

SHERIFFDOM OF LoTHIAN AND BORDERS AT HADDINGTON

DETERMINATION by **PETER GILLAM, Esquire**, Sheriff of the Sheriffdom of Lothian and Borders at Haddington following an Inquiry held into the death of **JOHN ANDREW McCafferty**, date of birth 16 June 1950 who resided at 4 Gordon Street, Easthouses, Dalkeith

*INQUIRY HELD UNDER
ACCIDENTS AND SUDDEN DEATHS
INQUIRY (SCOTLAND) ACT 1976
SECTION 1(1)(b)*

HADDINGTON 25 MARCH 2009

Introduction

In this fatal accident inquiry the following parties appeared:-

Procurator Fiscal Depute

Mr Fraser

I should explain that there were no other parties represented at the Inquiry. However, members of the immediate family of Mr McCafferty (hereinafter referred to as “the deceased”) were present. Mrs McCafferty was present, apart from one morning.

Mr Neil McCafferty, the deceased’s son was present throughout. Mr Craig McCafferty, the deceased’s son was present for some of the time. In addition, Mr and Mrs Reid were present throughout. Mrs Mitchell was present to give her evidence and to hear the evidence of the two experts who gave evidence. Mr Melville, from Drumhor Caravan Park, Musselburgh was present throughout. A representative of the solicitors firm of Digby Brown was present throughout to take notes of the evidence. Digby Brown had been instructed by the McCafferty family to keep a watching brief at the Inquiry. However, they were not present in a representative capacity.

I heard evidence on 9, 10, 11 and 12 March 2009. I heard a submission from the procurator fiscal depute on 13 March.

The procurator fiscal led evidence from the following witnesses:-

Mrs Gwyneth McCafferty (widow of deceased)

Neil McCafferty (son of deceased)

Brian Reid (brother-in-law of deceased)

Eileen Reid

Anthony Forbes (ambulance technician)

WPC Gwen Lindsay

David Wood

George Munn (Scott's Caravans)

John Henderson (Scott's Caravans)

Corrine Mitchell (Scott's Caravans)

Professor Busuttil (pathologist)

Paul Cichy (Corgi inspector)

Derek Bedson (expert instructed by Midlothian County Council)

Karin Ferguson (Health and Safety Executive)

Ross Buchanan (Midlothian County Council)

As there was only representation in this matter by the procurator fiscal depute, there was no dispute relating to the documentary evidence which was produced and spoken to by the various witnesses. Prior to giving evidence, Mrs Mitchell produced a document which formed No. 11 of process which gave an outline of matters that she wished to bring to the attention of the Inquiry and included five appendices. Again, during the course of the Inquiry additional productions were allowed to be received and referred to by witnesses as they gave their evidence. These included a receipt from Scott's Caravans given to Mr and Mrs Reid. They also included additional photographs that were produced by Mr Bedson and correspondence produced by Mrs Mitchell from Midlothian County Council. These formed Nos. 21 to 24 of the productions. A post mortem report, a toxicology report and the medical records of Mr and Mrs McCafferty, along with the reports by Mr Cichy and Mr Bedson were in the productions that were referred to by the witnesses.

In terms of section 6(1) of the 1976 Act I am required to make a determination setting out, so far as they have been established to my satisfaction, the circumstances of the death as enumerated in paragraphs (a) - (e) of the subsection. The standard of proof that I require to apply is one of a balance of probabilities.

Section 6(1)(a) - when and where the death and any accident resulting in the death took place

1. John Andrew McCafferty, sometime of 4 Gordon Street, Easthouses, Dalkeith died sometime between 10 pm on 12 February 2007 and 6.30 pm on 13 February 2007.
2. The cause of his death was acute carbon monoxide poisoning.
3. The deceased died in a Sprite Musketeer CD caravan manufactured sometime between 1980 and 1982. The caravan was parked in a field at Drumohr Caravan Camping and Holiday Lodge Park, Levenhall, Musselburgh. The caravan was owned by Brian Reid and Eileen Reid. Eileen Reid is the sister of Mrs McCafferty. The caravan was purchased by Mr and Mrs Reid from Scott's Caravans, Mayfield Industrial Estate, Dalkeith in June 2006. Scott's Caravans are a partnership, the partners being Corrine Mitchell and her mother. Scott's Caravans are sellers and storers of caravans and caravan equipment. The purchase price of the caravan was £995. Mr and Mrs Reid use the caravan on two occasions in the summer of 2006 for holidays in Morecombe for a week or ten days at a time. In September 2006 Mr and Mrs Reid left the caravan at Scott's premises for storage over the winter. It was stored at Scott's Caravans in a grassed area.
4. At the beginning of February 2007 the deceased and Mrs McCafferty were living in rented accommodation at 4 Gordon Street, Easthouse, Dalkeith. They had been told to leave this accommodation by their landlord and Mrs McCafferty had been threatened by her landlord. Mr and Mrs Reid were aware of this fact and offered to allow the deceased and Mrs McCafferty to use the caravan. They were to have the use of the caravan until they found

alternative permanent housing. They were not charged for the use of the caravan.

5. The caravan, which was a touring caravan, was taken out of storage on 10 February 2007 by Mr and Mrs Reid and taken to the site on Drumhor Caravan Park in Musselburgh. It was placed on its allocated pitch on that date and set up for use. The butane gas supply was turned on and a connection made to the site electricity supply. The deceased and Mrs McCafferty began living in the caravan on 10 February.
6. The caravan was cold and was heated by a gas heater which was a Carver Trumatic SB 1800 heater serial number CR187848. This was connected to a butane gas bottle supply which was housed in a box at the front of the caravan. In addition, the McCafferty's had the use of an electric halogen heater during the day.
7. On the evening of 12 February between 8.30 pm and 9 pm the deceased and Neil McCafferty connected a new full gas bottle to supply the heater. Neil McCafferty left his mother and father in the caravan at 10 pm on 12 February. They were both alive and well at that time.
8. On 13 February at 6.30 pm Mr and Mrs Reid attended at the caravan with an electrician who was to install an additional light in the caravan. They found the caravan locked, with all the windows closed. Mrs Reid used a spare key to enter the caravan. On entering the caravan, she found the deceased dead on the floor with his head approximately two to three feet away from the gas fire. She also found Mrs McCafferty unconscious at the other end of the caravan. Both were fully clothed.

Section 6(1)(b) - the cause or causes of death and any accident resulting in the death

Mr McCafferty died sometime between 10 pm on 12 February and 6.30 pm on 13 February. He was pronounced dead at 1905 hours on 13 February 2007. Blood samples and a urine sample were taken from the deceased. The blood and urine were examined for alcohol with negative results. Carboxyhaemoglobin was found in the blood (69% saturation). Carbon monoxide is formed from the incomplete combustion of carbon containing compounds of, for example, wood. When inhaled, it is absorbed by the red blood cells before carboxyhaemoglobin. The concentration of carboxyhaemoglobin found in the blood of the deceased lies within the range associated with fatal poisoning. The medical cause of death of the deceased was acute carbon monoxide poisoning.

Cause of accident resulting in the death

Having determined the cause of death, I now turn to the cause of the accident which resulted in the death. I found the following facts established:-

1. This caravan was over 25 years old at the time of the accident. A gas heater in the caravan was not installed at the time of manufacture. It did not form part of the manufacturers options list for the caravan. It is not known when the heater was installed. However, it was not installed recently. It was a room sealed gas appliance bolted to the floor of the caravan with its flue outlet and air intake located beneath the caravan floor. It was installed before the caravan was taken in for resale by Scott's caravans.
2. The heater was not installed in full conformity with the instructions of the manufacturer. The installation instructions form Appendix 8 of Production 8 of a report by Paul Cichy, Corgi inspector. The instructions specify that as the

heater is under floor flued, any ventilation holes in the same channel or within one metre of the flue must be blocked off and relocated outside this area if necessary. Otherwise the installation was in accordance with the instructions of the manufacturer

3. The air vent shown in photographs 10 and 19 of Appendix 10 to Production 8 was located only 470 millimetres from the heater flue outlet. The air vent was open.
4. On the evening of 12 February 2007, Neil McCafferty and the deceased changed over the butane gas cylinder as Mr and Mrs McCafferty had been unable to light the gas heater. Neil McCafferty at first only opened the cylinder valve half way, but then fully opened it as there were continuing problems in igniting the heater. The heater then ignited. There was a regulator between the cylinder and the caravan gas pipework, the operation of which was determined by demand for gas. There would have been a small time gap in the gas from the new cylinder reaching the gas appliances in the caravan whilst the pipework was purged of air.
5. The heater was in use and the switch in the on position between 10 pm on 12 February 2007 and 6.30 pm on 13 February 2007. During that period the heater was producing abnormal and potentially fatal levels of carbon monoxide. The cause of this was a partial, but significant, blockage of the heater flue outlet by nesting material, possibly placed there by a field mouse. Mr and Mrs McCafferty had parked a Hyundai Accent motor car at the side of the caravan. It was parked on the opposite side to the entry door side of the caravan close enough to the caravan to allow Mr McCafferty to have exited his car. It was parked parallel to the caravan.

6. The weather conditions for Musselburgh from 0001 until 2359 GMT on Tuesday 13 February 2007 showed that the wind was 10 to 15 miles per hour from the southwest giving gusts between 23 and 28 miles per hour before decreasing around mid afternoon to between 5 and 10 miles per hour. The temperature was between 6° and 9° by the early afternoon.
7. The weather conditions in the said period, and the location of Mr McCafferty's car provided conditions which enabled carbon monoxide produced by the gas heater in the caravan to enter the caravan through the vent mentioned previously rather than being carried away by the wind. The caravan windows were closed. Carbon monoxide is odorous and symptoms caused by its inhalation can mimic comic ailments. Mrs McCafferty felt unwell but did not identify her condition to being caused by carbon monoxide poisoning. As the effects take hold, people can experience disorientation.
8. The carbon monoxide in the caravan rose to a fatal level. Mr McCafferty was nearer to the vent through which the carbon monoxide was entering. Mrs McCafferty was found further away from the vent in a section of the caravan where the level of carbon monoxide was likely to be lower. This was because there was a vent, shown in photograph 11, above the bathroom compartment and also a rectangular brown coloured vent shown in photograph 2 behind a refrigerator in the caravan. This refrigerator was not connected to the gas supply at the time of the accident. It was able to be operated by electricity or by gas. There was also a gas oven in the caravan. This was found in the off position and was not operated during the time when this accident occurred. The gas cooker and gas/electric refrigerator did not contribute to the death.

9. There was no carbon monoxide detector in the caravan.
10. The heater was still on and the caravan warm when Mrs Reid entered the caravan. There was no smell of gas.
11. It is not possible to say when the partial blockage by nesting material occurred. However, the caravan was stored in a grassed area during the cold winter months when nests were more likely to be built by field mice looking for warmth.
12. The outlay flue terminal end of the heater did not comply with BSEN624:200 in that it was not so protected that a 16 millimetre bowl could not be introduced from the outside but any protection would at least have partly blocked the said outlet. This standard only came into effect in the year 2000. In these circumstances, if the heater was installed prior to the year 2000 then it would not have been necessary to put on this protection. The lack of protection might have enabled a mouse or other creature to enter the flue outlet and deposit the nest material. However, if some kind of protection had been placed on the outlet, this would have restricted the flow of carbon monoxide from the caravan.
13. The history of this caravan is not known. The caravan was an "S.O.B." (Sale on behalf of) caravan sold by Scott's Caravans on behalf of a customer called Mrs Horn. Corrine Mitchell, a partner in Scott's Caravans, was unable to provide further identification details or records and stated that any record relating to this transaction had been destroyed. Mrs Horn was not a regular customer known to her. When Mr and Mrs Reid purchased the caravan in June 2006, they were informed by Scott's Caravans that a pre-delivery inspection (PDI) would be carried out by Scott's Caravans. No record of such

an inspection was kept by Scott's Caravans. However, Appendix 7 of Production 8 is a blank standard service sheets used by Scott's Caravans for services. The service sheet specifies what gas and ventilation items were covered by a service and should have formed part of any PDI which was done. George Munn and John Henderson were the only employees of Scott's Caravans who carried out PDIs and services. Mr Munn stated that he did not PDI the caravan. Mr Henderson could not remember whether he had carried out a PDI on this caravan or not. Both Mr Munn and Mr Henderson were emphatic that it was normal practice for such PDIs to be carried out by Scott's Caravans even on S.O.B. caravans, although it could not be said categorically that such a PDI on this caravan had been done. The lack of record keeping in this regard did not assist in determining this fact.

14. Scott's Caravans are members of the National Caravan Council (NCC), but do not have an NCC approved workshop. There was no legal requirement to have one. The gas appliance testing that formed part of a PDI would not have revealed any combustion problem if it had existed at the time of sale. The test that would have been used and accepted by the NCC inspection to check combustion of such a heater is to examine the flame through an inspection window to check its colour and to look for soot at the flue outlet. Such an inspection would not have detected the combustion problem caused by the partial blockage if it had been carried out prior to Mr and Mrs Reid taking delivery of the caravan. It is now becoming more common to use a portable gas analyser with a probe which can be inserted into an exhaust flue to check the exhaust gases. This was not common at the time of the sale of the caravan to Mr and Mrs Reid or at the date of death.

15. For a PDI to have revealed the incorrect location of the vent would have meant that Scott's Caravans would have had to have had access to the installation instructions of the manufacturer of the heater. Neither expert, Mr Cichy nor Mr Bedson, have these available as a matter of course. They required to do research to access these instructions.
16. Neither the incorrect siting of the vent nor the lack of BSEN624:2000 protection were pointed out to Mr and Mrs Reid at the time of purchase. No rectification work was done by Scott's Caravans prior to delivery.
17. Midlothian Council Environmental Health Department became involved in the investigation of the death. Inspectors from the Council inspected the workshop at Scott's Caravans on 5 July 2007 as they were satisfied that Scott's Caravans were duty holders under section 3 of the Health and Safety at Work Act 1974. This duty extended to consumers.
18. The Council required Scott's Caravans to provide proof of competence to carry out work on touring caravan gas appliances.
19. Midlothian County Council had difficulty in identifying what was an acceptable standard to prove competence. The view of the Council was that workers should have the same or an equivalent level of training to Corgi level. Mr Munn had held such a qualification but it had expired in 2002. Such a qualification is awarded after a test of competency has been passed. That test of competency requires to be passed again after 5 years. If it is not done within that period then the Corgi registration ceases. Mrs Mitchell produced Corgi certification for Mr Munn for the year 2000, 2001 and 2002 expiring on 31 March 2002. Mr Munn did not pass any further test of competence. His qualification therefore expired in 2002.

20. An improvement notice under the Health and Safety at Work Act 1974 was served on Scott's Caravans. This improvement notice was to the effect that Scott's Caravans required to provide proof of competence by their staff to carry out work on touring caravan gas appliances. This notice was not complied with by Scott's Caravans and a prohibition notice was served upon Scott's Caravans on 24 August 2007. This prohibition notice still remains in place. No work is now done by Scott's Caravans on gas appliances.
21. Midlothian County Council gave advise to Corrine Mitchell on how she might implement her obligations under the said Act.

Section 6(1)(c) - the reasonable precautions, if any whereby the death and any accident resulting in the death might have been avoided

1. If the caravan had been fitted with a carbon monoxide detector which was in working order, the alarm would have been activated and Mr and Mrs McCafferty would have been able to take action to avoid them being subjected to carbon monoxide poisoning and the deceased's death avoided.
2. If the heater had been installed according to the instructions of the manufacturer and the vent located at least one metre from the exhaust outlet of the heater, the fatal level of carbon monoxide which entered the caravan would not have done so and the deceased's death avoided. A reasonable precaution would be to include in any servicing schedule for touring caravans a provision that all gas appliances should be checked to ensure that they are fitted in full accordance with manufacturer's instructions.

Section 6(1)(a) - any other facts which are relevant to the circumstances of the death

1. The circumstances which gave to the unfortunate death of Mr McCafferty were very unusual. This caravan was 25 years old. Although it was not known when the heater which produced the carbon monoxide had been installed, I have no reason to doubt that it had been installed for considerable period of time. There was no evidence that any problem with carbon monoxide poisoning of the occupiers of the caravan had occurred in the past.
2. The main factors which caused the death were as follows:
 1. The incorrect siting of the vent
 2. The nesting material located in the flue of the heater restricting the airflow causing incomplete combustion
 3. Weather conditions at the time.
 4. The McCafferty's car parked alongside the caravan restricting airflow under the caravan.
3. If any one of these factors had not been present, the accident would not have occurred and Mr McCafferty would not have died.
4. Mr Cichy, who prepared a report and investigated the accident the day after the death, was initially unable to recreate conditions which produced carbon monoxide in the caravan. He had switched on the fire but the levels of carbon monoxide in the caravan were quite safe. He stripped down the heater and located the nesting material which had caused airflow into the heater from the outside to be restricted. This affected the combustion process of the heater but did not produce a high level of carbon monoxide.
5. Mr Cichy, therefore required to try and discover how the high level of carbon

monoxide had entered the caravan. To do this, he covered part of the caravan with sheeting. The effect of this was to prevent the exhaust fumes which were coming from the heater dissipating into the outside air. The sheeting was close to the caravan and formed a barrier to any wind or breeze circulating under the caravan.

6. The result of this was that the exhaust fumes from the heater re-entered the caravan through the vent which was located less than the stipulated level from the exhaust outlet.
7. This resulted in a very high reading of carbon monoxide within the caravan. Thus Mr Cichy had identified the source of the carbon monoxide and how it had re-entered the caravan.
8. The difficulty was, however, that without the sheeting being in place and forming an air obstruction, there was no apparent reason as to why the carbon monoxide entered the caravan. In normal circumstances, therefore, the fumes would not have entered the caravan and would have been blown away by the air circulating under the caravan. However, it was only when Mrs McCafferty heard this evidence from the experts that it occurred to her that there was an obstruction to airflow caused by the parking of Mr McCafferty's car within close proximity of the caravan.
9. Unfortunately, the photographs which were produced were taken the day after the accident. By this time, the caravan had been taped by the police to preserve the scene. In addition, the car had been removed, presumably by the police. There was therefore no sign of any obstacle which would affect the circulation of air in and under the caravan. The experts, were therefore not in a position to know about this obstruction. They had given their evidence

before this piece of information came to light. However, it is clear from the evidence of the experts, on the information now provided by Mrs McCafferty that this provides an explanation as to why the carbon monoxide re-entered the caravan through the vent instead of being blown away by the prevailing wind and usual airflow.

There are several matters upon which I feel I should comment arising out of the circumstances of this case.

Firstly, as I have indicated, the installation of a carbon monoxide detector would have prevented this death. I understand from Mr Bedson that there are difficulties in carbon monoxide detectors being used in caravans at the present time. However, caravans have a small area and often use gas appliances. I would have thought that serious consideration should be given by anyone owning a caravan to having such a device installed. If there is any lesson to be learned from this incident, that is the most important one.

Secondly, it would appear that touring caravans are not covered by the gas industry regulations. This means that any person working on a gas appliance in a touring caravan does not require to be Corgi registered. Corgi registration is an accepted standard of competence for persons working on gas appliances. Touring caravans are inhabited by ??????? they normally rely upon Calor gas for fuel. I would have thought that the same regulations that apply to other caravans and homes should apply to touring caravans to try and ensure that persons working on gas appliances in touring caravans are Corgi registered.

Thirdly, there is no annual checking of touring caravans. These caravans are normally towed on the road. Any other road using vehicle requires an MOT after

three years. I would have thought that such an inspection and test, to include road worthiness and the safety of any appliances, should be something which ought to be required. I understand from Mr Bedson that a system of registration of touring caravans is envisaged under European regulations. This would be a first step to implementing any MOT test or inspection of touring caravans. However, this process is still in its infancy and has not yet come to fruition.

In this case, it would have supplied some way of checking on the caravan and provided the Inquiry with some history of when alterations, including the installation of the gas heater occurred. The tests would probably have to be carried out by an approved service organisation.

Finally, I would like to express my sympathy to the McCafferty family. As will be clear from this determination this was a very unfortunate set of circumstances resulting in the death of the late Mr McCafferty. Mrs McCafferty was perhaps very fortunate to have survived this event. However, she has suffered a great loss. The fact that she has to attend for almost a week to listen to the circumstances surrounding the loss of her husband must have been a difficult ordeal for her and her family. I do hope that the thoroughness of the investigation and the evidence which was presented so admirably by the procurator fiscal depute to the Inquiry will have assisted her and her family to come to terms with their loss.

I would only reiterate a comment which I have made previously after conducting a Fatal Accident Inquiry. This accident took place more than two years ago. I appreciate that an inquiry into any death needs to be thorough and takes time. However, I would again express my concern that the Fatal Accident Inquiry did not take place until two years after the death occurred. I think it is a matter of much

regret that these necessary inquiries take place so long after the event. It can only serve to lengthen the extent of suffering experienced by the family of the deceased.

I would hope that the inquiry into the conduct of fatal accident inquiries which, I understand is taking place at the present time, will result in some recommendation to expedite the hearing of such inquiries.

Sheriff of Lothian and Borders at Haddington

Dated March 2009