Joint Industry Programme on carbon monoxide issues
Review of the emergency response process related to CO/fumes incidents

Prepared by Advantica Technologies Limited
(formerly BG Technology)
for the Health and Safety Executive

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Martin Moore
Advantica Technologies Limited
(formerly BG Technology)
Ashby Road
Loughborough
Leicestershire LE11 3GR
United Kingdom

This review looks at the procedures that are in place in Great Britain related to the operation of the piped natural gas emergency service and the legislation, guidance documents and license conditions that have led to the current situation. The procedures used in some other countries are also reported.

The report then focuses upon two aspects of the emergency response process and the role of the Emergency Service Provider. It first addresses the question of whether instrumentation would assist in identifying the source(s) of carbon monoxide (CO) and hence reduce the likelihood of turning off or isolating the gas supply. Secondly, best practice is reviewed to consider whether the hand over from the emergency engineer to the CORGI engineer, and subsequent follow on work, is likely to proceed as efficiently as possible. Also that customer safety remains of paramount importance throughout the process.

Conclusions are reported. One is that the operation of the piped natural gas emergency process, when dealing with calls relating to fumes, is operating efficiently. In particular, there is a widespread satisfaction with the operation of Transco’s 24-hour freephone gas emergency service and the speed of response to an incident by the Transco engineers.

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SUMMARY

Public reports of gas escapes, in particular those which are fumes related, are dealt with by the Emergency Service Provider whose overall responsibility is to make the situation safe and prevent the escape of gas.

The role of the emergency service is constrained by the extent to which any investigation on site can be conducted, by current legislation, guidance documents and licence conditions. The situation is perceived to be that following a fumes incident the occupants are often turned off. They are then required to arrange a follow on visit by a CORGI registered installer in order to reinstate their gas supply and/or repair appliances suspected to be malfunctioning. As a consequence some consumers can be left without gas for heating or cooking for a period of time.

This review looks at the procedures that are in place in Great Britain and the legislation that has led to the current situation. The procedures used in some other countries are also reported. The report then focuses upon two aspects of the emergency response process. It first addresses the question of whether instrumentation would assist in identifying the source(s) of carbon monoxide and hence reduce the likelihood of turning off or isolating the gas supply. Secondly, best practice is reviewed to consider whether the hand over from the emergency engineer to the CORGI engineer, and subsequent follow on work, is likely to proceed as efficiently as possible. Also that customer safety remains of paramount importance throughout the process.

CONCLUSIONS

The operation of the emergency process to calls relating to fumes within Britain, following the reorganisation of British Gas, is operating efficiently. In particular, there is a widespread satisfaction with Transco’s 24-hour freephone gas emergency service and the speed of response to an incident by the TCP’s. However, there are missed opportunities which could lead to an improvement in the follow-up service. Although beyond the scope of the current service such opportunities may include:

- Using the call centre staff to contact consumers after the visit of a TCP to establish whether remedial work was carried out, and by whom.
- Improving the performance standards of installers on the Mondial database, such as declaring a maximum response time.

The costs of purchasing a CO analyser, its whole life costs and ease of use have dramatically improved, compared to ten years ago. In addition, the development of a British Standard Code of Practice for using an analyser is moving towards the acceptance of such instrumentation for assessing installation performance and safety.

The benefits of the use of CO instrumentation during fumes investigations have become an area of debate. In order to determine whether CO instrumentation could significantly improve the response to a fumes related call-out work would be required to demonstrate the benefits of using such equipment.

There is a need for a greater understanding of the health effects of CO.
1 INTRODUCTION

The responsibility for responding to calls from members of the public who report fumes rests with a conveyor or with their appointed Emergency Service Provider (ESP). At present Transco has been appointed emergency service provider for all the current Public Gas Transporters (PGT’s). (Transco is a part of Lattice Group plc and will be referred to as Transco within this report.) When attending, there is a duty on the conveyor, a Transco Competent Person (TCP) in the case of Transco, to "make safe" and leave any repairs to appliances and reconnections for a follow on registered "Council for Registered Gas Installers" (CORGI) gas installer to carry out. Transco has published Public Standards of Service for Gas Emergencies which aim for a 97% planned performance level. For a report of fumes or CO Transco aim to attend as quickly as possible within the following time scales. Within one hour for all uncontrolled escapes and emergencies and within two hours for all controlled escapes and emergencies (Appendix B).

Transco has obligations under its Public Gas Transporters Licence. Within Condition 18 of the Licence are described conditions for dealing with escapes. (Condition 18 is part of a standard format of conditions which are applicable to all conveyors). The condition requires the prevention of an escape to be effected in such a way as to maintain the supply of gas to appliances used for heating or cooking by carrying out minor repairs to appliances which can be completed within 30 minutes of entering the premises using materials costing no more than £4.00. This time and cost includes all the time spent on site to investigate and where possible carry out repairs. The materials price was set in 1998 and has risen since then in line with the RPI. Such a time constraint imposes a limit on the practical measures a TCP can take in identifying the source of any fumes, in addition to the other administration type tasks which also need completing whilst on site. It would be for further assessment as to whether any benefits could be achieved by any increase in the 30 minute time limit.

A property has to be left in a safe condition and this can often result in the turning off of the gas supply to the property, rather than the isolation of the particular appliance/installation which is malfunctioning. This, in turn, can cause the householder to be without heating or cooking facilities until after the follow-on CORGI Installer completes any appliance/installation reparation and the gas supply has been safely restored. It is understood from Transco that normally it is an appliance which is turned off, and not the whole property.

This report examines the opportunity for the Emergency Service Provider to identify a malfunctioning appliance, possibly using purpose-made instrumentation, to reduce the likelihood that the property’s gas supply is turned off and to leave the property not only safe, but in a condition which assists a registered CORGI gas installer to effect any repair and restoration of gas supply as efficiently as possible.

The report also looks at the United States of America where they have compiled extensive information on responding to fumes related call-outs, during the 1990’s, and the way that CO incident information is provided, collected and analysed in overseas countries.

The influence of factors such as the growing use of domestic carbon monoxide alarms on Emergency Response Provision will also be discussed.

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2 BACKGROUND AND LEGISLATION

British Gas plc, as an integrated company operated an emergency gas service and responded to Public Reported Escapes (PRE's) until the end of March 1996. The company provided both the emergency gas service and response function, plus site investigation schemes. It also carried out any follow up servicing of appliances/installations. Although the personnel worked for an integrated company they would have worked for completely separate departments within the company e.g. Emergency, Services, Distribution etc. Each department would have operated with their own structures and procedures which included assisting each other with respect to incidents.

Since separation and privatisation, the Emergency Service Provision has been carried out by Transco and any follow on servicing of appliances has to be undertaken by a person selected by the occupant. This is typically from one of a number of (local) companies employing registered CORGI gas installers. Thus Transco will respond to reports of actual or suspected escapes of CO/fumes and make the situation safe. It will also report to gas suppliers instances of actual or suspected CO poisonings.

Note: Transco has additionally carried out the duties of Network Emergency Co-ordinator, on behalf of all public gas transporters, since April 1996.

Transco has carried out the duties of the Emergency Service Provider, on behalf of all public gas transporters, since April 1996. In 1998 its call centres dealt with over five million telephone calls from the public, with around 5,800 calls in a peak hour. Of these calls about 1.43 million are reports of gas escapes and emergencies. The remainder are meter queries. The number of appliances turned off following reports of gas escapes and fumes exceeded 360,000. In 1998 approximately 246,000 callers were given details of their local CORGI registered gas installers. In 1999 there were 230,000 callers that received this information. There were about 110,000 reports of fumes investigated by Transco during 1998.

Of the 250 to 500 annual CO incident notification reports raised by Transco there are an average of 100 CO incidents each year which are fully investigated and reported to the HSE. These are mainly incidents involving fatalities and "major injuries", for example where at least one occupant had attended a hospital for a period of more than 24 hours. The majority of the investigations of CO incidents that take place are carried out by British Gas Services under contract to the majority of the gas suppliers. Additionally CORGI, and occasionally consultants, carry out a smaller number of investigations.

Transco is a registered installer with CORGI, but its registration is limited to those activities required of an emergency service provider.

COMMENT
With only a limited amount of operational time available for the engineer to make safe, this may involve turning off the gas supply to the property and instructing the occupant to contact a service company in order to ensure that the supply is restored safely. This matter is discussed in more detail later in this report, particularly in Section 3.
The changes within the gas industry have resulted in there no longer being one organisation responsible for co-ordinating the different activities required by a householder. This can often lead to a householder being faced with the situation where although the Emergency Service Provider, in the form of a TCP, has fulfilled their obligation of making a property safe, a time lag has become inevitable before any follow on work can be arranged and carried out by the customer’s chosen engineer. With the structures that operated within the “integrated” British Gas the close relationship between different departments would have generally enabled a faster and co-ordinated service to be provided to customers, even though more than one engineer would have been involved in the process.

The current situation has been criticised and described as an unacceptable consequence of deregulation in the gas industry which has led to a number of homes being left without gas for several days or more. This can be particularly arduous when left without heating and/or cooking during periods of cold weather. This matter is discussed again later in the report.

The work of Emergency Service Provision is documented within internal Transco Documentation and has to comply with government legislation and guidance notes issued by bodies such as the Institution of Gas Engineers. The framework of regulations relevant to CO investigations is given below:

### 2.1 THE GAS ACT

The Gas Act 1995 (Reference 1) came into effect in April 1996 and permitted competition in the domestic gas market. It includes provision under the Gas Safety (Rights of Entry) Regulations 1996 for authorised officials working for transporters the right to enter properties and inspect equipment connected to a gas supply. They may disconnect any gas fitting that they believe could cause immediate danger. Transco carries out this type of work currently. If there is any evidence of CO spillage into a room from an appliance then Transco have the right to enter the property, having obtained a warrant, and disconnect that appliance. It is understood that such action is uncommon and may result from actions such as the continued use, by a customer, of an appliance/appliances which they have been notified is a danger and which is likely to have been labelled as Immediately Dangerous.

### 2.2 GAS SAFETY (MANAGEMENT) REGULATIONS

In Great Britain the Gas Safety (Management) Regulations 1996 [GS(M)R 1996, Reference 2 & 3] deal with the management of the safe flow of natural gas in a connected network of pipes. The regulations set out the safety framework in which suppliers and transporters must operate. Gas transporters such as Transco are required to complete a Safety Case which must be accepted in writing by the HSE. Included within the safety case of the transporter are their emergency response provisions for dealing with gas incidents. They cover actual/suspected emissions of CO from an appliance using natural gas. These regulations interface with the Gas Safety (Installation and Use) Regulations [GS(I&U)R] 1998 (Reference 4) which have provisions on emissions of CO from appliances using gases other than natural gas from a connected network,. Specific information related to CO issues are given in Appendix A1.

The regulations place a duty on British Gas plc (carried out by Transco):

- to provide a continuously staffed, free telephone service to enable persons to report gas escapes (the term gas escape includes escapes or emissions of CO from a gas fitting).
- to pass that report onto the person who has the responsibility for dealing with the escape (if it is not Transco itself).
Proposals for amendment to these Regulations, via a consultative document, were issued for comment during 1999. A draft of the proposed new Regulations was included. The consultation period has now ended and it is expected that amended Regulations should be enacted in October 2000.

2.3 GAS SAFETY (INSTALLATION AND USE) REGULATIONS

The GS(I&U)R 1998 (Reference 4 & 5) deal with the safe installation, maintenance and use of gas systems and appliances in domestic and commercial premises. The regulations came into force on 31st October 1998. They require that only competent persons/operatives carry out any work on any domestic installation pipework, fittings or gas appliances. A business employing competent gas persons and those competent persons in business on their own behalf must be CORGI registered. From August 1998 competent persons should hold certificates of competency in all categories of gas related work in which they operate. There are about 65 categories held on the register by CORGI, with the names of the persons certified in each category. Qualifications are obtained under the Nationally Accredited Certification Scheme (ACS) for Individual Gas Fitting Operatives. It is believed that the ACS qualification appropriate to the TCP is CESP 1. It is understood that the required date for completion of training to CESP 1 is to be 31st March 2002.

A CORGI gas installer, competent in the required appliance category, can at the request of the customer examine the appliance in detail to ensure its safe operation, including its ventilation and flueing. He/she can then carry out any necessary repairs and recommission as appropriate.

An Approved Code of Practice (ACOP), including guidance notes and texts of the regulations, has been issued (Reference 5). This gives practical advice on how to comply with the law. The code was approved by the Health and Safety Commission on 8th September 1998 and came into effect on 31st October 1998. In this publication each regulation has been reproduced, followed by an associated ACOP and other guidance notes on compliance. By following the code, operatives will be doing enough to comply with the law. Operatives may use alternative methods but if prosecuted for breach of regulations, when not following the ACOP, they may need to show how they complied with the law. There are guidance notes to the regulations, which show good practice, but do not form part of the ACOP. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and Safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice. Specific information related to CO issues are given in Appendix A2.

A Gas Safety Review: Options for change discussion document was issued during 1999 by the HSC. It was in two parts, with the second part containing key issues for consumers. The document contained a wide range of views from groups interested in gas safety issues and suggestions as to possible changes that could be introduced. The document was intended to stimulate debate in advance of any decisions on how to further improve the safe use of gas. The responses generated are still the subject of analyses by the HSE.

2.4 THE REPORTING OF INJURIES, DISEASES AND DANGEROUS OCCURRENCES REGULATIONS

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) came into force on 1st April 1996 (Reference 6 & 7). They cover the reporting of work related accidents, diseases and dangerous occurrences and CO incidents involving death or major injuries. Specific information related to CO issues is given in Appendix A3.
2.5 DEALING WITH REPORTED GAS ESCAPES

The Institution of Gas Engineers document IGE/SR/20 - Edition 2 - Dealing with Reported Gas Escapes gives recommendations for dealing with gas escapes (Reference 8). Although escapes of CO are not covered the Scope does state that the principles contained in IGE/SR/20 do apply.

Section 4 covers basic requirements for the Emergency Call Centre, the requirements for logging call details and reports and the transfer of information to the required destinations. Adequate safety advice has also to be given to those making a report.

Section 5 states that if it is suspected that spillage or leakage of combustion products are taking place action must be taken to physically isolate suspect appliances from the gas supply. Owners should then be advised to have the appliance checked by a CORGI gas installer.

2.6 REPORTING AND INVESTIGATION OF GAS-RELATED INCIDENTS

The Institution of Gas Engineers document IGE/GL/8 - Reporting and Investigation of Gas-Related Incidents provides advice on CO incidents (Reference 9). In the introduction it states that employers must have done everything to ensure, so far as is reasonably practicable, that "responsible engineers" have the skills, training, experience and personal qualities necessary for the proper exercise of professional judgement. Also that there should be written procedures defining the extent which "responsible engineers" can exercise their professional judgement. Specific information related to CO issues is given in Appendix A4.

2.7 GAS INDUSTRY UNSAFE SITUATIONS PROCEDURES

As a result of the new GS(I&U)R it has become necessary to revise the existing Gas Industry Unsafe Situations procedure. Two classifications have been in use over recent years for unsafe situations - Immediately Dangerous (ID) and At Risk (AR) for situations which gas operatives may encounter. They have a duty to inform, disconnect or make safe as appropriate. Further information on the classification system is given in the CORGI "Essential Gas Safety" Manual which is part of the Gas Installer Manual - Domestic series (Reference 10). Details of the unsafe appliance or unsafe installation labels used by Transco to indicate when ID and AR installations/appliances have been identified are given in Appendix A5.

A leaflet "Industry Unsafe Situations Procedure - Dealing with Unsafe Situations in Customers Premises" was printed and issued by CORGI in April 1998. A second edition came into effect on 7th June 2000 (Reference 19). It gives details of fault situations that may be found and the actions that should be taken. Advice and guidance on procedures to follow and extracts from relevant legislation are provided. Details of RIDDOR are provided and guidance as to what is reportable. How to decide if a situation is unsafe and the actions required are then covered. A chart showing the procedure for "Dealing with Unsafe Situations" is also provided in the leaflet. A copy is shown in Appendix C.

2.8 TRANSCO PLC STANDARD T/PR/INC1 - INCIDENT REPORTING AND INVESTIGATION PROCEDURE (MARCH 1997, REVISED DECEMBER 1997)

This document (Reference 11) provides guidance to Transco personnel on how to deal with this subject and also highlights associated statutory reporting requirements. It sets a standard which should achieve an initial "factual" notification, as soon as possible, but in any case within 24 hours. Notifications being made via the Lattice company’s internal communications system. It is understood that this document is being revised during the year 2000 and may be amended in the future.
The incident (which is connected with Transco operations) is first assigned to a category which is then used to define the procedures to be followed. RIDDOR Reportable Incidents Regulation 6(1) come under category 1(a) for fatalities and 1(b) for major injuries requiring admission to hospital. If not reported previously as 1(b) then major injuries can be put into category 2(a).

Notification of CO incidents is via COS and a standard template is provided for completion, along with guidance notes. The CO Poisoning Notification form is completed and sent out from the Area Emergency Call Centres from information provided by the responsible District person on site. Each incident is allocated a unique reference code and once created the report is sent to a standard list of personnel within Transco.

The documents states that under the Gas Safety (Management) Regulations the gas shipper/supplier must be notified by the Call Centre, without delay, and that Transco will only have minimal involvement in any investigation due to their need to only establish whether the cause was due to installation pipework or an appliance. Under GS(M)R it is the duty of the supplier to investigate CO Incidents fully. The standard of service set is to notify the shipper/supplier and the HSE within 2 hours of arrival on site at the incident.

Details of flow charts and the COS form used are included for reference in Appendix D. Both the local and the national HSE offices receive notification of the incident. Additionally the Department of Trade and Industry is also notified of CO poisoning incidents.

2.9 TRANSCO STANDARD EM 71- TRANSCO ESCAPE PROCEDURES (MARCH 1997)

These procedures (Reference 12) cover the operational and administrative procedures and other aspects associated with dealing with the reporting of gas escapes and other emergencies, including the emission of fumes from gas appliances. The procedures provide flow charts and guidance notes to ensure that Transco's responsibilities are met and that information from incidents is passed to the correct destinations/organisations. Specific information related to CO issues is given in Appendix A6.

2.10 TRANSCO STANDARD HSEINS/11 - FURTHER GUIDANCE ON THE REPORTING & INVESTIGATION OF CERTAIN GAS RELATED INCIDENTS (28 JANUARY 1999).

To add clarity on the interpretation of reporting requirements, as agreed between Transco and the HSE, on CO reporting within Transco, this document has been published (Reference 13) to assist the understanding of all parties. A copy is included in Appendix E. It clarifies what should be reported under RIDDOR regulation 6(1) and states that Transco should only report to suppliers incidents which meet RIDDOR regulation 6(1). It is understood that notes already in use by Transco are to be updated to show the changes from these guidance notes. The contents of the document have been reviewed and approved for use by the HSE.

The document confirms that for fatalities where CO poisoning is not an obvious cause, but was likely to have been the cause the incident should be reported.

For CO poisoning, the relevant criteria for a major injury are either: the person has to be unconscious; and/or, the person is made so acutely ill that he/she has received or is currently receiving medical treatment. Under RIDDOR it had required admittance to a hospital for more than 24 hours. This has now been amended.
Where a TCP recommends a consumer to see their doctor it is not reportable under 6(1). But if Transco are notified after attending a suspected CO incident not involving a fatality or major injury that persons have subsequently received medical treatment for confirmed CO poisoning then the reporting and notification procedure should then be implemented. It is left to those that have been injured to inform Transco.
3 THE ROLE OF TRANSCO

Transco is the major gas transporter operating in Great Britain and is also the National "Emergency Service Provider" (ESP), as appointed by all the independent Public Gas Transporters. This requires Transco to operate a free gas emergency service (0800-111-999) available to all gas users. The gas emergency service operates 24 hours a day, every day of the year.

Details of the service are given in the CORGI manual - Essential Gas Safety. It states that the emergency service is tasked to attend all reports of escapes of gas and of reports of "fumes". The ESP permits its engineers to trace and repair an escape of gas, or identify the source of fumes. Reports of "fumes" will be made safe by isolating (turning off) the complete installation. Where the indication is that products of combustion are escaping into the property from just a single appliance then only this will be disconnected.

To provide the emergency service Transco has a small management team based in Dorking and three call centres and telephone operators strategically placed around the country. There are around 900 people needed to operate the call centres for 24 hours a day and for 365 days a year. From the call centres a local Transco Engineer (Transco Competent Person - TCP) will be despatched to an incident site. The HSE are also informed of the incident by phone for a RIDDOR Regulation 6(1) poisoning incident. The TCP can call for further assistance from supervisors or Engineering Teams as and when required. A TCP is defined as a person having the ability, appropriate training, knowledge and experience to carry out the work being undertaken in a safe and proper manner. This must be demonstrated by compliance with an appropriate quality control/audit procedure.

Internally within Transco an Incident Notification Form is used to report suspected CO Poisonings to a distribution list of staff within the organisation using the company computer system. The list includes senior management, management, H&S officers, public relations officers and other interested staff throughout Britain. The form is filled in using report notes. A copy of this is included in Appendix D for information. The form is completed following attendance by the TCP to the incident site and is then issued by one of the Call Centres to recipients of the distribution list. Similar information is also submitted to the HSE and to the relevant supplier, by facsimile. The supplier is identified through a Transco database containing all the gas meters, the site address and the allocated supplier.

The management team co-ordinate the work of the emergency service and provide comprehensive advice, guidance and procedural notes for all the staff to follow. They also work with other organisations such as the HSE to ensure that their emergency service obligations are met.

TCPs are operatives registered with CORGI and trained to carry out the initial site investigation. By law, all gas operatives who carry out work on gas appliances must be competent in the area of gas work in which they operate and have a current and relevant competency certificate under ACS. The CORGI manual "Essential Gas Safety" states that when gas operatives carry out new work in customers’ premises they are required to ensure that the appliance/installation is safe for use. If this cannot be achieved, the appliance/installation must not be left connected to the gas supply.
An article in The Gas Installer magazine, issued in March 1999, described the work carried out by the TCP on arrival at an incident site. The first job is to show his Transco and CORGI ID cards. The service engineer would then carry out a soundness test at the meter. This is followed by a visual inspection of all the gas appliances in the property and the gas installation. If no ID or AR situations are identified there may still be a concern for safety. In this situation the recently introduced ‘Concern for Safety’ label (a copy is shown in Appendix F) may be used. The engineer will turn off the appliance, attach the label, advise the customer and complete a written safety notice. A copy of this is left with the homeowner. The engineer will advise of the need to contact a CORGI registered gas installer who will carry out a further investigation and any work that may be required.

To assist the TCP’s Transco have produced guidance leaflets and wallet packs containing essential information. The wallet is produced in association with CORGI and contains a folder for the CORGI installer I/D card. A leaflet (ref. K004) provides helpful information for the customer. A copy is included in Appendix G. It provides details of the 24 hour Repair Help line (0800-371782) and the need to make the gas equipment safe. The TCP fills in information needed by the help line to assist the customer and then leaves them the leaflet. It informs the customer that repairs should be carried out by CORGI engineers and that the customer has to contact and deal directly with whoever they choose to carry out any repair work. A space is left to write down the names/telephone numbers of possible installers whose names will be provided free by the help line. Up to six CORGI registered installers in any given postcode can be given. Of these some are local and some are national. There are around 7,500 installers on the database which is being run for Transco by Mondial Assistance. This is only a proportion of the 44,000 registered installers that are understood to work in Britain. The leaflet also explains Transco’s role in providing a free gas emergency service and the limits to what is provided.

CORGI installers, who carry out gas servicing work as a main part of their business, are able to register on the database provided that they are willing to offer a service to callers on a regular basis. This has probably limited the numbers who wish to be listed. Most installers are likely to respond to calls from the help line with a response time governed by the constraints of their workload. There is no customer service level set for a recommended speed of response to a call. British Gas Services though have agreed to provide a next day service to callers from the help line. This is likely to significantly reduce any possible delays in gaining attention for a customer left without heating or cooking facilities. Transco is said to monitor the performance of the scheme and the installers that are listed to protect its reputation. In the event of a number of complaints, complaints of a contravention, loss of CORGI registration, gross misconduct or gross unethical trading Transco are able to remove installers from the register. This has been necessary in only a small number of instances.

A further leaflet "Gas Appliances - Get them checked, Keep them safe" has been printed in consultation and with the agreement of the HSE. It explains about CO incidents, the symptoms and causes. It gives guidance on using appliances safely and laws applicable to servicing appliances and using unsafe appliances. Landlord duties are explained. The HSE Gas Safety Advice Line (0800-300363) is mentioned and also details of the Transco emergency service along with notes on what to do and what not to do if you think you smell gas. A copy of the leaflet is included in Appendix H.
Transco have responsibilities to their staff in line with the HSE document "Guidance Note EH43 - Carbon Monoxide: health hazards and precautionary measures" to carry out risk assessment’s for all staff who may have to work wherever exposure to carbon monoxide is likely to occur. It is understood that some monitoring of TCP’s, when working in such areas, has been carried out to support such as assessment. It is believed that there have been no instances of Transco staff being exposed to excessive levels of CO and that Transco procedures would limit any exposure to CO in most situations. It is understood that Transco are intending to carry out further exposure related work. Occupational Exposure Limits (OEL’s) are in force and it is pointed out that it is possible to build increasing COHb levels by a number of short exposures to CO during a working day. This is due to the biological half-life of CO being in the order of three to four hours. This may well apply to TCP’s who are regularly attending CO call outs. The need to ventilate the property adequately is therefore important to the TCP who is unable to quantify the levels of CO within the property. Employers must also give any staff, who may be exposed to CO, sufficient information, instruction and training to understand the risks to their health caused by exposure to CO. Also the precautions which staff should take to avoid or minimise exposure. A further danger to the TCP is that of carrying out work in an atmosphere containing CO. The COHb level of a person working will increase faster than that for a person at rest.

A report was ordered to be printed by the House of Commons and which was published on 12th May 1999 by the Comptroller and Auditor General, Office of Gas Supply ref. HC 403 Session 1998-99. The report was titled "Giving Customers a Choice - The Introduction of Competition into the Domestic Gas Market. In Section 17 it states that a key safety improvement has been the establishment of a single national emergency telephone number. A survey showed that more than 90% of customers knew about it. The Report notes that under Transco’s Licence Conditions a Transco service engineer who is attending an Emergency Call in a customers house will make the installation safe either by isolating the appliance / installation or in some cases carrying out a minor repair providing this can be completed in 30 minutes and cost less than £4 in parts or materials. If a disconnection is required Transco are required, within reasonable practicality, to provide alternative heating and cooking facilities to premises occupied by a domestic consumer who is disabled, chronically sick or of pensionable age and who lives alone, or shares the premises with other persons in the same categories, or with a minor. Customers with special needs can only obtain this additional service if they have registered with their gas supplier and details have been passed to Transco. The terms for this Standard is contained within Transco’s Licence. This additional service also applies to upstream loss of supply. Under Compensation Standards a sum of £20 is payable for failure to provide alternative heating or cooking facilities in accordance with the licence agreement.

A MORI survey was carried out for the HSE during April 1999 on gas safety issues under the title Peoples Panel Gas Safety Study. This has been issued as part of the Gas Safety review (see section 2.3). The use of gas in the home was identified as one of the greatest safety risks. There was a general agreement that the government and the gas industry should do more to promote gas safety. Three quarters also thought that it should be the gas suppliers that provided information on how to use gas safely. Nearly three quarters of those surveyed felt they were well or fairly well informed how to use gas safely.

It is also reported that Ofgem have received very few complaints from customers about Transco’s emergency service. The total number of complaints sent to the Gas Consumers Council related to the Transco emergency services has reduced from 256 complaints during 1998 to 230 during 1999. Within the total number of complaints received there were complaints specifically related to the following four topics: Appliance/supply disconnected, no attempt to make repairs, unsatisfactory repairs within 30 minutes and delay in restoring supply. Complaints related to these four topics fell from 161 in 1998 to 145 in 1999.
In the annual customer service survey carried out by Transco, during April 1999, it revealed that the overall satisfaction rating with the call, made to either report a gas escape or a faulty electronic token meter, and the knowledge and ability of the operator was around 94%. A report of the survey was included in the August 1999 edition, issue 52, of Transco News. A copy of this article has been included in Appendix I. The independent survey was of 500 people who had used the emergency service and 500 who had used the repairs help line which is operated by Mondial on behalf of Transco. It shows a very high satisfaction level with the telephone emergency service and with TCP’s 92% said they were satisfied with the TCP’s visit. Of the small number (7%) dissatisfied with the outcome of the TCP’s visit the main cause was that the gas was switched off. They then needed to call in a follow-on CORGI installer. The overall satisfaction level with the repairs help line was 80%, which is said to be encouragingly high. The difficulty of contacting CORGI installers, by phone, appears to have increased. This has an impact on customers’ confidence that the work would be done. It shows up as a reduction in customer satisfaction levels, in the survey, with the quality and efficiency of CORGI installers work.

The Transco survey results are also an indication of the high level of success achieved by Transco when dealing with the gas emergency service that they provide. It is understood that there are over 100,000 calls to the emergency service to report incidents of fumes and that there are in excess of 300,000 appliances turned off annually by TCP’s following reports of gas escapes and fumes. In the BG plc Annual Report and Accounts for 1997 it records that during the year 250,000 callers were given details of their local CORGI installers.
4 PROCEDURES FOR RESPONDING TO A PUBLIC REPORTED ESCAPE

4.1 TRANSCO PROCEDURES

Reports of gas related escapes, made by members of the public, are received by Transco telephone operators who are located at Emergency Call Centres at Gloucester, Hinckley and Killingworth. Each Centre has responsibility for its respective part of the country. [The National Emergency Number is 0800-111-999.]

Call Centre operators are required to obtain the following information and provide appropriate safety advice (Guidance Notes to Regulation 7 of GS(M)R1996):

a) Establish the precise location of the emergency (including the address, date, time, postcode and telephone number of both the escape location and the person reporting the escape where different).

b) Establish whether the leak is controllable (that is on the consumer's side of the emergency control adjacent to the meter) or uncontrollable (that is on the transporter's side).

c) Advise callers how to turn off the gas at the emergency control, and confirm that this has been done where practicable; except where the emergency control is in a cellar or confined space, where there is also a smell of gas, when the advice may be not to enter but to vacate the premises.

d) Advise callers to open doors and windows to ventilate the property and warn them against operating any electrical appliances, in any way. They should also be advised not to smoke and to avoid using anything that could be a possible source of ignition.

e) Establish whether there are fumes (escape of CO into the room) and, if it is possible, to identify the appliance; and

f) Advise callers where an escape of CO is suspected of the immediate steps to be taken, namely to turn off all appliances which may be emitting CO and not to use them until they have been checked by the emergency service provider.

4.2 OVERSEAS PROCEDURES

At a GRI workshop on CO issues held at Advantica on 30/31st of October 1997 it was reported that only in Belgium and Great Britain, following an emergency fumes related call-out, was it necessary to call a different organisation to the emergency service supplier in order to obtain any servicing/repair work to an appliance. Additional countries represented were Canada, Denmark, France, Holland, Italy, Spain and the USA.

The emergency response process includes dealing with CO alarm calls and the provision of information related to CO incidents. These two topics are covered in more detail in the remainder of this section.
4.2.1 The U.S.A.

In April 1992 a standard for CO alarms was introduced. Following the issue of the standard their use in domestic properties was encouraged. The use of these detectors became increasingly widespread and as a result calls to the emergency service providers, due to CO alarm activation’s, increased dramatically. In a large number of instances, upon investigation, there was either no measurable levels of CO, or any hazardous levels of CO found. During 1995 a series of revisions to the standard were introduced to address the problem of “nuisance calls”.

In the U.S.A. the standard for CO alarms (UL 2034), introduced in 1992, advises that if an alarm activates the local fire service department or emergency service should be called for assistance (Reference 14). User instructions accompanying some alarms also suggest that the local utility company may be called. In the U.S.A. there are approximately 3000 gas companies and no national gas emergency service. It is therefore up to each company to operate its own emergency service. This may possibly lead to conflicting advice being given on the need for evacuation and ventilation of the property by different organisations. It also leads to difficulty when obtaining accurate national CO incident statistics.

There was perceived to be a high level of CO alarm activation’s in the U.S.A. by the mid 90’s. This also resulted in increased costs for operating the emergency service. Since this period work has been started to check the operation and improve the performance of CO alarms used in the country. This work also assisted with the required improvements to the CO standards. Improvements were needed as it has been estimated that over four heating seasons nuisance alarms have been responsible for 70 - 90% of the calls made for assistance. Survey work was carried out both within the USA and in Canada. In a survey of four cities in the U.S.A. and Canada there was found to be an overall activation rate of CO alarms of 30% per year (Reference 15). The rate varied widely from 59% in Brooklyn to 12% in Atlanta. Of the other cities Toronto recorded 28% and Oklahoma 24%.

*Note: It is understood that it has now become mandatory for homeowners to fit a CO detector in Metro-Toronto.*

It has been estimated that nearly 68% of the time spent on alarm calls by the emergency service and about 76% of the time spent dealing with inquiry calls was on properties with a maximum unventilated CO level of 0 - 9 ppm. (Inquiries are defined as non-alarm initiated resident requests for CO investigations.) About 92% of both types of calls were measured as below 35 ppm. Only about 3% of the time spent responding to unventilated alarm calls was to residences with measured CO levels over 100 ppm. The average time spent on attending alarm calls ranged from about 36 minutes for calls with 0 - 9 ppm CO to about 48 minutes on calls with higher than 35 ppm measured at the site (Reference 14).

The Gas Research Institute is carrying out further research projects within the U.S.A. and Canada in order to continue performance testing of CO alarms and to continue analysis of the emergency response data.

4.2.2 Within the European Community

A report sponsored by the Consumer Safety Unit of the DTI (Reference 16) gives details of statistics on CO incidents that were obtained from EU members. It gives brief details of the organisations able to provide such information along with contact details. The involvement of police and fire departments is not uncommon. There also does not appear to be any formalised procedures common to all EU countries for collecting or reporting CO incidents.
To obtain greater detail of the CO reporting procedures in particular a questionnaire was issued. Responses are shown in tabular form in Appendix J. Replies from 8 countries were obtained. Although responses are varied it does indicate that in most of the countries who replied they did promote CO awareness to customers. Often there was no local responsibility to collect CO incident data and it was not always the local gas company who carried out any incident investigations. In only 20% of the countries were the CO statistics thought to be complete and accurate. Data collection and reporting was variable and in some instances the reports were obtained from the local police/hospital/fire brigades.

4.2.3 Outside of Europe

In Canada a CO fatality is investigated by the Coroner’s Office. Both the fire department and the police would record CO incidents that they attend. Incidents resulting from malfunctioning appliances would be investigated by the local gas authority/company.

In Japan gas companies are required to report CO poisoning incidents within 48 hours of initial notification of the incident. Then within 30 days the company has to send a detailed report to the regional bureau of the Ministry of International trade and Industry.

In Russia domestic CO incidents are dealt with by the local authority or militia.
5 GUIDANCE NOTES FOR AN EMERGENCY RESPONSE ENGINEER

Within “TRANSCO STANDARD EM 71- TRANSCO ESCAPE PROCEDURES (MARCH 1997)” are guidance notes for use by a Transco Emergency Response Engineer. Appropriate parts to this report are given in Appendix B. The procedures are summarised below:

On attending a fume related call-out, the Transco Competent Person (TCP) carries out a site investigation. Where injury or fatality has occurred, Transco incident procedures will be implemented.

The initial site investigation may reveal evidence of fumes, for example the spillage of combustion products. Such evidence includes discoloration of appliance(s) or the areas surrounding the appliance.

In the case of suspected fumes, where evidence of a problem is noted, the TCP shall ensure that the suspected appliance(s), is/are turned off and capped, rendering it/them inoperable. Also that the appropriate safety warning label or labels are fitted. The TCP is then required to leave appropriate safety advice with the consumer.

If the initial site investigation reveals no evidence of fumes, but concern still exists, the TCP shall ensure that the appliance(s), is/are turned off and fitted with the appropriate safety warning label(s). Once again, the TCP shall leave appropriate safety advice with the consumer.

In the event of turning off, disconnection or capping of an appliance or installation, an appropriate safety label will be fitted and the consumer will be advised to have the appliance or installation repaired by a CORGI registered installer. Help in contacting such an installer can be provided via the Appliance Repair Hotline.

Following the use at a site of a “DO NOT USE” warning label a procedure has been put in place to send a reminder letter to the occupier of the site, and/or landlord as appropriate, reminding them of the need to have the work carried out using appropriately qualified installers. A copy of the letter has been included in Appendix F.
6 FACTORS AFFECTING THE ACTIONS OF THE TCP

The procedures outlined above are intended to ensure the safety of the consumer(s) involved is paramount. In particular, the procedures are written on the assumption that the caller is not necessarily sensing fumes and may well be confusing the smell of gas with that of fumes. Hence the advice given by the Transco Call Operator to open doors and windows in order to ventilate the property. The consumer is also advised to turn off all appliances that may be emitting fumes and to isolate the gas supply at the emergency control (valve). Details of the Customer Advice given by the call centre staff are given in Appendix B.

As a consequence of this initial advice, the TCP tends to arrive at a property with no appliances operating and without any appreciable build-up of fumes present, due to ventilation of the property. If the consumer was unable to identify the specific appliance involved in producing fumes, the TCP will potentially have a number to examine. One of the first actions of the TCP is to isolate the downstream pipework and to monitor and test it for soundness. If any appliances had still been in operation they would be turned off as part of this test. The TCP would therefore not be required to relight any appliances.

The TCP is trained to identify visual evidence of combustion product spillage from appliances. When there is evidence of fumes the appliance is turned off and capped. The appropriate safety-warning label is then fitted. At locations where fumes cannot be identified, but concern still exists, then the appliance would be turned off and the appropriate safety warning label fitted. If other gas appliances do not provide any concern then the TCP is able to relight them. They do not, however, carry out a full operational check of such appliances. The customer is then advised of the need to call in a CORGI registered gas installer to carry out a more detailed examination of any appliances that have been labelled. The customer is also provided with appropriate safety advice. Where the TCP encounters customers with special needs (e.g. disabled, vulnerable or with language difficulties) the TCP would be expected to assist the customer and make any calls on their behalf.

Details of the labels used by the TCP are given in Appendix B and copies are shown in Appendix F. CORGI also uses the Immediately Dangerous and At Risk classifications. They are further described in Appendix C.

Such procedures are, in particular, drafted to assume a member of the public senses fumes either visually, via the nose or both. With a growing number of domestic carbon monoxide alarms becoming available and being installed in the home, an audible alarm signal from such devices is now prompting consumers to report escapes.

As in the case of escapes sensed by the nose, the conditions prompting a domestic CO alarm to trigger may be also transitory. BS 7860 requires, that once triggered, an alarm will reset itself within 6 minutes when returned to “clean” air. The proportion of CO alarms installed in British homes, to date, that conform to BS7860 is not known. Alarms are now widely available from various sources including water utilities, British Gas and DIY stores. British Gas offer units in association with other services they provide and these are all to BS 7860. It is understood that nearly half a million units have been sold from this source but as more than one may be fitted per property it is unclear how many homes have fitted CO alarms.
7 CONSUMER CONCERNS

At a seminar - Dealing with Reported Gas Escapes, held on 17th March 1999, Mr C Chemney of the Gas Consumers Council (GCC) presented a paper titled "The Consumers Perspective". He stated, when talking of gas consumers, "Many do not understand why they have to suffer the inconvenience and stress caused by the isolation of an essential appliance or installation. They wonder why the emergency service provider does not do more than merely turn them off". He then raised the following points of concern:

a) Customers expect an expert view from the gas emergency service and do not expect to be left without the use of an appliance. They do not expect just a visual inspection to be carried out.

b) The GCC has concerns over the use of the "Concern for Safety - Do not use" label and notice. It understands the intention that the TCP will use this procedure when he/she cannot confirm an appliance is safe to use and in instances when there are no visible signs of a defect, but the customer insists there is something wrong. As a TCP is generally going to carry out a visual examination it is unlikely that he/she will ever be able to confirm that an appliance is safe and so will leave it turned off.

c) Customers do not understand how the TCP can label the appliance "Concern for Safety - Do not use" yet the CORGI gas installer that the customer employs can confirm that it is safe and indeed in many cases, without the need for remedial attention. This conclusion could have cost the customer £50 to obtain.

d) Why the TCP cannot confirm or otherwise the existence of CO.

e) Why the TCP cannot clearly identify if a defect exists.

f) Whether the emergency service is just creating a service for other CORGI registered installers.

g) The Gas Industry Unsafe Situations Procedure is used by CORGI registered gas installers to identify ID or AR situations. A less serious group of faults are identified and described by CORGI guidelines. These are classified as substandard. The GCC believe that the TCP's are not deemed as being competent to identify such categories and are concerned that an incorrect label could be used which would downgrade the seriousness of the defect.

h) The GCC pointed out that outside commentators and gas safety awareness groups have advocated the use of hand held CO detectors and ask why TCP's do not carry and use them. If their use identified a potential defect the follow up CORGI engineer would have had confirmed that at the time of the incident the appliance was definitely not operating satisfactorily.

i) The GCC point out that a better system may be to advise customers to phone CORGI gas installers directly, rather than use the national gas emergency number, if the smell disappears when they turn off the gas meter or appliance. This may result anyway due to, over time, customers learning that the emergency service engineer is only likely to isolate appliances/installations and that he/she cannot identify if a defect exists.

j) The GCC acknowledges that the current emergency service provides less clear identification of appliance malfunction to that given before privatisation. It sees no reason why the current service cannot meet the high expectations that customers have, all be it at a cost that the industry must be prepared to bear.

Note: Some of the points raised above were also applicable in the “integrated” British Gas prior to privatisation.
8 INSTRUMENTATION OF POTENTIAL USE TO AN EMERGENCY RESPONSE ENGINEER

The use of instrumentation by an emergency response engineer to detect the presence and source of fumes, in particular carbon monoxide, has been limited. In particular Transco TCP’s do not make use of CO measurement devices for the checking of indoor air and for checking installations during fumes incidents. A report has been produced as part of the Joint Industry Programme (GRTC R3003) which gives details of CO detection equipment available on the UK market. It gives details of Ambient Air CO Monitors and Data loggers and Hand-Held Flue Gas Analysers. It is apparent and generally agreed that the costs of purchasing a CO analyser, whole life costs, their usability and size have dramatically improved, compared to ten years ago. Nevertheless, the development of a BS Code of Practice (BS7967), aimed at agreeing a procedure for using this instrumentation, has yet to be agreed within the industry.

Problems for the use of such instruments, during fumes investigations, are thought to be largely due to the possibility that making measurements within a property, and assuming responsibility for correctly interpreting and acting upon such information, can lead to a failure to leave the occupants and property in a safe condition. In addition, the scope for taking comprehensive measurements remains limited, given the maximum attendance time of 30 minutes.

Instrumentation is used in the USA to provide an indication of the presence of CO in a property and helps to ensure an emergency response engineer is not exposed to excessive levels.

The use of instrumentation to determine the source of an escape within a property requires a more rigorous assessment of the premises. The current instruction is to conduct a visual examination of all appliances and look for signs of sooting in the close vicinity. This may or may not identify a malfunctioning appliance. Certainly, the production of CO by an appliance whose combustion air supply is severely depleted in oxygen will tend to show signs of sooting, but CO can still be generated in significant quantities by an appliance whose air supply has not been so depleted. In this situation, an appliance will look clean and give no indication of excessive CO formation.

The following sections outline the types of instrumentation available to an emergency response engineer both for identifying an unsafe atmosphere and an appliance whose performance is unsatisfactory and may be producing CO.

8.1 ATMOSPHERIC CO SAMPLING

Equipment exists from a variety of manufacturers which samples the atmosphere using an internal pump and provides a CO concentration reading in ppm via an LCD display. Such instrumentation tends to use an electrochemical sensor with minimal cross sensitivity to hydrogen.

8.2 COMBUSTION PERFORMANCE TESTER

Although the performance of a gas appliance is closely related to the composition of its flue gas emissions, and standards for flue gas analysers have now been agreed in BS7927:1998, no such agreement yet exists for a procedure whereby appliance performance is accepted to correspond with, for example, the ratio of the concentration of CO against the concentration of CO$_2$ in the flue gases. A code of practice which will cover the use of such instruments is currently in preparation and a further part of the Joint Industry Programme work is to produce a best practice procedure to be employed when reconnecting gas appliances. This will include the potential use of CO measuring instruments.
British Gas Services Ltd have been conducting combustion performance testing of appliances (in general boilers) for some time. Their adoption of the CO/CO$_2$ criteria was based upon extensive field trials carried out over a five year period and which indicated a boiler performs satisfactorily if the performance ratio <0.004, where

$$\text{Combustion Performance Ratio} = \frac{\text{Volume of CO in flue gas, } \%}{\text{Volume of CO}_2 \text{ in flue gas, } \%}$$

If the ratio lies between 0.004 and 0.008, a service engineer is required to strip and clean the boiler, and if the ratio exceeds 0.008, the engineer should strip and clean and also identify a fault with the appliance.

As stated previously, the procedure for obtaining measurements to calculate a boiler's performance ratio using specified instrumentation has been adopted by British Gas Services. The justification for the usage by British Gas Services lies in the extensive evidence gathered over a seven year period. This followed field trials and analysis of findings by Advantica (References 17 & 18).

The use of flue gas analysers to determine the combustion performance ratio of other gas appliances, e.g. cookers and gas fires, and their role in identifying potentially dangerous appliances, requires further work with the gas industry. A BSI panel has recently been convened to develop procedures for the use of CO and flue gas analysers with such a role in mind.

It has been suggested that such instruments may be suitable for the measurement of spillage, which has been typically indicated in the past by the use of items such as smoke matches. Such use would need careful appraisal before any changes to current working methods could be supported.
9 DISCUSSION

The operation of the emergency service and the speed of response of the TCP in attending site does not generally appear to receive any criticism. It is a well planned operation that meets the requirements placed upon Transco. The TCP is also well equipped with labels, forms and leaflets to enable them to document what is noted on site and inform the customer and any follow-on installer of this information. The reasons for this method of working have been previously described, along with the priority to safeguard life and property. Although the TCP now leaves remedial work to workers from a different company the method is very similar to that operated within the “integrated” British Gas. Where needed the TCP can help the customer to organise an installer to call. It is then up to the customer to have any work done to standards and costs that are acceptable. There is now a wider choice available to customers for having any servicing work carried out or for the provision of insurance backed servicing and maintenance of their gas systems.

One area which has been commented upon, however, is that of not “closing the safety loop”. For example, in section 2.10, if, following the visit of a TCP, the consumer receives medical treatment for CO it is up to the consumer to inform Transco. This introduces the chance that some incidents may not be correctly identified and investigated. There is no follow up by Transco, at a later date, to verify the outcome of any medical check-up following the recommendation to see a Doctor. In response to most CO incidents the supplier will arrange for a CO incident site investigation and the production of a CO investigation report that is usually sent to the Area HSE office. Transco have no rights to see this report and would generally not be aware of any conclusions from the site investigation. There is no linkage between the initial report and the visit of the TCP with later actions. Transco is not aware of the outcome of the suppliers investigation and if any appliance or installation repairs were carried out. Although not part of Transco’s remit it may be considered desirable to close the safety loop and go back to customers to obtain further details of what problems were found and how and by whom they were resolved. Such data may then prove of value to organisations such as CORGI and British Gas Services.

The Transco survey, discussed in section 3, could also be extended to “close the loop” by asking users of follow-on CORGI installer’s their satisfaction levels and views. This might provide Transco with information to judge whether the service provided was working well or could be further improved. For example at present there are no customer service levels set for the installers on the database and issues such as response time could be assessed by the survey. Criticism of the time that some customers are left without gas before an installer starts any remedial work have been made and so the introduction of response times may well serve to address such problems.

There is clear legislation indicating responsibilities for dealing with gas emergencies and the method to communicate emergency calls within the industry. The use of voluntary “Standards of Service” for attending emergencies, which are not covered by legislation or licence conditions appears to be an area of potential criticism. The national free phone gas emergency telephone number is well publicised and the majority of the public are aware of it. The situation for piped natural gas is well prescribed via GS(M)R; the requirements for LPG and other gases are set out in GS(I&U)R, although with some differences in the manner of approach.
The area of concern appears to be the level of work carried out by the TCP. This was identified by the GCC and listed within section 7 of this report. Within the time and cost constraints placed upon the TCP and using the limited equipment available there appears to be little more that the TCP can do than at present. There is currently no evidence that there would be any benefits obtained by extending the time the TCP spends on site. The priority is to safeguard life and property and this is accepted to be the driving force for the actions of the TCP. The need to identify the source of the CO/fumes may be of benefit to the customer and to be of reassurance to them, but the decision has to be made as to who pays. The customer concerns relating to the confirmation of CO were also described by the GCC and these are listed within section 7 of this report. An enhanced fumes investigation and fault finding service may be ideal for the customer and save them money, but there is some evidence to suggest that this may discourage them from having appliances properly and regularly serviced, in some cases. If the customer cannot afford servicing costs then it is not for the emergency service provider to help out. It is up to other government agencies to deal with matters of hardship. The emergency service provider is there to deal with emergencies.

Before the break up of the “integrated” British Gas it was possible for the organisation to make use of other skilled gas fitters and engineers to assist with CO emergencies and to identify and rectify faults on appliances/installations. Although these were from different departments within the company they generally had a close working relationship. This is no longer the case and the TCP has no such assistance. The skills required by the customer are not available from the emergency response procedures and the customer now has the responsibility to rectify their own appliances/installations. This has come about in the drive to reduce gas costs to the customer by the setting up of competition by providing a choice of supplier and from the need to reduce costs within gas servicing companies. The TCP workers are qualified to carry out their job function, but are no longer skilled in gas appliance servicing. They have been required to change their skills to the emergency role related to the gas transportation system, but as there is no financial need to maintain unrequired skills there have been no alternatives to this option.

The operation of the national gas emergency service is at present carried out by Transco, with the cost of running the service passed through to the gas shippers, although it has been proposed that the emergency service could be funded by a levy on all piped gas customers. Such a change may provide the opportunity for the provision of CO measuring equipment to fumes investigators. However, before this could take place, there would need to be clear evidence of the benefits, such as improved gas safety, and agreement concerning the methods for employing such equipment. Transco understandably are reluctant to make any expenditure on providing CO equipment available to TCP’s whilst there are many aspects of the equipment’s use still to be resolved. For example, such equipment has to be shown to be of benefit and, in particular to improve gas safety. Also, its use has to be confirmed for the different gas appliances in use and acceptable limits regarding safe/unsafe situations have to be agreed. It is also understood that Transco is not directly required to provide such equipment by current licence conditions. Nevertheless other safety legislation does require employees to be competent, adequately trained and appropriately equipped. Whilst Transco are not committed to using CO instruments, this decision may require reassessment in the future due to changes in standards, technological developments and future research and also to meet the requirements of safety legislation.
The ideal way to reduce the number of CO incidents and CO calls to the national emergency telephone line is by regular annual inspections and servicing of all gas appliances by a CORGI registered gas installer. This cost is carried by the customer or landlord who is responsible for the safe use of his/her appliances. Whereas there is now legislation to regulate gas servicing in the rented sector there is only good practice advice given to owner-occupiers of the need to carry out annual servicing. Those responsible owner occupiers who typically do have their gas boiler serviced annually may not get all their other gas appliances serviced. Comprehensive analysis of national servicing is not available, but it is considered that perhaps one third to one half of all central heating boilers are annually serviced. This would be about one third of the owner occupied market and almost all of the tenanted homes. Gas fires and individual water heaters are likely to be serviced less frequently than the boilers. For gas fires this would probably be about 10% to 15% of the owner occupied market and almost all of the tenanted homes. Cookers are likely to be serviced the least frequently of all the appliance types. Whether this attitude to servicing is due to cost grounds, in the owner occupied market, or the perceived view that the appliances do not require servicing, or that due to the reduced use of these appliances there is less need, is unclear.

The MORI survey carried out for the HSE during April 1999 on gas safety issues asked the 1000 interviewees about their servicing attitudes. The data was weighted to the known profile of the population. The results of some of the survey findings for those who owned the following gas appliances types are shown in Table 1:

<table>
<thead>
<tr>
<th>Appliance type</th>
<th>Servicing periods At least once a year</th>
<th>Less than once a year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler</td>
<td>81%</td>
<td>10%</td>
<td>3%</td>
</tr>
<tr>
<td>Cooker</td>
<td>29%</td>
<td>14%</td>
<td>44%</td>
</tr>
<tr>
<td>Fire</td>
<td>64%</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>Water heater</td>
<td>74%</td>
<td>8%</td>
<td>9%</td>
</tr>
</tbody>
</table>

The results are broadly in line with the comments contained within the previous paragraph, but do show a higher level of annual servicing than is expected. Without a comprehensive survey it is unclear whether the MORI survey is representative of the servicing profile within Britain.

The introduction of domestic CO alarms is aimed to provide an indication of a fault on a gas appliance/installation and to increase customer safety. The MORI survey carried out for the HSE during April 1999 on gas safety issues indicated that 12% of the interviewees had a CO alarm. This proportion is likely to increase with the widespread availability of the product and the expected cost reduction from mass production techniques. A drawback to the use of CO alarms is that, for example, some customers who are willing to annually service their car do not necessarily consider it essential to service all of their gas appliances. Having fitted a CO alarm it may be viewed as similar to the installation of a fire alarm. Nothing is done until the alarm goes off! Servicing of some or all of their gas appliances may be deferred, with the customer confident that any dangerous fault will be indicated by the CO alarm.

In the situation of a CO alarm indicating a fault an investigation may show no visual problem with the appliances. There is no on-site approved method to check the operation of the alarm and this is of concern. Reference can only be made to manufacturers instructions for guidance. The use of BS approved units is recommended and the replacement of the alarm with a kite-marked device may be required.
In the United States CO alarms have been in use for longer than in Britain. The introduction of CO alarms has led to high numbers of calls to their emergency service when the alarm has activated. This has not always been proved to be due to CO from a gas appliance. The sale of such alarms, which were not to any approved standards, has also been seen to lead to increased calls by customers to help lines and emergency services. This has become a strain on services.

The use of hand held CO detectors when investigating CO incidents has to be thought through in detail to gauge the effect on customer safety. There are various manufacturers who can supply such equipment for hand held use within rooms, as a clip-on operator safety device and for use within gas appliance flues. The use of CO instruments is not at present essential when servicing gas appliances. British Gas has experience of the use of a performance tester to gauge the type of service a gas boiler requires. This is only for boilers with copper heat exchangers and was introduced after considerable research by the company. For other types of appliances there are also opportunities to use these instruments. The instruments cost in the region of hundreds of pounds to buy and there is a need for regular servicing and calibration to be carried out. (The range and cost of CO detection equipment available in Britain is the subject of a separate report within the CO JIP). It is not possible, at present and without further work, to show that the provision of such instruments to all TCP’s would have a measurable effect on safety. It can be noted though that such instruments are becoming more common in use, their cost is becoming more acceptable to an installer and that their use is therefore becoming more expected.

A potential benefit from the use of CO instruments to the TCP would be where there are no signs of spillage. The use of the CO instrument might indicate an unsafe appliance producing high levels of CO and/or unacceptably high combustion performance ratios. This may improve customer satisfaction levels as the unsafe appliance could be identified and serviced faster, without the need for all the other gas appliances to be isolated.

The use of CO instrumentation, by a TCP, during a fumes investigation would run the risk of creating a false impression with the customer that all is well. It is only a point measurement in time (not a typical indication to the level of CO the customer is exposed to) and provides snapshot information of what could be a transient condition. Whilst the use of instrumentation can be considered useful, it does not confirm that the appliance and installation is fault free. Conditions may well change and could deteriorate after the TCP has left site. In addition the situation within a property can be affected by external ambient CO and by the CO produced within the exhaled breath of occupants who are heavy smokers. A further problem is that appliance CO production can be variable due to reasons such as changes in internal and external conditions. With changes in external weather conditions, acting upon the flue, it is possible that the correct operation of the flue may be weather dependant. Only under adverse conditions (typically cold days which may be calm or very windy) may the flue fail to operate correctly. Additionally some appliances produce above normal levels of CO when operated from cold. The use of incorrect flue/ventilation arrangements can also lead to intermittent CO emissions. Only a thorough check of an appliance and an installation will prove that it is safe to use. Unfortunately testing under “normal” weather conditions some time after an incident may not immediately identify a problem. It is also essential to check all the appliances, including oil and solid fuel ones, as it is not uncommon to find that, due to lack of servicing, more than one appliance in a property is a hazard. The time to carry out all this work can be in excess of 30 minutes. For example a fire would need to be removed and the flue and flue terminal checked to ensure it is to appropriate standards before an installer could say it was safe to use. This is not a job that can be carried out swiftly. Additionally once an appliance has been worked upon there is a need to check it meets many safety requirements before it can be switched back on.
Additional support for perhaps extending the TCP’s time on site is also provided within Section 7, concerns b and c, where it is felt that the current time limit may only permit a visual examination of the appliances to take place. Full and thorough investigations would raise costs and have implications for TCP’s registrations with CORGI. Such changes may not be achievable or desirable, within current guidance, for what is intended to be a front line emergency service.

It has been suggested that one possible use of a CO measuring device might be when a call to the emergency service has led to a TCP arriving at site, but without obtaining entry. If the customer has collapsed and is not visible from outside the property a measuring device inserted through the letterbox may provide an indication of the presence of CO and the need for urgent action. The call centre advice given to the reporter of the incident is for the property to be ventilated. This can be visually checked on site and when it cannot be confirmed, the use of a measuring device, via the letterbox, may indicate any dangers to the TCP that are within the property.

There is now increased availability of different types of CO measuring equipment. New technology is providing advances in equipment, but to date there is no proof as to how these instruments will assist a TCP. If a TCP were to use portable CO detectors it would possibly extend the time needed to be spent on site. This would probably require changes to the licence agreement. To justify such a change it is suggested that further work and trials may be required to evaluate the use of CO measuring equipment during fumes investigations. Only by such effort can their benefits be assessed and the amount of time required for their use be estimated. It is unknown if Transco have evaluated the potential use of CO instruments by TCP’s and the effect this would have on the time needed on site. It would be expected that Transco should have sufficient operational experience to know what can or cannot be done within the thirty minutes.

Consideration is being given to the possibility of using CO detection instruments to identify any sources of CO in a property. A Flue Gas Analyser Panel, working within BS7967, is currently involved in the development of acceptable procedures for the use of such instruments. In time such procedures may come into use. At that time it may become appropriate for Transco and other parties to re-evaluate the use of such equipment by TCP’s.

If more time were spent on fumes incidents yet there was a need to maintain the existing level of emergency service additional TCP’s would be required. During investigations appliances would need to be lit and operated until they were at normal operating conditions before checks could be carried out. (As the customer is advised to ventilate the property and turn off appliances then the site should be clear of products when the TCP arrives at site.) Even then the TCP could only state that at that point in time the appliance was safe. There would still be a need to check the flue, ventilation and other safety checks required by CORGI when commissioning an appliance. Appliances may not have any approved methods or test values for assessing their performance using a CO detector and so no test work could be carried out on a cooker grill, for example. Thus the customer would still be advised to call in a CORGI registered gas installer. There is a need to provide clear information to the follow-on engineer. This is achieved by the use of labels and a report which is left at the property. The procedures adopted when carrying out a follow-on investigation are to be covered by a separate report within the Joint Industry Programme On Carbon Monoxide Issues.
Once custom and practice became established it would be hard to resist calls for the use of CO detectors by all CORGI registered gas installers and TCPs when relighting appliances or commissioning any gas appliance. This would require considerable effort to produce procedural standards for using the equipment, acceptable test methods for testing all appliances and the fitting of test points to appliances/flues to enable a probe to be entered. At present CORGI operatives do not have to use such equipment. A register of those equipped with such equipment and have the competence to carry out meaningful tests was established by CORGI during 1999. This was felt necessary due to the publicity generated and the perceived benefit in their use (Appendix K). To be entered onto the register the installer must hold competency certification in the areas of gas work likely to be encountered, must be qualified to the City & Guilds Incident Investigators qualification, or its equivalent and possess analysers which meet BS7927, including at least one unit which is able to sample in the range 100 to 10,000 ppm CO. It is thought that the number of installers who can meet all the necessary criteria is likely to be only a small number of the total number of registered installers who carry out appliance servicing work.

It has yet to be proven if there are implications from informing an occupant of measurements taken from CO analysers. In legal cases it could be used as evidence of exposure and cases have already been taken up where injury has occurred and the production of CO by an appliance was used to show servicing was insufficient. If the analyser was used to state all was well there could also be litigation if at a later date injury from CO took place at the property. There are understood to be no published details, for domestic situations, of acceptable levels of CO in Britain. This would have implications for the TCP and also for the judgement needed of any levels of CO measured within a property.

The TCP would also be required to advise the customer of the medical treatment they required due to the CO reading obtained from the CO analyser. There would have to be a suspicion of COHb in the occupants’ blood if the analyser recorded CO levels and so the competence of the TCP to decide on medical matters would need to be clarified.

There are some portable CO detectors with a logging facility available. These can be of assistance where no indications of any problem can be found by a TCP and where the customer still has some concerns for their safety. The analysis of the data produced by such devices may be of assistance in confirming intermittent CO production. Their benefit requires investigation and proving during a field trial.
10 CONCLUSIONS

a) The operation of the emergency process to calls relating to fumes within Britain, following the reorganisation of British Gas, is operating efficiently. In particular, there is a widespread satisfaction with Transco’s 24-hour freephone gas emergency service and the speed of response to an incident by the TCP’s. However, there are missed opportunities, and reservations expressed by some that the TCP should have a greater diagnostic role in identifying potentially dangerous appliances, which could lead to an improvement in the follow-up service. Although beyond the scope of the current service such opportunities may include:-

- Using the call centre staff to contact consumers after the visit of a TCP to establish whether remedial work was carried out, and by whom.

- Improving the performance standards of installers on the Mondial database, such as declaring a maximum response time.

b) The costs of purchasing a CO analyser, its whole life costs and ease of use have dramatically improved, compared to ten years ago. In addition, the development of a British Standard Code of Practice for using an analyser is moving towards the acceptance of such instrumentation for assessing installation performance and safety.

c) The benefits of the use of CO instrumentation during fumes investigations have become an area of debate. In order to determine whether CO instrumentation could significantly improve the response to a fumes related call-out work would be required to demonstrate the benefits of using such equipment.

d) There is a need for a greater understanding of the health effects of CO.
11 REFERENCES


6. The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995, No 3163. A government Statutory Instrument which is available from the Publications Centre, PO Box 276, London SW8 5DT and good booksellers.


8. Dealing with reported gas escapes - Safety recommendations The Institution of Gas Engineers document IGE/SR/20 Edition 2, Communication 1650, ISSN 0 367-7850. It is available from the I.G.E., 21 Portland Place, London W1N 3AF.


10. Essential Gas Safety - Introduction to the Gas Installer Manual - Domestic Series, ISBN 1-902632-00-1. This is a CORGI manual which is available to installers.

11. Incident reporting and investigation procedure - Transco internal standard ref. T/PR/INC1 - revised December 1997


15. The US experience - Notes and presentation material prepared by SJ Wiersma, Program Leader, Health & Safety at the Gas Research Institute for the Seminar on Domestic CO Alarms held at Advantica on 14th September 1999.
16. A study of the occurrence of poisonings from CO gas from domestic heating appliances in the EU - DTI/Pub 2685/5k/3/97/R - Consumer Safety Unit of the Department of Trade and Industry.


## 12 Glossary of Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>ACoP</td>
<td>Approved Code of Practice</td>
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<tr>
<td>ACS</td>
<td>Accredited Certification Scheme</td>
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<td>AR</td>
<td>At Risk</td>
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<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
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<tr>
<td>CORGI</td>
<td>The Council for Registered Gas Installers</td>
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<tr>
<td>COS</td>
<td>Company Office System</td>
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<tr>
<td>ESP</td>
<td>Emergency Service Provider</td>
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<tr>
<td>GCC</td>
<td>Gas Consumers Council</td>
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<tr>
<td>GS(M)R 1996</td>
<td>Gas Safety (Management) Regulations 1996</td>
</tr>
<tr>
<td>HSC</td>
<td>Health and Safety Commission</td>
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<tr>
<td>HSE</td>
<td>Health and Safety Executive</td>
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<tr>
<td>ID</td>
<td>Immediately Dangerous</td>
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<tr>
<td>IGE</td>
<td>The Institution of Gas Engineers</td>
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<td>OEL’s</td>
<td>Occupational Exposure Limits</td>
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<tr>
<td>Ofgem</td>
<td>Office of Gas and Electricity Markets</td>
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<tr>
<td>PGT</td>
<td>Public Gas Transporter</td>
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<td>PRE</td>
<td>Public Reported Escape</td>
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<tr>
<td>RIDDOR</td>
<td>The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995</td>
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<tr>
<td>TCP</td>
<td>Transco Competent Person</td>
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<td>TSS</td>
<td>Transco Specialist Support</td>
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<td>TTS</td>
<td>Transco Technical Support</td>
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APPENDIX A INFORMATION RELATED TO CO ISSUES

A.1 GAS SAFETY (MANAGEMENT) REGULATIONS

Regulation 7 specifies the requirements for the emergency response procedures. Transco have been appointed the emergency service provider for the British gas network by current PGT’s. (This means that Transco carry the full cost of running the service within their companies operating costs). At some stage this role could be carried out by an alternative organisation, if they so wish, but currently Transco has maintained the role that it carried out before the reorganisation of British Gas.

Contact with the public is via a continuously manned national free phone telephone service answering calls received on one unique telephone number. The number is for the reporting of an escape of gas from a network or from a gas fitting (this includes a reference to an escape or emission of CO) supplied with gas from the network (this includes actual or suspected CO incidents, unintended fires and unintended explosions). When Transco is not responsible for preventing an escape of gas or of suspected CO it is responsible to inform the person/gas transporter who is responsible. The responsibility for investigating reports of an escape of gas which has, or was likely to have if from a network, resulted in a fire or explosion rests with the gas transporter. The escape may be from the network or from within a domestic property. The investigation of an escape of carbon monoxide, where death or injury notifiable under RIDDOR takes place, in order to establish the cause of the escape rests with the gas supplier. Anyone carrying out any of these investigations has to be deemed "competent" and a report of the investigation has to be sent to the HSE.

Regulation 7(5) states that where fumes escape from a gas fitting, supplied with gas from a network, the transporter responsible shall as soon as is reasonably practicable, after being so informed of the escape, attend the site. They are also required to prevent it, within twelve hours of being informed of the escape.

Guidance notes to Regulations 7(4) and (5) of the GS(M)R 1996 state that emergency service providers need to ensure that those attending incidents are registered with CORGI, and is in a class of persons approved for the time being by the HSE, if they work on gas fittings and installation pipework and that they have sufficient knowledge, appropriate equipment, practical skill and experience to deal with all foreseeable emergency situations. The priority when attending a PRE associated with fumes is to make the situation safe. The TCP also has to be competent in the safe reinstatement including checking all appliances for obvious visible signs of spillage of products of combustion when appliances are relit.

The guidance notes also state that if a TCP finds an appliance which is spilling products of combustion they should tell the consumer that further use of the appliance until it is repaired is an offence, and they should seek to persuade the consumer to allow them to disconnect it. An ESP has a duty under regulation 7(5) to prevent the escape of gas. Therefore, if the consumer refuses to allow the appliance to be disconnected, the ESP should exercise his rights-of-entry powers to deal with dangerous appliances. Additional guidance is given to label dangerous appliances and complete RIDDOR reports under regulation 6(2).

Regulation 7(15) requires that Transco (as a gas transporter) operate a system to notify suppliers of CO incidents where a death or injury notifiable under RIDDOR 6(1) has arisen as a result of an escape of CO or as a result of exposure to CO. The supplier is responsible for an investigation to establish, so far as is reasonably practicable, the cause of the escape and the accumulation of CO.
A.2 GAS SAFETY (INSTALLATION AND USE) REGULATIONS

Regulation 26(7)-(10) states that following work on a gas appliance a check is made of the flue effectiveness, combustion air supply, operating pressure and its operation so as to ensure its safe functioning. Then all practical steps have to be taken to notify any defect to the responsible person. The guidance notes state that checks are not required following the direct disconnection of an appliance.

Regulation 34 states that the responsible person/owner for any premises shall not use a gas appliance or permit a gas appliance to be used if at any time he/she knows or has reason to suspect that it cannot be used without constituting a danger to any person. The guidance notes states that this applies to unsafe rather than substandard appliances. (Substandard appliances are generally those which do not meet current installation standards, but which did meet the standards applicable at the time of installation.) The guidance notes also give specific guidance to how a gas installer should act upon discovering an unsafe appliance. He/she should notify the responsible person/owner of his concern and inform them that it is an offence to continue using the appliance until it is repaired. He/she has no legal power to disconnect. If he/she is unable to disconnect an unsafe appliance he/she should label it as unsafe and point out that its continued use is an offence. He/she is then required to notify the Gas Emergency Freephone number of the matter. The public gas transporter has powers to disconnect under the Gas Safety (Rights of Entry) Regulations 1996. Generally a report also has to be made under RIDDOR.

Regulation 37 covers the emergency procedures to be followed for incidents related to the actual or suspected emission of fumes from a gas appliance burning types of gas other than that supplied from a network. The guidance notes state that gas suppliers / emergency service providers are required to provide an emergency service phone service broadly similar to that provided by suppliers of network gas. This phone service will, for CO emissions, offer appropriate advice and guidance to turn off suspected appliances and to ventilate the property. It includes the advice to contact a CORGI registered installer to examine/repair the appliance before further use of the appliances. In this situation the procedure is different to that of networked gas as no competent person is required to be sent to the site to carry out any assessment of the property/appliances.

Appendix 1 contains an ACOP which lists the main points that need to be addressed by installers carrying out installation or safety check work. The appliance check list covers 8 areas and includes a visual check of the "flame picture" to ensure that it is satisfactory, or a measurement is made of combustion performance where appropriate. The domestic flue checks extends to a further 12 areas.

Appendix 2 contains guidance notes which give examples of potentially unsafe situations. In particular the likely causes of CO incidents are extensively described.

A.3 THE REPORTING OF INJURIES, DISEASES AND DANGEROUS OCCURRENCES REGULATIONS

Regulation 3 states that reporting to the HSE is carried out by the responsible person, this is defined as the person, for the time being having control of the premises in connection with the carrying on by him of a trade......... at which the dangerous occurrence..... happened.
Under Regulation 6 - Reporting of gas incidents is section 6 (1) it requires that whenever a transporter of gas through a fixed pipe system or an LPG filler, importer or supplier (other than by means of retail trade) of a refillable container receives notification of any gas related death or any major injury due to the gas he supplies he shall forthwith notify the HSE of the incident and shall within 14 days send a report of it to the HSE on an approved form - F2508G.

Under section 6 (2) whenever a CORGI employer has information which he concludes indicates a gas fitting/appliance or a flue or ventilation used with that fitting/appliance is or has been likely to cause death or any major injury by reason of inadequate combustion or inadequate removal of products of combustion he shall within 14 days send a report to the HSE on an approved form.

Schedule 1 contains Major Injuries, under RIDDOR, that could be reportable in incidents related to CO:

7c) any other injury requiring admittance to hospital for more than 24 hours
8) loss of consciousness caused by asphyxia or by exposure to a harmful substance
9) either of the following conditions which result from the absorption of any substance by inhalation:
   a) acute illness requiring medical treatment or
   b) loss of consciousness

Schedule 2 - Reportable Dangerous Occurrences include the following:

21) The accidental release or escape of any substance in a quantity sufficient to cause the death, major injury or any other damage to the health of any person.

A TCP is provided with a list of examples of RIDDOR Reportable faults to assist him in deciding if an incident is RIDDOR reportable.

Some gas installations may be found to be substandard i.e. they do not comply fully with current Standards/Regulations/ Codes of Practice etc. These are not reportable to the HSE unless there are signs that the appliance is dangerous or could become a danger. The responsible person or landlord should be made aware of any remedial work required and that it is recommended that faults should be corrected. It is advisable to keep written notes of the situation and the advice given.

A.4 REPORTING AND INVESTIGATION OF GAS-RELATED INCIDENTS

Under Section 3 - RIDDOR/Dangerous Occurrences it states that the initial notification should be made forthwith on the day of the occurrence using the quickest practicable means, for example, by telephone or facsimile. Alternatively, the HSE duty officer system may be used at anytime by ringing 0151-922-9235. The HSE also operate an incident reporting telephone number on 0845-2770277. A written report/form is required within 10 days of the event. For death/major injuries from piped natural gas or LPG from refillable containers a written report must be submitted within 14 days of the event.

A registered gas installer must report to the HSE details of any gas installation which could cause death or a reportable injury as a result of inadequate combustion of gas or inadequate removal of the products of combustion of gas. The fault giving rise to the danger should be attributable to its design, construction, manner of installation, modification or servicing.
Additionally faults resulting in less serious incidents which have been disconnected on safety grounds should be reported. A written report is required for this group within 14 days of when it was reasonable to decide that the installation had been dangerous.

In Section 3.2 it recommends that near misses should also be investigated.

In section 4.1.6 it recommends that records of incidents should be analysed to identify common features and trends..........................

A.5 GAS INDUSTRY UNSAFE SITUATIONS PROCEDURE

Warning labels are attached to an installation/appliance to visually warn of unsafe situations. The labels are produced by various organisations. Copies of examples of the Transco labels that are in use are shown in Appendix F. The unsafe Installation or unsafe Appliance label is used for either the AT RISK (AR) or the IMMEDIATE DANGER (ID) classified situations. The classification system is endorsed by the HSE and should be used by all CORGI gas installers.

The AR classification is used for situations which could create a risk to life or property e.g. lack of appliance ventilation. There is no legal requirement to disconnect an AR appliance or installation however the operative should advise the owner/occupier of his/her concerns and that he/she advises that it should not be used. The customer takes responsibility for any further use. With the customers permission there is a need for the engineer to make safe or disconnect. Also a warning notice listing the fault/faults and identifying the responsible person should be completed.

The ID classification is used where there is an immediate danger to life or property if an ID appliance is operated or left connected to a gas supply e.g. spillage of combustion products. Where possible and with the customers permission every effort should be made to rectify the defect or make the installation/appliance safe to use. Where this is not possible the occupier and the landlord/managing agent, if the property is rented, should be advised of the situation. They should be provided with a written notification and then with permission the installation/appliance should be disconnected until such time that the defect is rectified. It should be pointed out to the occupier that further use of the appliance is a contravention of the Gas Safety (Installation & Use) Regulations. If the customer refuses to allow the disconnection then this should be speedily reported to Transco, via the National Gas Emergency Service, who have powers to enforce a disconnection (Gas Safety {Rights of Entry} Regulations). Alternatively the gas supplier should be informed. In cases of hardship to vulnerable occupiers then basic emergency appliances can be loaned to the customer. A report is then required to be made to the HSE under RIDDOR.

A recent addition is the CONCERN FOR SAFETY label, for use by an emergency service engineer, to indicate where he/she cannot confirm an appliance is safe to use. The label indicates that the appliance should not be used until it has been tested by a CORGI registered gas installer.
A.6 TRANSCO STANDARD EM 71- TRANSCO ESCAPE PROCEDURES (MARCH 1997)

The process charts for dealing with Public Reported Escapes (PRE's) and Fumes are shown in Appendix B. They provide clear and succinct steps for dealing with incidents. The chart for Public Reported Escapes (PRE's) shows that safety advice should be given by the Emergency Call Centre operator. Further details of the advice to be given is provided in other Transco procedures. A further chart shows that for a report of fumes an appropriate TCP is selected to go to each incident. On receipt of emergency job details the TCP goes to site and carries out a safety assessment. The work process then continues on the Fumes chart. The investigation first need to reveal if the occupants’ safety may be at risk or persons have been overcome by fumes. Following assessment of the situation the TCP is required to make safe when there is evidence of fumes or to isolate and label when there is no evidence of fumes. Where injury or a fatality has occurred then Transco incident procedures are implemented.

Details of the information that needs to be obtained by the telephone operators is given under technical notes. A copy is shown in Appendix B. This also includes the advice given to callers where fumes are suspected. Details are also provided on the labelling of unsafe Installations/Appliances. If ID or AR units are found then Unsafe Installation and/or Unsafe Appliance labels are used to identify a problem. The note also gives advice to inform the customer of the Appliance Repair Help line (0800-371782), when the customer needs to contact an installer to have an appliance or installation repaired and that the installer needs to be CORGI registered. The standards of service are also given. It is aimed to visit the site within one or two hours dependant on if the escape is uncontrolled or controlled.
CHART - GUIDANCE NOTES

Public Reported Escape:

Report of Gas Escape or Other Emergency

Emergency Call Centre

Emergency Call Centre should operate on a computer based system which allows incoming calls to be received at any designated location to accommodate variations in workload and system loss. There should also be in place fall back clerical procedures to cover major failure situations.

The emergency process will be monitored to ensure that performance levels are maintained.

Fail-safe alarms should be in place to notify the Emergency Call Centre of any potentially dangerous/out of standard situations.

Information Recorded

Details of time, location, telephone number and name of person making the report shall be recorded.

Details of the nature of the emergency will be recorded.

Records will be made of all emergency calls including advice given and action taken.

Safety Advice Given

Safety advice consistent with the nature of the emergency will be given. Every effort will be made, consistent with the consumer's safety, to make the situation safe by isolating the supply at the emergency control (valve).

Confirmation of Status of Emergency

The classification of the emergency will be determined and special needs and/or instructions obtained.

Vulnerable and priority gas consumers should be identified.
CHART - GUIDANCE NOTES

Fumes
Where site investigation reveals that occupants' safety may be at risk or persons have been overcome by fumes.

Assess Situation
Site investigation will be carried out by a Transco Competent Person to assess suspected fumes situations. Where injury or fatality has occurred, Transco incident procedures will be implemented.

Evidence of Fumes
The initial site investigation reveals evidence of fumes [discoloration to appliance(s) or surrounding areas due to fumes].

Make Safe
In the case of suspected fumes, the Transco Competent Person shall ensure that the suspect appliance(s) is/are turned off and capped, rendering it/them inoperable, ensuring the appropriate safety warning label(s) is/are fitted.

The Transco Competent Person shall leave appropriate safety advice with the consumer.

No Evidence
The initial site investigation reveals no evidence of fumes.

Isolate as Appropriate
Where fumes cannot be identified but concerns exist, the Transco Competent Person shall ensure that the appliance(s) is/are turned off and the appropriate safety warning label(s) is/are fitted.

The Transco Competent Person shall leave appropriate safety advice with the consumer.
TECHNICAL NOTES

EMERGENCY CALL CENTRE AND ADMINISTRATION

Customer Details and Advice

Transco telephone operators will need to obtain the following information:

a) Establish the precise location of the emergency, including the address, date, time, post code, telephone number of both the escape location and person reporting escape where different.

b) Establish whether the leak is controllable (i.e. on the consumer's side of the emergency control adjacent to the meter) or uncontrollable (i.e. on the transporter's side).

c) Advise callers how to turn off the gas at the emergency control, and confirm that this has been done where practicable; except where the emergency control is in a cellar or confined space, where there is also a smell of gas, when the advice may be not to enter but vacate the premises.

d) Advise callers to open doors and windows to ventilate the property and warn them against operating any electrical appliances, in any way. They should also be advised not to smoke and to avoid using anything that could be a possible source of ignition.

e) Establish whether there are fumes and if it is possible to identify the appliance.

f) Advise callers where fumes are suspected to immediately turn off all appliances which may be emitting fumes and not to use them until they have been checked by the emergency service provider.
Labelling of Unsafe Installation/Appliances

When the Transco Competent Person attends a reported gas escape and through investigations of downstream installation pipework and appliances identifies one or more of the following:

- Immediately Dangerous Installation/Appliance(s) - (ID).
- Installation/Appliance(s) at risk - (AR).

The Transco Competent Person shall ensure that the appropriate procedure/action is taken and that affected installation or appliance(s) are correctly labelled using the approved labels, as follows:

"UNSAFE INSTALLATION"

and/or

"UNSAFE APPLIANCE"

The Transco Competent Person shall ensure safety warning label(s) is/are fitted in a prominent position. The consumer and, if different the owner (i.e. usually the landlord) of the appliance/installation should be informed, in writing that the appliance/installation is unsafe.

The consumer and or/owner (landlord) should also be informed that it is an offence to continue using the appliance.

Appliance Repair Helpline

Where making safe involves the turning off, disconnection or capping of an appliance or installation, they shall be fitted with an appropriate safety label. The consumer shall be advised to have the appliance or installation repaired by a CORGI registered installer. Help in contacting an installer can be provided via the Appliance Repair Helpline.

STANDARDS OF SERVICE

a) To visit all "uncontrolled" gas escapes, normally within one hour;

b) To visit all "controlled" gas escapes and no gas situations, normally within two hours.

(Except where no gas reports relate to an individual premise, where there is a form of prepayment meter with an automatic cut off device installed. Such No Gas situations should be normally be visited within four hours.)

Transco
APPENDIX C CORGI DOCUMENT: "DEALING WITH UNSAFE SITUATIONS"

Dealing With Unsafe Situations

START

Is the appliance/installation existing?

YES

Is the installation or appliance Immediately Dangerous (ID)?

YES

Has permission been granted to disconnect and cap off?

NO

Inform National Gas Emergency Service Call Centre (see Note Table 2). Record relevant job document number/time of call.

YES


NO

Disconnect and cap off appliance/installation.

Commission appliance and put into use.

NO


NO

Disconnect, cap off and label the appliance and inform the responsible person.

NO


NO

Inform the responsible person. The Gas Emergency Service Provider will disconnect and cap off using The Gas Safety (Rights Of Entry) Regulations (if necessary).

NO

Complete RIDDOR form F202/02/01 (where appropriate) and send to HSE within fourteen days.

NO

Is the installation or appliance At Risk (AR)?

NO

Is the installation or appliance Substandard? (S)

YES

Turn off the appliance.

Inform the responsible person orally. Record details on Substandard Advice Note (7) or any job record.

(1) One which if operated or left connected to a gas supply will be an IMMEDIATE danger to life or property.

(2) One which if operated may lead to a situation which COULD create risk to life or property.

(3) One which is not in accordance with current Regulations, Codes of Practice or Standards and Specifications, but does NOT constitute either an Immediately Dangerous or At Risk situation.

(4) The CORGI W1 or TG3 Warning Label.

(5) The CORGI CPS Warning Notice report form.

(6) The F202/02/02 forms are available from CORGI or the HSE.

(7) The CORGI CFT Substandard Installation Advice Note.

NB

When issuing a warning/substandard installation notice in rented accommodation, always issue a copy to the gas user AND the landlord/managing agent.
APPENDIX D TRANSCO CO PROCEDURES

Procedure for the Reporting of CO Poisoning Incidents

1. CO incident
   Notifiable under GSEMJR
   Reportable under RIDDOR

2. Internal Circulation
   Including North Incident Box

3. Transco operative on site
   Advises Call Centre Who
   Create and Send Notification

4. HSB
   Notified

5. Supplier Notified

Note: During preparation of this report it was determined that this document, T/PR/INC1, is under revision during the year 2000 and may be amended in the future.

Clarification was also given that the HSE are notified of CO poisoning incidents at Area and National level. Additionally, to the above flow chart, the Department of Trade and Industry is also notified of CO poisoning incidents.
BLANK CO POISONING NOTIFICATION FORM

TRANSCO
INCIDENT NOTIFICATION FORM

To be used for the notification of carbon monoxide (CO) related incidents resulting in loss of human life or serious injury requiring admission to hospital.

Under Regulations 7(14) and 7(16) of the Gas Safety (Management) Regulations, it is the duty of Gas Suppliers to investigate such incidents and notify the Health and Safety Executive, prior to commencing their investigation.

The information in this document does not have Legal Privilege and shall, therefore, be PURELY FACTUAL.

Complete all sections stating 'nil', 'not available' etc. as applicable.

COS REFERENCE: (system generated)
1. District Identifier: (system generated) (system generated)
2. Time of Message: (system generated)
3. Date of Message: (system generated)
4. Name of Supplier/Supplier: >

PART A
1. What is your full Name ?>
2. What is your Job Title ?>
3. What is your Telephone Number ?>
4. What is the name of your Organisation ?>
5. What is its Address and Postcode ?>

PART B
1. Time of Incident: >
1a. Date of Incident: >
2. Address of Incident: >
3a. Did the incident happen in a Building ?>
3b. What Type of Room ?>

PART C
1. Name of Person living in the premises: >
2. Are the Premises Rented ?>
2a. Name, Address, Telephone of Landlord: >

PART D
1. What was the main Cause of the Incident ?>
2. Was anyone Killed in the incident ?>
2a. How many people were killed ?>
3. Were there any Major Injuries ?>
3a. Number of People with Major Injuries: >
4. Give details of the injured people stating whether Male/Female, Fatally Injured (yes/no) and Age:
   i. >
   ii. >
   iii. >
   iv. >
   v. >

Transco
CO INCIDENT NOTIFICATION REPORT
NOTES TO ASSIST WITH COMPLETION

1. LDZ identifier: The alpha numeric Transco LDZ identifier, e.g. EM = East Midlands LDZ. The LDZ identifier will be used by the system to determine the distribution of the report.

4. Name of shipper/supplier: Name of the shipper/supplier of gas to the property, obtained from the UK Link-SPA database.

PART A

1. What is your full name?: Full name of the Transco employee making the report to the Call Centre.

2. What is your Job title?: Job Title of the Transco employee making the report to the Call Centre.

3. What is your telephone number?: Office or mobile telephone number at which the Transco employee making the report can be contacted.

4. What is the name of your organisation?: The full title of Transco.

5. What is its address and postcode?: The full postal address, including postcode, of the Call Centre receiving the report.

PART B

1. Time of incident: Time incident occurred, or when first reported to Transco.

1a. Date of incident: Date incident occurred.

2. Address of incident: Full address of where the incident occurred, including the postcode.

3a. Did the incident happen in a building?: Answer Yes or No. If the answer is Yes, specify the building type from the following options:-

- house
- flats (four storeys or less)
- flats (more than four storeys)
- bungalow
- maisonette

Page 1
3b. What type of room?: Specify the type of room from the following options:—

- kitchen
- bathroom
- bedroom
- lounge
- dining room
- other room

PART C

1. Name of person living in the premises: If the person living in the premises cannot be contacted, give the name of a relative or friend.

2. Are the premises rented?: Answer Yes or No.

2a. Name, address, telephone of landlord: If the premises are rented, give the name, address and telephone number of the landlord.

PART D

1. What was the main cause of the incident?: For these reports, the answer is pre-filled:—

"Suspected exposure to poisonous gas (carbon monoxide)"

2. Was anyone killed in the incident?: Answer Yes or No.

2a. How many people were killed?: Give the number of people who were killed.

3. Were there any Major Injuries?: Answer Yes or No. Remember, a Major Injury involves any person(s) having been sent to or admitted to hospital, or having received medical treatment from a GP or para medic.

3a. Number of people with Major Injuries: Give the number of people who suffered major injuries.

4. Give details of the injured people stating name, whether male/female, fatally injured (yes/no) and age:

Give these details for each person injured.
HEALTH, SAFETY & ENVIRONMENT INSTRUCTION
HSEINS/11 - FURTHER GUIDANCE ON THE REPORTING & INVESTIGATION OF CERTAIN GAS RELATED INCIDENTS

(28 January 1999)
(This supercedes instruction note HSEINS/04 which is now withdrawn)

This Instruction Note has been prepared following recent discussions with the HSE and has been circulated around their offices. The contents of the Note should be disseminated to appropriate persons who may be involved in the reporting or investigation of RIDDOR or GSM(R) related incidents.

1.0 INTRODUCTION

There have been a number of queries raised in connection with certain gas incidents and the interpretation of GS(M)R and RIDDOR. Following meetings with the HSE this Instruction Note has been produced to assist the understanding of all parties.

The term "gas fitting" in this Instruction Note means pipes, meters, appliances etc., on the consumer's side of the emergency control valve at the end of the service pipe.

2.0 REPORTS MADE UNDER RIDDOR REGULATION 6(1)

- CO incident causing death or injury

2.1 Who has a duty to report CO incidents?

When Transco believes that a CO poisoning incident has occurred it has a duty under RIDDOR reg.6(1) to notify the HSE forthwith and to send Form F2508(G) to the HSE within 14 days of the incident.

Transco also has a duty under GS(M)R reg.7(15) to notify the gas supplier of a CO incident as soon as is reasonably practicable. This will usually be at the same time the HSE is notified. Information provided to the supplier should be consistent with the information provided to the HSE.

To be reportable to either the HSE or the relevant gas supplier the incident must result in death or major injury as defined under Schedule 1 of RIDDOR (see 2.3 below).

2.2 Who has a duty to investigate CO incidents?

A gas supplier's duty to carry out an investigation of a CO poisoning incident under GS(M)R reg. 14 is triggered by Transco informing them that a reg. 6(1) RIDDOR incident has occurred. This duty, including the submission of a report on findings, is quite separate from the duty on Transco to report the incident to the HSE under RIDDOR.

Transco is currently the emergency service provider for all gas conveyors and therefore provides notifications of all CO incidents. It is important that Transco does not report the incidents which are outwith the scope of RIDDOR reg. 6(1).

2.3 What should be reported under RIDDOR 6(1)?
To be reportable to the HSE and the relevant gas supplier, the incident must result in a death or major injury as defined under Schedule 1 of RIDDOR.

i) Fatalities

Gas industry representatives have accepted that any deaths where CO produced by a gas fitting is the probable cause should be investigated by them, or by others on their behalf.

Transco employees should do their best to establish whether CO was the probable cause.

If, for instance, more than one person has died or been hospitalised in the same property, or perhaps family pets have also died or suffered ill effects, it is likely that CO poisoning has been the cause if there is a gas appliance in the property. On the other hand, if only one person has died and there is no sign of gas appliances being lit, or having been lit for some time, it is more than probable that CO has not been responsible. However, where employees cannot establish the underlying causes, and consider that CO poisoning was likely to have been the cause, they should report the incident.

ii) Incidents involving 'major injury'

The position with major injury incidents is different due to the greater numbers involved and because there is some confusion about the exact meaning of 'major injury'.

For a CO poisoning incident to be regarded as a major injury one or other of the following criteria must be met:

a) loss of consciousness - this is not the same as sleep and means a state where the affected person does not respond to attempts to communicate with them. If someone has been rendered unconscious because of CO, there will need to be another event if they are ever to regain consciousness, e.g. the appliance generating CO goes off, or the person is removed from the source of exposure and/or given appropriate treatment etc. It is almost inevitable that someone who has been found in an unconscious condition will be taken to hospital. Therefore, this will be an incident where the circumstances should be quite clear to the Transco employee and should be reported;

OR

b) the person is made so acutely ill that they require medical treatment - 'require' in this context means 'has received/is currently receiving'. This criterion encompasses a number of scenarios. The individual may have been given treatment for CO poisoning. This could be treatment at a medical facility that has a hyperbaric oxygen unit, or it could be general, supportive treatment in a hospital or elsewhere. In either case the treatment should have been administered by a doctor, nursing staff or by a paramedic.

However where Transco is given information that an individual had sought medical treatment and a blood test had identified elevated levels of carboxyhaemoglobin, (i.e. carbon monoxide in the bloodstream) then, even if that condition was not treated, it should still be regarded as falling under this reportable category for acute illness.

Complaints of feeling unwell made by a consumer to a Transco employee (responding to a gas escape/smell of fumes call) which result in a recommendation by the Transco employee to see a doctor are not reportable under regulation 6(1).

In these circumstances, the Transco employee should still take action to make the situation safe and advise the householder to have the installation checked by a CORGI registered installer, but should not cause a RIDDOR regulation 6(1) report to be made to the HSE, or a notification to the gas supplier under GS(M)R regulation 7(15).

2.4 Action on site

It should not be too difficult for the Transco employee attending the scene to determine whether or not any of the above criteria are present. In some cases, they may also see visible evidence that a gas
fitting is implicated. If there is no such evidence, they should err on the side of caution and treat the incident as reportable under RIDDOR regulation 6(1) and GS(M)R regulation 7(15), but only in those cases where a fatality or (a) or (b) above has also occurred. This may occasionally result in gas suppliers starting some investigations where the causative factor was not CO poisoning. However, once it is established that the cause is not CO from a gas fitting, their investigation stops, and the gas supplier's report to the HSE will indicate that it was not a CO poisoning incident.

If subsequent to attending what was believed to have been a CO incident Transco learn or are notified that the cause of death was not CO, e.g. from the Coroner, this should be immediately communicated to the HSE and the supplier concerned.

On the rare occasions where Transco are notified after attending a suspected CO incident not involving a fatality or major injury, that persons have subsequently received medical treatment for confirmed CO poisoning, then the reporting and notification procedure should then be implemented.

3.0 REPORTS MADE UNDER RIDDOR REGULATION 6(2)

- Gas fittings found to be dangerous

In circumstances where Transco employees are called in to deal with gas safety concerns, and either simply disconnect, or, isolate gas supplies, without carrying out inspections or examinations, or using their gas safety knowledge to come to a reasonable decision that an installation or appliance is dangerous, relevant HSE offices should not be notified.

However, it should be stressed that they must follow Company procedures by advising customers, and landlords (or their managing agents if they are called in to rented properties) about the CORGI helpline to have matters investigated further. If the registered installer called in finds that matters should be properly reported to the HSE under RIDDOR, it should be left to them to do so. The HSE have liaised with CORGI to agree the advice that has already been given to registered installers on what should be reported to the HSE.

4.0 REPORTS MADE UNDER RIDDOR REGULATION 3

- Notification and reporting of injuries and dangerous occurrences.

The reporting of certain gas escapes would generally be under RIDDOR Schedule 2, Part 1 Paragraph 14 - Pipelines or pipeline works, or Paragraph 20 - Escape of flammable substances, using the criteria in 3.1.1 (i) of this instruction. Reports of gas escapes should not be made under Paragraph 21 - Escape of substances, as stated in the document 'RIDDOR '95 - A Transco Guide for Managers'.

5.0 INVESTIGATION REPORTS MADE UNDER THE GAS SAFETY (MANAGEMENT) REGULATIONS 1996 REGULATION 7

- Gas escapes and investigations

5.1 GS(M)R Regulation 7 (13) - Gas conveyors’ duty to investigate certain gas escapes

Gas conveyors have a duty to investigate certain gas escapes that occur on their networks, i.e. those escapes which have or were likely to have resulted in a fire or explosion. It has become clear that a range of opinions exists on the meaning of the words ‘...likely to result in a fire or explosion...’.

HSE Inspectors and gas conveyors are fairly clear from the Guidance on the Regulations that the HSE is not interested in small escapes from weeping joints. However, the guidance is perhaps not so helpful when it goes on to suggest that (to be worthy of investigation) a ‘...sufficiently large gas/air mixture above the LEL would accumulate in practice.’. There is no further explanation of what this means, e.g. how large is ‘sufficiently large’?

5.2 Which escapes are meant to be covered?
i) Fire and Explosion Risk

a) Inside Premises

The words '...likely to result in a fire or explosion...' together with '...sufficiently large gas/air mixture above the LEL would accumulate in practice.' should be taken as meaning that the escape of gas has resulted in a concentration of gas in air in excess of the LEL in an amount which, if ignited, would pose a risk to the safety of persons. For example, where an escape results in levels of gas inside a premises rising above the LEL and the amount of gas is 10 kg or more (this gives some parity with paragraph 20(1)(e)(ii) of Schedule 2 to RIDDOR - Reportable Dangerous Occurrences) then this should be regarded as meeting the 'sufficiently large' test and so be within the scope of regulation 7(13). However, it should be recognised that there may be rare instances where particular circumstances combine in such a way that amounts less than 10 kg (and where the LEL is exceeded) may result in such a risk, e.g. confined space with no ventilation.

Given the above criteria there is no requirement to investigate and to notify the HSE of every evacuation.

b) Outside Premises

The position outside premises is more difficult although some help can be gained from Schedule 2 of RIDDOR where paragraphs 14 and 20 are particularly relevant.

Following this line of reasoning a sudden release of gas, e.g. due to a fusion joint failing, a cast iron main fracturing, a corrosion 'plug' failing from a ductile iron pipe or interference damage, resulting in a gas/air mixture containing 500 kg or more of gas would be an escape within the scope of regulation 7(13). The criteria that should be considered, i.e. about which judgment needs to be exercised, are the amount of gas, the (short) time period over which the escape occurs before the threshold quantity is released and the presence of ignition sources.

Other escapes which fall within the relevant criteria set out in paragraph 14 of Schedule 2 to RIDDOR should also be reported. There are a number of these. Some are straightforward e.g. whether or not a particular incident results in closure of the pipeline for more than 24 hours. Others involve a degree of judgment, e.g. is the incident likely to cause the death of, major injury to, or damage to the health of any person? The criteria above should also be applied to these incidents, i.e. amounts of gas above the LEL and escaping in circumstances, where if ignited, risks to the safety of persons might result.

The attached Appendix 1 gives some examples of releases that would be reportable for various diameter pipes operating over a range of pressures. Note that this table has been amended following recent discussions with GRTC.

From the above it is clear that in some cases where Transco are submitting a report of a dangerous occurrence under RIDDOR Schedule 2, Part 1 paragraphs 14 and 20, notification to the HSE of intention to carry out an investigation under GS(M)R would also be required. This should be clearly stated to the HSE when reporting the dangerous occurrence by telephone.

ii) Road Closures

Where it is necessary to close a road due to the risk of igniting escaping gas the HSE should be notified. If the road was closed only to protect Transco personnel attending the incident from traffic hazards then no notification is required.

Although the above make a number of references to RIDDOR requirements, it should be clearly understood that there is no direct legal link between RIDDOR and regulation 7 (13) of GS(M)R. The HSE should be informed at the time whether the report is being made under GS(M)R or RIDDOR or both.

5.3 When must a report be submitted to the HSE?

Where there is an escape of gas, which falls within GS(M)R Regulation 7(13), the person conveying
gas in that part of the network where the gas escaped shall as soon as is reasonably practicable cause an investigation to be carried out to establish the source of the escape and so far as is reasonably practicable the reason for it.

Transco is therefore required in these situations to submit a GS(M)R report to the HSE at the earliest opportunity following the conclusion of the investigations.

5.4 GS(M)R Regulation 7(16) - Notification to the HSE before commencing an investigation

Differences of opinion have arisen over the timing of the notification to the HSE, that is required under regulation 7(16) of GS(M)R, prior to Transco commencing an investigation. Understanding the objective to be achieved should ensure that problems do not occur.

**The objective is to ensure that evidence is not disturbed until the HSE has been consulted and have made a decision about what they wish to happen next.** There should be no conflict between this and the over-riding priority to make the situation safe.

It may be considered that a slight incongruity exists between Regulation 7(13), which requires the gas conveyor to carry out an investigation to establish "...the source of the escape and, so far as is reasonably practicable, the reason for it...", and regulation 7(4) which imposes the duty to attend escapes and prevent the gas escaping. Obviously, to do this, the conveyor needs to have a good idea of the source of the escape. A literal interpretation of 7(13) could be that all escapes have to be reported to the HSE before the source of the escape is identified. Clearly the HSE would not want this, so it is suggested that the focus should be on the second part of the duty, i.e. the investigation to determine the reason for the escape.

The HSE requires Transco to commence an investigation to identify the reason for the escape only after they have consulted an inspector. In making the situation safe Transco should avoid, so far as is practicable, disturbing potential evidence relating to the cause of the escape. Where death, major injury and/or severe damage to property are involved, the HSE should be notified forthwith, even out of hours. In other cases the notification could be made the next time the HSE offices are open. This means that although Transco would have made the situation safe, they would not be able to commence their investigation until the HSE offices were open and they had spoken with an inspector. This should not be confused with the requirement under RIDDOR to report a dangerous occurrence by the "quickest practicable means" i.e. telephone.

If, for some reason, Transco wished to commence an investigation out of normal HSE office hours, then they would first have to contact the HSE through its Duty Officer system.

When in doubt Transco should always make contact with the relevant local HSE office, so the issue can be resolved.

**THE CONTENT OF THIS INSTRUCTION NOTE HAS BEEN AGREED WITH THE HSE AND HAS BEEN CIRCULATED AROUND THEIR OFFICES.**

The Transco Incident Notification and Reporting Procedure and 'RIDDOR '95 - A Transco Guide for Managers' will be amended to reflect this Instruction.
DO NOT USE!

This Appliance must not be used until it is repaired and tested by a competent person. It is an offence to continue using an unsafe appliance.

CONTACT A CORGI REGISTERED INSTALLER
The Gas Safety (Installation & Use) Regulations 1998

UNSAFE APPLIANCE

Transco plc
Registered in England No. 2200030 Registered Office: 100 Thames Valley Park Drive, Reading, Berkshire RG6 1PT Incorporated in England and Wales
DO NOT USE!

This Equipment is dangerous and has been disconnected. It must not be reconnected until the reported gas escape has been traced and repaired. It is an offence to continue using an unsafe appliance.

CONTACT A CORGI REGISTERED INSTALLER
The Gas Safety (Installation & Use) Regulations 1998

UNSAFE INSTALLATION
CONCERN FOR SAFETY
DO NOT USE
THIS APPLIANCE HAS BEEN VISUALLY INSPECTED BY AN EMERGENCY SERVICE ENGINEER WHO CANNOT CONFIRM IT IS SAFE TO USE.

THE GAS SAFETY (INSTALLATION & USE) REGULATIONS 1998

Registered in England No:2649085 Registered ORE: 123 Thames Valley Park Drive, Reading, Berkshire RG2 0TT

Transco

B703 (Rev 2.00)
Dear Sir/Madam,

IMPORTANT SAFETY REMINDER

You will remember that when our Service Engineer visited your home recently, a gas appliance or gas pipework was found which was either unsafe or which could not be confirmed as being safe to use. A "DO NOT USE" warning label was attached to the equipment and you were advised to have it repaired or checked by a qualified gas installer.

Just in case you have not already done so, I am writing to remind you to get the work done as soon as possible. You could be breaking the law if you use a gas appliance knowing it to be unsafe.

Work on gas equipment must be carried out by gas installers who are registered with CORGI (Council for Registered Gas Installers). If you need help finding a qualified installer, call the Gas Repairs Helpline on 0800 371762 and you will be given the telephone numbers of firms who work in your area.

If you live in rented property you should contact your landlord immediately if you believe the landlord is responsible for the repairs.

If you have already taken the necessary action, please ignore this reminder, I am sure you will understand has been sent in the interests of gas safety.

Yours faithfully,

Duty Emergency Support Manager

Transco operates in the UK and is part of BG plc
BG plc: Registered in England No. 10009000 Registered Office: 100 Thames Valley Park Drive Reading Berkshire RG6 1PT

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TRANSCO'S ROLE

Transco's essential role is operating the gas pipeline network – piping gas to millions of domestic, industrial and commercial users – and providing the FREE gas emergency service.

Transco is completely separate from the companies which supply gas. It does not sell gas. Nor does it sell or service gas appliances.

Each year Transco invests millions of pounds in maintaining its pipeline system, which is 170,000 miles long and could go around the world six-and-a-half times.

THE GAS EMERGENCY SERVICE

Transco is committed to gas safety. It is responsible for stopping gas leaks which occur inside or outside your home or business.

This FREE service is available to all gas users, 24 hours a day, every day, irrespective of who supplies your gas.

There is no charge for:
- Checking for suspected gas leaks
- Stopping a gas leak
- Repairing a faulty meter (owned by Transco)
- Minor repairs in your home which can be completed within 30 minutes and using materials costing less than £4.21**

Our engineers will always stop a gas leak - safety is our priority.

Please Note

- If the faulty gas equipment is owned by someone else, for example your landlord, you should make them aware without delay.
- If your local authority or housing association normally services and repairs the equipment, contact them without delay.
- If the faulty gas equipment is covered by a maintenance contract, contact the company with whom the contract is held.
- If you want independent advice, the Gas Consumers Council may be able to help. Contact them on 0645 060708.

IF YOU SMELL GAS AT ANY TIME CALL 24 HOUR FREEPHONE

0800 111 999

An Essential British Company

Transco
Piping gas for you

PLEASE READ THIS LEAFLET CAREFULLY

Published by Transco, Ltd, Feb 2002
24 HOUR REPAIR HELPLINE

Our engineers will always make your gas equipment safe. However, they do not carry out repairs to appliances or pipework which cannot be completed within 30 minutes.

Repairs to gas equipment must be carried out by CORGI (Council for Registered Gas Installers) engineers. If you do not know one, our free 24 hour REPAIR HELPLINE will give you the names and numbers of local registered installers, or look in Yellow Pages.

REPAIR HELPLINE
0800 371782

To help you, the Transco engineer has noted on the page overleaf the information our REPAIR HELPLINE will need to give you the best advice.

ENGINEER'S REPORT

REPAIR HELPLINE
0800 371782

The REPAIR HELPLINE will need this information:

Your Postcode:

Type of appliance to be repaired:

Central Heating
Warm Air
Combination Boiler
Space Heaters
Water Heaters
Cookers
Non-domestic Equipment
Pipework Repairs
Flue Repairs
Nature of problem

Time when you want the work to be done

Daytime 8am-5pm
Evening 5pm-8pm
Saturday
Sunday
Other

Transco is providing this free helpline as part of its commitment to gas safety. Please use this space to record details supplied by the Helpline.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Telephone Number</th>
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It is up to you to choose and contact one of these companies and make arrangements that suit you.

REMEMBER TO ASK ABOUT THEIR CHARGES.

Transco does not inspect the work of CORGI registered gas installers. Transco has no liability for this work, which will be covered by a contract between you and the CORGI installer.

While we do our best to ensure the information given by the REPAIR HELPLINE is accurate and up to date, you should ring CORGI on 01256 372300 if you wish to check the current registration on any installer or have any other queries.

IF YOU SMELL GAS AT ANY TIME CALL

24 HOUR FREEPHONE
0800 111 999
APPENDIX H TRANSCO GAS APPLIANCES LEAFLET

The Transco emergency service will respond freely to calls concerning suspected gas escapes or flames from gas burning appliances.

If you think you smell gas:
- Don’t turn on or off the gas
- Don’t smoke
- Don’t use naked flames

Do turn off the gas supply at the meter
Do open doors and windows to get rid of the gas

CALL NOW - CALL FREE
0800 111 999

For a copy of the full Transco leaflet, contact your local gas supplier.

This is an emergency number and must not be used for servicing, billing or general enquiries.

This booklet contains notes on good practice which are not compulsory but which you may find helpful in raising the standards of your own establishment.
The problem

Every year some 30 people die from carbon monoxide poisoning caused by gas appliances which have not been properly installed or maintained. When gas does not burn completely, excess carbon monoxide is produced, which is toxic.

You can't see it. You can't taste it. You can't even smell it. But carbon monoxide can kill without warning in just a matter of hours. The early symptoms of poisoning include tiredness, drowsiness, headache, pains in the chest and stomach pains. You are particularly vulnerable when you are asleep.

You are at risk of carbon monoxide poisoning if:
- your appliance was poorly installed;
- your appliance is not working properly;
- your appliance has not been checked or maintained regularly;
- there is not enough fresh air in the room;
- your chimney or flue gets blocked;
- you allow unqualified people to install or maintain your appliance.

There is a particular risk if you sleep in a room where an appliance which is not of the balanced-flue type, is left burning at night. (A balanced-flue appliance is one that normally has the flue outlet on an external wall protected by a cage rather than terminating at or above roof level).

The answers

NEVER use a gas appliance if you think it’s not working properly. Signs to look out for include yellow or orange flames, soot or stains around the appliance and pilot lights which frequently blow out.

NEVER cover an appliance or block the convection air vents.

NEVER block or obstruct any fixed ventilation, grilles or air bricks.

NEVER block or cover outside flues.

CAUTION whenever draught exclusion, double glazing or a conservatory extension is fitted to a room containing a gas appliance, the appliance should subsequently be checked for safe operation.

All gas consumers are advised to have appliances checked for safety at least every 12 months by a CORGI registered installer.

The Law

The Gas Safety (Installation and Use) Regulations 1994 (as amended) place duties on gas consumers, installers, suppliers and landlords. Remember, for your own protection:

- **by law**, all businesses which carry out work on gas appliances must be registered with CORGI (the Council for Registered Gas Installers). Always check your installer is registered by asking to see a current CORGI registration certificate or ringing CORGI on 01256 372300;

- **by law**, only a competent person - someone with the right knowledge and technical experience - can carry out work on gas appliances. Do-it-yourself work on gas appliances could be dangerous and illegal;

- **by law**, you must not use any gas appliance you know or suspect is not safe. Through CORGI, HSE has asked all registered installers to disconnect any gas appliance which is so dangerous as to be a threat to life if it is used. If your installer asks your permission to disconnect such an appliance it will be in the interests of your own safety, and that of others, to agree. Before you use this appliance again, have it repaired by a CORGI-registered installation business;

If you need further advice about any of the gas safety issues mentioned in this leaflet, freephone the HSE Gas Safety Advice Line on 0800 300 363
94% satisfied with emergency service
Results from a recent customer satisfaction survey were held back by the independent researchers because they were worried they were just too good to be true.

But the results all checked out, and now the survey company, which specializes in asking customers what they think of service, says they’re the best they’ve ever seen.

“The scores we achieved were so high, the market research company insisted on double-checking the figures to make sure they were right,” said John Dunford, Manager Administration & Systems, Emergency & Meterworks, who commissioned the survey.

The survey results confirm that Transco’s Craftspeople and Call Centre staff are courteous, friendly, reassuring, easy to understand and helpful.

COURTEOUS

In fact, two surveys were carried out in April to monitor customer satisfaction with the Transco 24-hour gas emergency service. For each, an independent market research company made 500 calls to people who had used the emergency service and the repairs helpline, operated on Transco’s behalf by Mondial Assistance.

“The responses gathered from customers demonstrate that our call centre and repairs helpline staff and TCPs are doing an excellent job,” said a delighted John Rodger, manager of the Call Centre who administered the scores higher than he’d anticipated.

“And if we’re pleasing the gas consumer, then we’re also pleasing our main customers, the shippers,” he added.

A whopping 94% of callers said they were satisfied or very satisfied with the way their call was handled, and 92% were satisfied with the telephone operator’s ability to provide information and answer queries.

Ninety-two per cent said they were satisfied with the operator’s ability to understand their problem or query, and 94% were happy with the operator’s readiness to spend time dealing with the call.

Customers strongly agreed that call centre operations were courteous (91%), patient (87%), friendly (84%), reassuring (75%), easy to understand (92%), clear (92%), helpful (89%), took the call seriously (92%) and were business-like (84%)

Transco Craftspeople (TCPs) also came out of the survey with honours. Ninety-two per cent of customers said they were satisfied with the TCP’s visit.

“Seven per cent said they were dissatisfied, but these were mostly people who needed to call out a Corgi installer to carry out repairs after the TCP’s visit,” commented John.

And 61% of customers who had reported a gas escape said the TCP arrived more quickly than they had expected (62% of those reporting faulty electronic equipment said the same).

The TCPs scored highly for their courtesy (95%), friendliness (93%), reassurance (90%), and helpfulness (94%) and were easy to understand (95%).

Gas consumer survey results are ‘best ever’ according to market research company

By GILL TWYMAN

“We also wanted to find out what customers thought of the repairs helpline, which helps customers find a Corgi-registered gas installer who can undertake repairs or further work following a ‘make-safe’ visit by Transco’s emergency service,” said John.

“As these customers usually have to arrange for this at their own expense, we were anticipating that their satisfaction levels would be lower than those for our TCPs and call centre staff.

“This turned out to be the case, but the figures were still encouraging,” said John.

The overall satisfaction rating for the helpline was 89% (up from 76% last year). Eighty-eight per cent understood the problems, 89% were helpful in answering questions, 98% were polite and 95% ‘took time’ with their customer.

“The survey results are very encouraging,” said John.

“The call centre works in close partnership with the LDZs to deliver the emergency service and this reassures us that we’re getting it right, together.”

But as in most areas of life, there’s always room for improvement. “We’re going to carry on with our regular quality monitoring and refresher training for the call centre staff,” confirmed John.

“And perhaps one area that we ought to be looking closer at is the speed of reassurance, for which we only scored 73% in the survey. This suggests that people are more worried about the circumstances that lead them to call us out than we had thought.

“We need to be more aware of how our customers feel and do all that we can to reassure them that the situation is under control and put their minds at rest.”

The survey results reinforce the latest public standards of service figures which show Transco is meeting its planned performance levels for answering phones and responding to uncontrolled and controlled escapes.
## APPENDIX J EUROPEAN SURVEY RESPONSE SUMMARY

### Table J1 pt 1 of 3

<table>
<thead>
<tr>
<th>Company</th>
<th>Who is responsible &quot;legally&quot; for collecting上报 CO information</th>
<th>Who supplies this information? (i.e., gas transporters, suppliers, police, fire brigades)</th>
<th>Is anyone &quot;legally&quot; responsible for reporting CO incidents and if so, by what means?</th>
<th>Is this CO data then collected centrally by any organization? If yes, by whom?</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG Technology Great Britain</td>
<td>Transco - on a national basis - not legally responsible, HSE.</td>
<td>Transco to HSE and gas supplier, police and coroners.</td>
<td>Gas supplier reports to DGOI. DGOI is responsible for publishing details from February '09 onwards.</td>
<td>Yes, DGOI.</td>
</tr>
<tr>
<td>Danish Gas Technology Centre, Denmark</td>
<td>Local gas company in conjunction with DGOI (Danish Gas Governmental Institute) - legally responsible.</td>
<td>Gas supply reports to DGOI.</td>
<td>Yes, DGOI.</td>
<td></td>
</tr>
<tr>
<td>DVGW, Germany</td>
<td>DVGW. Local incidents are also reported by the Federal Office for Statistics in Westenheid.</td>
<td>The criminal investigation department is called in cases of initial CO incidents. The gas supply companies report any CO incidents by fax to the Energy Supervisory Board, the gas department of the Federal Ministry of Trade &amp; Commerce and the regional and head offices of DVGW.</td>
<td>Yes, DVGW collects statistical data on CO incidents. In cases of initial CO incidents data is also collected by the Federal Office for Statistics in Westenheid.</td>
<td></td>
</tr>
<tr>
<td>Electricity, Belgium</td>
<td>Nobody</td>
<td>Eventually (but not always) police, fire brigade, newspaper.</td>
<td>Nobody</td>
<td>No.</td>
</tr>
<tr>
<td>Gas Natural Spain</td>
<td>If facilities involve police then empowered by judicial powers. Gas supplier - not legally responsible.</td>
<td>Hospitals (emergency - medical info), gas supplier - technical info, police.</td>
<td>Police only where tenants are involved.</td>
<td>Yes, INE (Instituto Nacional de Estadística). SEDIGAS (Technical Gas Association).</td>
</tr>
<tr>
<td>Gassco NV, The Netherlands</td>
<td>Nobody</td>
<td>Newspapers, local newspapers, gas companies, police, fire brigade.</td>
<td>Nobody</td>
<td>Yes, CO incidents on gas are collected by Gassco on behalf of Energywatch. However, these organizations are not responsible for this activity.</td>
</tr>
<tr>
<td>Gaz de France, France</td>
<td>There is no single body who is responsible for collecting CO data.</td>
<td>The local fire brigades, the ministry of health, collection of hospital data, police and registry offices, death certificates.</td>
<td>Gas distributors must inform the administration (DRINE - Regional Directorate of Industry and Mines) of accidents involving death, or capable of causing total incapacity to work for three months or more of accidents where the extent of frequency could be reduced in their opinion by appropriate measures or legislation provisions.</td>
<td>No, in theory the Minister who is the head of the gas industry (Minister of Industry) should appoint a body whose task is to centralise information regarding CO incidents, but in practice no such body has been created.</td>
</tr>
<tr>
<td>Italia Gas and Snam, Italy</td>
<td>Two groups are responsible for collecting CO incident information. ISTAT (Italian Institute of Statistics) and CIG (Italian Committee for Gas) which is the body referred to the competent for Gas Standardization. The main difference between the two statistics is that the ISTAT collects all CO fatalities, whereas CIG only includes those due to CO.</td>
<td>In the ISTAT data base the information are gathered through the communications from the hospitals. In the CIG one news comes primarily from press and gas supplier companies.</td>
<td>Nobody is legally responsible for reporting CO incidents.</td>
<td>No.</td>
</tr>
<tr>
<td>Company</td>
<td>Are the government, gas companies, safety groups or consumer groups active in promoting CO awareness to customers?</td>
<td>If so, who?</td>
<td>How is it done?</td>
<td>If the government, or a government department, safety agency, actively involved in investigating CO incidents?</td>
</tr>
<tr>
<td>------------------------------</td>
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<td>------------------------------------------------</td>
</tr>
<tr>
<td>BG Technology, Great Britain</td>
<td>Yes, RSE - direct operation.</td>
<td>Yes, HSE and Crown Prosecution Service</td>
<td>Yes, Government, DTI, HSE, Environmental Health through media, BG, Centrica through leaflets and bills.</td>
<td>RSE (1 &amp; A), British Gas Services (1), CORGI (1), consultants (1), BG Technology (A and occasional (1) where I investigate and A = Analyze)</td>
</tr>
<tr>
<td>Danish Gas Technology Centre, Denmark</td>
<td>Yes, DGGI</td>
<td>Yes, Justice Dept; Notc. licenses may be revoked as a result.</td>
<td>Yes, gas companies - bills, mail, TV and papers. DGGI have authority to instruct gas companies to highlight through gas companies. Consumer groups (e.g. by government) through open forums and articles in papers. Also through new installations and 2 year checks/examinations.</td>
<td>DGGI (1 &amp; A), local gas company (1), DGGI (A) (where I investigate and A = Analyze)</td>
</tr>
<tr>
<td>DVGW, Germany</td>
<td>Yes - the criminal investigation department is actively involved in investigating CO incidents.</td>
<td>Yes, public prosecutors.</td>
<td>Yes, newspaper editors (consumer groups), information leaflets (gas company)</td>
<td>Criminal investigation department, Federal Office for Statistics in Wiesbaden, DVGW</td>
</tr>
<tr>
<td>Electralbat, Belgium</td>
<td>No</td>
<td>Yes, court of law</td>
<td>Yes, gas companies - bills (safety info - general - all aspects of safety operation). Also through periodic checks (e.g. examination of systems/appliances).</td>
<td>Centre Anti-Poison</td>
</tr>
<tr>
<td>Gas Natural, Spain</td>
<td>No</td>
<td>Yes, Justice Department - civil responsibility, Ministry of Industry</td>
<td>Yes, gas companies - bills (safety info - general). Also through periodic checks (e.g. examination of systems/appliances).</td>
<td>Gas companies (1 &amp; A), INE (A) (where I investigate and A = Analyze)</td>
</tr>
<tr>
<td>Gazco N.V., The Netherlands</td>
<td>No</td>
<td>Yes, insurance companies, police</td>
<td>Yes, consumer associations inform members of the risks associated with the use of gas appliances. The Commission for the Safety of Customers at the Ministry of Finance is charged with consumer safety and so issues advice on matters with which it concerns itself.</td>
<td>Gazco (technical research lab)</td>
</tr>
<tr>
<td>Gaz de France, France</td>
<td>The DIRE (National Institute of Statistics)</td>
<td>Yes, the competent authority i.e. fire brigade, public health service</td>
<td>Yes, gaz companies &amp; governmental departments through TV &amp; newspapers. Also through periodic checks. Advertisements appear on TV and in papers about the correct use of gas installations.</td>
<td>The DIRE (National Institute of Statistics)</td>
</tr>
<tr>
<td>Italygas and Sonari, Italy</td>
<td>No</td>
<td>Yes, the competent authority i.e. fire brigade, public health service</td>
<td>Yes, gaz companies &amp; governmental departments through TV &amp; newspapers. Also through periodic checks. Advertisements appear on TV and in papers about the correct use of gas installations.</td>
<td>ISTAT (Italian Institute of Statistics)</td>
</tr>
</tbody>
</table>

Appendix J - Table 1 (contd)
<table>
<thead>
<tr>
<th>Company</th>
<th>Where are CO statistics published in your country? (i.e. gas company reports, by government or other safety groups)</th>
<th>Are the statistics thought to be complete and accurate?</th>
<th>Why might the statistics be incomplete or inaccurate?</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS Technology, Great Britain</td>
<td>H.S.C. (statistical reports), Office for National Statistics (annual mortality statistics)</td>
<td>No</td>
<td>Coroners process, chronic poisoning, misdiagnosis.</td>
</tr>
<tr>
<td>Danish Gas Technology Centre, Denmark</td>
<td>Danish Gas (open publication)</td>
<td>Yes</td>
<td>D.G.G.T. figures reliable (major incidents) on natural gas. The Chimney sweeps (trade association) dispute the figures.</td>
</tr>
<tr>
<td>DVGW, Germany</td>
<td>Data on lethal CO incidents are published by the Federal Office for Statistics in Wiesbaden. DVGW presents annually its analysed statistics to the Federal Energy Supervisory (body under the damages and incidents section).</td>
<td>Yes, the data concerning lethal CO incidents is thought to be accurate.</td>
<td>As said before the statistics are thought to be complete but it should be mentioned that CO incidents resulting in symptoms of poisoning are often not reported.</td>
</tr>
<tr>
<td>Electrolux, Belgium</td>
<td>None</td>
<td>No</td>
<td>There is no central consistent gathering of information.</td>
</tr>
<tr>
<td>Gas Natural, Spain</td>
<td>INE (general accidents)</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Gazprom, The Netherlands</td>
<td>Yes, safety report (1 year update) issued by Enegiarad.</td>
<td>No</td>
<td>Only serious incidents are generally reported.</td>
</tr>
<tr>
<td>Gaz de France, France</td>
<td>None known, however widely varying annual mortality statistics and causes of CO poisoning are in circulation</td>
<td>Statistics from those able to supply information is not at all reliable. There is no cross-checking of data.</td>
<td></td>
</tr>
<tr>
<td>Ilius and Siam, Italy</td>
<td>In public reports issued by ISTAT and by GIG (italian).</td>
<td>Yes</td>
<td>Information obtained via the press is often technically incomplete and has to be completed with other sources.</td>
</tr>
</tbody>
</table>

Appendix J - Table 1 (contd)
APPENDIX K CO-RELATED PRESS CUTTINGS

Newspaper items related to the use of CO instrumentation.

“We must not stop caring” – A letter sent to H&V News from Stephanie Trotter, president CO-Gas Safety which was printed in the Letters column on 29-05-1999.

“Leak that wasn’t” – an article within the Dear Anna column of The Guardian which was printed on 29-07-1999.

“CORGI to establish register of firms able to test for CO” – An article in H&V News by John Butcher which was printed on 21-08-1999.

“Support for CO tests” - A letter sent to H&V News from Stephanie Trotter, The Carbon Monoxide & Gas Safety Society, Claygate, Surrey which was printed in the Letters column on 28-08-1999.

“Put gas in perspective” - A letter sent to H&V News from Albert J Keates which was printed in the Letters column on 11-09-1999.
Dear sir

I am writing to congratulate the excellent editorial on carbon monoxide (CO) poisoning (H&V News, May 15).

The editorial stated that “many members of the industry feel we afford CO too high a profile as it affects a comparatively small number of people every year”. Perhaps such members of the industry would feel differently if CO poisoned them or even if they talked to a family who had suffered a tragedy.

Human misery

As long as industry keeps these human miseries at arm’s length little will be done to prevent these avoidable deaths and injuries.

Without the press, CO-Gas Safety would never have been able to collect its data (181 deaths and over 1,175 near misses in three years from accidental CO) — and this was at a time when British Gas’ gas data collections were put on hold. We are very glad to hear that this is being remedied.

As for CO affecting only a small number of people — surely the point is that we simply do not know how many are out there still being affected.

Unscrupulous

Even where there is an obvious problem and the appliance is cut off, only too often the appliance is quickly changed by an unscrupulous landlord who then denies there was CO.

Having got nowhere trying to convince Transco to carry equipment to test for CO, (and give the consumer a written reading or at least confirmation of CO levels), we are asking Corgi firms to provide such a service. Although obviously this would have to be on a paid for basis.

Goodness knows how consumers who cannot afford it could pay, but at the moment it seems very difficult to obtain such proof, unless using a full blown, expensive gas expert for legal proceedings.

Even this can be difficult, but not everyone wants to sue anyway, they just want to be able to prove to their doctors they had a CO problem.

Also, without the hugely valuable contribution that H&V News has made, we would never have been able to get our ideas for stopping these deaths and injuries taken seriously.

The Health and Safety Executive HSE is undertaking a fundamental review and we believe that all our proposals will now be actively considered at Government level.

We have every hope that action will result but, please, keep it up H&V News.

It may seem small beer compared to Kosovo and Rwanda but caring about people is what makes the UK different from these sad societies.

Stephanie Trotter
President
CO-Gas Safety

“We must not stop caring” – A letter sent to H&V News from Stephanie Trotter, president of CO-Gas Safety which was printed in the Letters column on 29th May 1999.

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Link to “Leak that wasn’t” – an article within the Dear Anna column of The Guardian which was printed on 29th July 1999.
(http://www.guardian.co.uk/Archive/Article/0,4273,3887586,00.html)
CORGI to establish register of firms able to test for CO

By John Butcher

CORGI is set to compile a list of members who can test homes for poisonous carbon monoxide gas, it has been rumoured.

Registered firms will be asked if they want to join a list of companies willing and able to do paid for inspections.

The move is expected to significantly reduce the number of deaths from carbon monoxide gas poisoning caused by faulty and badly fitted gas appliances, according to Stephanie Trotter of CO Gas Safety.

But the inspections will exclude the poor — arguably the group most vulnerable to badly fitted and faulty gas appliances.

“I am very pleased that CORGI is doing it, however, what I really want is Transco to do it free of charge,” she said.

“Failing that I at least want them to make sure there is a fund available for the socially disadvantaged.”

“Transco is critical of Transco’s present checks which she believes are inadequate because they do not use carbon monoxide detection instruments.

“It is like sending someone to check for radiation without a geigercounter,” she said.

“Transco have equipment to trace gas you can smell, but no equipment to trace gas you can’t. I think it is scandalous.

“If they are going to call themselves the gas emergency service they should deal with it.

“If they did, it would cut gas deaths and incidents significantly.”

Transco spokesman Michael Walpole claimed the company had taken all the steps it could to improve public safety.

“Transco has introduced a more focused set of literature and a new labelling system which indicates there is a concern for safety and it has spent £40,000 briefing CORGI-registered installers on its helpline,” he said.

“But Transco engineers do not have the skills to test gas burning appliances.”

Transco will turn off an appliance if it is concerned there may be a carbon monoxide leak. If there is real evidence of a leak the appliance is isolated and cut off.

This year it has introduced a new sticker for faulty appliances and a leaflet which tells the homeowner the appliance has been visually inspected, that the inspector cannot confirm it is safe to use and that it needs to be inspected by a CORGI-registered installer.

“What we are trying to do is work towards a seamless process between CORGI and ourselves.”

Ms Trotter added: “I do accept it will cost Transco money and the money ought to be found for it... Let Transco act as a blood hound finding the fault and let people pay to put it right.”
Support for CO tests

Dear Sir,

There were a few things in John Butcher’s article — ‘CORGI to establish register of firms able to test for CO’ — which I would like to expand on. Incidentally, I did not say “let them pay” but most people, other than tenants, have to pay for a CORGI service and if people can afford something then it seems better to use resources to help those that cannot. But the point is that even the wealthy rarely have the knowledge of gas issues to know what to ask for.

In the majority of cases visual signs can be helpful. However, in some cases mere visual signs are positively misleading. We delivered such cases to Transco some years ago and our gas expert, Harry Rogers, has further cases. I would like Transco to carry equipment to trace CO for several reasons. Firstly, as mentioned in the article, CO cannot be sensed, so it is like sending someone out to check for radioactivity without a Geiger counter.

Secondly, because people are told not to use appliances which may be perfectly safe — sometimes on a Friday evening in deep midwinter when there is a serious danger of some vulnerable people suffering from hypothermia before Monday morning.

Thirdly, because it is all very well telling them to obtain a CORGI registered installer to check the appliance but many CORGI firms do not have a flue gas analyser. And ordinary consumers do not know what to ask for.

Fourthly, we have come across cases where the dirty looking appliance was condemned by Transco and the clean looking appliance was allowed to be used. Later tests with CO detection equipment showed that the clean looking appliance was the one emitting dangerous levels of CO. Leaving an already poisoned and confused consumer exposed to further poisoning, who then has to find a Corgi installer who will hopefully check all the appliances, not just the one Transco has condemned and hopefully use CO sensing equipment is, in my opinion, hardly “making safe”.

I came across a case four years ago where two checks by CORGI firms (one before and one after the tenant was rendered unconscious and hospitalised with CO) without a flue gas analyser, failed to spot serious CO emission (apparently 4,000 parts per million). Only because another member of the family insisted that British Gas Service check the property (and they carry flue gas analysers) was the problem picked up, solved and no doubt a death prevented. Surely Transco and CORGI installers should have to carry and use this equipment and be lobbying for the relevant funding to do this? Are there any arguments against this, other than money?

Stephanie Trotter
The Carbon Monoxide & Gas Safety Society
Claygate, Surrey

“Support for CO tests” - A letter sent to H&V News from Stephanie Trotter, The Carbon Monoxide & Gas Safety Society, Claygate, Surrey which was printed in the Letters column on 28th August 1999.

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houses, but no gas means no
more rip offs.

A landlord
Twynholm
Kirkcudbright
HV NEWS 11-09-99

Put gas in perspective

Sir,
Much as I sympathise with
Ms Trotter's vested interest in
gas safety, surely it is time to
put the situation into
perspective.

Compare the incidence of
serious road traffic accidents/
fatalities per 10,000 road
vehicles with serious gas
related incidents/ fatalities per
10,000 of installed appliances
and the efforts of her society
would seem somewhat over
the top.

I accept that one fatality is
one too many, but insisting on
the use of flue gas analysers
is akin to curing symptoms
rather than causes.

Combustion product
analysis is for accurate
commissioning, not for safety
- this requires good
ventilation, fluing and, where
appropriate, sealing.

Albert J Keates

Cloak and dagger

Sir
I read the story 'Industrial
espionage is growing
problem' in last week's issue
with great interest. You are to
be applauded for your incisive
and tireless reporting of a
serious matter in our industry.
To think there are dirty rascals
taking photographs when a
guide's back is turned.

Typical.

And it is welcome news
that Grundfos have security
systems – which they can't
give any details of... for
security reasons.

One snippet of information I
have is that these spies are
actually drug addicts that are
stealing domestic boilers to
fund their drug habit. Now
they have turned to

"Put gas in perspective" - A letter sent to H&V News from Albert J Keates which was printed in the Letters column on 11th September 1999.

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