known if all rented property is to be covered or only privately rented.

The other very good news is the continued support for our schools poster competition to raise awareness. We are very grateful. We now have all four emergency service providers supporting the competition. We would love to add N. Ireland as soon as possible.

I have also been helped hugely this year with the event by Danielle Royce and Cerys Canning of Wales & West Utilities and it has made such a difference!

Despite lobbying the MPs on the committee stage of the Energy Bill by CO-Gas Safety, CO+Savi (group of victims & victim groups) and Holiday Travel Watch, we were mostly completely ignored by nearly all MPs. The All Fuels Action Forum dismissed our ideas despite the fact that the most important of them, a levy on the industry and that the gas emergency service carry and use equipment to test gas appliances for CO, were recommended by the Health & Safety Commission (now Executive) in 2000. None of the amendments unanimously agreed and supported by CO+Savi were included in the Act. CO-Gas Safety is grateful to Mike Hancock MP for putting down the levy to pay for prime time TV warnings in the Commons and to Barry Sheerman MP for putting down the amendment about smart meters, but neither amendment was even debated in the Commons or Lords.

There are still no prime time TV warnings about CO which seems extraordinary to us. Recently there have been prime time TV warnings about railway crossings put out and paid for by Network Rail, which is to be congratulated. There were 9 deaths last year at such crossings, which is horrific but 9 deaths are nothing like the number even of known deaths from CO (around 40 – 50), let alone the unknown deaths from CO and other products of combustion. There are still no automatic tests on dead bodies even for CO, not even for unexplained deaths, despite the All Party Parliamentary Gas Safety Group's excellent recommendation that there should be, made in 2011 (see pages 9 to 10). Every year there are 3,500 unexplained deaths of people aged between 16 and 64 in the UK, (see New Scientist 'Killer with no name' December 2004). Senior Coroner, HM NS Meadows in his report to prevent future deaths (with regard to the death of Elizabeth Kerr who died 5th December 2008) has stated that 'The APPGSG should consider undertaking a review of progress made in the 2 years since the report.' The APPGSG is now the All Party Parliamentary Carbon Monoxide Group (APPCOG) now co-chaired by Baroness Finlay, Baroness Maddock, Barry Sheerman MP and Jason McCartney MP.

A large amount of time was also spent applying for funding to continue our collection, collation and publication of our data. CO-Gas Safety's data is almost certainly the best in the UK (see page 23 and para in bold). CO-Gas Safety directors are willing to give our extremely valuable data to a central body as recommended by Baroness Finlay and Public Health England wants our data to start this resource, but we need funding in order to continue this valuable work. It is from such work that the gaps in the system such as the lack of information about CO from fuels other than gas, are discovered.

The course devised by Roland Johns has been certified by BPEC and taught (see page 31)

We have applied to both the Gas Safe Charity and the Gas Safety Trust for funding for our data. Although we now have 18 years of data, the Gas Safety Trust has stated that it will start doing all fuels and will, in effect, reinvent the wheel. The two trusts have £6 million between them (GSC £1.5 and the GST £4.5) yet not a single victim on their boards. Surely a victim group with such a good reputation with regard to the data should be funded by either these wealthy trusts or by industry or government to continue this valuable work? Stephanie Trotter, OBE President & Director 2014

## The Facts about Carbon Monoxide (CO) and Other Fuel Toxins

### CO

CO may be emitted from any faulty cooking or heating appliance powered by any fuel that burns (gas, coal, oil, wood etc.). If there is sufficient air at the flame, carbon dioxide (CO<sub>2</sub>) is produced, not CO. CO<sub>2</sub> is a greenhouse gas but CO is lethal because less than 2% can kill in between one and three minutes (see page 26 Table 23 at <http://www.hse.gov.uk/foi/internalops/hid/spc/spctosd30-annex.pdf>)

CO is lethal because the haemoglobin in the blood takes up CO in preference to oxygen. *(Please note that whereas CO<sub>2</sub> has two molecules of oxygen to one of carbon, CO has only one molecule of oxygen to one of carbon.)*

Human senses cannot pick up CO, which is another reason it is so dangerous. Sometimes other products of combustion also escape, which do smell but not necessarily. People can describe this as a 'gassy' smell.

Please note that the Gas Emergency Service basically 'makes safe' from gas or CO. They ask the consumer to turn everything off and open the windows. They then visit and if necessary, turn the appliance or the gas off in that property. Thankfully the First Call Operators do have Personal Alarm Monitors or PAMs so the employees are protected. However, there is no free testing of gas appliances by the gas emergency service.

**In 2000, fourteen years ago, the Health and Safety Commission (now Executive) recommended that the GES has and uses equipment to test appliances for CO but Government has failed to implement this excellent HSC recommendation.**

**In 2000, fourteen years ago, the Health & Safety Commission (now Executive) also recommended a levy on the gas suppliers (we would prefer the whole fuel industry) to pay for publicity about the dangers of CO and for research.**

Again this excellent HSC recommendation has not been implemented. Why pay for the HSE if Government just ignores it? Also, why ignore it? Surely even on economic terms it would pay to deal with this issue? See our cost benefit analysis on page 11.

CO dissipates in a live body very quickly so a person needs to seek an urgent blood or breath test. If this is negative, it is not wise to assume that your home or workplace or car etc. is safe from CO and this is why **tests of appliances and air in a house are urgently needed to ensure safety**. Please note that CO can be emitted from next door (e.g. through a joint chimney or roof space) or another flat. Dominic Rodgers, aged 10 died from CO from next door in 2004. In 2007, Esmy Ighodalo aged 27 died from CO emitted from a mains gas central heating boiler in another flat.

Investigations can be undertaken by CORGI Services but cost at least £1,800-£3,000. If CO is suspected and if a legal action is contemplated, it is vital that this investigation is undertaken before any suspected appliances are worked on (other than to turn them off). Working on an appliance will change the evidence you may wish to rely on. Landlords and installers are well aware of this and often undertake work very quickly. Please note that in our considerable experience most Gas Safe Registered installers will not undertake this test (indeed they will change the appliance and evidence instead) and provide the parts per million of CO to the person affected. Without this, GPs don't take CO seriously (see page 6).

**There are now at least 200 people qualified under CMDDA1 who are qualified to test gas appliances for CO and record CO found. The problem is that people do not know what to ask for.**

Please note that Colin Breed MP tabled an EDM (Early Day Motion) asking for these recommendations to be implemented in 2000 and again in 2007. The first was signed by 49 MPs and the second was signed by 121 MPs (see website [http://www.co-gassafety.co.uk/early\\_day\\_motions.html](http://www.co-gassafety.co.uk/early_day_motions.html)). 121 MPs is a huge number for an EDM, so why did it apparently have no effect?

## **Other toxins in fuels and emissions from fuels**

1. Evidence from the Internet – our thanks to Gareth Hughes for these references  
[www.airquality.co.uk/archive/reports/cat08/0407081208\\_Task7\\_cumbustion\\_report\\_issue1.pdf](http://www.airquality.co.uk/archive/reports/cat08/0407081208_Task7_cumbustion_report_issue1.pdf)  
This is a DEFRA document (i.e. a British Government document) search for NoX, PM10s, Dioxins, Furans and PCBs and VOCs (Volatile Organic Compounds).  
For natural gas see <http://www.epa.gov/ttn/chief/ap42/ch01/final/c01s04.pdf> and search for mercury, manganese, copper, arsenic, chromium, cadmium, barium, nickel etc. and see [http://www2.unitar.org/cwm/publications/cbl/prtr/pdf/cat5/Australia\\_boilers.pdf](http://www2.unitar.org/cwm/publications/cbl/prtr/pdf/cat5/Australia_boilers.pdf)

For details of other toxins found in Domestic Heating Oil or fuel oil (Kerosene) combustion see <http://www.epa.gov/ttn/chief/ap42/ch01/final/c01s03.pdf>  
This is from the United States Environmental Protection Agency.

For coal see this Australian document  
[http://www2.unitar.org/cwm/publications/cbl/prtr/pdf/cat5/Australia\\_ffossilfuel.pdf](http://www2.unitar.org/cwm/publications/cbl/prtr/pdf/cat5/Australia_ffossilfuel.pdf)

For wood see  
<http://www.claverton-energy.com/burning-wood-has-worse-carbon-emissions-than-burning-coal.html> We can supply further articles, a Danish article and an Australian one. Please email us on [office@co-gassafety.co.uk](mailto:office@co-gassafety.co.uk)  
Wood pellets in store can emit CO see  
<http://annhyg.oxfordjournals.org/content/56/7/755.full?sid=27f48497-532d-4585-9745-ed660da1b2f9>

For diesel see <http://www.ncbi.nlm.nih.gov/pubmed/1383162>

For mercury in oceans from deposits from power stations see <http://www.ens-newswire.com/ens/may2009/2009-05-04-02.asp>

If fish in the Pacific are being poisoned by the mercury in the pollution from coal powered power stations in Asia, think what that mercury could be doing if it is leaking with the products of combustion from a fuel appliance into a home in a confined space. Surely there should be research into this danger?

See <http://www.epa.gov/iaq/combust.html> “Particles, released when fuels are incompletely burned, can lodge in the lungs and irritate or damage lung tissue. A number of pollutants, including radon and benzo(a)pyrene, both of which can cause cancer, attach to small particles that are inhaled and then carried deep into the lung.”

2. The Reach Legislation, which basically requires all products to have to be proved to be safe, excludes fuels. See  
<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:396:0001:0849:EN:PDF>

3. The fact that a test house assures us that the toxins (such as mercury, manganese etc.) are in such tiny amounts that they cannot possibly cause a problem, yet state that they have done no research to prove this nor can they quote any research done to prove this. All gas appliances are tested before sale for the CE Mark but they are tested with laboratory gasses, which are specially prepared to remove impurities such as the other toxins.

4. At the All Party Parliamentary Gas Safety Group (APPGSG) meetings, although the other toxins were discussed, none of the energy companies present denied that they existed.

5. The statement from Dr. Ed Walker in the APPGSG that the other toxic compounds may well be responsible for some of the long-term consequences – see Page 19 of the report January 2009 see <http://www.policyconnect.org.uk/appcog/research/report-raising-medical-professionals%E2%80%99awareness-carbon-monoxide-poisoning> as follows:- ‘Treatment for the long-term effects of CO exposure is, according to Dr Ed Walker is much more complicated. The picture is complicated by the fact that victims exposed to CO are often exposed to other toxic compounds at the same time, and it may be these that are responsible for some of the long-term consequences. However survivors of severe episodes of exposure often have extensive brain damage which can be demonstrated on MRI scans of the brain. This sort of damage is permanent and irreversible.’

6. We have many other cases over the years in which toxicologists cannot explain damage suffered as resulting from CO, yet that is consistent with damage as a result of the toxins.

7. There is a case of a three year old, who died with a gas appliance in his bedroom, who had insufficient CO in his blood to kill him (in fact zero CO which is unusual). However, Stephanie Trotter, OBE was told by the Coroner, that the child had raised levels of toxins (arsenic, barium and nickel and especially manganese – 15 times the higher levels). The inquest has now been held (April 2010) and the verdict was death by natural causes. The manganese was explained by contamination and post mortem distribution, although we have been told that there is only research on post mortem distribution with regard to drugs, not heavy metals.

Please note that although we informed the All Party Parliamentary Gas Safety Group about the other toxins in April 2008, the group has refused to examine the other toxins confining their inquiry to CO only. However, as we submitted to the APPGSG, if poisons in water were being considered, and if toxins A,B,C and D were known to exist in water, surely it would be pointless and dangerous to consider only toxin A? Yet this in effect, is what the APPGSG continued to do. It has now renamed itself the ‘All Party Parliamentary Carbon Monoxide Group’ or APPCOG.

Furthermore, there is a case of poisoning by an oil fired appliance where, having not been worked on, it was tested and found to have negligible CO emissions, yet the couple report they have been badly poisoned by the other toxins.

Please also note that it is extremely difficult for our victims to obtain the services of toxicologists to assist them in any way. The only toxicologists who have been at all helpful seem to have emigrated (e.g. Dr. Alison Jones who was head of Guys Toxicology unit) or retired or undertake research work only. Stephanie Trotter, OBE has tried very hard to obtain the name of a toxicologist to advise on the poisoning of foetuses, but it seems that there is nobody in the UK who can do this or if there is, they are unwilling to assist.

## How to prevent deaths and injuries from CO and other fuel toxins.

1. All appliances powered by any fuel that burns should be installed and serviced according to manufacturer's instructions – usually once a year.  
Make sure that the person doing this work is properly qualified. Please check and remember it's your money and your life. With gas the installer must be Gas Safe Registered. However, also check with the Gas Safe Registered website to make sure that the particular person who works on your appliance is qualified to do so (e.g. qualified for fires, not just boilers). This can be done by checking the Gas Safe Register on the Internet or by telephone.

2. Make sure all chimneys and flues are regularly swept and checked.

3. Ensure adequate ventilation and don't block ventilation grilles.

4. As an extra safeguard against CO, buy a CO alarm to European Standards EN50291. This will cost around £15 - £20 in most good DIY stores and some supermarkets.

5. Never use a barbecue inside a tent or confined space even if you think the barbecue may have gone out.

In an emergency, ring the Gas Emergency Service line on 0800111999 but they will only turn off your appliance or your gas. **They will not test your appliances for CO. They may be able to check the air you breathe but you will have been told to turn off all the appliances and open the windows before they arrived. Most fire brigades will usually attend and check for CO in the air. This will not necessarily inform you where the CO is coming from or which appliance is emitting CO, but it is very helpful and we are extremely grateful that most fire brigades will now do this.**

Seek immediate medical help and insist on a CO test and ask for the result in writing. Ordinary blood is adequate for this – **there is NO NEED for arterial blood.**

### Background to the charity and its data collection, collation and publication See

<http://www.co-gassafety.co.uk/aboutus.html> [http://www.co-gassafety.co.uk/stats\\_and\\_analysis.html](http://www.co-gassafety.co.uk/stats_and_analysis.html)

### Sponsorship sought

We have very little funding and any funding would be much appreciated. All details of how to donate can be found on our website at <http://www.co-gassafety.co.uk>  
We particularly need funding for our data collection, collation and publication. We have had no funding from the Department of Health for our data since 2010.

### Impact - numbers affected

Research commissioned from University College London, published in a press release dated 02.10.06 by HSE, to inform its gas safety review highlights the dangers of CO poisoning in people's homes, coupled with a lack of public awareness of the risks.

The early findings of the research include:

- 23% of homes had one or more defective gas appliance;
- 8% of homes were judged to be at risk of dangerous levels of CO;

Note If there are 22 million households (please see 2011-12 English Housing Survey [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/212496/EHS\\_HOUSEHOLDS\\_REPORT\\_2011-12.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212496/EHS_HOUSEHOLDS_REPORT_2011-12.pdf)) with 2.3 people in each household, there are therefore



50,600,000 people and 8% of them are 4,048,000. Call this 4 million people – be conservative and call it 3-4 million in the UK.

- 45% of homes had received no information on the dangers of CO; and
- A higher prevalence of problem appliances was found in the homes of vulnerable people (young, old, those in receipt of benefits).

Further research with similar findings has been undertaken by John Moore's university [http://ljmu.ac.uk/NewsUpdate/index\\_123350.htm](http://ljmu.ac.uk/NewsUpdate/index_123350.htm) - published 2012. More than 27,000 properties were visited.

The All-Party Parliamentary Carbon Monoxide Group strongly supports the inclusion of carbon monoxide poisoning as a high risk. The All-Party Parliamentary Carbon Monoxide Group's recent inquiry, 'Preventing Carbon Monoxide Poisoning', heard evidence that carbon monoxide poisoning causes 50 deaths a year (revised to 40 in the latest report by the Cross Government Group on Gas Safety and Carbon Monoxide Awareness), 200 serious injuries, and 4000 minor injuries – which costs the Department for Health in England and Wales approximately £178m a year in medical and care costs, as well as creating immeasurable human suffering.

Furthermore, it is thought that the number affected by CO poisoning **is considerably higher**- a recent study conducted by Liverpool John Moores University in 2011 measured CO levels in 109 homes over a number of weeks: it found that 24 homes had CO levels greater than 50 ppm (parts per million) – a level in which symptoms of poisoning, such as headaches, tiredness, and drowsiness can be experienced. A further 53 homes contained CO levels between 10 and 50 ppm.

CO-Gas Safety states:-

*This then shows about 22% of homes with CO levels exceeding 50 ppm and 49% of homes with CO levels between 10-50 ppm. This equates very well with other research done over the last 10 years. If one was to extrapolate these figures across the whole of the UK, then we would arrive at a number close to 15 million UK citizens being poisoned by CO in levels greater than 50 ppm and around 34 million being poisoned by levels between 10 and 50 ppm. In total this is 49 million people in the UK being exposed to CO in levels greater than those recommended by the World Health Organisation and as a consequence significant numbers, running into millions will as a result of this exposure eventually suffer chronic ill health.*

## How do CO and other Toxins impact on the UK Population?

CO+Savi (group of victims and victim groups) suggests that the following statement(s) is/are being used instead or at least in conjunction with any existing numbers in presentations, press releases, publications, etc.

### **Short Version**

There is currently **no conclusive and comprehensive** way of accurately establishing the actual number of people harmed to whatever level by carbon monoxide and other toxins (CO<sup>+</sup> for short). It is recognised that there are many sources of data collated over the years. However, this data is scientifically inconclusive at this point in time. We know that some people can suffer temporary illness, irreversible chronic ill health or death as a consequence of exposure to either low-level, chronic and high-level, acute CO<sup>+</sup> poisoning. Unfortunately, we do not know how many more are affected and we have no way of objectively and responsibly estimating the true figures.

There is also a long version which has not quite been finalised yet. When it has been finalised, we will put it on our website

## The Need for Research - Proposed research

CO-Gas Safety wants research into:-

1. What is in gas before and after combustion?  
Please note that natural gas varies according to where it comes from.  
Is it possible for significant amounts of toxins to be emitted into the atmosphere or far worse, blown back into or remaining in a dwelling when there is a partially blocked flue? Would incomplete combustion affect this other than to increase CO? What about flueless appliances such as cookers and some fires? To undertake this research an independent body would have to be found to test the gas before combustion and after combustion using gas in pipes and burned in a boiler with a flue, a boiler with a partially blocked flue. This would also have to be done for a gas fire and also for a cooker in an average kitchen with average ventilation. Also a flueless gas fire should be tested. In 2009 we asked BRE (Building Research Establishment) about the cost of this research and it would cost about £10,000 for an initial laboratory test and a further £40,000 for field tests.
2. It is also possible that while the amounts of the toxins in fuels are small, these could build up in the body fat of the person concerned causing problems over a long period. It is well known to toxicologists that this can occur with regard to heavy metals.
3. The same as above for oil, coal and wood.  
The cost of this research would be far more than we could afford but surely the gas and oil industry must have undertaken such research? If not, why not? **Surely if they are selling their products to the public they should know what is in it and whether if used correctly or incorrectly, there are any dangers to the public?** We need this research to be of the highest quality and extremely independent. We have already asked Lord McKenzie (who at the time was a Government Minister responsible for the Health and Safety Executive, which covers gas) to undertake this research (May 2009) and also drawn the attention of various Select Committees to this need. Please note that there may be a risk to those inside from these toxins when the fumes are not exiting to outside air. However, there is also a possible risk of planet poisoning when the toxins exit to the outside air and it seems that scientists expert in outdoor air are well aware of these toxins in the atmosphere. However, the amount of such toxins would obviously be much more concentrated in indoor air.

We suspect that many people whom GPs report as 'TAT' (Tired All the Time) are in fact suffering from poisoning caused by these toxins and/or Volatile Organic Compounds (VOCs). For blood tests for these toxins see <http://www.co-gassafety.co.uk/prevention.html> and click on 'Blood tests' on the right hand side. These blood tests can be done weeks or months later, unlike tests for CO. It is also possible to have urine tests both before and after a provoker has been taken. However, it would still be necessary to prove on a balance of probabilities (for a civil claim) that these toxins, if found in the blood, came from the fuel and appliance concerned. However, if the research really has not been done by the fuel suppliers, surely urgent research on the other toxins emitted by appliances should be undertaken?

Who knows what other conditions might be being caused or exacerbated by these other toxins? For example, ME, CFS, MS, heart disease, diabetes (caused in third world countries by arsenic in the drinking water), respiratory problems and even perhaps Alzheimer's disease?

**RECOMMENDATIONS – Summary of recommendations made by the All Party Parliamentary Gas Safety Group inquiry chaired by Baroness Finlay in 2011. Comment by CO-Gas Safety in blue.**

1. The Government should remove VAT on all carbon monoxide alarms.  
This could be good but will take time as will require agreement at EU level.
2. Mortgage providers and estate agents should include a declaration that the property has a carbon monoxide alarm and that appliances have been serviced by a Gas Safe registered engineer (or similarly registered for other fossil fuel appliances) within the last year.  
Good but CO-Gas Safety is concerned that mortgage providers and estate agents are unlikely to co-operate. We do hope they do co-operate though.
3. The Government should ensure that all work under the Green Deal includes the installation of a carbon monoxide alarm and is carried out by a Gas Safe registered engineer (or similarly registered for other fossil fuel appliances).  
Excellent provided similar arrangements brought in for carbon based fuels, other than gas.
4. The Government should ensure that under the NHS contracts for services GPs' surgeries and A&E departments are trained to recognise the symptoms of carbon monoxide poisoning and have the ability to monitor for it, using the appropriate equipment whenever carbon monoxide exposure is suspected.  
Very good but CO difficult to diagnose and medics notoriously poor at even thinking about CO as a possibly cause of CO symptoms (The late Dr. John Henry sent 200 GPs symptoms of CO. Not a single GP suggested CO as a cause). However, dataloggers given out by GPs etc. could be very helpful, provided there are Gas Safe Registered installers, who can find the source of any CO.
5. Industry should collaborate with the Medical Research Council and other research funding bodies to:
  - a) Support studies that attempt to evaluate the prevalence of carbon monoxide poisoning across different population groups.
  - b) Set up a longitudinal study to assess the sequelae of acute and low-level exposure to carbon monoxide poisoning.
  - c) Facilitate a study of the neurological effects of repeated exposure to carbon monoxide at low-levels.  
Good but we know CO is dangerous to health. CO-Gas Safety would prefer resources to be spent on prevention.
6. The Government should trial GPs prescribing a Gas Safety Check for suspected carbon monoxide cases.  
Good especially if NHS would pay for this where people cannot afford this, but CO-Gas Safety would prefer 'service' not just safety 'check'.
7. The Government should ensure that all coroners' post-mortems routinely test for carboxyhaemoglobin levels, recording death from carbon monoxide poisoning as a distinct category and to notify this to a central register if a verdict is recorded only in the narrative section of the coroner's certificate.  
Excellent. We have been pressing for automatic testing of dead bodies for CO for years. Notifying a central register sounds good but care would have to be taken to make sure that deaths from house fires and suicide were excluded.
8. Gas Distribution Networks should ensure that all Gas Emergency Service personnel are equipped with either personal carbon monoxide alarms, carbon monoxide detection equipment, or both.  
Excellent especially if personnel are equipped with flue gas analysers or the equivalent which can test the emissions from appliances for CO and provide parts per million of CO in writing to the tenant and/or responsible person.
9. Ambulance Services should ensure that all their operatives have the equipment to monitor for carbon monoxide in the pre-hospital environment.  
Excellent. We hope all emergency service personnel have Personal Alarm Monitors for CO.

10. Retailers selling camping and barbecue equipment, registered campsites and caravan sites should promote the dangers of carbon monoxide and the use of carbon monoxide alarms. The British Standards Institute should revise European standard EN 1860 to include a requirement for a prominent warning about carbon monoxide poisoning as part of the information on appropriate usage.  
Excellent.
11. The Government should include carbon monoxide in the home safety module of the Personal, Social and Health Education curriculum.  
Excellent. CO-Gas Safety has been trying to achieve this for some years.
12. Ofgem should regularly review and evaluate the effectiveness of the requirement for gas retailers to raise awareness of carbon monoxide.  
Excellent. However, we would prefer a levy on the fuel suppliers to pay for prime time TV warnings and/or similar media publicity about CO.
13. The Gas Safe Charity should support an All Fuels Carbon Monoxide Awareness Forum to coordinate cross industry campaigns, share knowledge and to strengthen links.  
Good but from as early as 1998, CO-Gas Safety has experienced VIGIL, the HSE work groups and COCAA and while useful discussions took place, in our opinion these meetings took up too much time with too little progress being achieved with regard to awareness being raised and genuine preventive measures being taken to save lives and preserve health. The cost of attending such meetings is high for small charities such as CO-Gas Safety.
14. The Government should update the Gas Safety (Installation and Use) Regulations 1998 to:
  - a) Make mandatory the use of flue gas analysers for installation, commissioning and maintenance, where specified by the manufacturers instructions (and manufacturers should ensure that those instructions are updated to reflect the latest British Standards).
  - b) Include a full service of all appliances according to manufacturers' instructions.
  - c) Require all rented properties to be fitted with an audible carbon monoxide alarm manufactured to the European standard EN 50921.
 Excellent. We have been lobbying for rented properties to have all the appliances owned by the landlord serviced using a FGA rather than just a safety check for some years.
15. The Government should consider both the public asset message and the possibility that new appliances may breakdown when determining the requirement for a wired-in carbon monoxide alarm in Part J of the Building Regulations.  
Excellent. We would like to see this requirement covering all fuels not just gas.
16. The Government should bring regulation for the whole fossil fuel sector in line with that of the gas industry.  
Excellent – CO-Gas Safety has been lobbying for this for many years. However, we would prefer the expression 'carbon based' to include wood etc., not 'fossil'.
17. The Health and Safety Executive, working in partnership with industry, should create a central collation point for data relating to carbon monoxide injuries and fatalities, together with a dedicated helpline that would help act as a signposting service.  
Excellent provided all carbon based fuels are covered, not just gas. However, it should be considered that victim organisations, such as CO-Gas Safety have a great deal to contribute because victims care passionately about prevention and can empathise with new victims. Care must also be taken to exclude suicides and house fires etc.

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#### **Comment 2014**

**CO-Gas Safety and others still cannot understand why prime time TV warnings were not recommended. The Cabinet office has a duty to put out public health warnings (see page 12). There are warnings about fire and smoking but we all know about these dangers.**



**Death of Elizabeth Kerr 8<sup>th</sup> December 2008**  
**REGULATION 28: REPORT TO PREVENT FUTURE DEATHS**

This report is made under paragraph 7, Schedule 5, of the Coroners and Justice Act 2009 and Regulations 28 and 29 of the Coroners (Investigations) Regulations 2013.

The matters of concern are as follows:

1. **All Party Parliamentary Gas Safety Group (APPGSG):** All the recommendations of the All Party Parliamentary Gas Safety Group (APPGSG) Reducing death by Carbon Monoxide Report of 2011 (copy attached) have not been adopted or enacted. The APPGSG should consider undertaking a review of progress made in the 2 years since the report.

.....

### **Cost benefit analysis of a modest levy**

A levy would save funds or even produce surplus funds, because the cost of each sudden death is £1,565,000 and reportable\* injuries £17,900. These are HSE figures at 2011 prices see <http://www.hse.gov.uk/economics/eauappraisal.htm>

The Fuel Safety Levy, even at £2 per annum should bring in at least £44 million per year to be spent on safety improvements. There would be some costs involved in raising a levy but these are likely to be small.

DH statistics released Autumn 2011 are 50 deaths and 4,000 to A & E each year in England and Wales See <http://gp.dh.gov.uk/2011/09/27/carbon-monoxide-poisoning-alert/>

Costs then just of England and Wales are:-

50 deaths at £1,576,000.....	£78,800,000
4,000 near misses at £23,500.....	£94,000,000
Total.....	<b>£172,800,000</b>

The DOH figures above do not include N. Ireland or Scotland. Many CO deaths in Scotland are not recorded properly even by CO-Gas Safety because there is no coronial system there.

\*Some CO incidents are reportable under RIDDOR see

<http://www.hse.gov.uk/riddor/reportable-incidents.htm#gas>

These are deaths, loss of consciousness or taken to hospital for treatment to an injury arising in connection with gas or incomplete combustion.

## CO+ & Public Information Films

### Introduction:

For 18 years, HolidayTravelWatch (HTW) has been providing assistance to holidaymakers with their travel complaints. Part of our role involves campaigning and lobbying for improved Safety & Consumer Rights in Westminster, Brussels, Strasbourg, USA & Australia. To date we have assisted with over 250,000 individual holiday complaints.

### Concerns on CO+:

Since its formation, HTW has received many complaints from holidaymakers affected by their exposure to toxins on aircraft, ships and their holiday accommodation. Those concerns reveal a woeful shortcoming in the quality of holiday accommodation which has resulted in death, injury and accusations made against victims. Recent experiences reveal that holidaymakers are also being poisoned through their use of portable barbecues. We have also received reports from 'Whistleblowers' within travel companies which demonstrate a scant disregard for health & safety. We have made representations on a National & European Level and have been disappointed with the National response. In Europe we are contributing to the growing debate on safety in Holiday Accommodation, but believe that there must be a greater platform of Public Education on the dangers of CO+ through the use of Public Information Films.

### The Cabinet Office & Public Information Films:

In an effort to garner political action on the use of Public Information Films (PIF's), to warn holidaymakers on the dangers of CO+, we noted the 2010 review of the use of Public Information Films and the decision of the Cabinet Office (CO) to restructure this area. On the 31 October 2012, HTW wrote to The Rt Hon Francis Maude MP at the CO where we set out the history of the use of PIF's and observed the decisions made by him and the CO for their future structure and use. Essentially we asked why were there no PIF's to warn of CO+, when they are used widely in other areas? We highlighted 14 further questions, seeking answers to how the new structure, created by the CO would operate? HTW received no reply and so had to chase matters on 24/1/13, 8/2/13 and numerous social networking posts to provoke a response. A response was received in mid 2013, but demonstrated that they failed to recognise the 'knowledge' of HTW and did not answer the questions posed. A meeting was held at the House of Commons on 15/10/13 where the large energy companies discussed PIF's with no apparent outcome. HTW wrote to the CO again on 16/10/13 seeking answers to our questions posed on 31/10/12. They responded on 20/11/13 where again they failed to answer the questions and simply referred HTW to the Dept for Communities. They have also failed to respond to a request for a Ministerial meeting with the victims, survivors and campaigning groups. **It is now Day 442 since we asked our questions in 2012 (30.10); we shall continue!**

*HolidayTravelWatch™ is a partner in the Foreign and Commonwealth Office  
'Know Before You Go' Campaign  
Website: [www.holidaytravelwatch.net](http://www.holidaytravelwatch.net) HolidayTravelWatch™ is the trading name for  
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Manchester, M16 0PG VAT Regn No 835099212*



## 1. WHAT WE WANTED

**Suggested legislative changes that CO-Gas Safety wanted originally and delivered to Don Foster MP, Minister for CLG in a briefing note on 18th December 2012.**

For briefing note see [http://www.co-gassafety.co.uk/energy\\_bill.html](http://www.co-gassafety.co.uk/energy_bill.html) and scroll down

### **Amendments to Energy Bill - Summary**

Decided by CO-Gas Safety after 18 years of work, professionally drafted and supported unanimously by CO+SAVi - group of victims, charities and other bodies as well as others from emergency medicine, ambulance and the fire service.

**1. Levy on fuel suppliers to pay for raising awareness, research and action.** £2 per household per year would be ample. Compare over £100 proposed for green energy. CO-Gas Safety has lobbied for prime time TV warnings since 1995.

**2. Gas Emergency Service to carry and use equipment to test gas appliances for CO.** Lord Hunt 'This is a no brainer'.

CO-Gas Safety has lobbied for this since 1995.

**3. Change in legislation re landlords to make it clearer that servicing or testing for CO must be done.** We hope that Baroness Finlay's amendments combined with other measures, such as the new ACOP and the need to tests condensing boilers with flue gas analysers, will assist with this aim but this is unclear.

**4. Testing appliances before and after exchange of meter. Please note that smart meters must be put in every home.**

**5. Public Liability Insurance** for all registered gas installers, solid fuel and oil installers.

A group of victims and victim groups met in May 2012 under the banner of the then All Party Parliamentary Gas Safety Group. Baroness Finlay urged this victim group to agree on what they wanted to be changed. The CO+Savi group was formed and agreed unanimously on the legislative changes which the group wanted. CO+Savi was well aware that such changes would need to be put in Regulations, in the way that the amendments that have been achieved have been drafted (see page 15, i.e. the power to make such regulations are put in primary legislation with detailed regulations made later). However, in order to show that these provisions could be drafted relatively easily, the group decided to instruct a lawyer experienced in drafting to draft what had been agreed by CO+Savi.

These can be found at [http://www.co-gassafety.co.uk/our\\_professionally\\_drafted\\_suggestions.html](http://www.co-gassafety.co.uk/our_professionally_drafted_suggestions.html) (One page example is on page 14).

Once these changes had been professionally drafted, CO-Gas Safety lobbied MPs, particularly those on the Committee Stage of the Energy Bill by sending them copies of our drafted amendments with a summary. Holiday Travel Watch also lobbied these MPs. CO+Savi also asked the All Fuels Action Forum to discuss our suggested amendments, but we were left with the impression that little actual discussion took place. The AFAF decided it did not wish to put the CO+Savi suggested amendments forward for consideration by APPCOG or the MPs on the committee stage of the Energy Bill.

## 2. WHAT WE PUT FORWARD

### PROFESSIONALLY DRAFTED SUGGESTIONS THAT CO+SAVI\* UNANIMOUSLY AGREED ON AND PUT FORWARD TO

The All Fuels Action Forum and to the MPs on the Committee Stage of the Energy Bill

THIS IS JUST ONE PAGE OF SIX PAGES of our professionally drafted suggestions

To view them all please visit

[http://www.co-gassafety.co.uk/our\\_professionally\\_drafted\\_suggestions.html](http://www.co-gassafety.co.uk/our_professionally_drafted_suggestions.html)

*Carbon Monoxide Safety Board*

[       ]

To move the following Clause:—

- ‘(1) There shall be a Carbon Monoxide Safety Board.
- (2) The Carbon Monoxide Safety Board shall consist of a chairperson and six other members of whom—
- (a) the chairperson shall be a person appointed by the Secretary of State who the Secretary of State is satisfied has no interest connected with carbon monoxide which might hinder them from discharging their function as a member of the Board in an impartial manner;
  - (b) three members shall be appointed by industry; and
  - (c) three members shall be appointed by appropriate consumer safety groups.
- (3) All members of the Board shall hold office for twelve months following which period they shall be eligible for reappointment for a maximum of two further terms.
- (4) The Board may pay the chairperson such remuneration and to any member of the Board, travelling, subsistence and other allowances at such rates as the Board may with the approval of the [Secretary of State] determine.
- (5) The Board shall employ an administrator on such terms as to remuneration, pensions or otherwise as the Board may determine.
- (6) The Board may appoint such other officers, servants and agents on such terms as to remuneration, pensions or otherwise as the Board may determine.
- (7) The chairperson is to have a casting vote on all matters for decision by the Board.
- (8) The Board may regulate their own procedure and make standing orders governing the conduct of their business.’

\*Note CO+Savi is a group of victims and victim groups set up under the All Fuels Forum which was set up by the All Party Parliamentary Carbon Monoxide Group

© CO-Gas Safety 2013 These amendments were drafted by David Mundy of Bircham Dyson Bell after instruction from Stephanie Trotter OBE CO-Gas Safety and consultation with members of CO+Savi, especially contributions from Gareth Hughes.

Funded half by CO-Gas Safety and half by the Katie Haines Memorial Trust.      Page 1 of 6



### 3. WHAT BARONESS FINLAY HAS ACHIEVED RE THE ENERGY ACT 2013

<http://www.legislation.gov.uk/ukpga/2013/32/section/150/enacted>

#### Energy Act 2013

##### You are here:

- [2013 c. 32](#)
- [PART 6](#)
- [CHAPTER 2](#)
- [Smoke and carbon monoxide alarms](#)
- Section 150

#### 150 Smoke and carbon monoxide alarms

(1)The Secretary of State may by regulations make provision imposing duties on a relevant landlord of residential premises in England for the purposes of ensuring that, during any period when the premises are occupied under a tenancy—

(a)the premises are equipped with a required alarm (or required alarms), and

(b)checks are made by or on behalf of the landlord in accordance with the regulations to ensure that any such alarm remains in proper working order.

(2)“Required alarm” means—

(a)a smoke alarm, or

(b)a carbon monoxide alarm,

that meets the appropriate standard.

(3)Regulations may include provision about—

(a)the interpretation of terms used in subsections (1) and (2);

(b)the enforcement of any duty imposed by regulations.

(4)Provision made by virtue of subsection (3)(b) may in particular—

(a)confer functions on local housing authorities in England;

(b)require a landlord who contravenes any such duty to pay a financial penalty.

(5)Provision about penalties made by virtue of subsection (4)(b) includes provision—

(a)about the procedure to be followed in imposing penalties;

- (b) about the amount of penalties;
- (c) conferring rights of appeal against penalties;
- (d) for the enforcement of penalties;
- (e) about the application of sums paid by way of penalties (and such provision may permit or require the payment of sums into the Consolidated Fund).

(6) Regulations may—

- (a) include incidental, supplementary and consequential provision;
- (b) make transitory or transitional provision or savings;
- (c) make different provision for different cases or circumstances or for different purposes;
- (d) make provision subject to exceptions.

(7) Consequential provision made by virtue of subsection (6)(a) may amend, repeal or revoke any provision made by or under an Act.

(8) Regulations are to be made by statutory instrument.

(9) An instrument containing regulations may not be made unless a draft of the instrument has been laid before, and approved by a resolution of, each House of Parliament.

(10) Subject to provision contained in regulations, in this section—

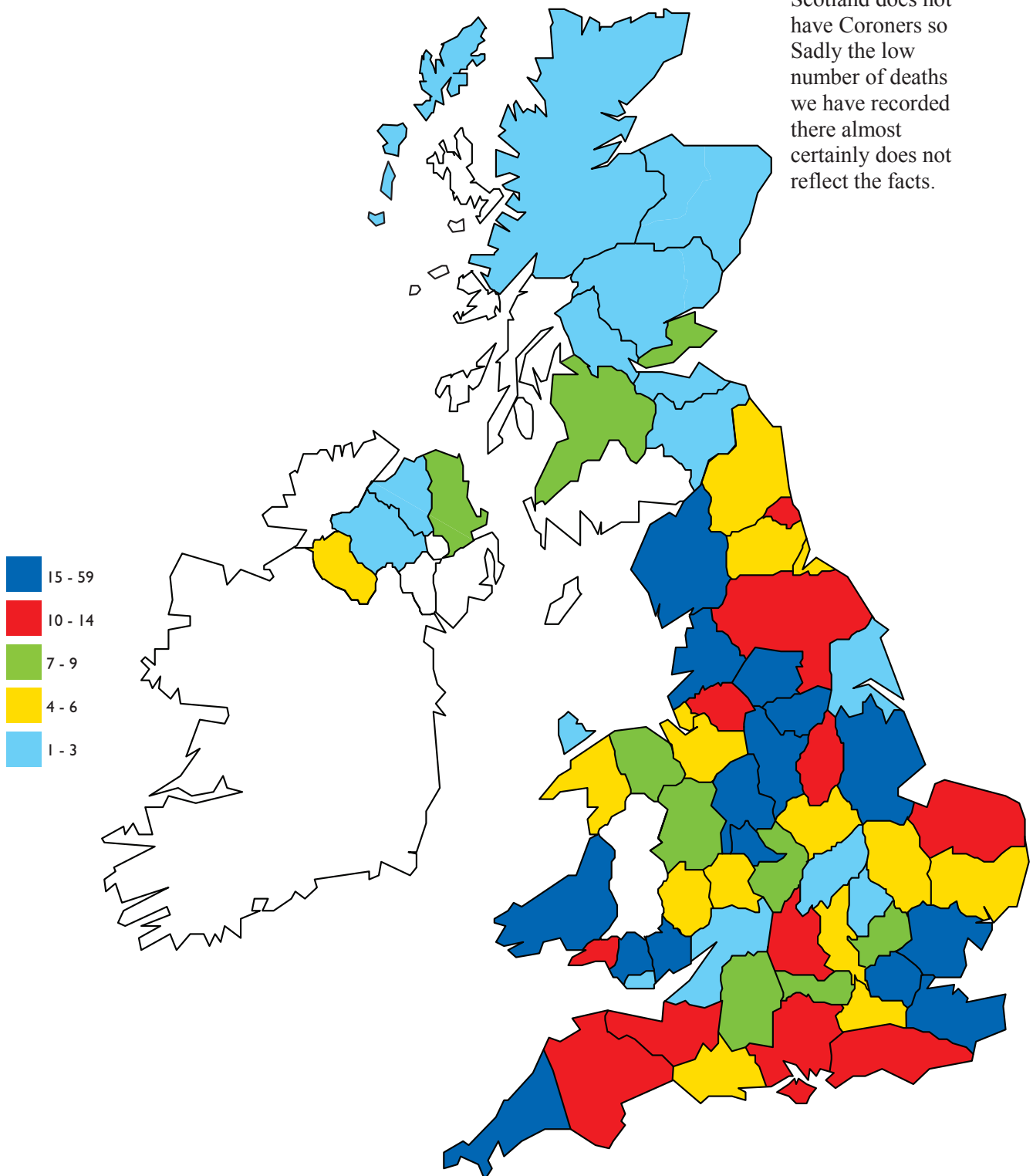
- “the appropriate standard”, in relation to a smoke alarm or a carbon monoxide alarm, means the standard (if any) that is specified in, or determined under, regulations;
- “local housing authority” has the meaning given in section 261(2) of the Housing Act 2004;
- “premises” includes land, buildings, moveable structures, vehicles and vessels;
- “regulations” means regulations under this section;
- “relevant landlord” means a landlord in respect of a tenancy of residential premises in England who is of a description specified in regulations;
- “residential premises” means premises all or part of which comprise a dwelling;
- “tenancy” includes any lease, licence, sub-lease or sub-tenancy (and “landlord” is to be read accordingly).

- [Previous: Provision](#)
- [Next: Provision](#)

# UK Deaths from unintentional carbon monoxide poisoning from 01.09.95 to 31.08.2013

(This data is being added to and checked all the time so may change)

Please note  
Scotland does not  
have Coroners so  
Sadly the low  
number of deaths  
we have recorded  
there almost  
certainly does not  
reflect the facts.



CO-Gas Safety receives information about deaths from media, families, Coroners and other organisations, such as the Solid Fuel Association and HSE. CO-Gas Safety writes to every Coroner concerned to check each death and most are very helpful.

## Deaths listed by area

<b>England</b>	519
<b>Wales</b>	91
<b>Scotland</b>	25
<b>N. Ireland</b>	16
Unknown	2
<b>TOTAL</b>	<b>653</b>

### ENGLAND

London	59
South Yorkshire	32
Derbyshire	26
Kent	24
West Yorkshire	22
Staffordshire	19
Cumbria	19
Cornwall	19
Lincolnshire	18
Lancashire	18
Essex	17
West Midlands	16
Sussex	14
Somerset	14
Norfolk	14
Greater Manchester	14
Tyne & Wear	13
Nottinghamshire	12
Devon	11
Oxfordshire	10
North Yorkshire	10
Hampshire	10
Wiltshire	9
Hertfordshire	9
Shropshire	8
Warwickshire	7
Berkshire	7
Merseyside	6
Leicestershire	6
Northumberland	5
Durham	5
Dorset	5
Cleveland	5
Cambridgeshire	5
Buckinghamshire	5
Worcestershire	4
Surrey	4
Suffolk	4
Cheshire	4
Northamptonshire	3
Gloucestershire	3
Humberside	2
Bedfordshire	2

### WALES

Dyfed	24
Gwent	18
Mid-Glamorgan	18
West Glamorgan	13
Clwyd	9
Gwynedd	5
South Glamorgan	3
Anglesey Isle of	1

### NORTHERN IRELAND

Co. Antrim	7
Co. Fermanagh	4
Co. Tyrone	3
Londonderry	2

### UNKNOWN

	2
--	---

### SCOTLAND

Strathclyde	8
Fife	7
Lothian	3
Highland	2
Central	2
Grampian	1
Scottish Borders	1
Tayside	1



# CO-GAS SAFETY'S STATISTICS OF DEATHS AND INJURIES\*

## UK deaths caused by accidental Carbon Monoxide (CO) poisoning

(Between 1 Sept 1995 - 31 Aug 2013): **Total: 653**

TENURE	
Total Number of CO accidental deaths by Tenure: (1 Sept 95 – 31 Aug 2013):	
Owner/Occupier	378
Private Rental	68
Council	61
Housing Association	21
Other (e.g. hotel)	12
Unknown	113

SITUATION					
Total Number of CO accidental deaths by Situation (1 Sept 1995 – 31 Aug 2013):					
House	311	Campervan	11	Public House	4
Flat	92	Lorry	7	Tent	4
Bungalow	42	Shed/Cabin	7	Shop	3
Caravan	28	Hotel	7	Public Hall	2
Boat	24	Workshop	6	Care Home	2
Garage	23	Car	5	Other	21
Work Place	14	Commercial Premises	4	Unknown	36

	FUEL TYPE																		
	Total Number of CO accidental deaths by Fuel breakdown and CO-Gas year (1 Sept to 31 Aug):																		
Year	95/6	96/7	97/8	98/9	99/00	00/1	01/2	02/3	03/4	04/5	05/6	06/7	07/8	08/9	09/10	10/11	11/12	12/13	Total
Solid fuel	27	19	25	14	17	14	5	8	3	5	8	14	10	6	7	7	9	2	200
Gas Mains	32	22	18	24	14	16	7	11	9	14	12	9	11	16	4	12	0	3	234
Gas Portable	8	8	6	6	10	5	7	7	6	4	7	4	3	6	5	5	1	1	99
Petrol/ Diesel	6	7	3	6	3	3	8	1	2	3	2	9	5	4	6	4	2	3	77
Oil	0	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	6
Paraffin	0	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	0	0	5
Unknown	1	0	0	0	0	0	4	4	0	3	4	2	1	3	0	2	1	5	30
Total	74	58	52	51	46	38	31	31	22	29	33	39	31	36	23	30	13	16	653

## Near-Misses from Accidental Carbon Monoxide Poisoning in UK

(01 Sept 1995 - 31 Aug 2013): **Total: 4686**

More than 2188 requiring hospital treatment and of those over 379 had lost consciousness

Year	95/6	96/7	97/8	98/9	99/00	00/1	01/2	02/3	03/4	04/5	05/6	06/7	07/8	08/9	09/10	10/11	11/12	12/13
	467	449	320	386	335	296	87	145	171	213	153	329	192	263	187	155	280	258

## Deaths from Gas Explosion in UK(Sept 1995 to Aug 2013): **Total: 106**

Year	95/6	96/7	97/8	98/9	99/00	00/1	01/2	02/3	03/4	04/5	05/6	06/7	07/8	08/9	09/10	10/11	11/12	12/13
	11	5	6	6	13	6	6	5	15	4	4	4	5	4	4	5	2	1

\* Information is collected from the International Press Cuttings Bureau on a daily basis and from other sources.

Coroners are contacted about all deaths. The tabulated data presented here is based on the December 2013 update.

For further details please visit [www.co-gassafety.co.uk](http://www.co-gassafety.co.uk)

## CO-Gas Safety data on deaths from unintentional CO poisoning put into HSE years (1 April to 31 March)

Year	95/6	96/7	97/8	98/9	99/00	00/1	01/2	02/3	03/4	04/5	05/6	06/7	07/8	08/9	09/10	10/11	11/12	12/13	Total
Solid fuel	26	18	22	17	13	19	5	8	3	5	8	12	10	8	7	6	14	0	201
Gas Mains	28	22	18	23	17	18	6	12	10	13	9	10	12	14	8	12	2	1	235
Gas Portable	8	6	6	7	10	5	6	7	8	2	8	3	5	5	4	6	3	0	99
Petrol/ diesel	3	7	5	5	4	3	6	4	2	2	2	8	7	2	8	4	2	3	77
Oil	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	6
Paraffin	0	0	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	0	5
Unknown	1	0	0	0	0	0	2	5	0	3	3	3	1	3	0	1	7	1	30
<b>Total</b>	<b>66</b>	<b>55</b>	<b>51</b>	<b>52</b>	<b>46</b>	<b>45</b>	<b>25</b>	<b>36</b>	<b>23</b>	<b>27</b>	<b>30</b>	<b>36</b>	<b>37</b>	<b>33</b>	<b>28</b>	<b>29</b>	<b>29</b>	<b>5</b>	<b>653</b>

Please note that HSE collect statistics for domestic/commercial gas fatalities due to both LPG and Natural Gas. Workplace CO deaths recorded could (theoretically) arise from incomplete combustion of any type of fuel. In contrast, CO-Gas Safety collects statistics with regard to unintentional CO related deaths and injuries from all fuels.

## CO-Gas Safety data on deaths from unintentional CO poisoning put into Gas Safety Trust years (1 July to 30 June)

Year	95/6	96/7	97/8	98/9	99/00	00/1	01/2	02/3	03/4	04/5	05/6	06/7	07/8	08/9	09/10	10/11	11/12	12/13	Total
Solid fuel	27	18	26	13	16	15	6	8	3	5	7	13	9	9	7	6	11	2	201
Gas Mains	30	21	21	24	14	17	7	11	9	14	12	7	13	16	4	12	0	2	234
Gas Portable	8	8	5	7	10	4	8	7	6	2	8	4	4	5	4	6	2	1	99
Petrol/ diesel	5	7	4	6	3	3	8	1	2	2	3	7	7	4	6	4	2	3	77
Oil	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	6
Paraffin	0	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	0	0	5
Unknown	1	0	0	0	0	0	3	4	0	3	4	2	1	3	0	2	1	5	29
<b>Total</b>	<b>71</b>	<b>56</b>	<b>56</b>	<b>51</b>	<b>44</b>	<b>39</b>	<b>32</b>	<b>31</b>	<b>22</b>	<b>26</b>	<b>34</b>	<b>33</b>	<b>36</b>	<b>38</b>	<b>22</b>	<b>30</b>	<b>16</b>	<b>14</b>	<b>651</b>

Please note. CO-Gas Safety started collecting its data on the 1st September 1995 so for 95-96, the data put into HSE year (April to March) and Gas Safety Trust year (June to July) is only partial for the time period.

# Table RIDGAS

Incidents reported in Great Britain relating to the supply and use of flammable gas (a) 2008/09- 2012/13p

Type of incident (b)		Year				
		2008/09	2009/10	2010/11	2011/12	2012/13p
Total number of incidents		203	223	278	173	219
	Carbon monoxide poisoning	172	196	229	142	187
	Other exposure e.g. to unburnt gas	4	6	13	7	6
	Explosion/fire	27	21	36	24	26
Total number of fatalities		18	10	17	4	10
	Carbon monoxide poisoning	15	9	13	3	9
	Other exposure e.g. to unburnt gas	1	-	1	-	-
	Explosion/fire	2	1	3	1	1
Total number of non-fatalities		324	330	428	266	343
	Carbon monoxide poisoning	289	292	368	226	302
	Other exposure e.g. to unburnt gas	5	11	12	8	6
	Explosion/fire	30	27	48	32	35

## Notes:

Source: RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

Regulation 6(1) of RIDDOR places a duty on certain conveyors of gas (including LPG), to notify HSE of an incident involving a fatal or major injury that has occurred as a result of the distribution or supply of flammable gas. The statistics published above are as reported to HSE. When a report is made under Reg 6(1), it will be at an early stage of the incident, thus the detailed circumstances of the incident will not have been confirmed.

From 1 October 2013, RIDDOR changed slightly in respect of the above reporting criteria ('RIDDOR 2013' replacing 'RIDDOR 95'). However, this change does not currently affect the figures in the above table. For more information please see 'gas incidents' at: <http://www.hse.gov.uk/riddor/reportable-incidents.htm>

From September 2011 reporting arrangements changed, see: [Summary of the effects to statistics for 2011/12 onw](#)

p Provisional

- (a) Mainly piped gas but also includes bottled LPG
- (b) An incident can cause more than one fatality or injury

General information on domestic gas safety is available at: <http://www.hse.gov.uk/gas/domestic/index.htm>

**Comment by CO-Gas Safety:** Please note that although RIDDOR imposes a duty to notify HSE, it seems that HSE is under no specific duty to investigate. HSE always investigates if there is a fatality but, in our over 18 years of experience, does not usually investigate a mere incident or injury, unless extremely serious.

## CO-Gas Safety reminds readers that our data is the only data:-

1. To be collected directly from the media and other sources with regard to all fuels.
2. Checked with the Coroner concerned, although of course we can't insist that the Coroner helps us, but most do. We have been doing this since 1995.
3. Is widely published with the names of the dead in England and Wales published on our website so anyone can check its validity re the deaths. We obviously can't publish the near misses in the same way due to confidentiality. The deaths from CO all have a public inquest in England and Wales, so they are already in the public domain.

4. Is collected, collated and published by a victim based charity, which really cares about its accuracy.
5. Has been favourably reviewed and favourably compared to the data of the Gas Safety Trust by the independent 'Straight Statistics' (see attached) headed by Nigel Hawkes, an eminent Science writer (see <http://www.straightstatistics.org/article/carbon-monoxide-killer-no-official-record> and <http://www.straightstatistics.org/about-us>). We had to correct the data provided by the Gas Safety Trust in summer 2012. One of their 'barbecue deaths' was in the wrong year and was not caused by a barbecue but by a generator.
6. Is not supporting a profit for an organisation to do this.
7. Has a form on our website for the Coroner to fill up after the inquest and which we encourage them to look at before the inquest in order to think about what evidence they need to call at the inquest (e.g. was there a CO alarm and was it to EN 50291, was it in date and did it work?).
8. And thanks to the Gas Safe Charity, is now the only data to have been validated by an independent statistician, Dr. Craggs.

No other body does all this, which we find extraordinary especially as the two wealthy charities Gas Safe Charity and the Gas Safety Trust have vast resources compared to us (£1.5 million, £4.5 million respectively). CO-Gas Safety has no official funding for the data and lives very hand to mouth.

We have recently applied to both charities for funding to continue our data. The Gas Safety Charity has refused on the grounds that it has agreed with the Gas Safety Trust that only the GST will undertake research. The Gas Safety Trust has refused on the grounds that the GST has decided to undertake its own data collection from all fuels, which basically means the GST must reinvent the wheel, when we have four and a vehicle on top. This just seems a waste of resources to us.

Baroness Finlay recommended pooling all data, which is very sensible. Although our data is now hugely valuable (as we have data from all fuels from 1995), CO-Gas Safety's directors would be happy to donate, this historical data provided either CO-Gas Safety, (which is a victim based organisation) is funded to continue the data collection, collation and publication or provided a committee of equal numbers of victims and industry oversee the data collection and collation but that CO-Gas Safety is still free to publish responsibly. Both the GSC and the GST are wealthy but lack a single victim on their boards. Most of their trustees are industry based.

Giovanni Leonardi, of Public Health England is keen on using our data to start the central database as recommended by Baroness Finlay. We have been told that although PHE will write letters of support with regard to our funding applications, it cannot provide any funding in the foreseeable future.

We know that all published data is only the tip of an iceberg. One reason is that GPs almost never diagnose CO and another is that there is no automatic testing of dead bodies for CO, even in cases of unexplained deaths. There are estimated to be 3,500 unexplained deaths between the ages of 16 and 64 in the UK every year (Killer with no name, New Scientist December 4<sup>th</sup> 2004).

**In CO-Gas Safety's opinion the gas industry should welcome our data and its continuance as a victim organisation is saying that, particularly per user, gas is much safer than solid and other fuels.**



## Validation of CO-Gas Safety's data

During the Winter and Spring of 2011 Dr. Craggs undertook a review of CO-Gas Safety's data and concluded that the quality of the raw data collected by CO-Gas Safety over the previous 17 years was good. It was concluded that the information collected on deaths was valid and reliable though clearly an under-estimate for total deaths. The Near Misses are slightly less reliable as the primary source is from newspaper reports and by the nature of Near Misses there are fewer opportunities to reliably follow-up these reports. It is recognised and accepted by all that the summary statistics produced by CO-Gas Safety are under-estimates of the actual numbers of victims and, for this reason, careful interpretation of CO-Gas Safety statistics is needed.

The 2011 Data Validation found the reliability of the paper filing system was excellent however Dr. Craggs made a recommendation to move from paper to electronic filing to simplify the process. This would be speeded up by more funding. When this has been fully implemented, Dr Craggs will be carrying out the 2014 data validation.

### Note by Stephanie

We have always accepted that even the deaths we record are the tip of an iceberg. There is no automatic testing of dead bodies for CO on death, even when death is unexplained. There is no coronial system in Scotland which, in our opinion means a gross under reporting of CO deaths there.

**CO-Gas Safety's data covers all fuels, has been collected since 1995, has some report for every death, tries to check every death with the Coroner concerned and most now help, publishes the names of the dead on the Internet for anyone to check, has had 18 years of input from a victim organisation that simply seeks the truth and the only data on CO that does all the above and has been validated by a statistician.**

Please also note that Straight Statistics commented favourably on our data see [http://www.co-gassafety.co.uk/downloads/Jan\\_2012/Press%20Pack%202012%20final%20from%20Kadee.pdf](http://www.co-gassafety.co.uk/downloads/Jan_2012/Press%20Pack%202012%20final%20from%20Kadee.pdf) at pages 23-25

### **DR CAROLYN CRAGGS**

**BSc PhD CStat FRSS**

#### **Experienced statistician - consultancy and training**

Lean Six Sigma, Operational Excellence and Quality Compliance  
Secretary of Quality Improvement Section, Royal Statistical Society  
Experience in a large multi-national company  
Successful trainer with ability to develop training strategies

### **Qualifications**

1993- to date	Chartered Statistician
1980	PhD in Applied Statistics, University of Newcastle upon Tyne
1976	BSc(Hons) Statistics (First Class), University of Newcastle upon Tyne
1976 – to date	Fellow of Royal Statistical Society

### **Training**

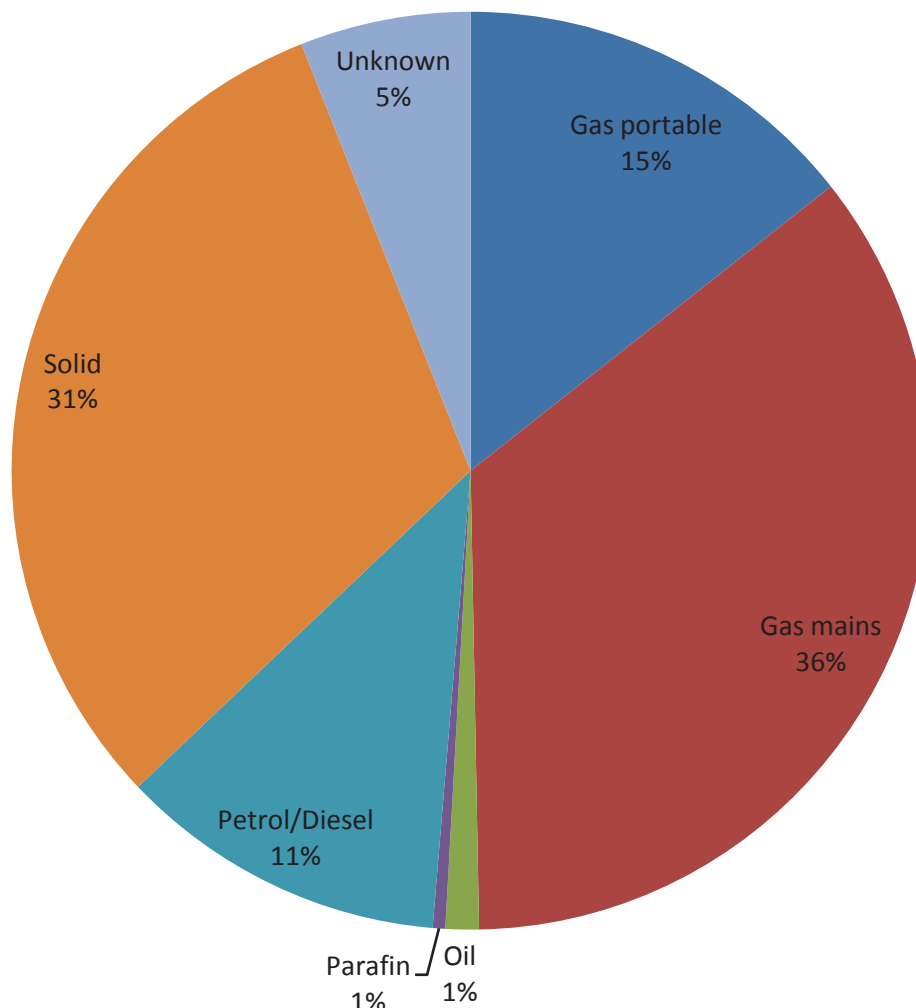
- Training statistical & Six Sigma (Green, Black & Master Black Belt) courses including software e.g. MINITAB, SPSS
- Developing training programmes aligned to business needs
- Training courses presently available include: a range of Refresher Statistics courses, Six Sigma Black Belt Training, Analysis of Variance, Multivariate Analysis,

### **Employment Record**

2007- to date	Director – Carolyn Craggs Statistician Limited (CCSL)
1999-2007	Principal Statistician in Operational Excellence, GlaxoSmithKline plc based at Barnard Castle; in addition Lean Six Sigma Expert
1998-1999	Director of Programmes (courses), School of Computing and Mathematics, University of Northumbria at Newcastle, UK
1989-1998	Head of Statistics Division and Principal Lecturer in Statistics, School of Mathematics, University of Northumbria at Newcastle, UK
1985-1989	Senior Lecturer in Statistics, University of Northumbria
1983-1985	Lecturer II in Applied Statistics, Sheffield City Polytechnic, UK
1979-1983	Lecturer in Statistics, The University, Hull

## FUEL type relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2013.

\*This data is being added to regularly so chart may change.



### Fuel Type

In total, 3.9 million homes in Britain rely on other heating fuels to mains gas to heat their homes, according to a 2011 report by Consumer Focus:

- 21 million homes in Britain are heated by mains gas (83 per cent of all homes)
- 2.3 million homes in Britain are heated by electricity (9.3 per cent)
- 1.1 million (4.4 per cent) by heating oil
- 310,000 (1.2 per cent) by solid fuel
- 170,000 (0.7 per cent) by LPG

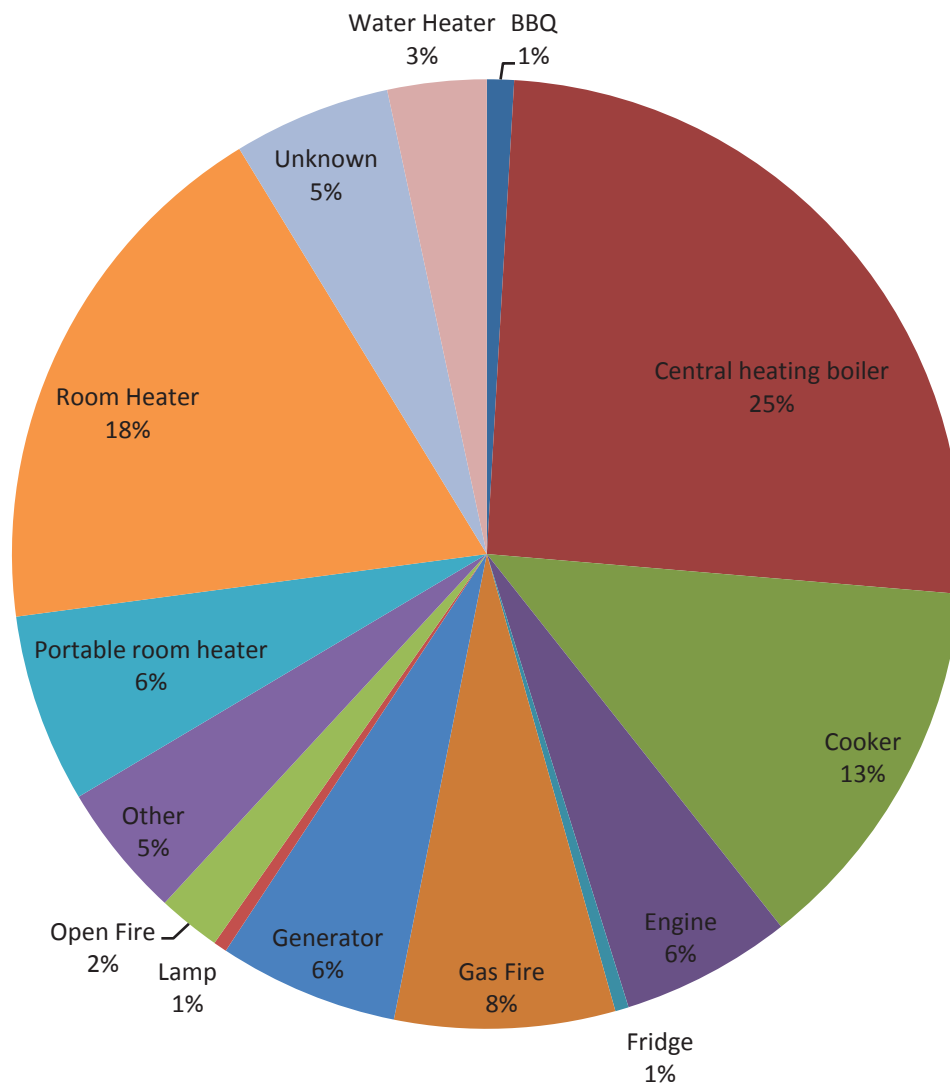
Comment by CO-Gas Safety

Considering these figures and the relatively small number of solid fuel users, there is a high incidence of deaths from solid fuel.

('Off-gas consumers' report <http://www.consumerfocus.org.uk/files/2011/10/Off-gas-consumers.pdf>)

# APPLIANCE type relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2013.

\*This data is being added to regularly so chart may change.



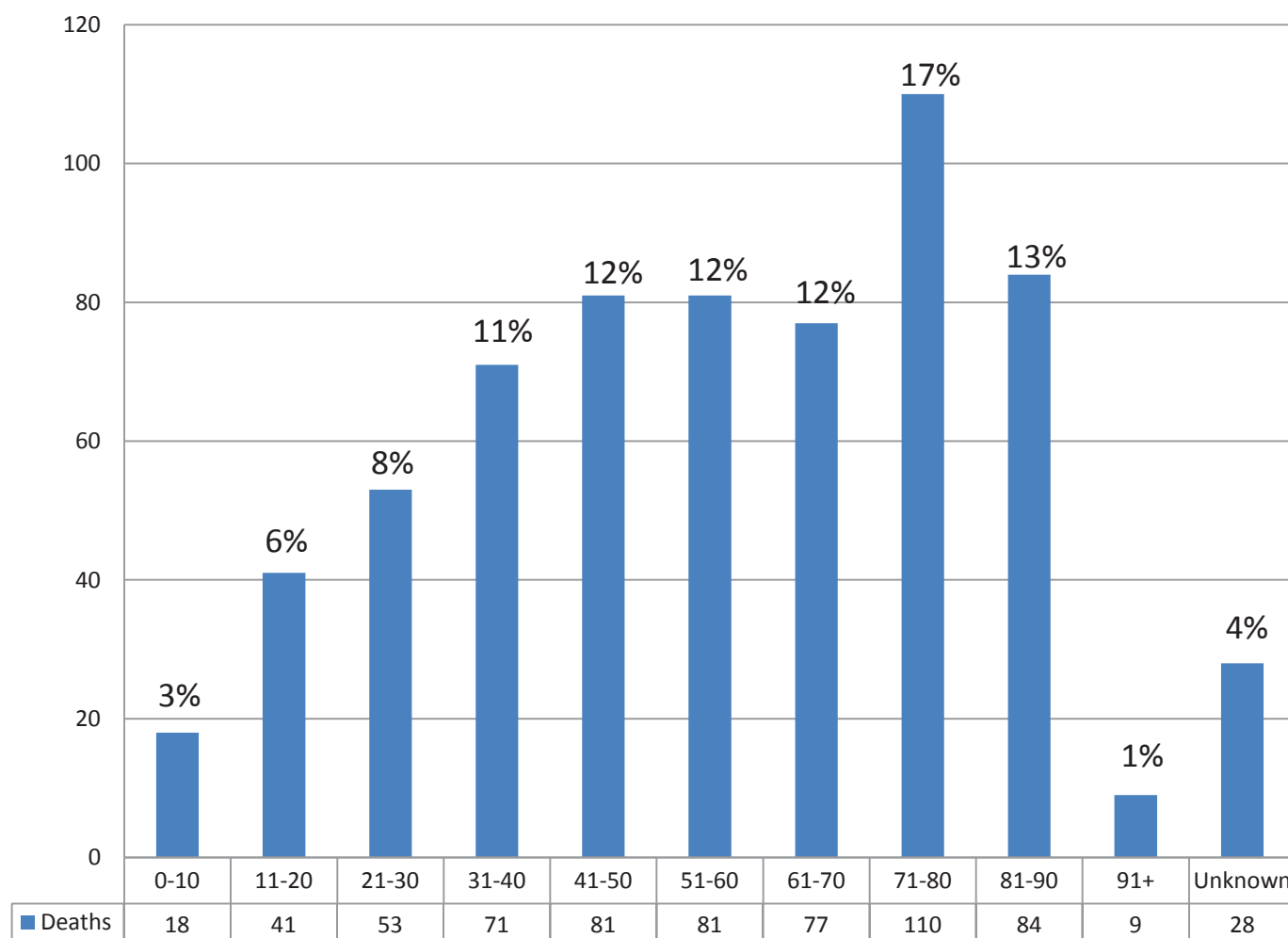
Please note:

Generator is a portable machine.

'Engine' is from a car, lorry, aeroplane or boat.

# AGE of victims relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2013.

\*This data is being added to regularly so chart may change.



## Age Range

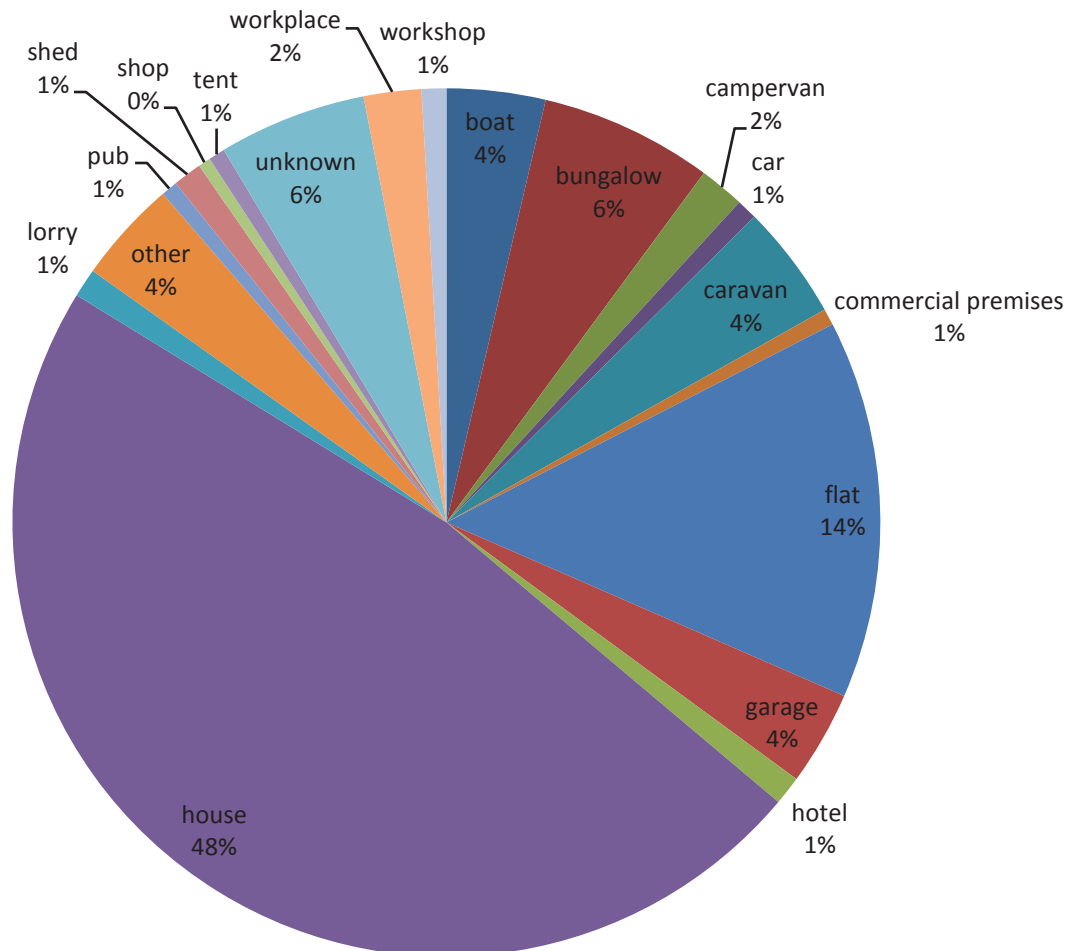
It is interesting to note that ages 71-80 make up just over 7%\* of the population, according to the latest census, yet they represent around 17% of the deaths.

In our opinion, many deaths in this age group may be put down to 'heart attack' when they are in fact CO, because there is no automatic test of CO on death, meaning the number of deaths in this age group could be even higher.

(\*Taken from [www.ons.gov.uk](http://www.ons.gov.uk) ONS Table P01 2011 Census: Usual resident population by single year of age and sex, England and Wales. *The census is undertaken every ten years. The next will be in 2021.*)

# PLACE of incident that caused death relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2013.

\*This data is being added to regularly so chart may change.



## Place of incidence

It is easy to see that people at home are most at risk from carbon monoxide poisoning. Why is so little being done to raise awareness of the dangers and to protect ordinary people who may be exposed for 24 hours a day?

Dr. Ben Croxford's research at UCL (University College London) in 2006\* found:

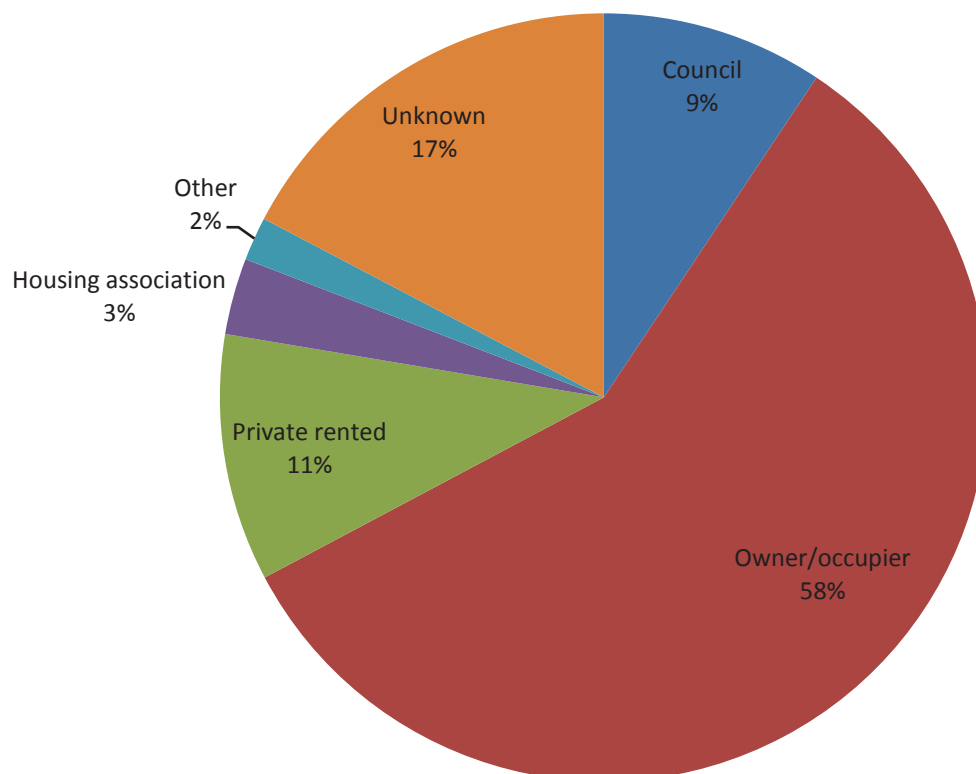
- 23% of homes had one or more defective gas appliance;
- 8% of homes were judged to be at risk of dangerous levels of CO;
- 45% of homes had received no information on the dangers of CO; and
- A higher prevalence of problem appliances was found in the homes of vulnerable people (young, old, those in receipt of benefits).

(\*Taken from HSE press release 2006)



# TENURE type relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2013.

\*This data is being added to regularly so chart may change.



## Tenure

The latest census reveals that of the 23.4 million homes/households in England and Wales on census day in March 2011: (<http://www.ons.gov.uk/ons/rel/census/2011-census/detailed-characteristics-on-housing-for-local-authorities-in-england-and-wales/short-story-on-detailed-characteristics.html>)

- 15 million (64%) were owner occupied
- 8.3 million (36%) were rented
  - 4.2 million (18%) were privately rented
  - 4.1 million (17%) were socially rented
    - 2.2 million (9%) rented from local authorities
    - 1.9 million (8%) rented from other private social landlords

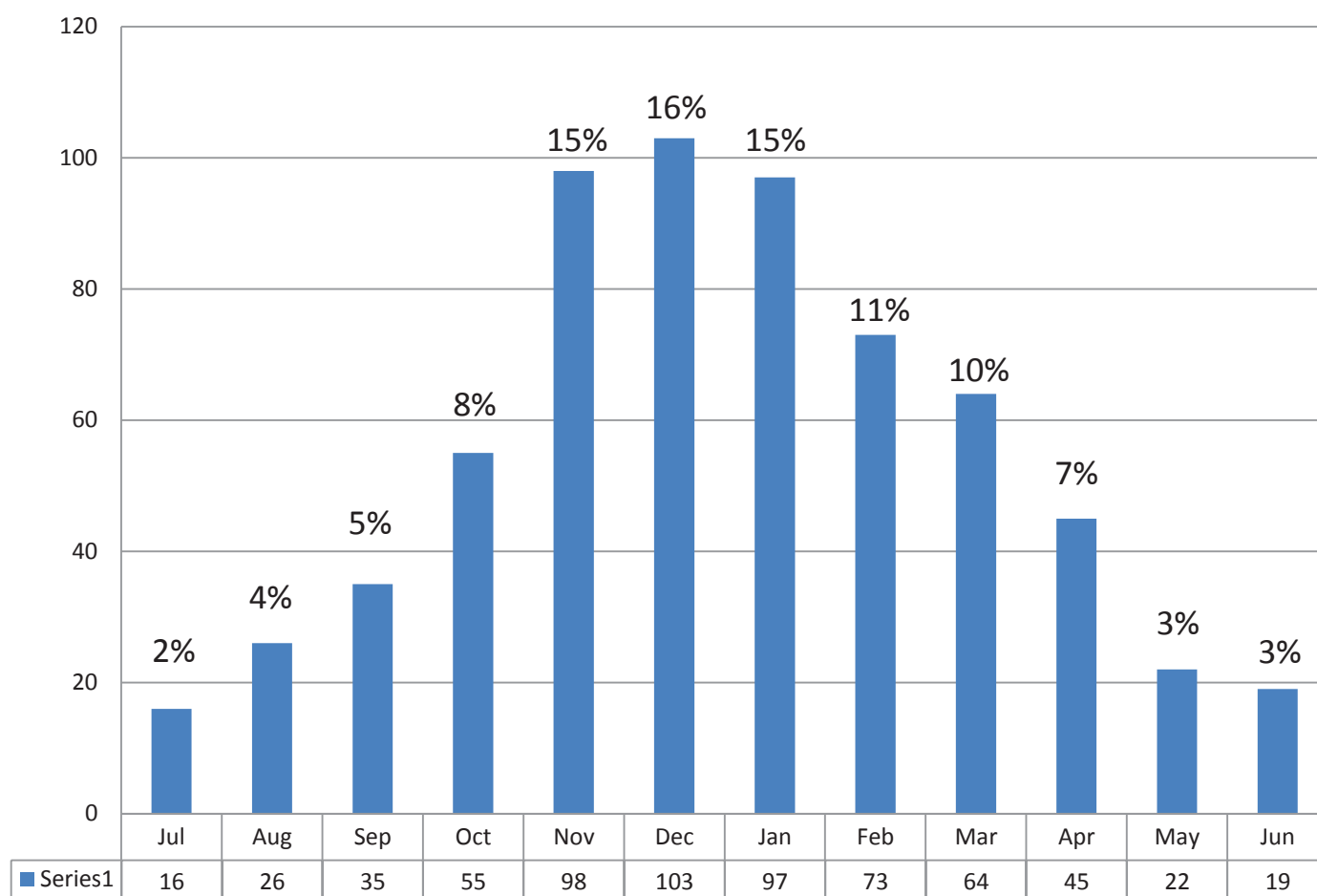
## Comment by CO-Gas Safety

When comparing tenure percentages for the data we have collected and the national figures we see some correlation. However, with the high incidence of unknown tenure (17%) it is impossible to accurately contrast. It would be helpful to have even more co-operation from Coroners to help us record tenure. This is something the government could also require.

Owner/occupier:	64% nationally	58% of CO Gas Safety data deaths
Private rented:	18% nationally	11% of CO Gas Safety data deaths
Council:	9% nationally	9% of CO Gas Safety data deaths

# MONTH of death relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2013.

\*This data is being added to regularly so chart may change.



## Month

It is unsurprising that the colder months of November, December and January contain the highest number of deaths.

**One example page of CO-Gas Safety's 18 pages from 01.09.95 to 31.08.13 of the named people who have died from unintentional carbon monoxide poisoning**

For entire list see <http://www.co-gassafety.co.uk/deaths.html>

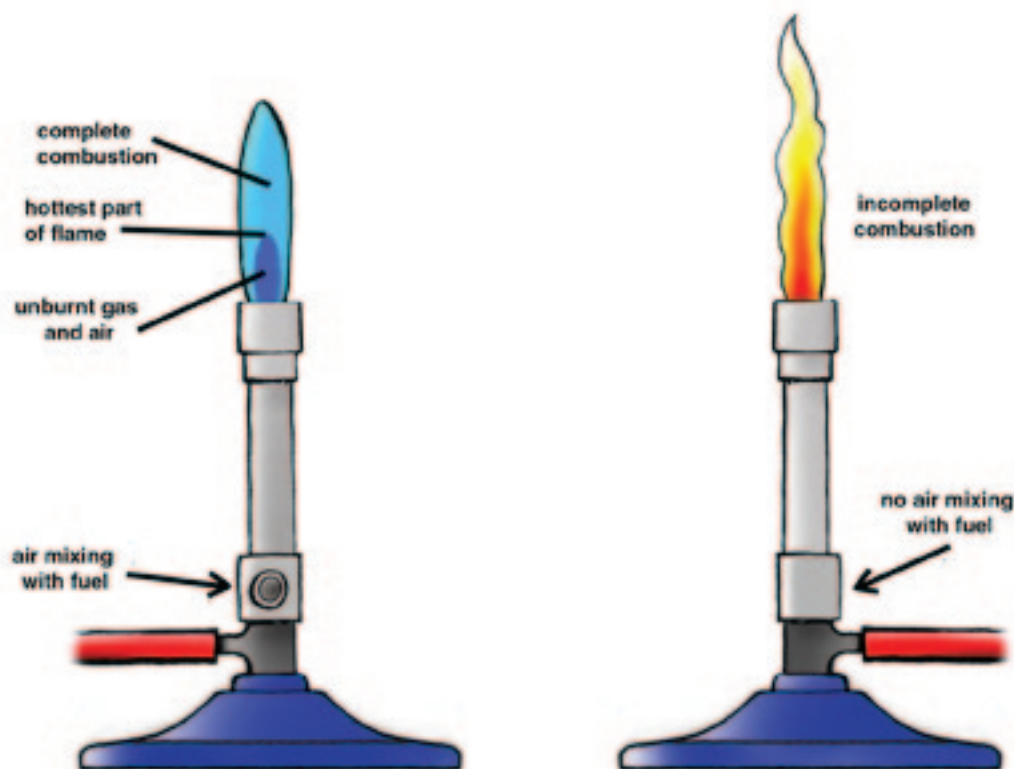
Surname	Forename	Age	Date of Death	Fuel	Appliance
Ellis	Mark	41	18/02/2008	Mains Gas	Boiler
Elliwell	Walter	71	09/05/1999	Solid	Room Heater
El-Tabakh	Ahmed	24	15/01/2006	Mains Gas	Grill
Ephgrave	Peter	58	06/02/2000	Petrol/Diesel	Engine
Etough	Beverly	37	00/01/1996	Mains Gas	Boiler
Etu	Stephen	36	16/02/2008	Petrol/Diesel	Generator
Evans	Francis	70	06/03/2005	LPG	Cooker
Evans	Kitty	81	04/06/2000	Solid	Room Heater
Evans	Margaret	88	12/12/2000	Solid	Room Heater
Evans	Mrs. M.	71	14/12/1995	Solid	Room Heater
Fairbairn	John	33	08/11/2009	LPG	Port Room Heater
Farrell	Ronald	62	07/09/2003	Solid	Boiler
Fearn	Joseph	79	24/07/2000	Solid	Room Heater
Fell	Elizabeth	83	22/12/2012	Mains gas	Cooker
Finney	Roger	49	20/11/2000	Mains Gas	Boiler
Fish	Eric	71	27/03/1998	Solid	Room Heater
Fish	Joan	68	27/03/1998	Solid	Room Heater
Fish	Ronald N	68	11/12/1996	Mains Gas	Gas Fire
Fitzmaurice	Peter	67	20/09/2009	Petrol/Diesel	Engine
Fletcher	Joan	76	08/03/2000	Solid	Boiler
Fletcher	Margaret	74	30/09/2006	Solid	Room Heater
Fletcher	Robert	75	08/03/2000	Solid	Boiler
Foster	Paul	18	24/02/1996	Mains Gas	Gas Fire
Fox	Michael J	45	20/10/2002	Solid	Boiler
Francis	Cyril W	79	22/01/2006	Mains Gas	Boiler
Francis	Stuart	60	20/09/2009	Petrol/Diesel	Engine
Fraser	Tommy	37	06/02/2008	Petrol/Diesel	Generator
Frith	Eric	64	18/11/2007	LPG	Room Heater
Froggatt	John	72	18/11/2007	LPG	Room Heater
Frosdick	Michael	19	17/03/2003	Mains Gas	Gas Fire
Fry	Elsie	70	25/02/1996	Solid	Room Heater
Fuller	Blanche	80	09/01/2004	Solid	Room Heater
Fulton	John	49	22/11/1999	LPG	Other
Fulton	Wilbert	32	24/12/1995	LPG	Room Heater
Gardner	David	33	13/08/1996	Petrol/Diesel	Other
Garvey	Dean	45	02/06/2011	Solid	Portable BBQ
Georgeson	Peter	21	06/11/2002	LPG	Lamp
Giauque	Elizabeth	6	05/02/2005	Mains Gas	Boiler
Gidlow	Gerald	52	01/12/2009	Petrol/Diesel	Generator
Gifford	Harry	85	11/03/2008	Solid	Room Heater
Goodall	Alma	87	28/01/2008	Mains Gas	Gas Fire
Goorahoo	Jane	58	15/01/2008	Mains Gas	Boiler
Gorinsek	Joseph	33	23/03/1998	LPG	Cooker
Grand	Albert	83	28/11/2010	Solid	Room Heater

## One page example of material put together by Roland Johns & checked by Dave Williams both ex British Gas to teach aspiring registered gas installers about carbon monoxide

We hope that this material will eventually be incorporated into all courses in order to prevent deaths, such as that of Matthew Nixon, registered gas installer aged 22, who died in December 2010 from CO from the use of a petrol generator in a room to power his tools. Dangers from fuels other than gas need to be emphasised.

Potential centres / colleges wanting to offer this awareness course can contact BPEC at [info@bpec.org.uk](mailto:info@bpec.org.uk) or call 08456446558

For feedback on this course please visit [http://www.co-gassafety.co.uk/trainers\\_of\\_gas\\_installers.html](http://www.co-gassafety.co.uk/trainers_of_gas_installers.html)



# National Grid Gas Distribution

## Keeping you safe and warm

Our CO strategy over the last 5 years has evolved, based on our stakeholders' feedback, from raising awareness to also encouraging action and changing behaviours. We have continued to focus our awareness campaigns to appeal to elderly people, students and families with children; these groups have been identified by external research as having exceptionally low awareness of gas safety and carbon monoxide.

We are working alongside all Gas Distribution networks, chairing the 'CO Best Practice Working Group' to identify and develop best practice solutions that can be shared throughout the UK.

Examples of some of our CO and safety awareness activities are shown below.



Annual competition winners

### Forming effective partnerships

We have supported the Scout Association for many years and recently made a significant update to the Home Safety Badge pack as well as developing a new 'Engineering our energy future' resource.

Survey results and the volume of young people using the resources indicate that the Home Safety Badge remains a key part of many Leaders' programmes. As a long term supporter of Scouting and its annual Home Safety Poster competition we have found that volunteers return to our resource time and time again to deliver home safety training to young people.

Building on the success of our partnerships we are now members of Age Action Alliance and are currently working with the Chief Fire Officers' Association and Gas Safe to establish ways in which we can work together to share expertise in promoting the use of CO alarms in the home. Gas Safe is also on our new Stakeholder Advisory Panel which has been established to review and challenge the business and support our stakeholder activities.

### Improving access to gas safety information and raising awareness of 'The Silent Killer'



During 2012/13, we reviewed and refreshed our dedicated Gas Emergency webpage and produced a new webpage dedicated to CO. We have introduced a suite of safety related videos, and by making better use of search engine optimisation tools and social media presence we have been able to increase awareness of the dangers of CO. Our dedicated webpage also provides information on what to expect when making a call to the gas emergency service, and compliments our other more traditional media campaigns.

We continue to measure the impact of our campaigns and refresh and update these based on feedback. Working with the industry we have developed a common CO awareness survey and this is used as part of our home safety visits so that we can measure the impact of our before and after visits.

### Want to know more?

The Silent Killer: [www.youtube.com/watch?v=ddXtgcsJVNg](http://www.youtube.com/watch?v=ddXtgcsJVNg)  
 Gas Emergency Information: [www.nationalgrid.com/UK/Safety/Gas-emergency/](http://www.nationalgrid.com/UK/Safety/Gas-emergency/)

To find out more about our safety, CO, Fuel Poverty and Environmental work see our 'Discretionary Reward Scheme' Report on our Talking Networks website: [www.talkingnetworksngd.com/about-us.aspx](http://www.talkingnetworksngd.com/about-us.aspx)

### Follow us:

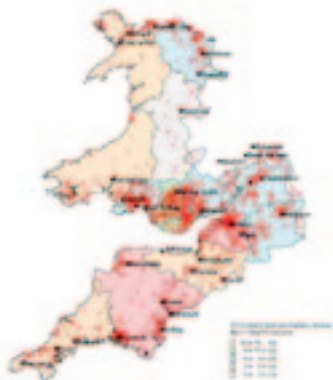




## Wales & West Utilities - SAYNO TO CO

Following consultation with our stakeholders, Wales & West Utilities (WWU) has developed a strategy, recognising that CO is not solely a gas issue, which delivers a diverse programme of initiatives both to our staff and more widely, to the 7.5 million people who live and work within our network. Building upon our strategy over the last 12 months, WWU has;

- used better data and developed new partnerships
- continued with successful initiatives
- Shared learning with other networks and wider industry at best practice events.



### Improved data allows us to target at risk areas

By using the data our Emergency engineers collect onsite to we continue to map our incidents geographically, producing a “hotspot” analysis (left). This allows us to continue to proactively target initiatives to areas most at risk.

Considering our unique geography and large number of rural communities, we have worked in partnership with Techniquest to develop an interactive learning environment for families (right). Our campaign won us “Best Stand of Educational Value” and has toured agricultural shows across our area. Our reach at these events alone has been in excess of 640,000 people.



Feedback at these events has proven the approach to be both popular and successful in raising awareness. Over 90% improved their awareness, and over 85% committed to pass the message onto a friend or family member.

### First CO conference in partnership with Igem and the All-Party Group

WWU is also taking a lead in building a broader response to promoting CO safety, inclusive of shippers, suppliers and other fuel groups. WWU worked with the Institute of Gas Engineers and Managers, Igem, and the All Party Parliamentary Carbon Monoxide Group to hold an industry conference on CO safety in July 2013. The conference was the first of its kind and enabled interested parties to share best practice and innovative thinking, promoting innovation and identification of suitable research projects. The event report is available at <http://www.igem.org.uk/co-report>. A follow up event is planned for the summer of 2014. In the interim, we are making good progress against the priority actions identified and will send a mid-year progress report to delegates.



### New initiatives are “a Breath of Fresh Air”



A theatre performance commissioned and sponsored by WWU in partnership with Arts & Business Cymru ensured over 1,300 children and their grandparents across South West Wales learned about the serious dangers of carbon monoxide (CO) poisoning.

Working with a local theatre company, Theatr Na n'Og, WWU has also produced a 45-minute play around CO. Workshops involve WWU's emergency engineers and local schoolchildren to shape, produce and take part in the play. “A Breath of Fresh Air”, was specially designed to engage children in an equally funny and tragic tale. It is based on the tale of a grandson who spends a weekend camping with his grandmother after the loss of her husband through CO poisoning. Sara Lewis, production script writer, said: “The response from the pupils, teachers, parents and grandparents has been overwhelming. Boilers are being serviced, audible CO alarms purchased and the CO safety message shared via the rather unconventional method of a CO Hakka developed especially for the children to perform.” At the end of every performance the actors hold a question and answer session with the audience to reinforce the CO safety messages. Everyone is provided with CO related materials to take home and distribute to family and friends. The project has been such a success an additional 10 schools in Bristol and Cornwall, two of our other high-risk areas will benefit from this campaign in 2014.

There is, however, always more we can do and WWU is committed to working with the All Party Parliamentary Group, charities, the wider industry and other interested parties with the aim of eradicating the risk of unintentional CO poisoning.

If you would like any further information about WWU's CO strategy – please contact: [danielle.royce@wwutilities.co.uk](mailto:danielle.royce@wwutilities.co.uk)

## Keeping our customers warm and secure by delivering gas safely, reliably and efficiently.

Since our formation in 2005, we have worked with a number of organisations and charities to reduce the number of deaths and injuries caused by Carbon Monoxide (CO).

In 2009, we became the first gas distribution company to equip all our emergency staff with Personal Atmosphere Monitors (PAMs) so when in customers' homes, our operatives can save lives and protect themselves by alerting them to the presence of CO.

## Tackling the Silent Killer

We're taking a four stage approach to tackling Carbon Monoxide (CO) safety. Each stage has a different emphasis but together they reflect all that needs to happen if the dangers of CO poisoning are to be recognised and needless deaths prevented.



### Our interactive approach

Recent **research** has shown that only 1 out of 40 fatal CO poisoning incidents was related to natural gas. Recent high profile media cases have highlighted the dangers associated with leisure activities and research from that sector has shown that 33% of campers would use a barbecue inside their tent. Portable stoves and generators are also part of the less obvious CO dangers associated with environments such as holiday homes, caravans, pleasure boats and camping situations.



### Learning from this research

We've produced a new customer CO safety leaflet. While continuing to highlight good practice and appliance safety at home, our new leaflet draws attention to the risks associated with leisure activities outside the home which have been associated with a significant number of recent CO fatalities.



### Leading the way

We're issuing our new leaflet in advance of the peak holiday season and expect our First Call Operatives to distribute around 500,000 leaflets per year. While carrying out their emergency and meter work visits, they will take the opportunity to discuss these new aspects of CO safety with our customers. How well the message is received is being assessed by customer surveys. We will **share** our learning with the industry, ensuring best practice drives the promotion of this important safety message, keeping our customers safer.

### For more information

Contact our 24-hour Press Office on 0845 070 1811.

Like us on Facebook and follow us on Twitter: @SGNSouthern and @SGNScotland  
[www.sgn.co.uk](http://www.sgn.co.uk)

**Research** undertaken by and for our Director of Stakeholder Engagement, Chris Bielby has been used as the basis of a presentation entitled 'Carbon Monoxide, The Past, Present and Future'. This has been presented to MEPs and learned bodies in Europe and to MPs, Ministers and Parliamentary Committees here in the UK. It's been shared with other GDNs, as well as to a wide range of learned institutions – all with the shared aim of raising awareness and also to encourage legislative change where it is needed.



**Leading the way** - Chris Bielby is a recognised industry lead on CO related matters and chairs or is an active participant in several national groups. His drive and enthusiasm for these initiatives has provided the additional encouragement for us to extend our promotion of CO awareness.

**Our commitment to sharing** is highlighted by all our initiatives. Our involvement includes the Safety Centre Alliance, Girlguiding, Go Safe Scotland and Safetaysiders. We've even helped develop a story line in Coronation Street which reinforced the dangers of employing unqualified tradesmen.

**In all of this we are learning, gathering the feedback, shaping our strategy - and always being proactive.**

**We've formed a strong relationship with the Dominic Rodgers Trust** supporting the development of a colourful camper van emblazoned with eye catching CO warning messages. Having launched the safety message at the Houses of Parliament, the van is now on the road raising awareness. We will make sure it is available for appearances in other networks, to ensure we share its essential safety message.



## Tackling the Silent Killer

Over the past 12 months, we have gone further than ever before in our efforts to protect customers from the risks of Carbon Monoxide (CO).

In spring 2013 we held a workshop with key stakeholders from across our network, and we have developed our CO strategy based on the feedback we received.

### Gascoseekers

We'll be rolling out more than 1000 Gascoseekers across the network by September 2014. The new units are capable of not only monitoring levels of natural gas (methane) in the air but also CO and Oxygen, providing extra peace of mind for our customers and employees during emergency call outs.

### iCop

In 2012 we launched iCop, an innovative smartphone app designed to raise awareness of CO among 18-24 year olds living in rented accommodation. A second wave of activity took place during fresher's week 2013. We spoke to over 2000 students, and surveyed more than 200. 96% of those surveyed told us they thought iCop was a great way to raise awareness of CO.



### Taking the Carbon Monoxide message into schools

Our schools education programme contains a strong CO awareness element. Through classroom based workshops, Year 7 pupils are taught what CO is, how to recognise the signs of CO poisoning and what to do if they suspect CO is present in their home.

### Spreading the word

We're working hard to spread the word about the dangers of CO to customers across our network.

Our First Call Engineers deliver CO awareness home-briefings to 'at risk' customers including those aged over 60 and those with disabilities.

We have developed an eye catching A5 CO awareness card to hand out to all our customers. The card contains key facts about CO, spotting the signs and symptoms, prevention and action to take if CO is suspected.

In December 2013 we launched our new customer friendly website, featuring important information about CO displayed in a visually appealing and engaging way.

We have also erected a huge billboard at our York depot, to help raise awareness of CO amongst train passengers!









# CO-Gas Safety Poster Competition

Registered Charity Number: 1048370

[www.co-gassafety.co.uk](http://www.co-gassafety.co.uk)

**Calling all Primary School Teachers  
and Pupils aged 10-11!  
We want YOU!**

Please help raise awareness of the dangers of carbon monoxide (CO) poisoning!  
CO-Gas Safety is an independent registered charity and is running a Schools Poster Competition for a seventh year to highlight the dangers of CO and other dangers from using fuel that burns.

**Entry is FREE**

**PRIZES are at least £300 for each winning pupil and at least £500 for each winning school!**

**Competition for this year closes 31<sup>st</sup> July 2014**

All teaching materials are on the website, including a downloadable Power Point Presentation See <http://www.co-gassafety.co.uk/competition.html>

There are four regions, North England, South England, Scotland & Wales. There will be 4 winners. Presentation at the House of Lords, January 2015. These areas are now kindly sponsored by Scotia Gas Networks, Wales & West Utilities, Northern Gas Networks and National Grid.



Teachers - You could ask your pupils to spot the CO dangers in this picture.

Answers see <http://www.co-gassafety.co.uk/answers.html>

**The charity is hoping for some brilliant entries to get the message across simply**

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**nationalgrid**







## CO GAS SAFETY - POSTER COMPETITION 2013/14

# RULES

1. The competition asks students to produce an informative, accurate and eye-catching poster warning of the dangers of Carbon Monoxide (CO) poisoning and/or fumes and/or how to avoid them. Material about CO and how to avoid it and other fuel toxins can be found at [www.co-gassafety.co.uk/competition.html](http://www.co-gassafety.co.uk/competition.html)
  2. There will be one year group Year 6 in Primary School (ages 10-11) in the autumn term 2013 (or any other student who joins this year in 2013 to July 31<sup>st</sup> 2014 but who is the correct age as specified above).
  3. Students can use any medium (paints, crayons, painting, photographs etc.) provided it is the individual student's own individual and original work. Students must not work together.
  4. Students may consult books or the Internet for information or ideas, but no credit will be given for material simply printed off the computer or photocopied etc.
  5. Entries must be photographed or scanned and emailed (1 entry per person per email) in JPEG format to: [postercompetition@co-gassafety.co.uk](mailto:postercompetition@co-gassafety.co.uk) Please make sure that the photo or scan is in colour and does not cut off part of the poster. Most teachers can find a space to attach the name & age of the pupil and the name & post code of the school.
  6. Entries should reach CO-Gas Safety by no later than midnight on July 31<sup>st</sup> 2014. To avoid any Confusion, please make sure that each entry/poster is clearly labelled on the poster itself with the name and age of the student as well as the name and post code of the school.
  7. The winners will be awarded prizes and the best ones may be put on display in the media or used to further raise awareness.
  8. The judges' decision on all matters will be final and no correspondence will be entered into with regard to any matter concerning this competition. However, the charity will try to clear up any ambiguities that may be brought to its attention (email [office@co-gassafety.co.uk](mailto:office@co-gassafety.co.uk)) and rules may be amended accordingly from time to time in order to clear up any such ambiguities.
  9. Provided there are enough entrants, there will be four regional winners, North England and South England plus one in Scotland and one in Wales. Prizes will be £300 for each winning student and at least £500 for each winning school\* (although if we obtain more sponsorship, we may increase this).
  10. For those being home educated\*, parents can nominate either a school or a Local Education Authority etc. to receive the £500 winning prize for the 'school'.
- Please note that groups of the relevant ages such as scouts etc. can also enter provided they nominate a recognized organization, such as scouts, guides etc. as the 'school' to receive the prize.
11. By entering all entrants, (if winners), agree to attend a prize presentation at a venue to be notified to the winners, probably at the Houses of Parliament usually during the last week of January in the year following (e.g. if poster sent by 31.07.2014 wins, prize giving end of January 2015). The competition is being sponsored by Scotia Gas Networks, Wales & West Utilities, Northern Gas Networks, National Grid and Kane International.
- Reasonable expenses for travel, food and accommodation costs for attending the prize giving venue of students and a parent/guardian will be reimbursed provided original receipts are received. At the event one overall winner for the UK may be announced selected from the regional winners.
12. Upon entry, all entrants agree that all copyright and other intellectual rights to the posters will become the property of the registered charity, CO-Gas Safety.

For further information please visit [www.co-gassafety.co.uk](http://www.co-gassafety.co.uk) or email [office@cogassafety.co.uk](mailto:office@cogassafety.co.uk)

**'If you have any queries or worries please email Stephanie Trotter OBE [office@co-gassafety.co.uk](mailto:office@co-gassafety.co.uk)'**

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## SCHOOLS POSTER COMPETITION

### INFORMATION ABOUT CARBON MONOXIDE

#### SECTION ONE

**TO BE READ BY PUPILS/STUDENTS WITH THEIR PARENTS AND TEACHERS BEFORE DESIGNING A POSTER**

#### The Silent and Invisible Killer

The Department of Health announced in 2012 that every year about 50 people in the England & Wales are recorded as having died of carbon monoxide poisoning. About 4,000 visit their A & E with CO symptoms. Many suffer ill-effects as a result of exposure to carbon monoxide: sometimes they are permanently disabled. Carbon monoxide can be emitted from faulty domestic heating and cooking appliances.

CO-Gas Safety believes that even these figures are the tip of an iceberg for many reasons:-

1. GPs rarely test for carbon monoxide.
2. Dead bodies are not automatically tested for carbon monoxide.
3. Heating and cooking appliances are often not tested for carbon monoxide.

Greater awareness of the dangers of carbon monoxide and other products of combustion and toxins in fuel as well as the need for ventilation, proper servicing and chimney sweeping could prevent these tragedies.

#### What is carbon monoxide?

Carbon Monoxide (CO) is a toxic gas, which can be emitted from the burning of any fuel.

#### Can you name any fuel that burns?



Gas (mains or bottled), solid fuel (coal, wood, etc) petrol, oil, paraffin.

[www.co-gassafety.co.uk](http://www.co-gassafety.co.uk)

Can you find any possible sources of carbon monoxide in this picture?



### Why is Carbon Monoxide called CO?

The fuels that we use on a daily basis all contain carbon. Sources of carbon include charcoal, oil, natural gas and petrol. When we burn these fuels the carbon combines with oxygen in the air. If there is enough air, carbon dioxide is produced. Carbon dioxide or CO<sub>2</sub> is formed from one atom of carbon and two atoms of oxygen.



Carbon monoxide, CO is formed from one atom of carbon and one atom of oxygen.



So you can see that the less oxygen there is at the flame the more likely it is that carbon monoxide will be formed. This is why it is so important to burn fuels in a well ventilated area.

### The dangers of carbon monoxide

Carbon monoxide is a highly toxic gas. Less than 2% of CO in the air can kill in two minutes (see [http://www.hse.gov.uk/foi/internalops/hid\\_circs/technical\\_osd/spc\\_tech\\_osd\\_30/spctecsd30.pdf](http://www.hse.gov.uk/foi/internalops/hid_circs/technical_osd/spc_tech_osd_30/spctecsd30.pdf) at Para 74 Table 23)

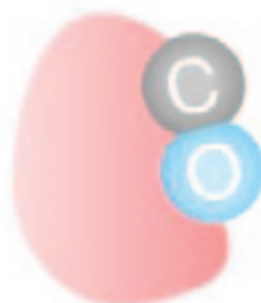
Low level exposure of CO over a long period can cause brain and neurological damage.

## Why is carbon monoxide so toxic?

The red blood cells in your bloodstream carry oxygen to all parts of the body. Each red blood cell contains molecules of haemoglobin. Oxygen binds to the haemoglobin and when it gets to where it is needed in the rest of the body, the oxygen breaks away.



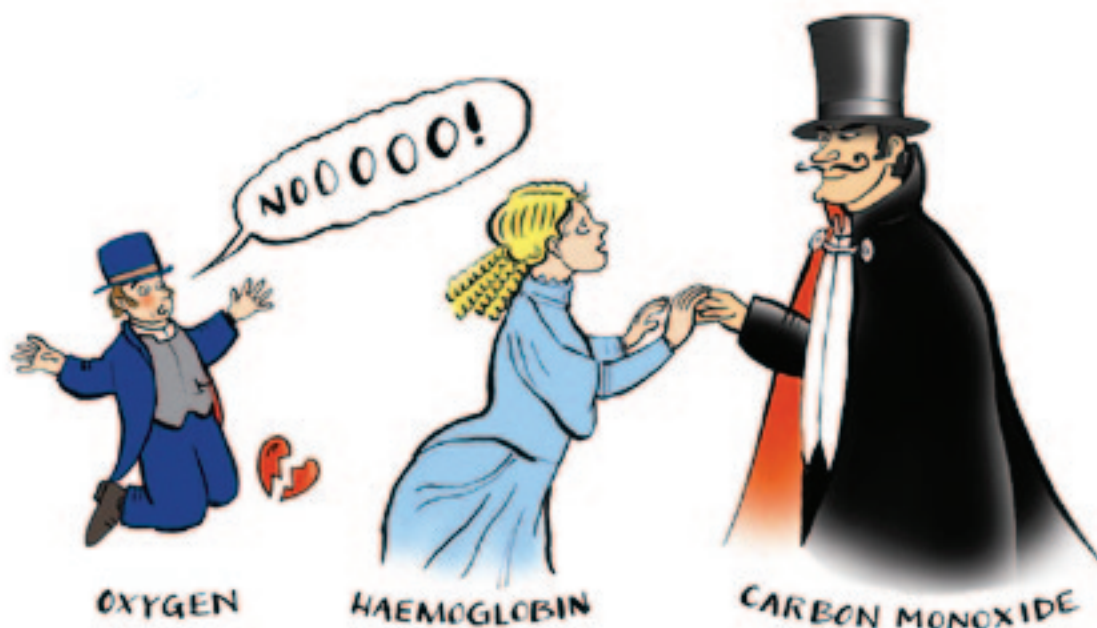
Carbon monoxide can also bind to the haemoglobin but it doesn't break away again.



Effectively carbon monoxide blocks the haemoglobin, making it useless for carrying oxygen.

This explains why CO can poison in tiny amounts.

**Haemoglobin is attracted to the deadly charms of carbon monoxide**





**CO cannot be sensed using human senses, (hearing, seeing, tasting or feeling).**



**Do you know that miners used to take canaries down the mine?**

Do you know why?

Because the poor canary (being very small) would die first and this would alert the miners to the presence of CO or other toxic fumes.

These days, special equipment, such as a flue gas analyzer, is needed to test appliances and/or the air in a room for CO.

Animals can still warn of dangers in the home. You may find your cat won't stay in the house.

Dogs may also behave strangely or have a sore throat or mouth.



Please note that although you can't smell CO itself, you just might be able to smell some of the other products of combustion, which may have escaped into the room rather than gone up a chimney, (because it is partly blocked for example). Sometimes people describe this smell as 'gassy' and think there has been an escape from a gas pipe supplying natural gas to the house or appliance.

**Research shows how widespread the problem is**

Research undertaken by University College London has found:-

1. 23% of homes had one or more defective gas appliance;
2. 8% of homes were judged to be at risk of dangerous levels of CO; (*equates to about 4.5 million people in the UK*)
3. 45% of homes had received no information on the dangers of CO; and
4. A higher prevalence of problem appliances was found in the homes of vulnerable people (young, old, those in receipt of benefits).

The above is taken from an HSE Press Release 02.10.06

This has been confirmed in a wider research programme from Liverpool John Moore's university see [http://ljmu.ac.uk/NewsUpdate/index\\_123350.htm](http://ljmu.ac.uk/NewsUpdate/index_123350.htm) More than 27,000 properties were visited.



### Symptoms of CO poisoning include:

- Headaches
- Nausea, (feeling sick)
- Exhaustion, (feeling unnaturally tired)
- Drowsiness, (wanting to go to sleep more than usual)
- Dizziness, (feeling funny as if you are going to fall over when standing up and perhaps feeling funny sitting down)
- Vomiting, (being sick)
- 'Flu like' symptoms, (generally feeling unwell. Some people suffer tummy aches and quite often different people suffer from different symptoms)
- Palpitations, (feeling your heart beat oddly)
- Chest pain, (pain in your chest)
- Collapse without necessarily losing consciousness, followed by unconsciousness and perhaps death.

The elderly and young are at higher risk than healthy adults. If you are suffering any of the symptoms, especially if more than one person in the house is suffering, you may be at risk of CO poisoning. Another thing to think about is, are you better when away from the house?

**Look  
for the**



Please bear in mind that family members can suffer different symptoms, for example, the mother may be tired and have a headache, the son may be dizzy and act strangely and always want to be out of the house, the daughter may have a bad stomach ache, while the father may just be bad tempered. The problem is that such symptoms could be nothing or they could be CO.

## Diagnosing CO poisoning

Doctors are generally poor at diagnosing CO. Doctor John Henry, former Consultant Physician at the National Poisons Unit, surveyed 200 general practitioners. He sent them symptoms of CO poisoning and requested their diagnoses. Although many sensible suggestions were made, not one GP suggested CO as a cause of these symptoms.

Some doctors' surgeries have equipment, (sometimes called a Smokelysler or ToxCo), to analyse breath for CO. This is easy, painless and provides an instant result. If this shows CO, a simple blood test may be required to confirm the diagnosis. However, a blood or breath test can produce a falsely negative result if too much time has passed between exposure to CO and tests being carried out. Do not assume that your appliances are safe just because the test results were negative.

### What do I do if I suspect I have been exposed to CO?

1. Get out of the house or place where the poisoning is occurring (e.g. workplace, garage, etc.) or if you can't do this
2. Open all windows and doors and turn off all appliances.
3. Call the Gas Emergency number on 0800 111999 (e.g. from a neighbour's house)
4. Get to your GP or to the Accident and Emergency department at a hospital as soon as possible and ask for an immediate blood or breath test for CO. Find someone to go with you if possible. A visit to a doctor may also be helpful to prove CO poisoning or at least to record symptoms suffered by you that are consistent with CO poisoning. If exposure to CO is severe, treatment with hyperbaric (high pressure) oxygen is often recommended.

### Can CO pass between houses?

Yes, through a joint chimney for example. Alternatively CO or other products of combustion can leak from the flat above or the flat below.

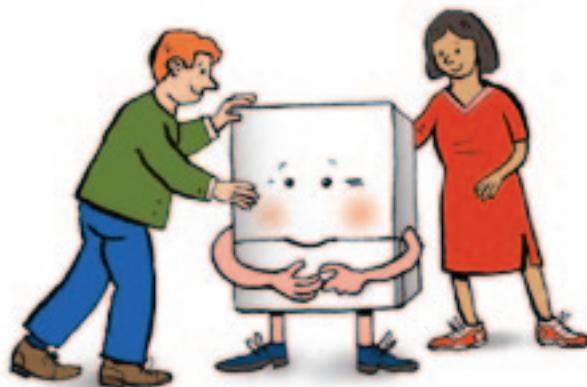
Please note that the National Gas Emergency Service, (responsible for gas emergencies) has no equipment to test appliances for CO. We think this is like sending someone out to trace radioactivity without a Geiger counter! However, most now at least have some Personal Alarm Monitor to protect the person who calls, the First Call Operative but you will have been told to turn off appliances and open windows so by the time the FCO calls, there probably won't be any CO present even if there was before you turned everything off.



*How safe is your boiler?*

## Take these simple steps to CO safety - it's just commonsense

1. Look at all your appliances. Do they look unsafe?  
They should look clean (i.e. no soot or dirt around it and no water leaking from it) and burn with a blue flame.



2. Have all appliances installed and serviced at least once a year by a properly qualified person. For gas appliances this means that only someone who is on the Gas Safe Register should inspect or service them.  
Don't be shy about asking for proof of their training and experience - it's your money and your life. You can check that the individual who comes to your house is qualified to work on that particular appliance on the Gas Safe Register website <https://engineers.gassaferegister.co.uk/> or ring 0800 408 5577.  
Ensure that your gas fitter uses a flue gas analyser or similar equipment to check for CO gas to find which appliance was emitting the CO and how many parts per million.



3. Make sure chimneys and flues are swept regularly, at least once a year, by a fully qualified sweep.

Make sure the chimney does not end in the loft or leak into the loft (e.g. sometimes unscrupulous builders won't bother to ensure that the chimney goes up through the roof).

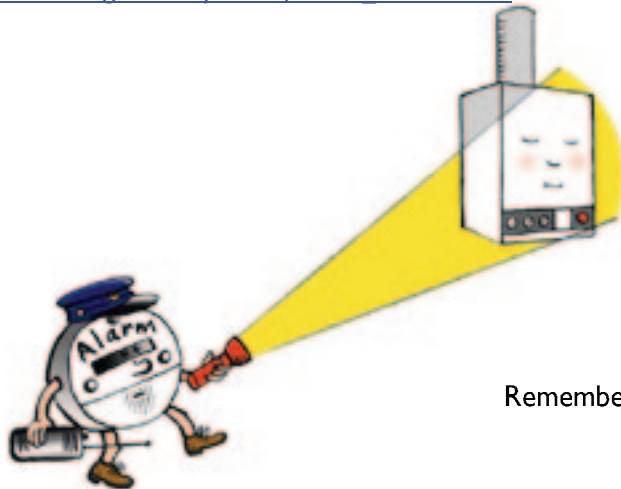
It is important that chimneys and flues are kept clear so that all the products of combustion go harmlessly up the chimney and not back into the house.



4. Do not block vents or air grilles. Make sure you have some ventilation (open a window). If there is enough oxygen reaching the flame carbon dioxide will be formed, NOT carbon monoxide.

As an extra safeguard buy a CO alarm to European Standards EN50291.

This will cost around £15-£20. Alarms are available at most DIY shops and some supermarkets. CO-Gas Safety has never heard of anyone dying with an in date CO alarm who took notice of the alarm in nearly 18 years but we have heard of people still feeling ill with a good alarm, perhaps from low levels of CO or perhaps from other products of combustion or toxins in fuels. For the other toxins see [http://www.co-gassafety.co.uk/other\\_toxins.html](http://www.co-gassafety.co.uk/other_toxins.html)



Remember a smoke alarm is NOT a CO alarm.  
A CO alarm is NOT a smoke alarm.

Illustrations by John O'Leary [www.oleary-irsara.com](http://www.oleary-irsara.com)

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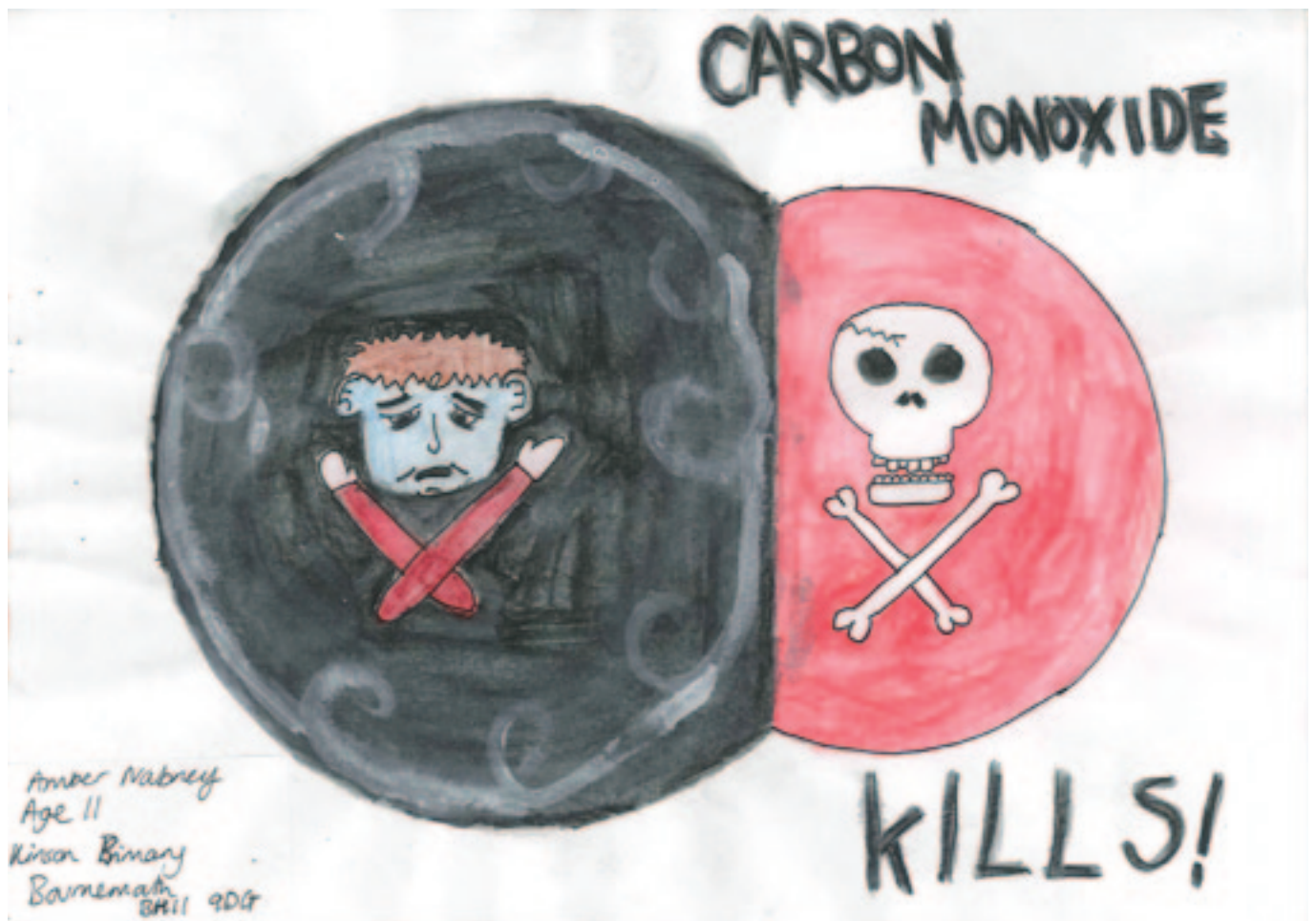


### Winner for Wales

Tesni Macelsanca. Age at entry 11

School: Llantisant Welsh Community School

Teacher: Mr Gethin Jones



**South of England**

Amber Nabney. Age at entry 11  
School: Kinson Primary, Bournemouth  
Head teacher: Miss Victoria Bryan





**Winner for Scotland**

Kirsty Braynion. Age at entry 11

Teacher: Mrs. Marie McIntyre

# **CO-GAS SAFETY CONGRATULATES NETWORK RAIL!**

**NETWORK RAIL** has put out some excellent prime time TV warnings for 9 deaths last year on footpath railway crossings.

<http://road.cc/content/news/68534-new-tv-advert-highlights-level-crossing-danger-cyclists-and-walkers-video>

Network Rail campaign urges crossing users to "See track: Think train"



Reproduced by kind permission of Network Rail & thanks to Rob Kirk of the marketing department

**Will the fuel industry please pay for prime time  
TV warnings for at least 40 CO deaths a year?**

**or**

**Will Government put out Public Health warnings?**

**CO is such a hidden, unknown danger**

**There are almost certainly many more deaths that are never diagnosed as  
CO and deaths caused or contributed to by the other toxins in the products  
of combustion.**