CO-Gas Safety's 20th Anniversary 1995-2015

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Prize Giving Charity Tea at The House of Lords

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19 Years of Data of Deaths and Injuries from Unintentional Carbon Monoxide Poisoning 01.09.1995 – 31.08.2014

Cover graphics taken from poster by ***Chihiro Nagano****, 11 years old, Stephen Perse Foundation Junior School.*

Make sure YOUR child is SAFE

CO-Gas Safety's School Poster Competition

Closing date for entries 31st May 2015

Help us to stop these unnecessary deaths from CO and other fuel toxins (CO+)

The House of Lords Event, The Press Pack and Competition are kindly sponsored by

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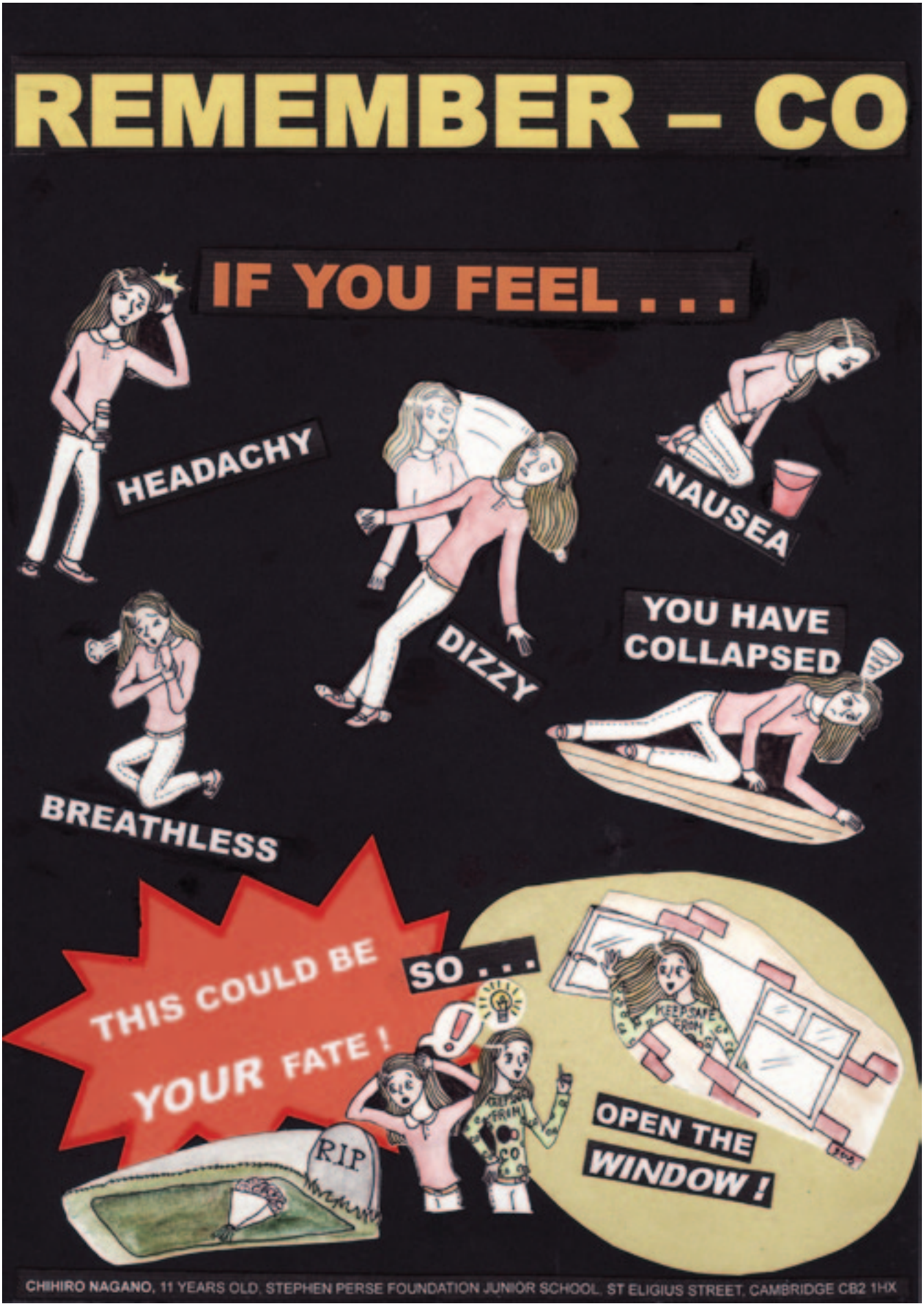

Winner for the South of England
Chihiro Nagano. Age at entry 11.
School: Stephen Perse Foundation Junior School
Teacher: Mr Gordon West

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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, Registered in England. Registration No. 03084435. Charity Registration No. 1048370

CO-Gas Safety's 19 years of data on deaths and injuries from Unintentional Carbon Monoxide poisoning 01.09.95 – 31.08.2014 & Schools Poster Competition

Press Pack 2015 – 20th anniversary pack

Dedicated to the memory of to all those who have died or suffered from carbon monoxide poisoning and other products of combustion (CO+) and their families & friends

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20 years and counting…….

How CO-Gas Safety started

I had been campaigning for children's activity holidays to be licensed after our older son, Alex, then aged 12, had an accident in 1991 which resulted in a clot on the brain. We were lucky that after brain surgery and a year off school he recovered. I wrote to my MP appalled at the lack of First Aid at the centre, the lack of qualified sailing instructors (who all have to do First Aid) plus the lack of notification to us as parents of the accident when I'd told them that Alex was accident prone. I received a letter from my MP full of 'there are lots of guidelines etc.' and was composing a response, when I heard that four teenagers had drowned while canoeing in Lyme Bay in March 1993. I was devastated for their parents but thankful that at least I'd made a start.

After much research I wrote my first ever legal article advocating the licensing of these centres. My husband's legal partner at the time told me I must be mistaken – mandatory requirements must exist. Thankfully I wasn't wrong but obviously it's impossible to find an absence of law in a law library and I had been at home caring for our sons and my elderly parents for 7 years so I lacked confidence. My article was published in the New Law Journal. When I attended the trial for manslaughter by gross negligence of the director, company and manager of the centre, I was told by one of the barristers that my article had been read by the judge and barristers as background. Mr. Justice Ognall gave a speech at the end of the trial calling for compulsory licensing of these centres. I am so grateful to him.

While I was lobbying about the licensing of these activity centres I was introduced to Molly Maher, who in 1980 tragically lost her son Gary to CO in Tenerife and her daughter, Sheree was severely injured, in a coma for a year and became a wheelchair user. Molly supported my licensing idea as this affected holidaymakers and her charity, Consumer Safety International, worked to improve holiday safety. With the support of the canoe parents and their MP, David Jamieson, the Activity Centres (Young Persons' Safety) Act 1995 was passed licensing these centres.

Molly rang me on Boxing Day 1994 and asked me to head CO-Gas Safety to look into CO, particularly in the UK. Like an idiot I agreed and without any funding whatsoever CO-Gas Safety was launched at the House of Commons in January 1995. I thought it would take about three years as it had for children's activity holidays. How wrong I was!

I pay tribute to Molly, her family and all those who worked and work for her charity Consumer Safety International. Molly put the CO-Gas Safety trustees/directors together and they were me as president, her as vice-president, Don Neal, father of Katy Neal who died of CO and Jonathan Kane, director of Kane International (which makes flue gas analysers) and also cross party MPs. Paul Overton joined CO-Gas Safety some years after the death of his step daughter Katie, who died in 2003. Directors have come and gone but without Don, Jonathan and Paul I just could not have carried on. Don and Jonathan have stayed the distance and also done 20 years which is a huge achievement.

Thank you Don, Jonathan and Paul.

Pete Eldridge from Capita was kind enough to tell me that running a charity and particularly achieving consensus among trustees is like herding cats and so much harder than running a normal business with a hierarchy & salaries!

In 2011 an attempt was made to remove licensing from these centres but was thankfully abandoned.

What CO-Gas Safety did in the first few months and sadly all is still relevant 20 years on!
Awareness
I knew nothing about carbon monoxide (CO) when I started. However, after university and before becoming a barrister I had worked for the North Thames Gas Board and learned about work study and clerical work measurement (after this law seemed fascinating!). This taught me to ask those doing the job how that job could be improved. It might seem a bit of a leap to go from those doing a job to those who've lost loved ones but what I found was that people desperately & generously want to stop such a tragedy happening to anyone else. Nearly everyone said, 'How could we have stopped our loved one dying or being injured by CO when we didn't even know CO existed or how to prevent it?' All the families and victims thought the obvious way to stop these tragedies was prime time TV warnings. The Warwick study showed that live TV accounted for 90% of all viewing in 2012 http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr13/uk/ How can people change behaviour when they don't know of the dangers?
Proof and victim support
When trying to help people who had survived but were injured I found that proof was a huge problem. Blood tests were usually done too late to prove CO. It therefore seemed obvious that testing appliances for CO, identifying which appliance was emitting CO and providing parts per million of CO in writing would help with proof and more vitally, safety.
The last gap was victim support. Nottingham students the Leighton brothers died of CO in 1992 (http://www.nottinghampost.com/Don-t-fall-victim-silent-killer-deadly-carbon/story-16962572-detail/story.html). Their parents were offered no victim support. However, ironically when their parents went to attend the inquest their house was burgled 'Victim Support' contacted them and offered help and support with regard to the burglary.
Having thought about the aims and objectives, with the help of my husband's firm Bates Wells & Braithwaite, we organised a memorandum and articles for the company and registered it as a charity. Then we tried to raise these issues with all the organisations that we considered should be interested.

We tried to interest the wealthy fuel suppliers but even obtaining a meeting has proved to be a hugely uphill task. British Gas did match our DoH funding for three years for which we are grateful but that was a long time ago. We have approached CORGI (as it then was), HSE, Ofgem, appliance manufacturers and their associations, CO alarm manufacturers, Parliamentary Groups and more recently the Gas Safe Register and other wealthy charities such as the Gas Safe Charity and Gas Safety Trust (with £4.5 million) and other charities. Only the GDNs and Ofgem have really helped.

What have we done?
We have led the industry and the government by:-

1. Collecting collating and publishing data of deaths & injuries from unintentional CO from all fuels from 1995 see http://www.co-gassafety.co.uk/our_data.html But we still lack funding for this although ours is the only data to have been independently validated. See page 26
2. Providing a website with information and advice about CO and prevention see page 9
3. Supporting innumerable victims who in return come up with brilliant ideas! See page 16
4. Lobbying for changes to the law and practice to save lives and preserve health see page 17
5. Raising awareness with our schools poster competition see pages 41-50
6. Petitioning the EU see pages 38-40

I am sure that it is very difficult for big business (and some won't even talk to us) to receive suggestions from ordinary consumers and victims. **The one shining exception has been the gas emergency service providers,** which have been fantastically helpful and CO-Gas Safety would like to thank them, particularly Gary Barnes of Scotia Gas Networks and also all those at Wales & West Utilities, particularly Danielle Royce. Ofgem has also been helpful. CO-Gas Safety is constantly told to work with the industry but it is the GDNs which have worked in partnership with us.

We think it sad that so much of the fuel industry can't see that it would make more profit out of saving people than allowing unnecessary tragedies to occur. Perhaps the EU will be better.

Activity report produced for the All Party Parliamentary Carbon Monoxide Group January 2015

CO-Gas Safety

CO-Gas Safety is an independent registered charity which works to try to reduce accidents from carbon monoxide (CO) poisoning, other products of combustion (CO+), and other gas dangers.

Company Reg. No. 03084435 Charity Reg. No. 1048370.

We offer free, confidential help and advice to victims.

We lobby for changes. We have asked for prime time TV warnings since 1995. We want a sustained campaign covering all fuels, all appliances and all types of accommodation.

We collect, collate and publish data of deaths and injuries. We run a schools poster competition to raise awareness.

It's five years since we were asked to provide any activity report (for our activity see www.co-gassafety.co.uk/what_weve_done_so_far.html from item 1 - 428 at time of writing) yet still people are unaware of the dangers of CO or how to prevent it.

However there has been a drop from about 50 deaths per year to about 20. The problem is the hidden deaths, near misses and chronic poisoning.

The two main changes recommended by the Health & Safety Commission (now Executive) in 2000 were:-

- A levy on the gas suppliers to pay for raising awareness and for research.
- That the gas emergency service carries and uses equipment to test gas appliances for CO.

These recommendations were supported by the majority of the stakeholders, mainly industry. However, they were never implemented due, in our opinion, to the lobbying of the powerful gas suppliers. Baroness Finlay has estimated that deaths and injuries cost the taxpayer £178 million a year.

Action by CO-Gas Safety

1. Lobbied hard for funding for prime time TV warnings about CO since 1995. A sustained campaign is needed covering all fuels (gas to wood), all appliances (boilers to barbecues) and all accommodation (bungalows to boats). Please note that Network Rail managed a prime time TV warning campaign about pedestrian rail crossings for only 9 deaths with no hidden deaths on such crossings.
2. On very little funding the charity has run a Schools Poster Competition for ages 10-11 since 2007 with the help of the gas emergency service providers (GDNs) to whom we are most grateful.
3. The charity collects, collates and publishes data on unintentional deaths and injuries from CO.

We use a press cuttings service to collect data and receive reports from victims and their families. Please see and download our data from 1995 from www.co-gassafety.co.uk/stats_and_analysis.html and www.co-gassafety.co.uk/downloads/2014/Statistics%20Sheet%20for%20press%20pack%202014.pdf and www.co-gassafety.co.uk/downloads/2014/Charts%20pages%202014.pdf

There are 3,500 unexplained deaths in the UK every year between the ages of 16 and 64, New Scientist December 2004, and they are not tested for CO.

Our data:-

A. Has been collected, collated and published since 1995.
B. Collects CO incidents and deaths from ALL Fuels.
C. Has some kind of report, authority (e.g. Solid Fuel Association) or Coroner's letter to support every entry on our database with regard to the acute deaths from CO.
D. Tries to check every death with the Coroner concerned and most now help.
E. Publishes the names of the dead on the Internet as a memorial so anyone can check.
F. Is the only data to have been validated twice by an independent statistician, Dr Craggs, and inspected by Public Health England.
G. Has had 19 years of input from a victim based organisation that simply seeks the truth.
H. 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 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?).

No other body does all this.

4. Invited to the Coroners' conference in 2014 to speak about our work and thanked the Coroners and their officers for all their invaluable help over the years.

5. Approached the Royal College of GPs in 2012 and again recently. On both occasions huge enthusiasm was initially shown but there is no action, merely silence.
6. Continued to provide free, confidential help and advice to victims and their families. It is often from doing this that we learn where the gaps exist. For example we learned from the death of registered gas installer Matthew Nixon aged 22 from CO in 2010 that he had been in the gas industry from the age of 16, yet had not realised that using a petrol fuelled generator to power his tools indoors would result in death from CO. As a result of work done by Roland Johns (retired British Gas investigator & trainer) working with us, we have put together a training course which due to help from Gary Barnes of Scotia Gas Networks was taught in Autumn 2014 to apprentices from SGN (www.co-gassafety.co.uk/trainers_of_gas_installers.html).
7. Aware that there are too many deaths caused by registered gas installers (e.g. the death of Zoe Anderson, daughter of Chris Anderson of TED) we are trying to put a further course together because on top of the normal tragedy of an unnecessary death, deaths caused by registered installers ruin the lives of the registered installer and reflect badly on the gas industry.
8. Expressed concern about meter exchange and the lack of Personal Alarm Monitors for CO by those who exchange the meters plus the need to test the appliances for CO before and after exchange. With all meters due to be changed to smart meters this is a huge issue of safety for the operatives, plus a missed opportunity to check for CO in homes.
9. In 2009 raised the issue with Lord McKenzie and HSE of the other toxins in the products of combustion (CO+), Beko cookers with the defective grills, (which had caused 6 deaths at that time), lack of victim support, the data, main recommendations made by the Health & Safety Commission in 2000 and the difficulty consumers have in obtaining a test of gas appliances for CO.
10. Did a huge amount of work on the Energy Bill 2013, had some amendments professionally drafted see www.co-gassafety.co.uk/our_professionally_drafted_suggestions.html. These were unanimously supported by the members of CO+SAVi (group of victims, victim groups and other interested organisations) under the All Fuels Action Forum. The Katie Haines Memorial Trust kindly paid half of the cost of this. However, despite sending these professionally drafted amendments to the Steering Group of the AFAF and the MPs on the committee stage of the Bill etc., our amendments were hardly even discussed. This did not assist the morale of CO+SAVi. However, our MP Mike Hancock did kindly table the levy amendment in the House of Commons, and Barry Sheerman MP put down an amendment on meter exchanges including smart meters and spoke about this.
11. Estimated the impact of CO to be affecting 3-4 million people a year, see www.co-gassafety.co.uk/numbers_affected_by_co_plus.html. The impact of the other fuel toxins i.e. CO+ (www.co-gassafety.co.uk/other_toxins.html) is much greater.
12. Lobbied the Gas Safe Register in 2013 over the difficulty of obtaining individual Gas Safe Registered installers who hold CMDDA1 (which allows them to test gas appliances for CO). How can anyone be safe unless the source of the CO is identified or ruled out? Lobbied again December 2014. What consumers & victims need is to know what to ask for and to be able to easily find someone on the Gas Safe Register website who has the qualification of CMDDA1.
13. Supported Baroness Finlay in her amendment S. 150 of the Energy Act but this will need Regulations to bring it into force and there seems little prospect of these.

14. Applied to the Gas Industry Safety Group and to the Gas Safety Trust twice for funding to continue our data collection, collation and publication. Our applications were refused.
15. Tried to obtain a meeting with the CEO of Energy UK to seek funding from the wealthy gas suppliers. We were refused a meeting.
16. On the 23rd September 2014 as a result of being alerted by retired fire fighter Tom Mills, Stephanie Trotter investigated a website selling generators which featured a film showing generators being used in a living room and kitchen. It took some time but with the support of Myles Platt on behalf of the Chief Fire Officers' Association and a letter written by CO-Gas Safety pointing out that the person dealing with this at the generator company could face a manslaughter charge, the film was changed.
17. October 2014, attended a walk in Wales in memory organised by the sister of a girl who died of CO aged 25. Greatly assisted by Mark Aylett, chimney sweep (& member of the Guild of Master Sweeps) who wore his full costume to the summit of Pen-Y-Fan to raise funds. Over £1,000 was raised for CO-Gas Safety by ordinary people and we are most grateful.
18. 04.11.14 Submitted CO-Gas Safety's response with regard to smart meters to the Energy & Climate Change Select Committee. Published data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/progress-on-smart-meter-rollout/written/15080.pdf
19. November 2014 wrote to all the CEOs of the 'big 6' gas suppliers to invite them to our 20th anniversary at the House of Lords in January 2015 and a meeting with CO-Gas Safety.
20. Made a presentation to the GDNs to apply for funding for our schools poster competition 2014-15 and for our data.

We are about to mark our 20th anniversary but are unable to take action to even warn people because we lack the funding. CO is such a hidden danger.

We are delighted to have heard from the GDNs that they are funding our event at the House of Lords, our press packs and continuation of our schools poster competition for 2014-15. We have heard that the GDNs are quite understandably not prepared to fund CO-Gas Safety to continue our data collection, collation and publication. Our problem is that we have been refused funding from the wealthy trusts and we don't seem to be able to reach other parts of the industry, such as the suppliers. So we are still without funding for our data yet the fuel industry is probably the wealthiest in the world.

Stephanie Trotter received a CORGI award for gas safety in 2005 and an OBE in 2007 yet what good are such awards when there is so little action that could easily be taken to save lives and preserve health?

For further information about CO-Gas Safety:

Web:* www.co-gassafety.co.uk*; Email:* office@co-gassafety.co.uk*; Telephone:

07803 088 688; *Twitter: @cogassafety; Facebook:* facebook.com/CoGasSafety

Images: Kirsty Braynion and family with Tom Greatrex MP (this page); Pen-Y-Fan walk in memory of a girl who died of CO (facing page) - At the top, Stephanie Trotter (CO-Gas Safety) and Mark Aylett (Guild of Master Sweeps).

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 (CO2) is produced, not CO. CO2 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_circs/technical_osd/spc_tech_osd_30/spctecosd30.pdf

CO is lethal because the haemoglobin in the blood takes up CO in preference to oxygen. *(Please note that whereas CO2 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 we understand that the First Call Operators do have Personal Alarm Monitors or PAMs or Gasco seekers which can also pick up CO so the employees are protected. However, there is no free testing of gas appliances by the gas emergency service. Also when the consumer telephones the Gas Emergency Service provider he or she is told to turn off everything and open the windows, so by the time the FCO arrives the CO may have dispersed unless it was coming from next door or from an unsuspected appliance, e.g. a woodburner.

In 2000, fifteen 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, fifteen 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 12.

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-£3000. 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 pages 38, 47 & 48).

There are now at least 900 people qualified under CMDDA1 who are qualified to test gas appliances for CO and record CO found in writing. The problem is that people do not know what to ask for. Also at the time of writing (January 2015) the only way to find someone qualified under CMDDA1 is to undertake an advanced search on the Gas Safe Register. You then put in your post code and find a firm offering 'fumes investigation'. You then need to contact the firm and ask if they have an employee qualified under CMDDA1 and ask how much this will cost (anything from around £88 to £550 in our limited experience).

Please note that such a test by someone qualified under CMDDA1 is not good enough for a court case but can be a very useful filter or for a first test.

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). 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
This is about air quality generally. Search for NoX, PM10s, Dioxins, Furans and PCBs and VOCs (Volatile Organic Compounds).

See also the study in Mexico City which shows that pollutants affect more than just the lungs
http://www.thefreelibrary.com/Destination+brain%3a+inhaled+pollutants+may+inflame+more+than+the+lungs.-a0227652701

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.

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

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

Wood pellets in store can emit CO see
http://annhyg.oxfordjournals.org/content/56/7/755.full?sid=27f48497-532d-4585-9745-ed660da1b2f9 & http://www.hse.gov.uk/safetybulletins/co-wood-pellets.htm

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

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
In October 2014 CO-Gas Safety has submitted the following question to
http://www.europarl.europa.eu/portal/en/contact
'I would like to know when your committee will next consider air purity (or lack of it) both indoors and outside.
I would also like to know why the Reach legislation expressly omitted fuels when on combustion (and wood chips even in store) can emit toxins which can be lethal and at a lower level cause all sorts of problems from brain damage to depression.'

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%99-awareness-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

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 2012-13 English Housing Survey https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284648/English_Housing_Survey_Headline_Report_2012-13.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://www.ljmu.ac.uk/NewsUpdate/index_123350.htm 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 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 is 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^+ 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^+ 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?

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…….£**172,800,000**

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.

Recall UK

Stephanie came across this excellent organisation run by Barry Mulcahy while campaigning for Beko cookers to be recalled after a fault with the grill had caused 6 deaths. We are sure that this website saved many lives but we are bitterly disappointed that no funding was found for such valuable and vital work.

We call on the energy industry and Government to provide this funding while this excellent organisation can still be revived.

About Recall UK and its work
In 2010 Recall UK was created to provide a single website listing all product recalls that affect UK consumers. The website was hugely successful and helped raise the visibility of the millions of missing recalled products that are still in people's homes, including the Beko made gas cookers and LPG conversion kits that have been responsible for a number of deaths in the UK and Ireland.

The website was used by over 1 million consumers to check if they had any potentially dangerous recalled products in their home.

Unfortunately, we (Recall UK) had to close the website in August 2014 due to a lack of funding. We had provided 100% of the resources and funding to run the website for 4 years. We tried to secure funding from the government and manufacturers to continue to run the website, without success.

Ironically, in September 2014 the coroner in the Santosh Benjamin Muttiah inquest ruled that he had died as a result of a fire caused by a Beko fridge freezer (which was subsequently recalled) and called for **"The creation of a simple, easy to use, Government funded/National website where all product recalls can be registered and accessed by consumers".**

It is clear what is needed but there is a great reluctance from the Government and manufacturers to provide it.

In the four years we ran RecallUK we tracked down and listed:-
- 1,730 recalls

Of these:-
- 965 were vehicle recalls covering over 4.5 million vehicles
- 389 were for general products, including 4 million household appliances
- 352 were for food recalls
- 24 were drug/medical device recalls

The inquiry process was co-Chaired by Baroness Finlay and Dr Rachel McCloy from the University of Reading. The other officers of the APPCOG were also involved in the process; Barry Sheerman was on the inquiry Advisory Board, while Jason McCartney and Baroness Maddock were consulted throughout. Some of the Recommendations made in the 2011 inquiry are still relevant, and have been built upon within this report.

Please note that although CO-Gas Safety has seen the Executive summary thanks to the kindness of Baroness Finlay and APPCOG, we have written these comments before we were given the benefit of reading the full report.
CO-Gas Safety congratulates Baroness Finlay on her commitment to this topic.
CO-Gas Safety was not aware of Dr McCloy's involvement until sent this summary 12.01.15.

General Comments
This report contains a great many welcome recommendations and we agree with them. However, we do differ in the fundamental issue as to how to approach behaviour change. It is asserted that traditional awareness raising approaches 'will on their own likely to be insufficient to bring about the key behavioural shifts necessary to prevent CO poisoning in the short and long term'. We accept this. However the traditional awareness raising approaches have never even been thoroughly tried. Well known research has shown that TV works. Asked what media they remembered, 71 (77%) of the 92 said it was television, 21 (23%) said newspapers, and 19 (21%) said the internet (more than one response could be given).
http://www2.warwick.ac.uk/fac/cross_fac/healthatwarwick/publications/occasional/report_students_2011-12.pdf

People surely cannot be expected to change behaviour unless they are clearly informed of what the dangers are. That would most effectively be done through prime time TV Public Information Films (PIFs) warning about CO from all fuels, all appliances and all accommodation ideally by stirring emotion in those watching. The Cabinet Office has a duty to put out these Public Information Films, which was pointed out by letter from Holiday Travel Watch in October 2012.

The Health & Safety Commission (now Executive) recommended a **levy** on the gas suppliers in 2000 to pay for raising awareness about CO and for research. Yet this is not even mentioned in this report. Even in economic terms the government is failing to take the right steps to prevent these deaths and injuries that are costing the NHS £178 million a year, according to Baroness Finlay.

We are glad that it has been recognised that there are 'many sources and exposure can happen in numerous different environments'. We recognised this in 1995 and have suggested a sustained campaign of PIFs to cover all fuels (gas to wood), all appliances (boilers to barbecues) and all types of accommodation or scenarios (bungalows to boats).

We note that the submissions requested and made are not going to be published. We would appreciate an explanation for that decision. Surely under the Nolan principles they should be published? How else are we all to learn from each other?
We cannot find any mention of the toxins other than CO (CO+). We think it would have been helpful because in our opinion CO+ are causing serious, widespread ill health.
Nor can we find any mention of victim support or seeking the opinions of those most affected.

Conclusion
We greatly welcome this report and its recommendations. However, we are disappointed by the absence of a straightforward approach to informing the public of the dangers of CO. That seems to us to be the starting point for the success of many of these recommendations.

HolidayTravelWatch
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In Support of Quality Holiday Travel

CO+ & Public Information Films

Introduction:

For 20 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 275,000 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 barbeques. 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 30 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 799 to 27th January 2015 since we asked our questions in a letter to the Cabinet Office in 2012 (30.10); we shall continue!

1. WHAT WE WANTED AND ARE STILL NEEDED TO PREVENT DEATHS AND INJURIES FROM UNITENTIONAL CO+

CO-Gas Safety's suggestions to improve safety and reduce unintentional deaths and injuries from CO and other fuel dangers
Please see http://www.co-gassafety.co.uk/changes_to_save_lives.html

I delivered our suggestions 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 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, (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
(One page example is on page 17).

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 PUT FORWARD TO THE ALL FUELS ACTION FORUM AND TO THE MPS ON THE COMMITTEE STAGE OF THE ENERGY BILL

See http://www.co-gassafety.co.uk/our_professionally_drafted_suggestions.html

One page example

Carbon Monoxide Safety levy

[ ]

To move the following Clause:—

'(1) There shall be a Carbon Monoxide Safety levy.

(2) The Carbon Monoxide Safety levy is a levy—

(a) charged in respect of supplies of fuel that have been, or are expected to be, made in each specified period, and

(b) payable in respect of each such period by persons who make, or are expected to make, the supplies.

(3) In subsection (2) fuel includes gas, solid fuel, heating oil, paraffin and barbeque fuel.

(4) The Secretary of State may from time to time by order specify the rate of the levy to be charged.

(5) The order may, in particular, make provision about any of the following matters—

(a) what is a supply of fuel for the purposes of the levy;

(b) when a supply of fuel is, or is expected to be, made for those purposes;

(c) who makes, or is expected to make, a supply of fuel for those purposes;

(d) the rates or amounts of the levy, or how such rates or amounts are to be determined;

(e) payment of the levy, including deadlines for payment in respect of each period and interest in respect of late payment;

(f) administration of the levy;

 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.

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

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.

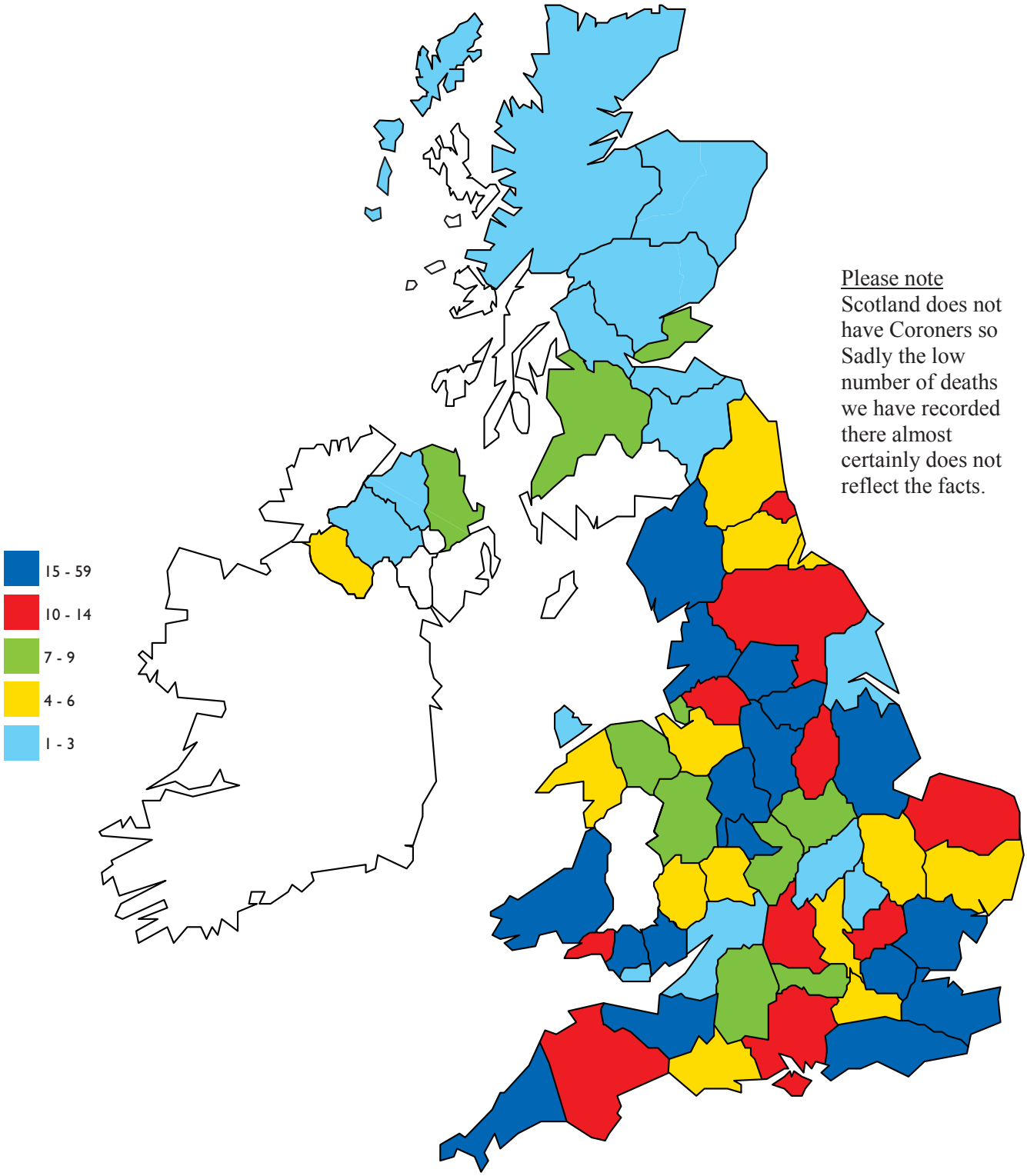
(10)Subject to provision contained in regulations, in this section—

- "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).

Please note – This section requires Regulations in the form of a Statutory Instrument to bring it into force.At the time of writing (6th January 2015) there appears to be no date set for this.

UK Deaths from unintentional carbon monoxide poisoning from 01.09.95 to 31.08.2014

(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 by Area

England	540
Wales	25
Scotland	95
N. Ireland	17
Total	**677**

England	
London	59
South Yorkshire	34
Derbyshire	27
Kent	25
West Yorkshire	23
Staffordshire	19
Cornwall	19
Cumbria	18
Lincolnshire	18
Lancashire	18
Essex	17
West Midlands	16
Sussex	16
Somerset	15
Norfolk	14
Greater Manchester	14
North Yorkshire	14
Tyne & Wear	13
Nottinghamshire	12
Oxfordshire	12
Devon	11
Hampshire	11
Hertfordshire	10
Wiltshire	9
Shropshire	8
Merseyside	8
Leicestershire	8
Warwickshire	7
Berkshire	7
Cambridgeshire	6
Cleveland	5
Northumberland	5
Durham	5
Buckinghamshire	5
Suffolk	5
Cheshire	5
Dorset	4
Worcestershire	4
Surrey	4
Northamptonshire	3
Gloucestershire	3
Humberside	2
Bedfordshire	2
	540

Wales	
Dyfed	26
Gwent	18
Mid-Glamorgan	19
West Glamorgan	13
Clwyd	9
Gwynedd	6
South Glamorgan	3
Angelsey Isle of	1
	95

Scotland	
Strathclyde	8
Fife	7
Lothian	3
Highland	2
Central	2
Grampian	1
Scottish Borders	1
Tayside	1
	25

Northern Ireland	
Co. Antrim	7
Co. Fermanagh	5
Co. Tyrone	3
Londonderry	2
	17

CO-GAS SAFETY'S STATISTICS ON DEATHS AND INJURIES*

UK deaths caused by accidental Carbon Monoxide (CO) poisoning

(Between 1 Sept 1995 - 31 Aug 2014): **Total: 677**

TENURE	
Total Number of CO accidental deaths by Tenure: (1 Sept 95 – 31 Aug 2014):	
Owner/Occupier	382
Private Rental	67
Council	62
Housing Association	18
Other (e.g. hotel)	18
Unknown	130

SITUATION					
Total Number of CO accidental deaths by Situation (1 Sept 1995 – 31 Aug 2014):					
House	323	Campervan	1	Public House	2
Flat	94	Boat	1	Care Home	2
Bungalow	45	Shed/Cabin	8	Shop	1
Caravan	29	Hotel	4	Public Hall	2
Vehicle – car/lorry	53	Workshop	5	Other	10
Garage	24	Tent	12	Unknown	36
Work Place	15	Commercial Premises	10		

FUEL TYPE

Total Number of CO accidental deaths by Fuel breakdown and CO-Gas year (1 Sept to 31 Aug):

	95/96	96/97	97/98	98/99	99/20	20/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	Total
Gas Mains	33	20	21	24	14	16	7	12	8	14	12	9	11	16	4	12	0	4	2	**239**
Gas Portable	8	8	5	5	10	5	7	7	6	4	7	4	3	6	5	3	1	2	2	**98**
Solid	26	17	27	14	17	14	5	8	6	5	8	14	10	6	8	7	10	3	7	**212**
Petrol	6	7	3	7	3	3	8	1	2	3	2	9	5	4	6	5	2	3	3	**82**
Oil	0	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	**6**
Parafin	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**3**
Unknown	1	1	0	0	1	0	4	2	2	2	4	2	1	3	0	2	2	8	2	**37**
Total	**74**	**55**	**56**	**51**	**46**	**38**	**31**	**30**	**24**	**28**	**33**	**39**	**31**	**36**	**24**	**29**	**15**	**21**	**16**	**677**

Near-Misses from Accidental Carbon Monoxide Poisoning in UK

(Sept 1995 - 31 Aug 2014): **Total: 4766**

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

95/96	96/97	97/98	98/99	99/20	20/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	Total
467	449	320	386	335	296	87	145	171	213	153	329	192	263	187	155	280	258	80	**4766**

Deaths from Gas Explosion in UK (Sept 1995 to Aug 2014): Total: 108

95/96	96/97	97/98	98/99	99/20	20/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	Total
11	5	6	6	13	6	6	5	15	4	4	4	5	4	4	**5**	**2**	**2**	2	**108**

*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 2014 update. For further details please visit 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**
Total	**66**	**55**	**51**	**52**	**46**	**45**	**25**	**36**	**23**	**27**	**30**	**36**	**37**	**33**	**28**	**29**	**29**	**5**	**653**

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	95/96	96/97	97/98	98/99	99/20	20/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	Total
Solid fuel	27	18	26	13	16	15	6	8	3	5	7	13	9	9	7	6	11	3	7	**209**
Gas Mains	30	21	21	24	14	17	7	11	9	14	12	7	13	16	4	12	0	3	2	**237**
Gas Portable	8	8	5	7	10	4	8	7	6	2	8	4	4	5	4	6	2	2	2	**102**
Petrol/ diesel	5	7	4	6	3	3	8	1	2	2	3	7	7	4	6	4	2	4	3	**81** **0**
Oil	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	**6**
Paraffin	0	0	0	1	1	0	0	0	2	0	0	0	1	0	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	5	**34**
Total	**71**	**56**	**56**	**51**	**44**	**39**	**32**	**31**	**22**	**26**	**34**	**33**	**36**	**38**	**22**	**30**	**16**	**18**	**19**	**674**

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) 2009/10 - 2013/14p

Type of incident (b)		Year				
		2009/10	2010/11	2011/12	2012/13r	2013/14p
Total number of incidents		223	278	173	224	203
	Carbon monoxide poisoning	196	229	142	193	181
	Other exposure e.g. to unburnt gas	6	13	7	6	3
	Explosion/fire	21	36	24	25	19
Total number of fatalities		10	17	4	10	6
	Carbon monoxide poisoning	9	13	3	9	3
	Other exposure e.g. to unburnt gas	-	1	.-	-	-
	Explosion/fire	1	3	1	1	3
Total number of non-fatalities		330	428	266	353	342
	Carbon monoxide poisoning	292	368	226	313	316
	Other exposure e.g. to unburnt gas	11	12	8	6	5
	Explosion/fire	27	48	32	34	21

Notes:

Source: RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (as amended).

r=revised
p=provisional

Regulation 11(1) of RIDDOR 2013 (previously Regulation 6(1) in RIDDOR 1995) places a duty on conveyors of flammable gas (including LPG), to notify HSE of incidents where someone has died, been found unconscious or has been taken to hospital in connection with the gas they have distributed, filled, imported or supplied, This includes exposure to unburnt gas, products of combustion, i.e. carbon monoxide, or fire/explosion incidents. In practice the reporting duties are usually undertaken by the gas Emergency Service Providers (ESPs) representing gas conveyors. The statistics published above are 'as reported' to HSE. When such reports are made, it is at the early stages of the incident, thus the detailed circumstances of the incident will not have been confirmed.

Key changes to the reporting system and the legal requirements for RIDDOR have occurred in recent years. More information on data changes affecting RIDDOR statistics is available at:
www.hse.gov.uk/statistics/riddor-notification.htm

(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:
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 experience, does not usually investigate a mere incident or injury, unless extremely serious.

CO-Gas Safety reminds readers that our data is:-

1. 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 and have built up a good relationship with the Coroners and their officers and even attended the Coroners' conference in Autumn 2014 and addressed them about our work as well as thanked them for all the help they have given us over the years.

Photo of the CO-Gas Safety table at the Coroners' Conference 2014 and from left to right Ian Arrow, Senior Coroner for South Devon and Martin Fleming, Senior Coroner for West Yorkshire

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' headed by Nigel Hawkes, CBE, an eminent Science writer. This organisation no longer exists or has a website but a copy of this article by Nigel Hawkes can be read at http://www.co-gassafety.co.uk/our_data.html at the bottom.

6. Is not supporting a profit for an organisation to do this.

7. And thanks to the Gas Safe Charity, is now the only data to have been validated by an independent statistician, Dr Craggs. In summer 2014 Dr Craggs undertook a further validation of our data which was inspected by Public Health England in January 2015.

However at the time of writing (January 2015) we have no funding to continue this valuable work as both the Gas Safe Charity and the Gas Safety Trust have both refused our applications for funding to continue our data collecting, collating and publication.

The Gas Safety Trust wants to collect, collate and publish the data itself and has recently told us that it has asked universities to put in tenders for this work. This is good news but why does the GST not want to fund us so that our data since 1995 could also be used? We do have considerable experience and would love to work with a university. Sadly to do this funding is required which we have always lacked.

Also we consider CO-Gas Safety's data is unique because in offering victim support we often find out details that would otherwise not come to light for example the fact that Matthew Nixon, aged 22, who died of CO from using a petrol generator indoors to power his tools in 2010 was a registered gas installer and in the gas industry from the age of 16. As a result CO-Gas Safety with Roland Johns, ex British Gas investigator and trainer has devised a course about CO which has now been taught to Scotia Gas apprentices in Autumn 2014 see http://www.co-gassafety.co.uk/trainers_of_gas_installers.html

Validation of CO-Gas Safety's data

The Near Misses are 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. Also due to confidentiality the charity cannot name people who have been injured but survive.

So it has been the charity's policy to concentrate on the deaths. Dr Craggs has reviewed CO-Gas Safety's data twice now. Once during 2011 and more recently in 2014. 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 Despite lack of funding this has now been undertaken and the deaths are now on the database. 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.

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.

Please note that CO-Gas Safety's data is the only data on CO that has been validated by a statistician.

Please also note that Straight Statistics commented favourably on our data see http://www.co-gassafety.co.uk/our_data.html at the end for a copy of this article. We have put this article on the CO-Gas Safety website because sadly, Straight Statistics has closed down.

DR CAROLYN CRAGGS

BSc PhD CStat FRSS

Experienced statistician - consultancy and training

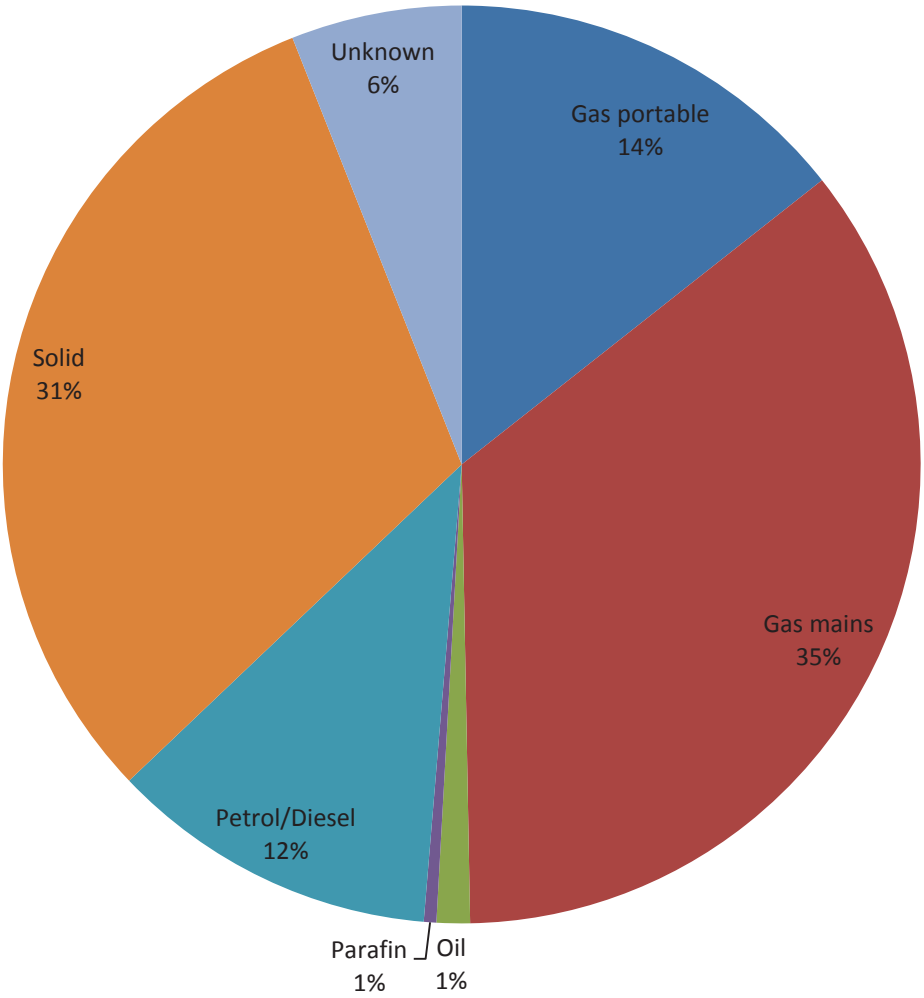
Lean Six Sigma, Operational Excellence and Quality Compliance
Secretary of Quality Improvement Section, Royal Statistical Society
Experience in a large multi-national company
Successful trainer with ability to develop training strategies

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

FUEL type relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2014

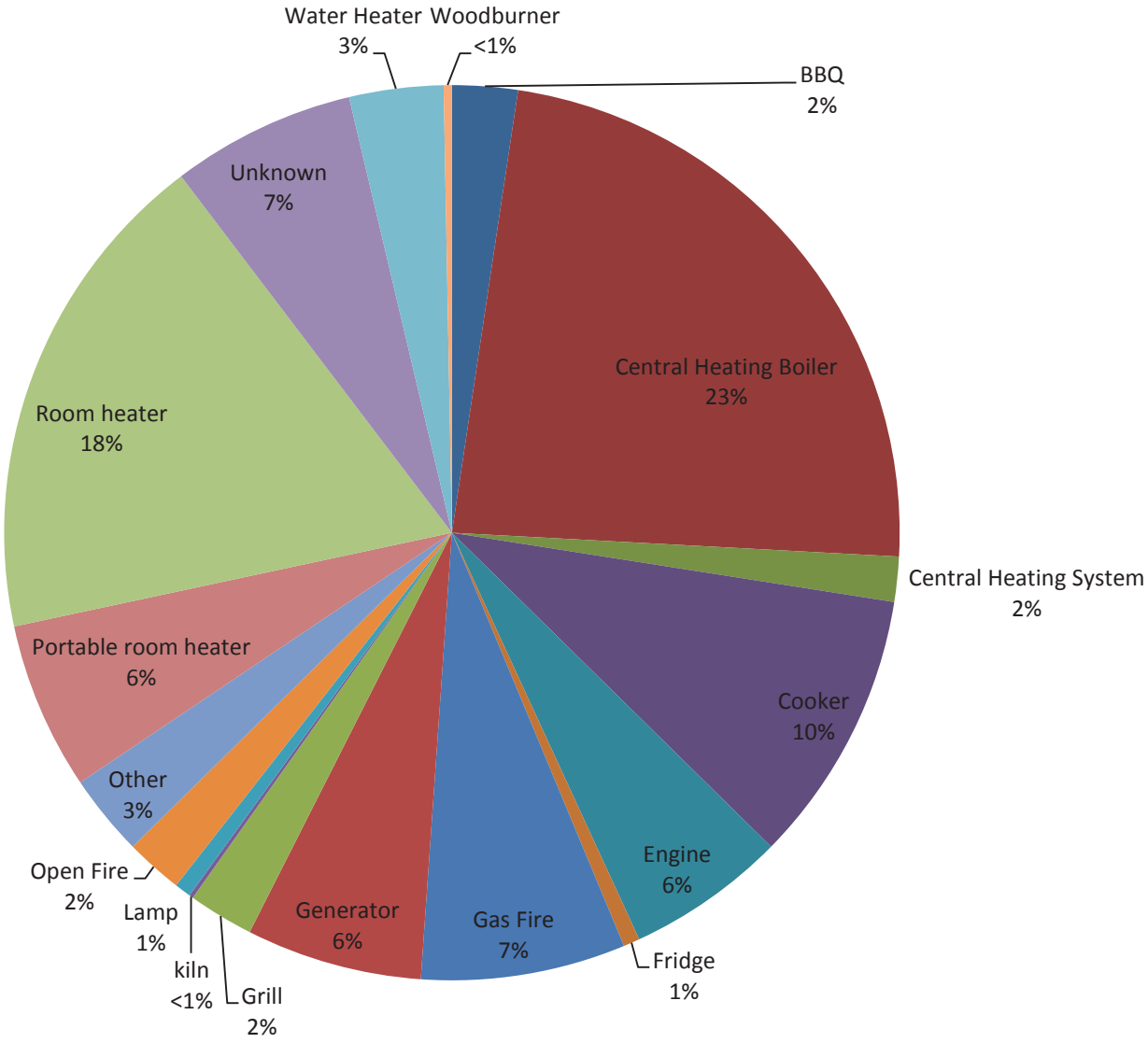
*This data is being added to regularly so chart may change.



CO-Gas Safety comment

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

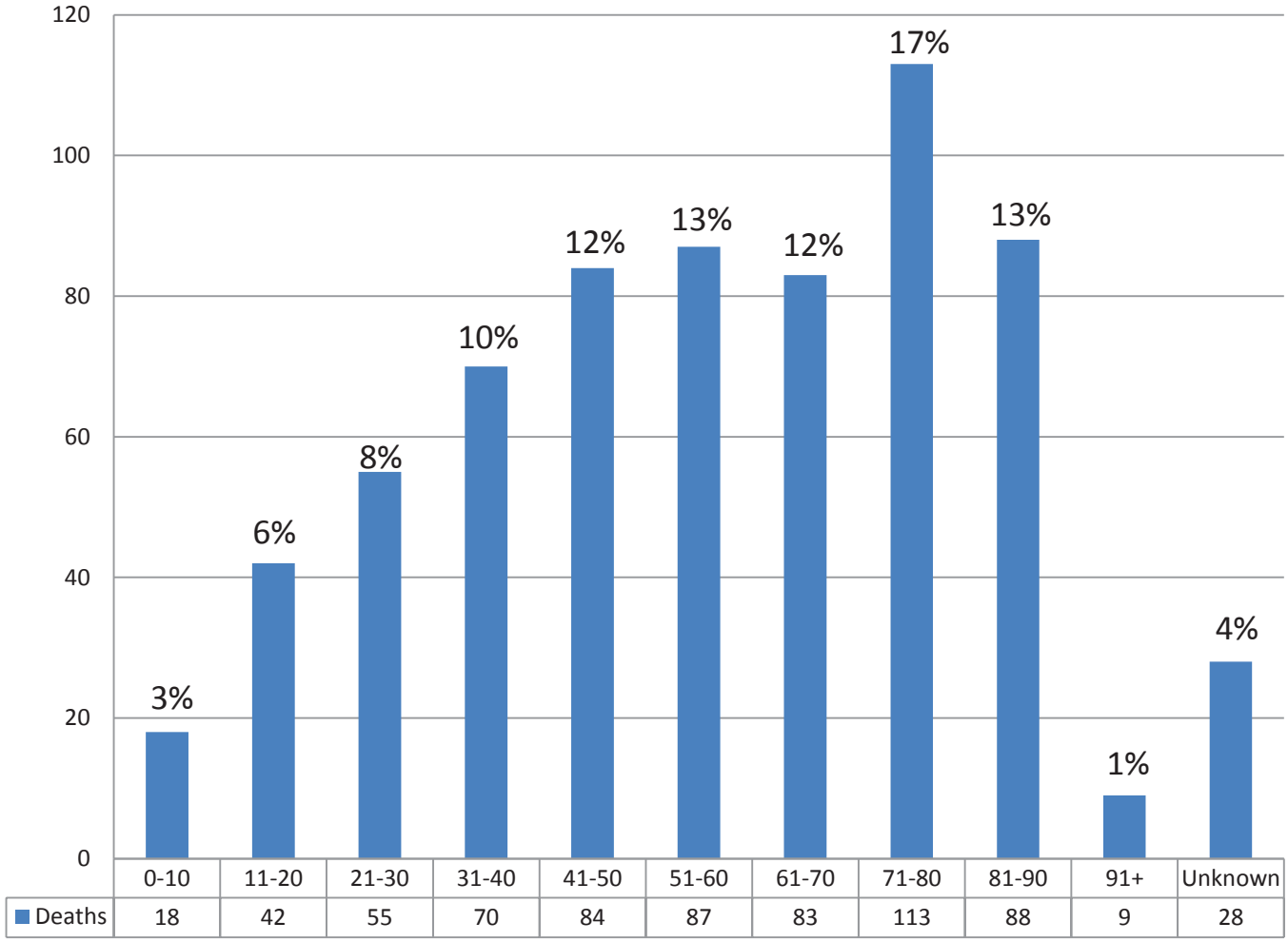
APPLIANCE type relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2014



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

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 31.08.2014



	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91+	Unknown
Deaths	18	42	55	70	84	87	83	113	88	9	28

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

Age Range

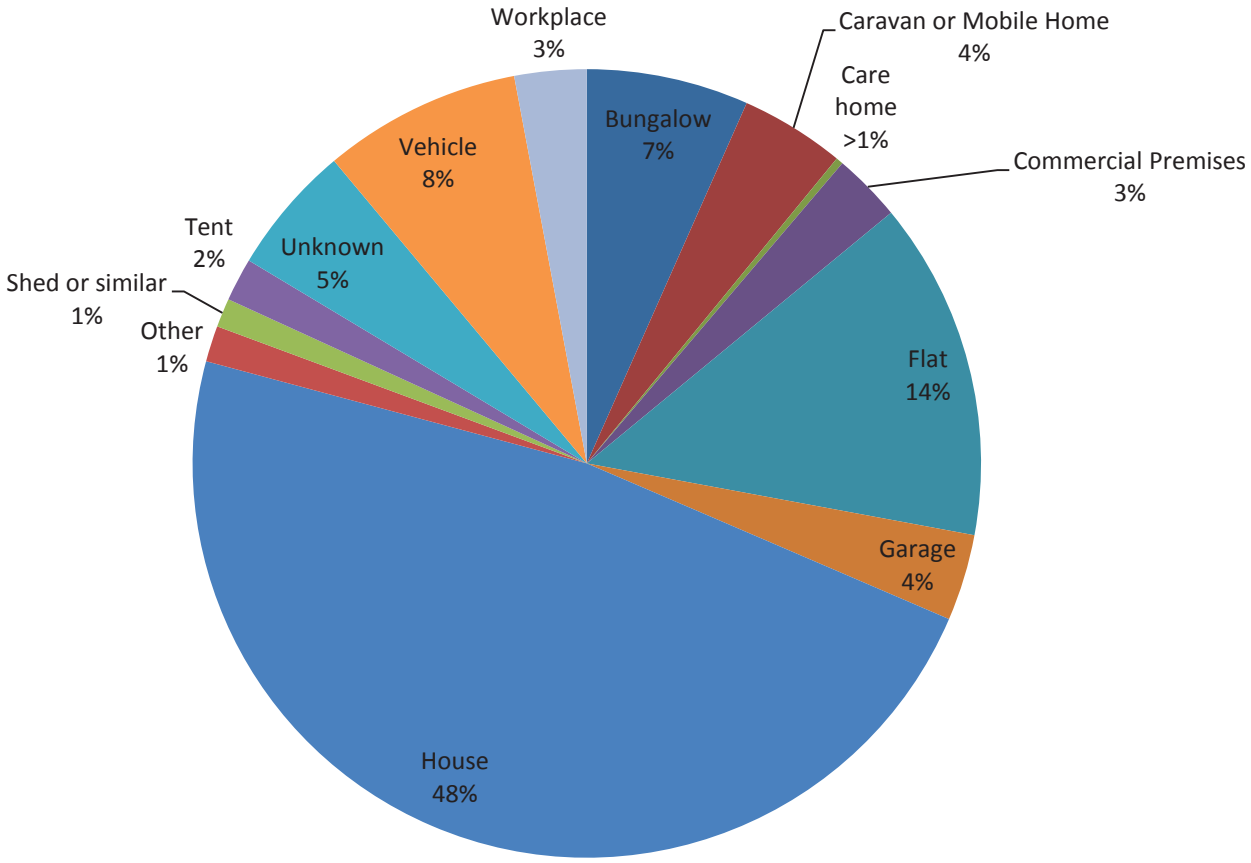
Census 2011

It is interesting to note that ages 71-80 make up just over 7% of the population* yet 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 ONS Table P01 2011 Census: Usual resident population by single year of age and sex, England and Wales)*

PLACE of incident that caused death relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2014

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



CO-Gas Safety comment

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?

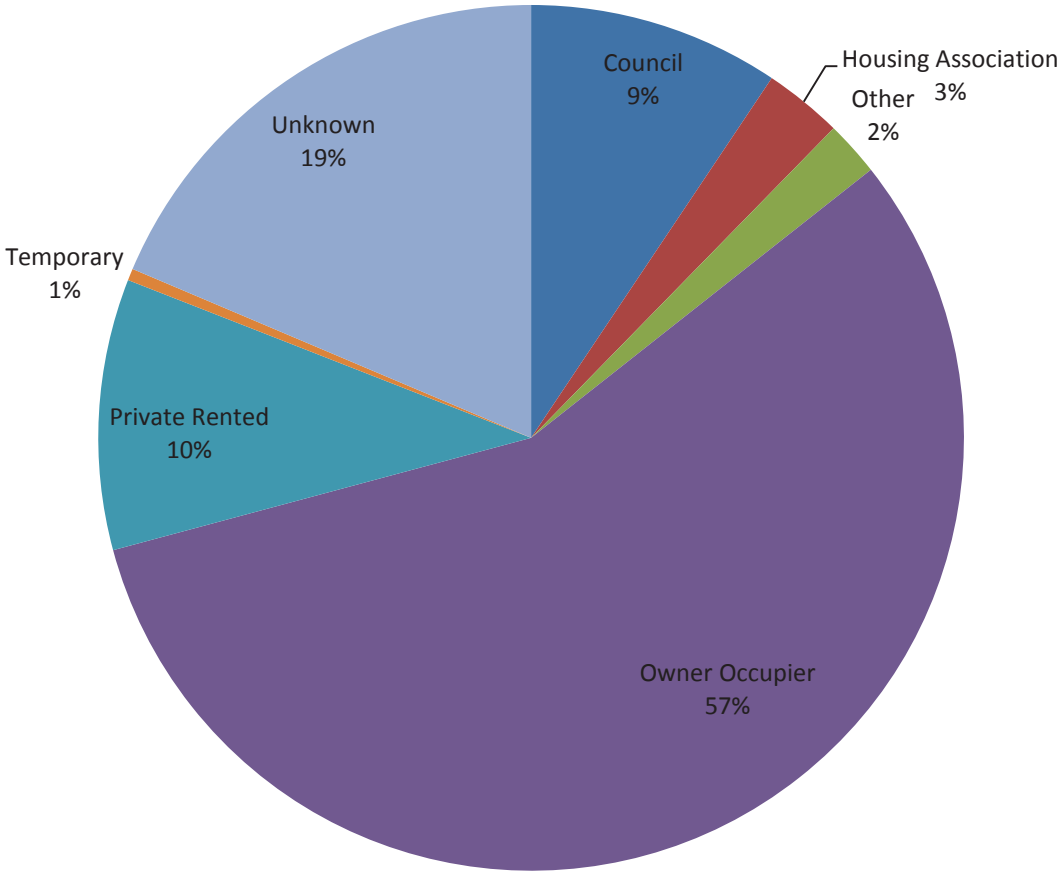
Dr. Ben Croxford's research at UCL (University College London) in 2006 found:

- 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 31.08.2014.

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



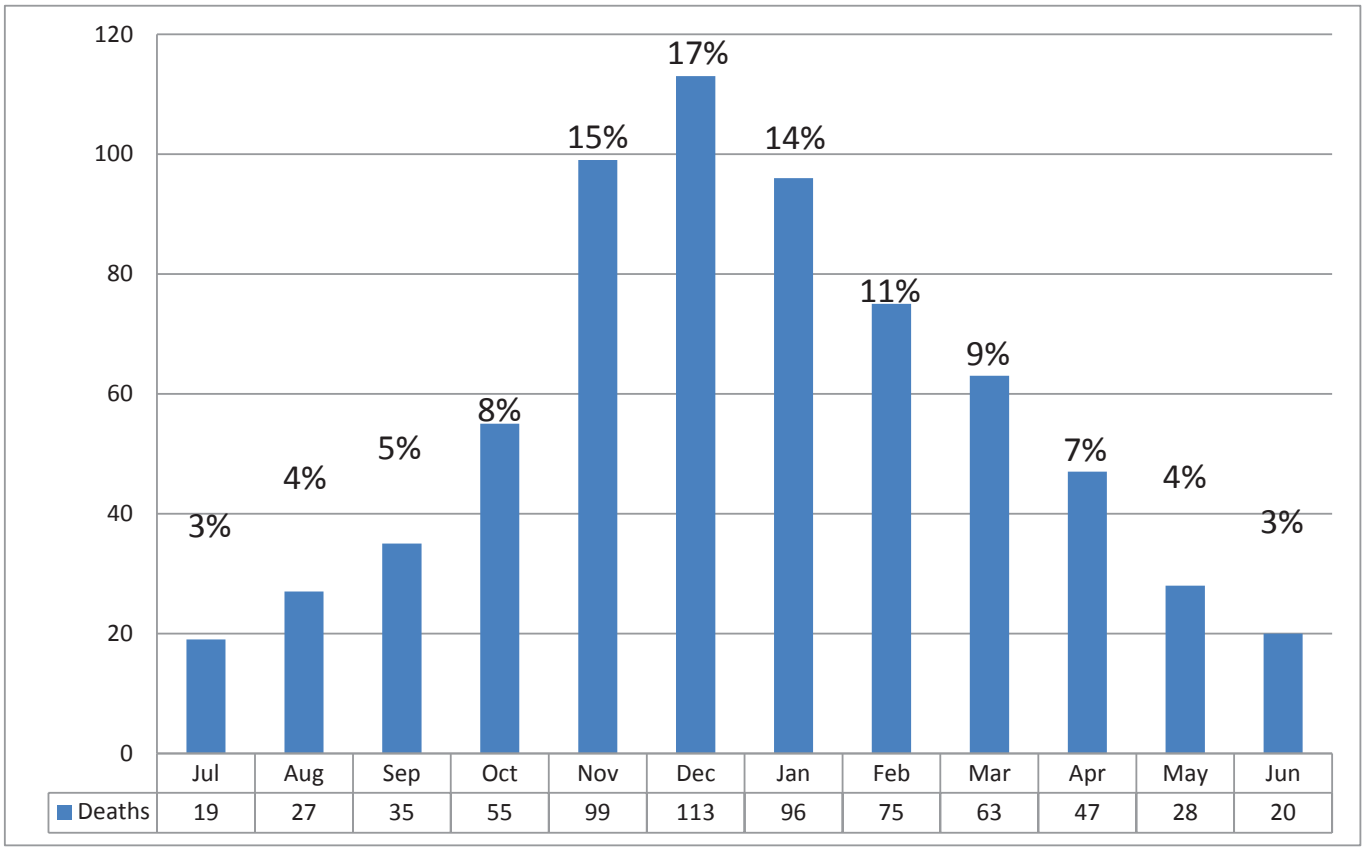
Tenure

According to the Communities & Local Government Dwelling Stock Estimates England 2011:
There were an estimated 22.8 million dwellings in England as at 31 March 2011, an increase of 0.53 per cent on the previous year.
At March 2011 there were 18.8 million private dwellings (owner occupied plus private rented tenures) and 4.0 million social rented (housing associations plus local authority tenures).

Comment by CO-Gas Safety
Therefore the incidence of deaths in owner occupied property looks lower than expected, although there is quite a high incidence of unknown tenure (17%). The incidence of deaths in housing associations (3%) looks low compared to the percentage of properties owned by housing associations (9%). It would be really helpful to have even more co-operation from Coroners to record the tenure which, of course, the government could require.

MONTH of death relating to UK Deaths from unintentional carbon monoxide poisoning from 01.09.1995 to 31.08.2014

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



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Deaths	19	27	35	55	99	113	96	75	63	47	28	20

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 19 pages from 01.09.95 to 31.08.14 of the named people who have died from unintentional carbon monoxide poisoning

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

Drabble	Robert Stephen	20	28/01/1998	Mains Gas	Water Heater	Hotel
Druce	Mandie Ann	47	09/12/2008	Mains Gas	Boiler	House
Drummond	John	36	11/11/1996	Mains Gas	Boiler	House
Duester	Robin	71	27/01/2003	Mains Gas	Cooker	House
Dunn	Robert	22	10/11/1995	Mains Gas	Boiler	Flat
Duxbury	Mr.	??	07/11/2000	Solid	Boiler	House
Dye	Jason	16	01/12/2001	Petrol/Diesel	Engine	Car
Eason	Neil	39	17/02/2005	Petrol/Diesel	Generator	Flat
Ebirim	Arthur	45	27/10/2011	Petrol/Diesel	Generator	Other
Edge	Aileen	92	28/12/2010	Solid	Open Fire	House
Edwards	Tashon	2	10/11/1999	LPG	Room heater	House
Edwards	Natalie	22	10/11/1999	LPG	Room heater	House
Edwards	Tyvanai	1	10/11/1999	LPG	Room heater	House
Edwards	David Wyn	33	18/11/2004	LPG	Room heater	Caravan
Egerty	Edward	42	15/08/1996	Mains Gas	Cooker	Flat
Eker	Mark	53	07/04/2000	Mains Gas	Boiler	Flat
Ellis	Mark	41	18/02/2008	Mains Gas	Boiler	House
Elliwell	Walter	71	09/05/1999	Solid	Room Heater	House
El-Tabakh	Ahmed M. Amil	24	15/01/2006	Mains Gas	Grill	Flat
Ephgrave	Peter	58	06/02/2000	Petrol/Diesel	Engine	Boat
Etough	Beverley	37	01/01/1996	Mains Gas	Boiler	Flat
Etu	Stephen Victor	36	16/02/2008	Petrol/Diesel	Generator	Workplace
Evans	Mrs. M.	71	14/12/1995	Solid	Room Heater	?
Evans	Kitty	81	04/06/2000	Solid	Room Heater	House
Evans	Margaret	88	12/12/2000	Solid	Room Heater	House
Evans	Francis	70	06/03/2005	LPG	Cooker	Boat
Fairbairn	John	33	08/11/2009	LPG	Room heater	Vehicle
Farrell	Ronald	62	07/09/2003	Solid	Boiler	House
Fearn	Joseph	79	24/07/2000	Solid	Room Heater	House
Fell	Elizabeth	83	22/12/2012	Mains Gas	Cooker	House
Finney	Roger	49	20/11/2000	Mains Gas	Boiler	House
Fish	Ronald Norman	68	11/12/1996	Mains Gas	Gas Fire	House
Fish	Joan	68	27/03/1998	Solid	Room Heater	House
Fish	Eric	71	27/03/1998	Solid	Room Heater	House
Fitzmaurice	Peter	67	20/09/2009	Petrol/Diesel	Engine	Other
Fletcher	Robert	75	08/03/2000	Solid	Boiler	Bungalow
Fletcher	Joan	76	08/03/2000	Solid	Boiler	Bungalow
Fletcher	Margaret	74	30/09/2006	Solid	Room Heater	House
Ford	Gary	54	02/06/2014	Mains Gas	Cooker	Bungalow
Foster	Paul	18	24/02/1996	Mains Gas	Gas Fire	Flat
Fox	Michael John	45	20/10/2002	Solid	Boiler	Caravan
Francis	Cyril William	79	22/01/2006	Mains Gas	Boiler	House
Francis	Stuart	60	20/09/2009	Petrol/Diesel	Engine	Other
Fraser	Tommy	37	06/02/2008	Petrol/Diesel	Generator	Workplace

nationalgrid

ENA Members Activity Report – National Grid

National Grid's gas distribution business delivers gas to 10.9 million homes and businesses and we also manage the National Gas Emergency Service free phone line on behalf of the industry.

Carbon Monoxide (CO) poisoning continues to be a high priority for us and we are committed to playing an active role in ensuring that no person's life will be accidently impacted by CO.

Our emergency engineers are now all equipped with CO detection equipment and continue to hand out our CO awareness information while on their safety visits. Additionally, we have undertaken a number of initiatives to raise awareness and keep our communities safe.

Fire service partnership:
The fire services have worked tirelessly on educating our communities on fire risk, prevention and keeping people safe. This has included home safety visits for vulnerable customers deemed at risk of fire. In many cases these people will also be at risk of CO. Working collaboratively with the Chief Fire Officers Association, we have incorporated CO Awareness as part of the home safety visits providing 3000 free CO detectors for hard to reach, vulnerable people.

University Freshers Fairs:
University students are particularly vulnerable when it comes to gas safety and Carbon Monoxide. For many students, university is the first time they will be living independently away from home, usually moving into private rented accommodation in their 2nd and 3rd year. In September 2014 we attended freshers fairs events at 9 of the largest universities across our 4 distribution networks, proving CO awareness information and free carbon monoxide detectors to student's.

Cub Scout Campaign:
By targeting the younger population making gas safety awareness 'the norm' we will help safeguard future generations. We have developed and continue to sponsor the home safety badge which during 2013/14 provided in excess of 206,000 home safety resource packs and awarded 22,600 National Grid Cub Scout home safety badges.

Intelligent CO:
We are passionate about supporting new innovations and are delighted to be sponsoring the Intelligent CO monitor project through the Energy Innovation Centre in collaboration with NGN and WWU.

This project tests new technology in the form of a 'smart CO detector' allowing remote monitoring of CO levels in properties and notification via text or access to a monitoring system. This could prove particularly beneficial to groups such as housing associations where access for annual safety checks may be problematic. Additionally, cases such as warden controlled flats and domestic properties with elderly occupants could benefit as this technology would allowing a family member / warden to be notified when CO is detected in the property.

Other initiatives include:

- Running CO awareness days for employees and encouraging them to share what they have learnt.
- Supported CO-Gas Safety's Schools poster competition last year and is joining with the other GDNs to support the competition and ensure it continues in the future.
- Working with Dying To Keep Warm charity to safeguard vulnerable people in their own homes
- Launching a suite of online safety videos, achieving 6,000 hits in 2013-14
- Promoting safety advice through social media – Our Facebook CO campaign reached 30,000 Facebook users

Outcome:
Education holds the key to increasing CO awareness and keeping our communities safe and warm. Based on our CO awareness survey results, on average our customers demonstrated a 49% increase in their awareness of the dangers of CO and 97% said they would 'take further action' such as having their gas appliances serviced regularly or talking to family and friends about the potential dangers of CO. This supports our ambition to keep our customers safe and ensure that no person's life will be accidently impacted by CO.

Wales & West Utilities (WWU)

We developed a comprehensive strategy to address the safety risk posed by CO. Using the quality data engineers collect at the 6,000 visits they make each year to suspected CO poisoning, our "hotspot" analysis tool uses our incident data to proactively to target our campaigns to those communities most at risk. Our campaign, which aims to successfully raise awareness, inspire behaviour change, influence policy and support technical innovation, has won a number of accolades including 2014 Business in the Community Wales Responsible Business Building Stronger Communities Award.

Our activities

We have developed an interactive learning environment for families, which has toured events and agricultural shows in our region. Recognising that CO is not only a danger in buildings, we have also used this as opportunities to raise awareness with caravaners and campers through advertisements on admission tickets, camping and parking passes.

Award winning arts partnerships

The way we collaborate with the arts is recognised as unique amongst the gas industry as best practice within business. This approach began with our film 'The Silent Killer' developed in partnership with the Royal Welsh College of Music and Drama. Extending this partnership, WWU are employing recent graduates to deliver the first outreach programme for theatre design and has included the development of a unique 10-foot monster puppet that represents the deadly nature of CO. The monster is being used in a series of puppetry workshops in secondary schools across our operating area, raising awareness of the causes and symptoms of CO poisoning in an innovative way.

Our partnership with Theatr Na nÓg involved WWU emergency engineers and local schoolchildren to shape, produce and take part in 'A Breath of Fresh Air.' The play, which uses drama and storytelling to focus on the dangers of CO, is now touring primary schools across our operating area and is targeted at raising awareness amongst pupils, their grandparents and carers.

Leveraging value from partnerships

Collaborating with Fire and Rescue Services and South Wales Police, we were able to use CO awareness week in November as an opportunity to target a vulnerable community in South Wales. Our dedicated employee volunteers gained access to 500 properties over 4 days, providing each with home safety advice and installing a CO alarm. Environmental Health graduates are surveying the properties pre and post intervention to undertake a detailed piece of research into the impact of this campaign.

Taking an industry lead in a broader response

In 2013 WWU held the first national conference on CO safety in partnership with IGEM. The conference included shippers, suppliers and other representatives from other fuel groups. The other gas networks also supported the subsequent conference. Following these events, WWU brought together a smaller working group with independent facilitator to agree an outline for a consistent campaign approach. We are also supporting product innovation, working with Northern Gas Networks and National Grid to bring to market an intelligent CO monitor linked to smartphones for homes later this year.

Impact of our Investment

Wherever possible participants are asked to score their awareness before and after each activity in order to measure the percentage increase in awareness following our intervention and the percentage inspired to take positive further action. In over 87% of interventions, those surveyed would now service appliances or purchase an alarm. To date we have distributed over 10,000 free audible CO alarms already saving one family who, after receiving and using their alarm discovered a CO problem at home. The family contacted WWU to thank 'for potentially saving our lives'.

For further information about Wales & West Utilities please visit: www.wwutilities.co.uk Follow us on Twitter @wwutilities or on Facebook at facebook.com/wwutilities

Dedicated to keeping our customers safe and warm by leading the way in energy delivery

SGN operates over 74,000km of gas mains and services in Scotland and the south of England. Whoever your supplier is, we have a responsibility to deliver gas safely, reliably and efficiently to every one of our 5.8 million customers.

Gas safety and CO awareness is a focus all-year round for SGN, which provides the gas emergency service in its areas of operation.

Every year thousands of people across the UK are diagnosed with CO poisoning.

As an industry leader in carbon monoxide safety, we work hard to influence policy and strategy to help educate and inform the public on the dangers of CO, and have set up a Carbon Monoxide Action Group to help drive forward initiatives.

Over the past year we have:

- Further improved CO literature which our First Call Operatives leave with customers after they contact us via the National Gas Emergency Number – 0800 111 999.
- Exhibited at outdoor leisure events to raise awareness of CO when camping or caravanning.
- Continued an enduring partnership with Girlguiding UK to actively engage Brownie Guides and Guides in raising awareness on the dangers of CO in the home.
- Collaborated with the National Union of Students to carry out a survey of students' gas safety and CO knowledge. We followed up the survey with visits to Strathclyde University in Glasgow and the University of Reading to promote gas safety and CO awareness.

The Action Group is also focusing on building links with fire and rescue services and carrying out further research.

We'd like to urge everyone to get an audible carbon monoxide alarm, plus know the six signs of carbon monoxide poisoning – headaches, dizziness, breathlessness, nausea, collapse and loss of consciousness.

Northern Gas Networks

Northern Gas Networks delivers gas to 2.7 million homes and businesses in the North East, Northern Cumbria and much of Yorkshire, through a vast network of underground pipes.

As well as keeping our network in tip top condition, we also provide the region's rapid response service for customers who smell gas at home or work.

But we're as much about people as we are about pipes. Whether we're playing our part in helping to lift customers out of fuel poverty, educating households about the dangers of Carbon Monoxide, or providing training opportunities in deprived areas, we have a broad reach and an ambitious social agenda.

Carbon Monoxide education in the classroom

In 2012/13 we launched a new education programme aimed at Key Stage 3 pupils (11-14), to promote CO awareness and nurture an appreciation of the importance of carbon reduction, recycling and sustainable living.

We are aiming to reach 900 students by the end of the 2014/15 academic year.

Gascoseekers: life-saving technology in our hands

We have invested £2 million to equip all our emergency engineers with new Gascoseekers, which not only detect levels of gas (methane) in the air, but also CO. This was an industry first.

Smart Carbon Monoxide detectors

We are working with the other GDNs to trial the use of a new type of smart Carbon Monoxide (CO) detector which sends SMS notifications of any CO alerts to a nominated mobile phone.

Smart devices are being installed in 600 properties throughout the country including social housing, student accommodation and other vulnerable people.

Customer CO briefings

In 2013 we became the first GDN to deliver CO awareness briefings to customers in their homes following emergency call outs.

Aimed at the elderly and other vulnerable customers such as those living with disabilities or long term illness, the briefings see engineers explain the key facts about CO (e.g. tell-tale signs and symptoms) using specially developed materials.

iCop: back on the case

In 2012, we launched an innovative smartphone app called iCop, aimed at 18-24 year olds living in rented accommodation, the app uses an engaging film noir style detective game to highlight the dangers Of CO.

In 2014/15 we will be working collaboratively with the other GDNs, to extend the iCop game to cover the risks of CO outdoors (e.g. BBQs, generators).

For further information about Northern Gas Networks and our work to raise awareness about CO, please visit: www.northerngasnetworks.co.uk.

Follow us on Twitter @NGNgas or on Facebook at facebook.com/northerngasnetworks

Petition to the European Parliament to ask for changes to reduce deaths and injuries from unintentional poisoning from carbon monoxide (CO) and other products of combustion (CO+). Allocated number 0016-15.

Carbon monoxide (CO) is a deadly gas which can be emitted by faulty cooking and heating appliances powered by any carbon based fuel that burns.

Less than 2% of CO can kill in between one and three minutes (see Para 74 table 23 page 26 http://www.hse.gov.uk/foi/internalops/hid_circs/technical_osd/spc_tech_osd_30/spctecosd30.pdf)

CO cannot be sensed using human senses.

Medics rarely diagnose CO poisoning and it is difficult to diagnose partly because CO mimics viruses and food poisoning and also because different members of the same family can suffer different symptoms.

1. Deaths in the UK are estimated as 50 deaths and 4,000 visits to A & E https://www.gov.uk/government/news/carbon-monoxide-poisoning-sends-4-000-people-to-a-e-each-year

This estimate was later revised to 40 deaths http://www.nhs.uk/Conditions/Carbon-monoxide-poisoning/Pages/Introduction.aspx

The impact on the population is vast.

The cost is of great concern. Even by Department of Health estimates on England & Wales the cost to the taxpayer is £178 million a year, according to Baroness Finlay co-chair of the All Party Parliamentary Carbon Monoxide Group. CO is therefore a matter of public importance.

CO-Gas Safety has undertaken data collection, collation and publication since 1995 see http://www.co-gassafety.co.uk/stats_and_analysis.html and http://www.co-gassafety.co.uk/downloads/2014/Charts%20pages%202014.pdf
CO-Gas Safety data:-
A. Has been collected, collated and published since 1995.
B. Collects CO incidents and deaths from ALL Fuels.
C. Has some kind of report, authority (e.g. Solid Fuel Association) or Coroner's letter to support every entry on our database with regard to the acute deaths from CO.
D. Tries to check every death with the Coroner concerned and most now help
(although Scotland lacks a Coronial system).
E. Publishes the names of the dead on the Internet as a memorial so anyone can check.
F. Is the only data to have been validated twice by an independent statistician, Dr Craggs (most recently in summer 2014).
G. Has had over 19 years of input from a victim based organisation that simply seeks the truth.
H. 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 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?).

No other UK body does all this.

However, in the opinion of CO-Gas Safety with its 20 years of experience, there are many more CO related deaths, injuries and chronic ill health that are not even suspected to be connected to CO. Please note that there are 3,500 unexplained deaths in the UK every year between the ages of 16 and 64, (New Scientist December 2004), and even these are not automatically tested for CO.

2. The UK requires compulsory registration and 5 yearly competency testing of gas appliance installers and maintenance technicians performing work for consumers.

UK Gas Distribution Companies are also obliged to provide a guaranteed 1 hour "Emergency Service Response" to consumer reports of fumes or gas leaks (not CO) but this is not the case in all EU countries.

3.There is a further risk from other products of combustion which we call CO+ (see http://www.co-gassafety.co.uk/other_toxins.html
It is worth noting that while smoking is considered a risk with regard to many diseases (e.g. lung cancer), indoor air pollution from the products of combustion is usually not even considered. Yet the impact from the other products of combustion, especially with regard to indoor air where pollutants are likely to be much more concentrated, is likely to be huge.

4. From talking to victims and their families we quickly came to the conclusion that raising awareness of the dangers of CO and how to avoid being poisoned are the most important issues.

5. From our work with victims and families we also came to the conclusion that a free or reasonably priced test of the emissions from appliances and also indoor air for CO (and ideally CO+) are also very important.

6. At least six people died from carbon monoxide being emitted from a Beko cooker that had a grill door that could be shut. There needs to be a Government backed recall system. Barry Mulcahy set up a website called Recall UK in 2010 but had to stop this in 2014 due to lack of support and funding.

7. From our work we now appreciate that by talking to victims and families, as well as studying individual tragedies and how the fuel industry works, we learn a huge amount of detail about what went wrong and how to prevent future unnecessary deaths and injuries. Deaths and injuries often result in family collapse, loss of work and the need to be cared for, which is not only tragic but is also a drain on the resources of the state.

We petition the EU to consider taking the following action:-

1. To persuade or require EU governments to put out a sustained programme of education and prime time TV public health warnings about the dangers of emission from all fuels, (gas to wood) all appliances (boilers to barbecues) and in all types of accommodation (from bungalows to boats).

   Such warnings should also inform people how to prevent unintentional poisoning by CO+ by using qualified people to install and regularly maintain appliances according to manufacturers' instructions, to regularly sweep and check chimney and flues, to ensure adequate ventilation and as an extra safeguard, to install a CO alarm to EN 50291.

   Funding for this is lacking but could be provided by the EU or by a levy on the wealthy fuel suppliers.

   A levy on the gas suppliers to raise awareness and for research was recommended by the Health & Safety Commission (now Executive) in 2000 (after an exhaustive gas safety

review and with the support of the majority of the stakeholders) but never implemented, in our opinion due to lobbying by the wealthy gas suppliers.

2. To require EU governments to ensure appliance installers and maintenance technicians are well trained and regularly tested to demonstrate their up to date competence and have their competencies publicly available in order to install, maintain and test appliances.

   Such engineers should also be tested on their competence and be required to use EN50379 compliant flue gas analysers to test appliances after installation or maintenance and to test indoor air for CO using EN50543 compliant equipment to ensure sources of CO are found and isolated.

3. To require warnings about CO+ to be clearly marked on fuel (such as bags of charcoal for barbecues) and appliances powered by carbon based fuels.

4. To require CO alarms to EN 50291 to be installed in all property.

5. To set up an EU wide organisation providing services and a website for recalls of dangerous products, ideally supported by funding for prime time TV warnings about them.

6. To require EU governments to provide at least one organisation in each EU country to provide free help and support to victims and their families and ideally free or affordable tests of appliances and indoor air for CO as well as undertake the work of collecting, collating and publishing the deaths and injuries from unintentional CO poisoning.

   From this work the organisations should suggest improvements to governments and to the EU that could be made to reduce these unnecessary tragedies.

CO-Gas Safety Poster Competition

Registered Charity Number:1048370
www.co-gassafety.co.uk

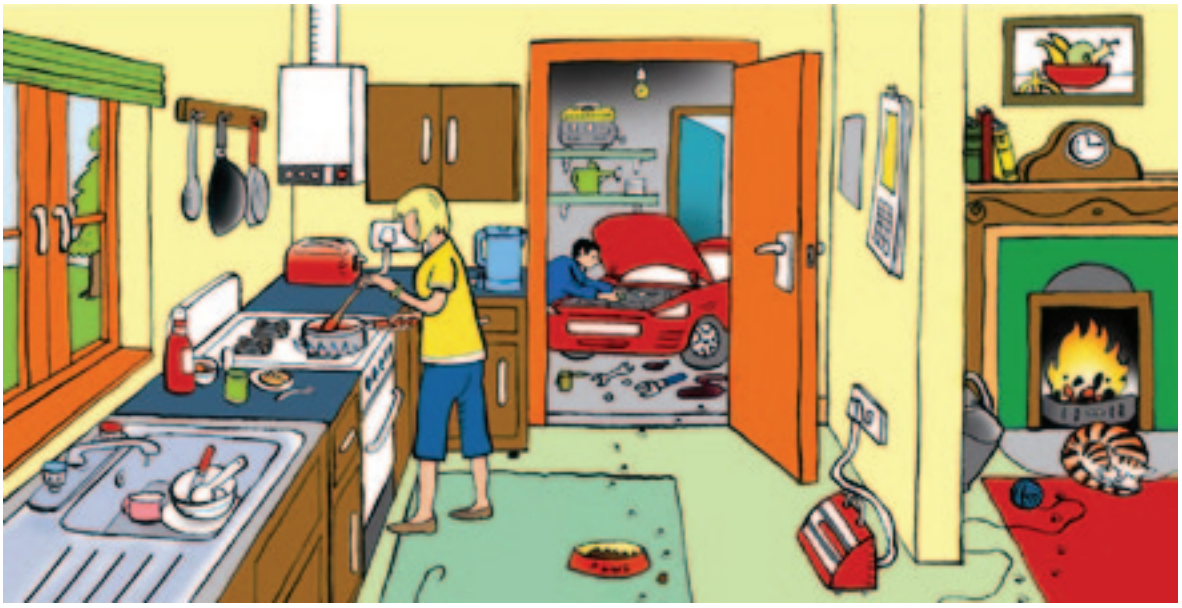
Calling all Primary School Teachers and Pupils aged 10-11! We want YOU!

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 an eighth 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 31st May 2015
All teaching materials are on the website, including a downloadable Power Point Presentation See http://tinyurl.com/p2q7epp

There are four regions, North England, South England, Scotland & Wales. There will be 4 winners. Presentation will be in the local area before the end of the summer term 2015. Possibly an overall winner will be asked to attend and event at the Houses of Parliament. 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

CO GAS SAFETY – POSTER COMPETITION 2015

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
2. There will be one year group Year 6 in Primary School (ages 10-11) in the autumn term 2014 (or any other student who joins this year in 2014 to May 31st 2015 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 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 May 31st 2015. 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) 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 in their local area before the end of the summer term 2015. It is possible that a national overall winner will be invited to the Houses of Parliament. 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 or email office@cogassafety.co.uk

'If you have any queries or worries please email Stephanie Trotter OBE office@co-gassafety.co.uk'

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.

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 CO2 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/spctecosd30.pdf at Para 74 Table 23)
Low level exposure of CO over a long period can cause brain and neurological damage.

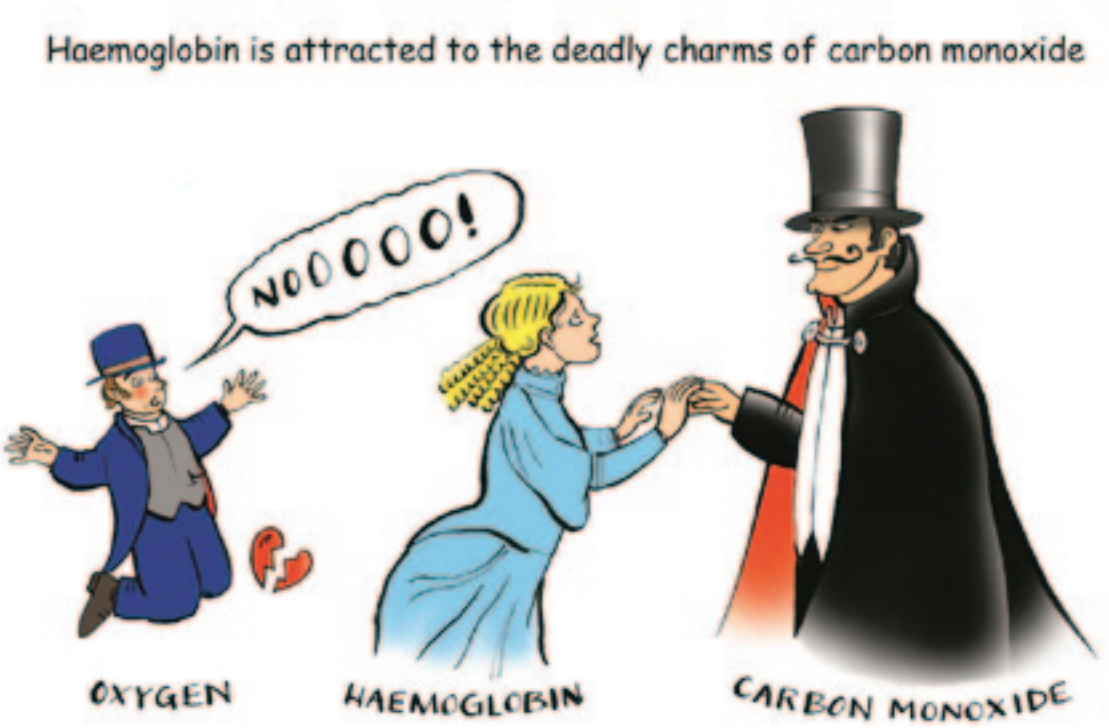
Why is carbon monoxide so toxic?

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.

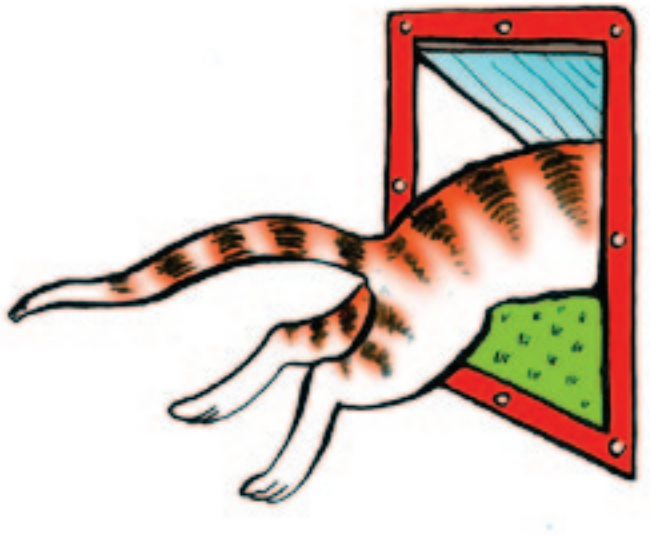
Effectively carbon monoxide blocks the haemoglobin, making it useless for carrying oxygen.

This explains why CO can poison in tiny amounts.



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** 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?

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.

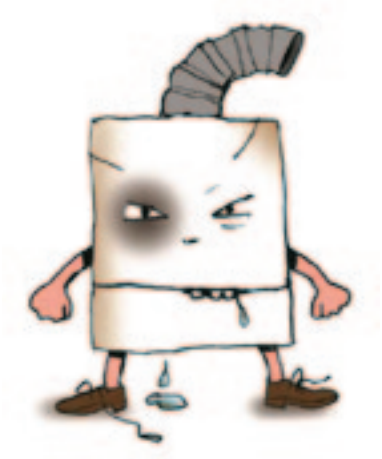
What do I do if I suspect I have been exposed to CO?

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.
5. If you need to prove that you have suffered from CO (e.g. for a legal case) see http://www.co-gassafety.co.uk/legalhelp.html

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 trace CO. We think this is like sending someone out to trace radioactivity without a Geiger counter! However, we now think all the First Call Operatives (FCO) have some Personal Alarm Monitor for CO or a Gasco seeker capable of picking up CO to protect them. However 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

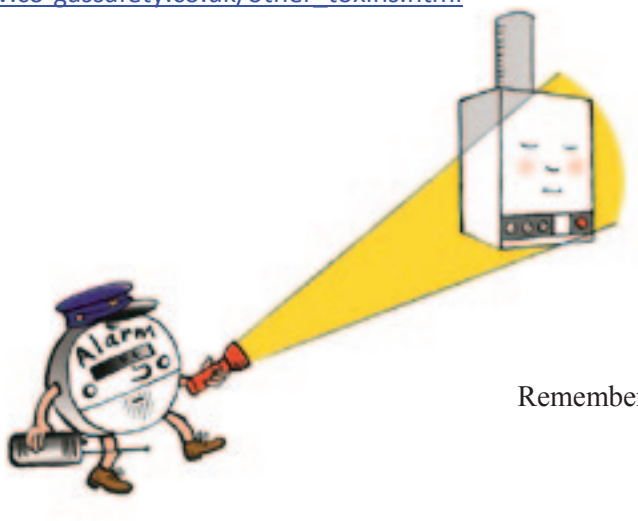
1. Look at all your appliances. Do they look unsafe?
   They should look clean (i.e. no soot or dirt around it and no water leaking from it) and burn with a blue flame.

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. 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 20 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



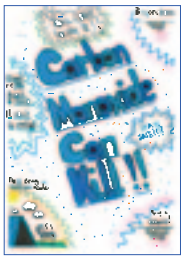
Remember a smoke alarm is NOT a CO alarm.
A CO alarm is NOT a smoke alarm.

Illustrations by John O'Leary www.oleary-irsara.com

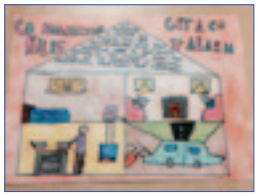
Winners of the 2013-14 Competition

Winner for the North of England
Sephora Ford. Age at entry 11
School: Sheffield High Junior
Teacher: Sarah Groombridge
MP for the School, Paul Blomfield MP, Labour

Winner for the South of England
Chihiro Nagano. Age at entry 11.
School Stephen Perse Foundation Junior
Teacher Mr Gordon West (Chihiro's teacher), Science Co-ordinator
MP for the School, Dr Julian Huppert MP, Lib Dem.



Winner for Scotland
Finlay Kettles. Age at entry 11
School Coupar Angus
Head Teacher: Margaret Cameron.
MP for the School Pete Wishart MP, Scottish National



Winner for Wales
Naomi Rahman. Age at entry 11
School: St Patrick's Roman Catholic Primary
Teacher: Sarah Michael
MP for the school and family, Stephen Doughty, Labour
Welsh Assembly Member Vaughan Gethin

A Big Thank You to the Sponsors of our Competition & those who have helped us through the year

Scotia Gas Networks, Wales & West Utilities, Northern Gas Networks and National Grid who are very kindly sponsoring our schools poster competition, the event at the House of Lords and the press packs. Their help and support has made this all possible.

Honeywell which has again kindly supplied us with alarms to EN 50291 this year. Honeywell also kindly paid for our advertorial about the competition in First News in 2014.
British Gas which has sponsored our badges.

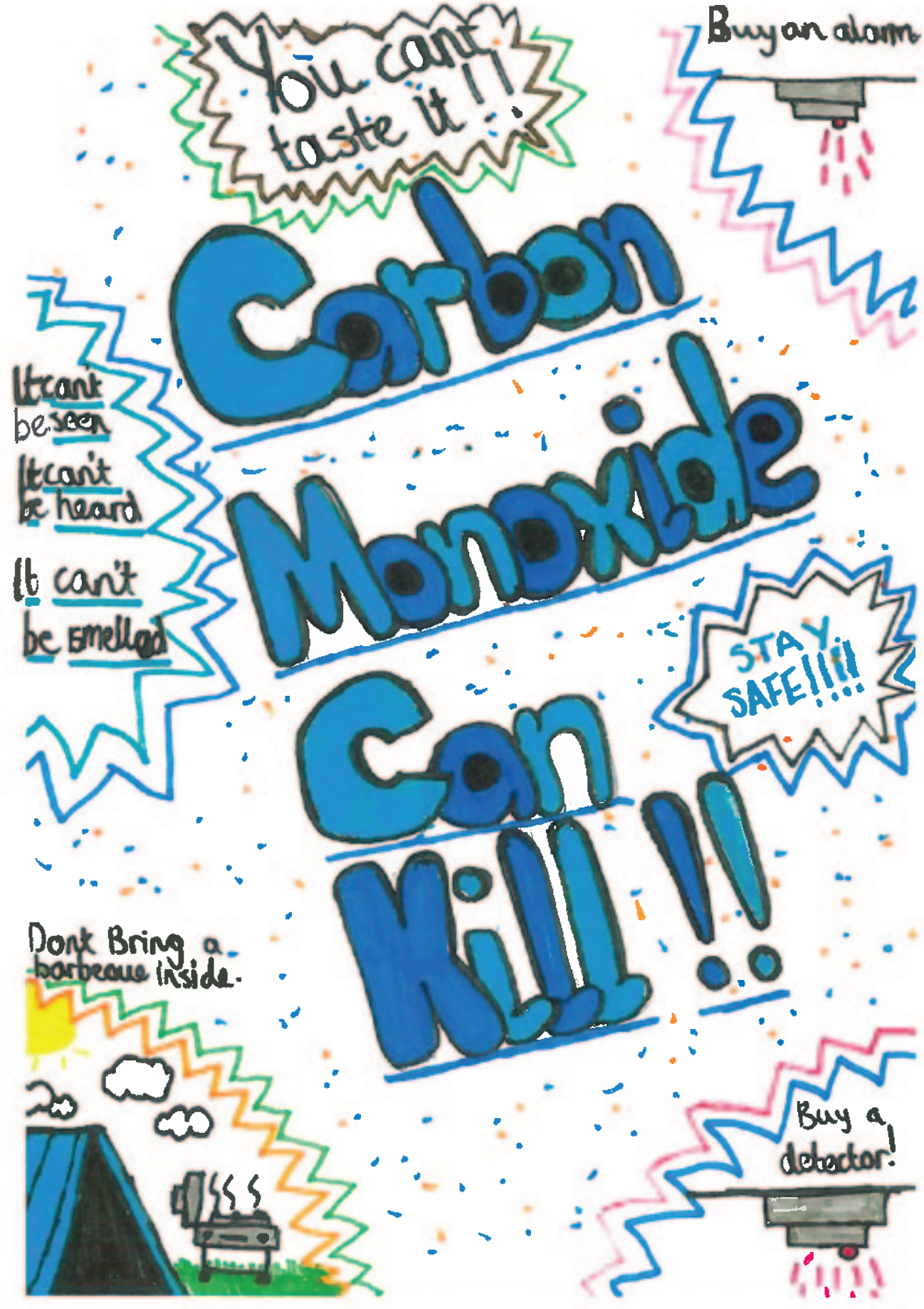
Also thank you to those who have generously given to us throughout our 20 years in particular:-
The Guild of Master Sweeps, who generously gave us another huge donation last year, see page 56.
Mark Aylett from the Guild of Master Sweeps who helped Stephanie walk up Pen-Y-Fan
The family and friends of Kimberley Jones, (aged 25 who died of CO). We received a great welcome to Wales when we walked u Pen-Y-Fan and family and friends raised a huge donation for us.
Roland Johns, who has worked so hard to put the course for aspiring registered gas installers together and then taught it to all the apprentices in the South of Scotia Gas Networks.
John O'Leary, who made the course possible by drawing more pictures for the course and our PPP.
BPEC – which has certificated our course about CO for aspiring registered gas installers
Danielle Royce & Cerys Canning – who have again helped with this event.
Kane International – which has kept us going generally.

Winner for Wales

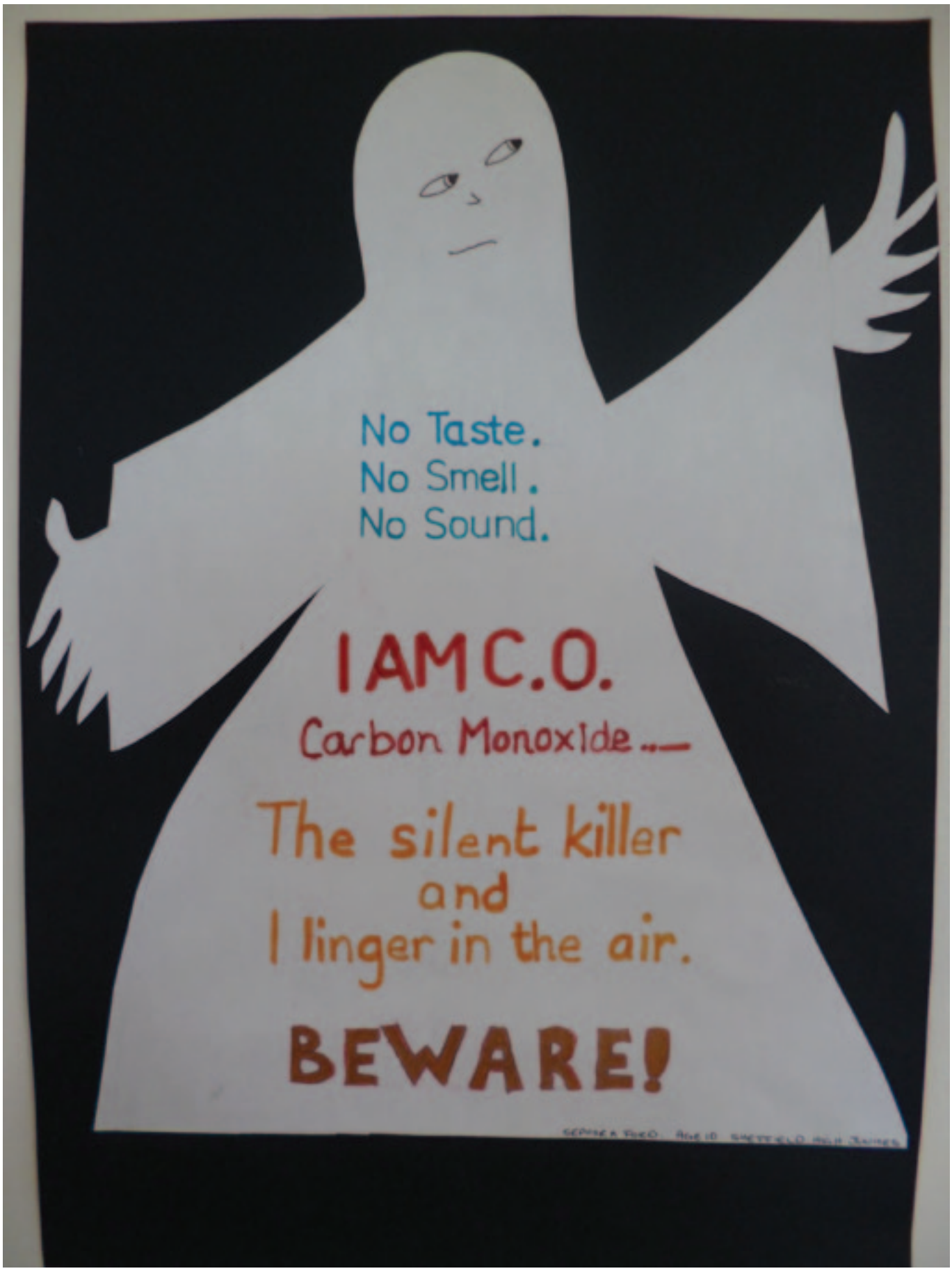
Naomi Rahman. Age at entry 11

School: St Patrick's Roman Catholic Primary School

Teacher: Sarah Michael



Winner for Scotland
Finlay Kettles. Age at entry 11
School Coupar Angus Primary School
Teacher: Mrs Helen McCulloch
Head Teacher: Margaret Cameron.



Winner for North of England
Sephora Ford. Age at entry 11.
School: Sheffield High Junior School
Teacher: Sarah Groombridge

Gasfuse – a safety cut off system for gas bottles

"Gasfuse, is a lifesaving device that will completely and automatically shut off the supply of bottled gas in the event of a major leak or regulator failure. Gasfuse fits quickly and easily onto your gas bottle and no professional help is required. It also acts as a minor leak detector and comes with a useful gauge indicating when a refill is required. A quick and easy explainer video can be found on our website http://www.gasfuse.co.uk.

We have been operating down in Australia and New Zealand for 25 years, supplying Bunnyngs, Aldi, the Australian Army and Navy, all of the major BBQ retailers, camping outlets and, Gasfuse is now a mandatory fitting on all new Jayco RV's. We conform to all of the major global statutory codes and have won several innovation awards internationally, also receiving praise and a letter of commendation from the former Australian Prime Minister Bob Hawke. To date, 2 million units have been sold.

We have recently arrived in the UK and have had instant success within the boating community, featuring in several magazines, soon to receive more positive reviews in the caravanning sector and outdoor leisure sector.

We are proud of our incredible safety record to date, rewarded with the knowledge that families around the world are safer with Gasfuse.

Gasfuse. Making gas safer."

Daniel Hodgson, Chair of the Guild of Master Sweeps,
Mark Aylett, Guild of Master Sweeps and Susan Ross representing CO-Gas Safety

CO-GAS SAFETY CONGRATULATES NETWORK RAIL!

NETWORK RAIL has put out some excellent prime time TV warnings for 9 deaths a 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?

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 (CO+)

Note The John Lewis Christmas Penguin advert cost £7 million
http://www.mirror.co.uk/news/uk-news/watch-john-lewis-christmas-advert-4576188
Dan Donovan | Media Relations Manager Network Rail
'We're not able to give out the costs of our marketing campaigns I'm afraid as its commercially sensitive information. But raising awareness of the dangers of level crossings not only reduces the risk of death by the user, but also raises the issue's profile in the media, helping us get support to close further crossings'

This press pack prepared to mark the 20th anniversary of CO-Gas Safety is dedicated to all those who have died or suffered from carbon monoxide poisoning and other products of combustion (CO+) and their families & friends

Thank you to all the survivors and the friends and families of victims and to those in the industry who have helped us work to stop this happening

Anne Brennan aged 19 died of CO while a student at Durham in 1995. She wanted to be an MP.

All truth goes through three stages.
First it is ridiculed.
Then it is violently opposed.
Finally, it is accepted as self-evident.
Arthur Schopenhauer 1788-1860, German philosopher who based his ethics on compassion