

SHERIFFDOM OF TAYSIDE CENTRAL AND FIFE AT ARBROATH

DETERMINATION

of

SHERIFF FIONA TAIT

**Under the Fatal Accidents and Sudden Deaths
Inquiry (Scotland) Act 1976**

in respect of

the Fatal Accident Inquiry into the death of

PETR ADAMIK (born 24 December 1978)

Arbroath, 8 August 2013

The Sheriff, having considered the cause, determines:

1. In terms of section 6(1)(a), Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 that Petr Adamik, born 24 December 1978, formerly residing at Birkhill Farm, Marywell, Arbroath died at Ninewells Hospital, Dundee and was pronounced dead at 1130 hours on 2 April 2007. The accident, namely a caravan fire, resulting in the death of Petr Adamik occurred at Birkhill Farm, Marywell, Arbroath, shortly before 0200 hours on 2 April 2007.

2. In terms of section 6(1)(b) of the said 1976 Act that the causes of death were 1(a) Smoke Inhalation and 1(b) Fire in Caravan. The cause of the accident resulting in the death was an electrical fire originating in a refrigerator located outside and between caravans 6 and 7. The fire was most likely precipitated by a thermal hotspot associated with a high resistant joint or connection. The fire burned within the refrigerator for some time before spreading to caravan 6 and then onto caravan 5 where Petr Adamik was sleeping, having consumed excessive alcohol. The spread of fire was aided by the prevailing wind.

3. In terms of section 6(1)(c) of the said 1976 Act that reasonable precautions whereby Petr Adamik's death and the accident resulting in his death might have been avoided would have been:

- (i) **arrangements for the installation, supply and maintenance of electricity:** for an electrical system appropriate and fit for the purpose for which it was being used to have been installed, supplied and maintained in conformity with the requirements and standards of British Standard BS 7671 and the Electricity at Work Regulations 1989.
- (ii) **adherence to the Model Standards for Residential Caravan Sites and in particular for (a) the installation of fire detectors and smoke detectors in caravans and (b) spacing between caravans of not less than six metres.**

4. In terms of section 6(1)(d) of the said 1976 Act that defects in the system of work which contributed to the accident resulting in Petr Adamik's death were as follows:

- (i) **the system of work for the installation, maintenance and inspection of electrical supply to the caravan site:** that there was no formal system of inspection or testing of the electrical installations at Birkhill Farm. Any such activity that did take place was *ad hoc* and failed to identify and remedy defects. It is likely that the actual precipitating cause of the fire was a specific wiring arrangement put in place by unidentified site residents but that this

was possible because of the electrical arrangements and their use permitted by the landowner Frank Hendry.

- (ii) **the system of compliance with the Model Standards for Residential Caravan Sites:** there was a failure by Frank Hendry to discharge his duty to apply for and obtain a caravan site licence in terms of the Caravan Sites and Control of Development Act 1960 and to comply with the Model Standards which would have applied to such licence.
- (iii) **the system of inspection by Angus Council:** notwithstanding Frank Hendry's primary duties to ensure he had obtained relevant statutory permissions, there were clear defects in Angus Council Environmental Health department's interaction with Mr. Hendry in terms of the opportunity to have a site licence put in place and thereby to seek to bring the site into compliance with the Model Standards. Defects also existed in respect of Angus Council Planning department's failure to continue to work with Mr. Hendry to reduce the number of caravans on site to an acceptable level in late 2005 and to ensure that planning consent was applied for.
- (iv) **the system of compliance with fire safety measures:** there was a failure by Frank Hendry to discharge his duties in terms of the Fire (Scotland) Act 2005.

5. In terms of section 6(1)(e) of the said 1976 Act that other facts which are relevant to the circumstances of Petr Adamik's death are as follows:

- (i) **the response of relevant authorities, specifically Angus Council and Tayside Fire and Rescue, to the growing presence of migrant worker sites within Angus.**

Note

The Application

The Procurator Fiscal's Application for a Fatal Accident Inquiry, lodged at Arbroath Sheriff Court on 8 November 2011, set out the following objectives:

1. to establish publicly the circumstances of the relevant death;
2. to allay public concern by exploring the standards of accommodation provided to migrant and other workers and the regulation of such accommodation;
3. in terms of section 6(1)(c) of the 1976 Act to establish that the following are reasonable precautions which could have been taken whereby Petr Adamik's death and the accident might have been avoided:
 - (i) the arrangements for the supply of electricity being designed and installed to conform to the prevailing British Standard (BS7671)
 - (ii) the arrangements for the supply of electricity being maintained to conform to the prevailing British Standard (BS7671)
 - (iii) the installation of a fire detector/smoke detector in the caravan
 - (iv) the spacing between caravans being maintained in accordance with the Model Standards for Residential Caravan Sites.
4. in terms of section 6(1)(d) of the 1976 Act to identify the defects in:
 - (i) the system of work for the installation, maintenance and inspection of the electricity supply to the caravan site
 - (ii) the system of inspection of the said premises by Angus Council for compliance with planning permission requirements under the Town and Country Planning (Scotland) Act 1997 and with the caravan site licensing regime under the Caravan Sites and Control of Development Act 1960, which defects contributed to the accident and, therefore, to the death.

5. in terms of section 6(1)(e) of the 1976 Act to identify the following facts which will be proved to be relevant to the circumstances of the death:

- (i) the lack of fire safety measures at the caravan site at Birkhill Farm
- (ii) the inspection regime of caravan sites for migrant workers operated by the relevant authorities.

The Evidence

Evidence in the inquiry was led over 27 days on various dates in October 2012, January, March and April 2013. Evidence concluded on 30 April 2013. Mr. Gavin Callaghan, Senior Procurator Fiscal Depute represented the Crown. Mr. David Thompson, Solicitor represented Angus Council. Mr. Rory Jackson, Solicitor represented Tayside Fire and Rescue (now the Scottish Fire and Rescue Service). Mr. George Donnelly, Solicitor represented Mr. Frank Hendry.

A timetable was agreed for the preparation and exchange of written submissions. The submissions were lodged in process on 6 June 2013 and a hearing on those took place on 13 June 2013. The inquiry was adjourned for a written Determination to be issued.

The Crown led evidence from the following witnesses:

1. Fiona Reilly
2. Neil Balfour
3. Graeme Christie
4. Steven Walker
5. Gavin Paterson
6. Jaroslav Jarabek
7. Grant Taylor
8. DS Bruce Peebles

9. PC Paul Benson
10. PC Gary Benson
11. Allan Innes
12. PS Ashley Dewar
13. PC Andrew Spiers
14. PC Rod Selfridge
15. Peter Dodd
16. Stephen Gunning
17. John Madden
18. Steven Thomson
19. Ian Webster
20. Colin Hannigan
21. Ross Haggart
22. Veronica Jarabekova or Moore
23. Frank Longmuir
24. Stuart Findlay
25. Vacslav Tomasek
26. Frank Hendry

At the time of Mr. Adamik's death, the witnesses held the following positions. Their positions, rank or designations may have changed since then. Fiona Reilly and Neil Balfour were paramedics with the Scottish Ambulance Service. Graeme Christie, Steven Walker, Gavin Paterson and Grant Taylor were firefighters with Tayside Fire and Rescue. Mr. Christie was a watch manager with Tayside Fire and Rescue. Detective Sergeant Bruce Peebles, Police Sergeant Ashley Dewar, Police Constables Paul Benson, Gary Benson, Andrew Spiers and Rod Selfridge were all officers with Tayside Police. Alan Innes was a forensic scientist with the Scottish Police Services Authority.

Steven Thomson, Ian Webster and Stuart Findlay were employed by Angus Council. Messrs. Thomson and Webster were respectively a senior Environmental Health Officer and acting Head of Environmental and Consumer Protection within the Environmental Health

department. Mr. Findlay was a Planning Enforcement Officer within the Planning department.

Peter Dodd was a principal agricultural inspector and John Madden was a principal electrical engineering inspector with the Health & Safety Executive. Mr. Madden had retired by the date of the inquiry.

Stephen Gunning, Colin Hannigan and Ross Haggart were respectively Group Manager, Station Manager in legislative fire safety and Station Manager with Tayside Fire and Rescue at the time of Mr. Adamik's death. Mr. Hannigan had retired by the date of the inquiry. Mr. Haggart was subsequently appointed as a manager in legislative fire safety.

Jaroslav Jarabek, Veronica Jarabekova or Moore and Vacslav Tomasek all resided at Birkhill Farm, Marywell, Arbroath at the time of Mr. Adamik's death. Frank Hendry was the owner of Birkhill Farm.

Frank Longmuir was the brother of Alexander Longmuir, an electrician who carried out electrical work at Birkhill Farm.

A Joint Minute of Agreement was entered into on behalf of the parties. In terms thereof, it was agreed:

1. that Mr. Adamik arrived at Ninewells Hospital, Dundee at 0309 hours on 2 April 2007. He was noted to have severe full thickness burns to the majority of his body. He was intubated and ventilated. He was transferred from Accident & Emergency to the Intensive Care Unit where on examination and following upon a bronchoscopy, he was found to have 75% body surface burns, mostly deep, and very severe and extensive burns of the airway. Having consulted with consultants in plastic surgery, it was decided that there was no prospect of survival and active therapy was withdrawn. Mr. Adamik was pronounced dead at 1130 hours on 2 April 2007.

2. that a post mortem examination took place on 4 April 2007 when the cause of death was identified as 1a. smoke inhalation and 1b. fire in a caravan. The post mortem report is Crown Production number 2 and is dated 14 May 2007.
3. that a toxicological analysis of blood sample disclosed that at the time of his death, Mr. Adamik had a blood alcohol level of 141 milligrams of alcohol per 100 millilitres of blood. The legal limit for drink drivers is 80 milligrams of alcohol per 100 millilitres of blood. The toxicological analysis is Crown Production number 3.
4. that Alexander Longmuir, now deceased, had carried out electrical work at Birkhill Farm. He was a qualified electrician, having completed his apprenticeship in 1975. He was given the status of an approved electrician in 1977. No information is available in relation to any subsequent training carried out by him.

Otherwise medical records, various photographs, a scale plan, police search record and the use of Czech and Slovak interpreters in obtaining witness statements were agreed.

No evidence was led on behalf of Angus Council, Tayside Fire and Rescue and Mr. Hendry.

The Submissions

On behalf of the Crown, Mr. Callaghan set out the established general propositions of law which apply in relation to fatal accident inquiries. He did so under reference to appropriate authorities and none of the other parties disputed the legal framework. The position may be summarised as follows:

1. the function of the sheriff at a fatal accident inquiry in making his determination does not include making any finding of fault or apportioning blame between any persons who might have contributed to the accident. *Black v Scott Lithgow Limited* 1990 SC 322.
2. a fatal accident inquiry is not the proper forum for the determination of civil or criminal liability. *Determination into the death of Keiran Nichol* 3 June 2010 Sheriff G Liddle.

3. it is proper to apply hindsight when identifying reasonable precautions.
Determination into the death of Sharman Weir 23 January 2003 Sheriff FL Reith.
4. in identifying any reasonable precautions under section 6(1)(c), I was referred to the observations of Sheriff Kearney in his *Determination into the death of James McAlpine* dated 17 January 1986 wherein he stated:

"In relation to making a finding as to the reasonable precautions, if any, whereby the death and any accident resulting in the death might have been avoided (section 6(1)(c)) it is clearly not necessary for the court to be satisfied that the proposed precaution would in fact have avoided the accident or the death, only that it might have done, but the court must, as well as being satisfied that the precaution might have prevented the accident or death, be satisfied that the precaution was a reasonable one." and

"The phrase 'might have been avoided' is a wide one which has not, so far as I am aware, been made the subject of judicial interpretation. It means less than 'would, on the probabilities, have been avoided' and rather directs one's mind in the direction of the lively possibilities."

5. in relation to section 6(1)(d), Sheriff Kearney observed:

"In deciding whether to make any determination (under section 6(1)(d)) as to the defects if any in any system of working which contributed to the death or any accident resulting in the death, the court must, as a precondition to making any such recommendation, be satisfied that the defect in question did in fact cause or contribute to the death.

6. section 6(1)(e) allows the making of a determination of any other facts which are relevant to the circumstances of the death but which have not been proved to have any causative effect, *Sudden Deaths and Fatal Accident Inquiries* IHB Carmichael 3rd edition paragraph 5-77.
7. the standard of proof and rules of evidence are as applicable in civil business and accordingly the standard of proof is that of the balance of probabilities, section 4(7) of the 1976 Act.

In submissions, all parties were agreed on the findings in terms of section 6(1)(a) and the cause of death in terms of section 6(1)(b).

On behalf of the Crown, Angus Council and Tayside Fire and Rescue, I was invited to find that the cause of the accident resulting in Mr. Adamik's death was a fire which started in a refrigerator which contained electrical installations and which was located between two caravans, numbers 6 and 7. On behalf of Mr. Hendry, Mr. Donnelly submitted that the source of the fire may have been as a result of an electrical fire in a distribution box within the refrigerator but that a second fire could also have been burning within Mr. Adamik's caravan, namely number 5.

In terms of section 6(1)(c), there was broad agreement between the Crown, Tayside Fire and Rescue and Angus Council as to the substance of any reasonable precautions whereby the death and accident resulting in death might have been avoided. The Crown invited me to make findings directed to:

1. the arrangements for the installation, supply and maintenance of electricity
2. the installation of fire detectors and smoke detectors in caravans and
3. spacing and adherence to the Model Standards for Residential Caravan Sites (hereinafter referred to as 'the Model Standards').

Mr. Jackson's submissions on behalf of Tayside Fire and Rescue mirrored the Crown submissions. On behalf of Angus Council, Mr. Thompson framed his proposed findings in terms of compliance with the Model Standards and separately with the statutory duties imposed on Mr. Hendry under the Fire (Scotland) Act 2005.

While Mr. Donnelly explored fully the substance of these proposed reasonable precautions within the framework of the inquiry's objectives, he concluded that no formal recommendations were required. He proceeded on the proposition that working practices and protocols which could and ought to have been implemented before the fire by Angus

Council and Tayside Fire and Rescue had been implemented following upon the fire. His submission to this effect was common to any findings under section 6(1)(c), (d) or (e).

In terms of section 6(1)(d), the Crown proposed findings in relation to:

1. the system of work for the installation, maintenance and inspection of electrical supply to the caravan site
2. the system of inspection by Angus Council and
3. the system of fire safety inspections.

On behalf of Angus Council, Mr. Thompson identified the defects in terms of Mr. Hendry's non-compliance with his statutory duties:

1. to obtain a caravan site licence thereby bringing him within the Model Standards and
2. to carry out a risk assessment in relation to any harm caused by fire.

On behalf of Tayside Fire and Rescue, Mr. Jackson submitted that the defects contributing to Mr. Adamik's death were characterised by the failure on Mr. Hendry's part:

1. to attend to an application for a caravan site licence or for planning permission,
2. to consider or apply any normal fire safety measures,
3. to comply properly with fire safety legislation including carrying out a risk assessment and to enact its findings under the Fire (Scotland) Act 2005 and
4. to have a suitable electrical system installed and properly maintained.

I was not invited to make any findings in terms of section 6(1)(e) by Angus Council or by Tayside Fire and Rescue. The Crown explored within the ambit of section 6(1)(e) the location of Mr. Adamik at the time of the fire, early assumptions made by various authorities in relation to Mr. Adamik being within caravan 6, the first call to Arbroath Fire Station and the number of fire appliances dispatched. I note that the objectives of the inquiry identified the factors which may be relevant to the circumstances of the death to be:

1. the lack of fire safety measures at the caravan site and
2. the inspection regime of caravan sites for migrant workers operated by the relevant authorities.

Determination

General

The present inquiry proceeds in terms of an application under section 1(1)(b) of the 1976 Act: it appearing to the Lord Advocate to be expedient in the public interest in respect that the circumstances of Mr. Adamik's death gave rise to serious public concern.

The evidence led established that shortly prior to 2am on 2 April 2007, residents at a caravan site at Birkhill Farm, Marywell, Arbroath became aware of a fire involving a caravan. The caravan site housed a number of migrant workers. The alarm was raised among the residents and a telephone call was made to Tayside Fire and Rescue. Tayside Fire and Rescue firefighters attended along with paramedics from the Scottish Ambulance Service and police officers from Tayside Police.

In the immediate aftermath of the alarm being raised, residents found Petr Adamik, then aged 28, lying outside of the caravans and apparently suffering from burns. He was carried a short distance into a field immediately behind the row of caravans. Mr. Adamik was assessed by paramedics and taken by ambulance to Ninewells Hospital.

Mr. Adamik was found to have significant body surface burns, mostly deep, and very severe and extensive burns of the airway. It was decided that there was no prospect of survival and active therapy was withdrawn. Mr. Adamik was pronounced dead at 1130 hours on 2 April 2007.

Post mortem examination was carried out on 4 April 2007 by Dr. Enrico Risso. The final report, completed after toxicological analyses, is Crown Production number 2 and is agreed in terms of paragraph 6 of the Joint Minute of Agreement. The report concluded that the cause of death was 1(a) smoke inhalation and 1(b) fire in a caravan.

A toxicological analysis of blood, Crown Production number 3, disclosed that at the time of his death Mr. Adamik had a blood alcohol level of 141 milligrams of alcohol per 100 millilitres of blood. The legal limit for drink drivers is 80 milligrams of alcohol per 100 millilitres of blood.

A second non-fatal casualty, Robin Sejval, sustained burn injuries to his hands which were described by Fiona Reilly of the Scottish Ambulance Service as life changing but not life threatening.

The fire was investigated subsequently by Tayside Police, by the Health and Safety Executive and by Tayside Fire and Rescue.

This Determination makes various references above to the specific numbers of caravans. There were eleven caravans in a row, numbered 1 to 11 in ascending order from left to right. Any references to caravan numbers reflect the scale plan of the caravan site at Birkhill Farm which is Crown Production number 10, agreed in paragraph 10 of the Joint Minute of Agreement. The plan was prepared on 3 April 2007 by Police Constable Paul Ainley. I note that a plan was also prepared by Tayside Fire and Rescue as Appendix ii to its Fire Investigation Report which is Crown Production number 12. The Tayside Fire and Rescue plan numbers the caravans in descending order from left to right. Caravan 6 falls to be numbered the same on both plans. The discrepancy in numbering was noted at the outset of the inquiry and all witnesses gave evidence under reference to Crown Production number 10. However, the Fire Investigation Report has to be read subject to adjustment of the caravan numbers to reflect Crown Production number 10.

Petr Adamik's Location & the Spread of the Fire

To assist in determining the cause of the accident and how that resulted in Mr. Adamik's death, under section 6(1)(b), it is necessary to address not only the source of the fire but also the order in which the individual caravans became involved in the fire and the location of Mr. Adamik both before and during the fire.

Despite the length of the inquiry and the number of witnesses called, there was limited dispute on the facts. Credibility of witnesses was largely not in issue. However, differing accounts were given in relation to firstly Mr. Adamik's whereabouts at the time of the fire and secondly the order in which the caravans became involved in the fire.

On the first point, it was clear that an early assumption was made by Tayside Police and Tayside Fire and Rescue that Mr. Adamik was sleeping in caravan 6 when the fire took hold of that caravan. The assumption seems to have developed from, on the police and firefighters' evidence, caravan 6 being most involved in fire on their arrival and caravan 5 not being substantially involved. It developed to a belief that Mr. Adamik had been engulfed in the fire in caravan 6 and having escaped was then found suffering severe burns in the vicinity of caravan 6 as the emergency services arrived. The assumption having been made and shared with the fire investigators, the Scottish Police Services Authority and the Health and Safety Executive, it was not revisited. Unfortunately that was the case even in the face of witness statements obtained by the police from residents of the site at the early stages of the police investigation.

There was, then, on the one hand the evidence of Tayside Police officers and members of Tayside Fire and Rescue, relied upon and repeated by investigators, that Mr. Adamik had been sleeping in caravan 6. On the other hand, the evidence of Jaroslav Jarabek, Veronica Moore, Vacslav Tomasek and Frank Hendry was that Mr. Adamik's allocated caravan was caravan 5. Further, Mr. Jarabek, Mrs. Moore and Mr. Tomasek spoke variously to caravan 6 being unoccupied, being used for storage and being padlocked. In his witness statement, spoken to by the police, Robin Sejval confirmed that he and Mr. Adamik were sleeping in Mr. Adamik's caravan on the night of the fire. Mr. Adamik's occupancy of caravan 5 was

separately verified by the scene investigation which revealed a gas and electricity supply to caravan 5 while there was none to caravan 6.

I have no hesitation in finding that Mr. Adamik was sleeping in caravan 5 at the time of the fire and in preferring the evidence of those living at Birkhill Farm who had knowledge of the caravan allocation and occupancy. The investigators proceeded on the basis of the police briefing and the police themselves seem to have reached their conclusion in the immediate aftermath of the fire; they did not seek at the inquiry strongly to assert or to defend that conclusion.

More troubling was the evidence in relation to the order in which the individual caravans became involved in the fire. There was no dispute that caravans 4, 5 and 6 were substantially destroyed in the fire and that caravans 3 and 7 displayed radiated heat damage. There were two distinct and competing accounts of the order of the fire. Those resident on the site - namely Messrs. Jarabek, Tomasek and Hendry and Mrs. Moore- spoke to the fire taking hold in caravan 5 and then spreading to caravans 4 and 6. In contrast, the firefighters and police officers - namely firefighters Christie, Walker and Taylor and PS Dewar and PC Spiers- spoke to arriving at the locus to see a well established fire in caravan 6, with caravan 5 pyrolysing and the fire ultimately spreading to caravan 4. The evidence of the former body was characterised by the conviction that the fire was first visible in caravan 5 whereas the evidence of the second body was characterised more by the westerly spread of the fire, although amply of the view that it was first visible in caravan 6. In relation to this chapter of evidence, each of the witnesses had reference to the scale plan, Crown Production number 10.

As noted above, credibility of these witnesses was not in issue. I gained no impression that any witness sought to mislead the court or would have had any purpose or benefit in doing so. Even within the two camps of evidence, there were slight differences and each witness brought an individual perspective, reflecting and testing his or her recollection appropriately. Each admitted to the passage of time between the fire and the inquiry but nonetheless stood firm on the direction in which the fire had spread.

The submissions on behalf of the Crown, Angus Council and Tayside Fire and Rescue urged me to prefer the evidence of the firefighters and police officers. Very fairly, they did not seek to impugn the residents' evidence rather they contrasted the professional training and dispassion of the emergency responders to the inevitable panic and upset of the residents. I was invited to place particular reliance on the evidence of firefighter Grant Taylor whose role was to spray water onto caravan 5 which was just becoming involved in fire. He did so for some five to eight minutes before the water supply ran out and caravan 5 was fully involved in fire. His recollection was clear and convincing in respect of the spread from the initial caravan on fire to the one immediately to its left, that is in a westerly direction. Similarly Watch Manager Graeme Christie spoke to the continuous process of forming a dynamic risk assessment and crucial to that risk assessment was the direction in which the fire was spreading.

Mr. Jackson undertook a careful analysis of the evidence of the residents at Birkhill Farm. He did so as a critique of the reliability of the evidence. He submitted that the evidence disclosed the residents having been awoken from sleep, being thrown into panic, involved in attempting to rescue Mr. Adamik, potentially being exposed to influence by another resident Zuzana Kocianova when she acted as an *ad hoc* interpreter and finally discussion between the residents both in the immediate aftermath of the fire and to a limited extent during the inquiry. These factors supported his submission that the better evidence was that of the professional witnesses undertaking the task for which they had been trained, which evidence was free of any contamination.

There is some merit in such submission. However, the assessment of the competing accounts is made easier by the forensic evidence which supports and is consistent with the firefighters' and police evidence. Such forensic evidence is more appropriately dealt with when considering the source of the fire below. In that context, I also consider Mr. Donnelly's submission on behalf of Frank Hendry which postulated that either the fire started within caravan 5 or alternatively that there were two sources of separate fires, coincidentally at the refrigerator and within caravan 5.

Source of the Fire

1. Seat of the Fire

Immediately following upon the fire, a multi-agency investigation and response was co-ordinated by Tayside Police. The agencies involved were Tayside Police, Tayside Fire and Rescue, Angus Council and the Health and Safety Executive. Tayside Police assumed primacy in the investigation as the agency responsible to report to the Procurator Fiscal.

Three reports and one supplementary report were before the inquiry. These are the Tayside Fire and Rescue Fire Investigation Report, Crown Production number 12, the Health and Safety Executive Technical Report and its Addendum, Crown Production numbers 13 and 14, and the Scottish Police Services Authority Locus Report, Crown Production number 16. These were spoken to by their respective authors, namely Group Manager Stephen Gunning, John Madden and Allan Innes.

The briefing received by each of the authors from Detective Sergeant Colin Leonard was to the effect that Mr. Adamik was asleep within caravan 6 when that caravan became involved in fire. As set out above, that information was incorrect. Each witness was appropriately examined and cross-examined on the potential influence of the incorrect information. In his written submissions, Mr. Donnelly explores Group Manager Gunning's concession that he would have revisited his investigation had he been advised later of the correct position albeit, significantly, that he did not think that he would have come to a different conclusion. Entirely properly, Mr. Donnelly accepts that the incorrect information may not have influenced any enquiry into the electrical system as the source of fire. Having regard to the totality of the evidence, I am entirely satisfied that each of the three authors carried out their investigations forensically, with an open mind, thoroughly and that they did not reach a predetermined conclusion. I concur with Mr. Jackson's submission that the physical evidence was critical to the findings of the joint investigation, carrying much greater weight than the initial briefing.

Allan Innes and Group Manager Gunning first attended at Birkhill Farm on 2 April 2007. John Madden first attended on 3 April 2007.

Allan Innes is a forensic scientist employed by the Scottish Police Services Authority. He has examined some 100 fires in his role. He examined the scene of the fire on 2 April 2007 and discovered the row of eleven caravans, as depicted and numbered in the plan Crown Production number 10. The row of caravans was assembled from west to east and numbered in ascending order. Mr. Innes recorded in his report that information received was to the effect that the fire originated in the rear of caravan 6, spread through this caravan and then west to involve caravan 5 then 4. The prevailing wind was from a general east to west direction. The east wall of caravan 3 and the west wall of caravan 7 exhibited heat damage. The greater heat damage was to the east wall of caravan 3. The west wall of caravan 7 exhibited limited heat damage. The area of greatest damage was to caravan 6.

The fire had consumed almost all of the fabric and internal furnishings of caravan 6. The degree of fire damage decreased from caravan 6 to 4. Small portions of the walls and floor remained of caravan 5 and larger portions of the walls and floor remained in caravan 4.

At the rear of caravan 6 were heat softened metal bed springs, lying over a distorted metal part of the caravan chassis. Within the central area of the caravan were the remains of a small refrigerator and gas fire but no gas supply to that gas fire could be established. The area at the rear of the caravan chassis appeared to have suffered the greatest heat damage.

Information provided to Mr. Innes was to the effect that the glass in the exterior door of caravan 6, to the rear of the caravan, was missing prior to the fire and that a blanket covered the door frame.

Closer examination of the rear of caravan 6 led Mr. Innes to note the presence of an extensively fire damaged refrigerator. It was located between caravans 6 and 7 and approximately adjacent to the exterior door of caravan 6. A number of electrical extension

cables led from the refrigerator to caravans within the row. The sources of the cables were traced. Some were found to feed into one caravan then into another through a series of electrical extension cables.

The refrigerator sat on two lengths of wood which lay over a small hole in the ground. The upper layers of wood immediately in front of and under the fridge were charred. The uncovered areas and surfaces on the opposite side of the pieces of wood appeared to be undamaged.

The refrigerator appeared to have been used as a weather proof container to house an electrical distribution board and multi-socket outlet. Fire had consumed the internal insulation of the refrigerator and the insulation of the sockets and plugs. The refrigerator appeared uniformly damaged from the base upwards.

Based on the foregoing scene examination, Mr. Innes contemplated that the origin of the fire was within the refrigerator and likely to be of an electrical origin. Accordingly the scene examination was suspended and arrangements were made for an electrical engineer to attend from the Health and Safety Executive, namely John Madden.

Having observed Mr. Madden's site inspection on 3 April 2007 and discussed Mr. Madden's preliminary conclusions, Mr. Innes himself concluded that the most likely origin of the fire was an electrical source originating in the refrigerator between caravans 6 and 7. Further, he opined that the fire spread through the damaged door of caravan 6, became established therein and spread west to caravans 5 and 4, assisted by the prevailing wind.

Group Manager Stephen Gunning undertook a site examination on 2 April 2007 together with Area Manager Stewart Edgar and prepared a Fire Investigation Report, Crown Production number 12. Group Manager Gunning had 26 years of service, had an HNC in Fire Safety Studies and a BSc (Hons) in Fire Risk Engineering. At the date of the present fire he had prepared six formal fire investigation reports and had been involved in fire investigations in a total of 20 to 30 fires.

Group Manager Gunning's observations at the scene of the damage to caravans 6, 5 and 4 and separately to caravans 3 and 7 were consistent with those of Mr. Innes.

With specific reference to caravan 6, he noted that substantial damage had occurred to the chassis cross sections at the rear of the caravan and adjacent to its door. There was lessening damage towards the front. The cross section had bent towards the front which he considered to be consistent with the greatest intensity of fire at the rear of the caravan. Typically a bending of beams occurs away from the source of heat. Further, he spoke to a pattern of greater heat damage on one side of the beams which illustrated a fire spread in caravans 5 and 6 from their rear to the front.

In his report, Group Manager Gunning recorded there was evidence within the debris of the use of electrical appliances in caravan 6 but it was impossible to ascertain if or how their use contributed to the fire.

Investigation of the enclosure, adjacent to caravan 6, housing the distribution board identified the enclosure was an old refrigerator with its electrical and mechanical elements removed. There was evidence that the old insulation remained and a timber board had been used to secure the associated electrical equipment. The distribution board supplied a number of sockets. Each caravan was then connected via a trailing lead.

Group Manager Gunning's excavation of the immediate area of the refrigerator identified severe fire damage to the enclosure at both high and low levels. The distribution board and associated cable were damaged by fire. Evidence was also present that burning had occurred below ground level with the area adjacent to the main cable having significant charring, resulting in the insulation of the main cable being significantly damaged. He considered that the damage was consistent with a smouldering fire over a long duration.

Group Manager Gunning then explored the possible sources of ignition which could have resulted in the fire. He concluded that the supposed cause of fire was from the failure of

electrical equipment or insulation within the refrigerator enclosure containing the distribution board. He was unable to determine whether this was due to overheating or the result of a short circuit.

In his written report, Group Manager Gunning considered that the fire had been smouldering for some time and generated sufficient heat to ignite the surrounding material. In oral testimony, he set out a time frame of between an hour and some days or weeks, tending to the view that electrical fires can smoulder for days, breaking down insulation. Presented with Mr. Madden's opinion, Group Manager Gunning refined his view to a period of two hours from ignition to discovery but held to the view that there could have been a lengthy period of smouldering and deterioration. The internal insulation and timber provided the fire loading to develop an intense localised fire. The flames subsequently impinged upon caravan 6, possibly assisted by the wind. On the basis of his understanding that there was no glass in the door of caravan 6, Group Manager Gunning observed that no resistance was offered to the fire which spread into the internal compartment and in turn to caravans 5 and 4.

The supposed cause of fire was determined partly on the basis that the damage to the distribution board enclosure and to the timber, upon which the enclosure was sitting, was not consistent with exposure to radiated heat from caravan 6. It was further determined by exclusion of other possible causes. He excluded ignition due to a faulty gas appliance as no gas was present at caravan 6. He expressed the view that a fire started either accidentally or wilfully using a naked light would not have resulted in the damage observed at the scene. Nonetheless, as there was no evidence to either substantiate or dispute careless disposal or wilful fire raising, Group Manager Gunning conceded that it remained a possibility. In the wider context of his evidence, I understood him to mean that it could not be excluded but that did not detract from the failure of electrical equipment or insulation within the refrigerator as the supposed cause.

I pause to observe that Robin Sejval's evidence, spoken to in terms of his police statement Crown Production number 77, was to the effect that Mr. Adamik had not lit candles in his

caravan on the weekend of the fire nor had he been smoking as he fell asleep. These comments are specific to the night of the fire. I acknowledge the strong body of evidence speaking more generally to the prevalence of candles in Mr. Adamik's caravan and his tendency to smoke and drink to excess.

It is important to note that Mr. Innes and Group Manager Gunning employed the same approach to identifying the seat of the fire. Their findings were identical. Each saw the degree of damage and pattern of destruction as good indicators of the origin of the fire. The degree of damage increased from caravan 4 to caravan 6, leading to the rear of caravan 6 where there was distortion to the chassis metal. Having regard to that distortion and the fact that the contents of caravan 6 were consumed, Mr. Innes was of the view that the greatest heat and prolonged fire had occurred in that general area. Group Manager Gunning echoed this view in asserting that the greatest damage is found where the fire starts. He spoke to fire spreading in a V pattern; the most intense damage is at the seat of the fire with damage lessening as the fire spreads. He also brought into play the impact of wind direction and the spacing between the caravans.

Focus then turned to the refrigerator, sitting on wooden sleepers and the evidence of charring. Mr. Innes was clear that had the fire started outwith the refrigerator, then the refrigerator would have protected the wooden sleepers and there would have been less charring. By the time Group Manager Gunning gave his evidence, the wooden sleepers and the casing of the refrigerator had been lodged as Crown Label numbers 1 and 2. They had not been available for direct comment by Mr. Innes. Group Manager Gunning highlighted the deep charring on the sleepers, indicative for him of a long burning, intense fire.

Moreover, he had regard to the damage to caravan 7. Had the fire spread from caravan 6 to the refrigerator, rather than the reverse, then the requisite intensity of fire to cause the destruction within the refrigerator would have caused much greater damage to the west wall of caravan 7.

Again in common with Group Manager Gunning, Mr. Innes employed a process of elimination of other possible causes. He saw no evidence to support the use of accelerants, thereby excluding wilful fire raising.

Mr. Innes gave careful consideration to the alternative hypothesis, supported by the evidence of the site residents, of the fire starting in caravan 5 and spreading to caravans 4 and 6. Had that been the case, he would have expected the damage to caravan 6 to resemble more closely that seen to caravan 4 and in turn for the damage to caravan 5 to resemble more closely that seen to caravan 6.

Group Manager Gunning drew further support for his opinion that the fire started within the refrigerator from the time which had elapsed between discovery of the fire and the fire being brought under control. He would not have expected to see the degree of damage visible to the refrigerator had it not been the seat of the fire and if the fire had started elsewhere and spread to the refrigerator.

I found Mr. Innes and Group Manager Gunning to be impressive witnesses. Mr. Innes gave his evidence in a straightforward and professional manner. At no time did he seek to go beyond his qualifications and experience. Group Manager Gunning was subjected to much greater cross-examination and in particular in relation to the impact of the briefing to the effect that Mr. Adamik was in caravan 6. I agree with Mr. Jackson that Group Manager Gunning made appropriate concessions about the limitations of witness evidence available to him and that he had wrestled with the possibility of the fire starting elsewhere. While his fire investigation report was available to the inquiry and spoken to by him, Group Manager Gunning helpfully expanded about the report and his oral evidence provided a more cohesive account. He was at no time dogmatic but rather displayed considerable willingness to assist the inquiry and to test thoroughly his own findings.

Before turning then to the specialist electrical engineering evidence of John Madden, the forensic evidence of Allan Innes and Group Manager Gunning enables me to conclude that the seat of the fire was within the refrigerator located between caravans 6 and 7. Further, I

accept their analysis of the available physical evidence as demonstrating that the fire spread from the refrigerator to caravan 6 and thereafter to caravans 5 and 4 in turn. It follows, that when taken with the forensic evidence, I prefer the evidence of the firefighters and police officers to the Birkhill Farm residents as to the direction in which the fire spread.

As referred to above, Mr. Donnelly invited me to consider whether the fire began within caravan 5 and spread from there or whether there were two sources of separate fires coincidentally within the refrigerator and within caravan 5. He posed the questions having regard to the residents' evidence on the spread of fire and, what he termed, the false premise - shared with the investigators- that Mr. Adamik was in caravan 6. I have already assessed the relative reliability of the evidence of the residents on the one hand and the emergency responders on the other. However, crucially any conclusion that a fire started in caravan 5 is wholly unsupported by forensic evidence and indeed would be contrary to that evidence. Accordingly, I decline to accede to any proposition which proceeds on a fire starting in caravan 5.

2. Cause of the Fire

The seat of the fire having been identified as within the refrigerator, matters turn evidentially to the cause of the fire. At this point, Mr. Innes and Group Manager Gunning deferred to the electrical engineering expertise of John Madden, then a Principal Inspector (Electrical Engineering) with the Field Operations Directorate Scotland Specialist Group of the Health and Safety Executive. Mr. Madden's *curriculum vitae* is Crown Production number 76. All parties were unequivocal in accepting his evidence as authoritative, based on extensive academic qualification and experience, both in the field and as a specialist inspector. I should like particularly to record the inquiry's gratitude for his ability to simplify and clarify very complex electrical evidence. His evidence was subject to very limited cross-examination and was in no way contradicted.

In common with the other investigators, Mr. Madden was briefed by police officers to the effect that Mr. Adamik was sleeping in caravan 6 on the night of the fire. The

misinformation is of no moment to Mr. Madden's role as his findings were predicated on the fire investigators' conclusion that the seat of the fire was the refrigerator. For the reasons set out above, I accept the fire investigators' evidence.

Notwithstanding the complexity of subject matter of Mr. Madden's evidence, it was unchallenged and is accepted by all parties, indeed commended, in their submissions. Accordingly, I propose to reproduce the relevant parts of Mr. Madden's report, Crown Production number 13, wherein he sets out his conclusions.

Mr. Madden first attended at Birkhill Farm on 3 April 2007 to assist with the technical aspects of the investigation, the suggestion being that the fire may have been ignited by an electrical fault. He examined the electrical systems in conjunction with members of Tayside Fire Investigation Unit. Police search officers followed the various cables from the fire damaged distribution board within the refrigerator to the various caravans and reported to Mr. Madden.

For orientation purposes, I reproduce Figure 1 from Crown Production number 13 to show the arrangement of the caravans and electricity supply cables.

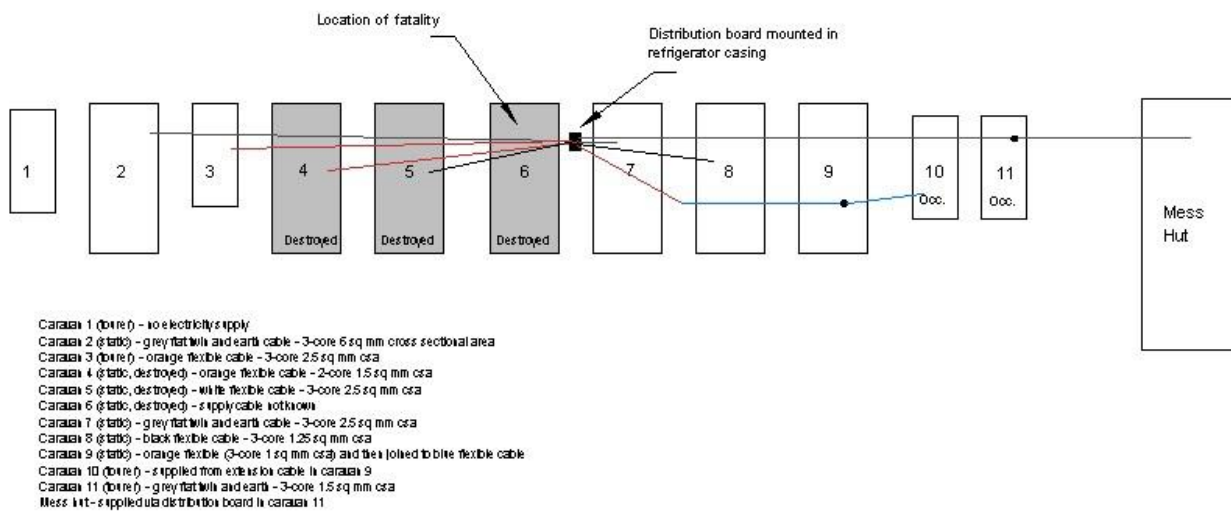


Figure 1 Arrangement of caravans and electricity supply cables

It has been established above that the caravans have been numbered 1 to 11 in ascending order from west to east. The wooden hut which acted as a mess hut for the residents is at the eastern end of the row. Mr. Madden noted that caravans 6, 5 and 4 had been destroyed by fire. Significantly, he concluded that as caravan 7 had suffered only minor fire damage to the outer skin on its western side and that restricted to its northern half, then if the fire started in or close to caravan 6, the prevailing wind must have been from the east.

In his report at paragraphs 2.1.4 to 2.1.8, Mr. Madden records his physical findings in relation to the refrigerator. There were the fire-damaged remains of a metal case situated on the ground between caravans 6 and 7. The remains of the refrigerator casing were produced to the inquiry as Crown Label number 2. They were described by Group Manager Gunning

and Mr. Madden as being typical of an under counter domestic fridge. Photograph 2 of Mr. Madden's report shows the fire-damaged remains.

The casing was resting on a piece of fire-damaged wood that covered a pit out of which ran a steel wire armoured electric cable. The cable entered the refrigerator casing through its underside and was connected into a fire-damaged small electrical distribution board located inside the casing. The cable entered the distribution board through a hole in its back plate through which also ran a number of copper wires. There was a length of single core cable wrapped around the wire armouring of the cable just before it entered the distribution board and this was connected at its other end to a metal spike that had been driven into the ground about 0.75 meters away from the casing.

There did not appear to have been a metal cover or a rear metal panel for the casing. There was a significant amount of fire debris at the bottom of the casing and inside the pit, comprising the fire damaged remains of wood, insulating foam and metal components.

There were electric cables running along the ground from the various caravans and the mess hut towards the refrigerator casing. In the main, the cables ran along the surface of the ground although some of the cables were routed through a length of grey plastic pipe.

Mr. Madden inspected the interior of the refrigerator. The refrigerator components had been removed from the case and an electricity distribution board had been mounted inside, most probably -he concluded- on a wooden back-board, together with five double socket outlets of the type covered by British Standard (BS) 1363, which is the British Standard for 13 amp domestic plugs and sockets. The distribution board was the source of the electricity supply to the caravans and mess hut and was supplied through a buried cable from a power distribution point in a nearby wooden building. Four, and possibly five, of the caravans were supplied with electricity through cables of varying types and sizes terminated in BS 1363 plugs that were plugged into the socket outlets in the refrigerator case. He could not determine how the other caravans received their electricity although a total of eight caravans had cables running directly to them from the distribution board.

Mr. Madden described the use of the refrigerator as, in effect, an outside junction box as unique in his considerable experience and as having no obvious logic. It did not offer protection against water ingress if that were its intended purpose.

Mr. Madden then explored possible causes of the fire. He reminded the inquiry that it is well known that electricity has the potential to cause fires and at paragraph 3.3.1 set out the mechanisms by which that can happen in the following terms:

‘ i. Hot spots in electrical systems can be created by, for example, loose or poorly made joints and by contaminated/dirty contacts in devices such as circuit breakers and switches; these introduce electrical resistance in the circuits that will generate heat when current is passed. The surfaces and materials may become hot enough to cause ignition of combustible materials and consequential fire.

ii. Insulation failure on cables and components can cause current to flow, typically between a live conductor and a conductor that is either a neutral conductor or one that is earthed, or between live conductors at different voltages. This can create localised heating, leading to fire, or to the generation of arcs and sparks that may have sufficient energy to ignite adjacent combustible materials. In some instances, the insulation failure can lead to highly energetic explosions, particularly in systems that have high prospective short circuit current.

iii. If a conductor, such as the wires in a cable, carries excessive current, the current may heat the conductor to the extent that the insulation covering it melts and creates the conditions for fire. The excess current can be caused by faults in the circuit, such as short circuit and earth faults, or by overload caused by, for example, an electric motor stalling. Electric cables are rated according to their current carrying capacity – the amount of current that the cable can carry without overheating. The current carrying capacity is predominantly determined by the type of conductor (copper, aluminium etc.), the cross sectional area of the conductor, the type of insulation covering the conductors, and where the cable is located (in free air, surrounded by thermal insulation, installed alongside other cables etc.).’

Mr. Madden expanded his evidence to emphasise that electrical systems have to be designed and maintained to prevent these types of fault occurring and to prevent the faults, when they do occur, leading to danger so far as reasonably practicable. He referred to the applicable standards to which I refer below in looking at reasonable precautions.

Mr. Madden then excluded both insulation failure and overloading as possible causes of the fire. In relation to insulation failure, he did so as the residual current devices (RCDs) on the supply to the caravan distribution board were correctly connected into the circuit and were

serviceable. Accordingly, in the event of an earth fault occurring, the RCDs would have tripped off very quickly and disconnected the supply before a fire could have started.

In relation to overloading, Mr. Madden envisaged that some of the cables supplying the caravans could have been overloaded. He thought it unlikely that all potential appliances and so loads would have been on at the same time. In so concluding, he applied the concept of diversity. Further, it was likely that the cable was protected by a 13 amp fuse as well as two RCDs to provide earth fault protection. In the absence of further evidence, he discounted overloading as a possible cause of fire.

He then explored the third potential cause. He was of the view that for an electrically-initiated fire, the most probable ignition mechanism was a thermal hot spot associated with a high resistance joint or connection. His reasoning is as follows:

‘ Given the extensive fire damage, it is not possible to determine precisely where the high resistance occurred but it is my opinion that it is most likely to have occurred in at least one of the plugs supplying the caravans and most probably a plug supplying either caravan 2 or caravan 11 because both of the plugs were connected to cables with solid copper conductors.

My reasoning is that it is very difficult correctly to connect cables with solid copper conductors into domestic plugs, even more so when the cross sectional area of the conductors is as high as 6 mm² as in the case of the cable supplying caravan 2. The conductors are difficult to manipulate and bend into the pin terminals and this can result in connections not being made at all, or in connections being loose. As previously described, domestic 3-pin plugs are manufactured to British Standard 1363 *13 A plugs, socket-outlets, adaptors, and connection units. Part 1 Specification for rewirable and non-rewirable 13 A fused plugs*. This standard specifies that this type of plug is suitable for use with flexible cables having conductor cross-sectional areas between 0.5 mm² and 1.5 mm² inclusive. They are not suitable or designed for use with semi-rigid cables with solid copper conductors and particularly cables that have solid copper conductors with cross sectional areas of 2.5 mm² and 6 mm².

Poorly made connections can introduce electrical resistance, which can lead to localised heating that can reach very high temperatures. This can create temperatures that are high enough to melt brass and cause plastics to burn, particularly if electrical arcs develop at the connections. If these components are mounted on a wooden backboard, as was the case in the refrigerator, the wood could be ignited and this could allow the development of a fire. It is my opinion that this is the most likely explanation for how this fire started and developed.’

The Inquiry heard evidence from Mr. Madden, Allan Innes and Stephen Gunning that there were both combustibles and a supply of oxygen within and to the refrigerator which would have allowed the fire to become well developed before spreading from the refrigerator.

The foregoing analysis enables me to conclude on the balance of probabilities that the fire started within the refrigerator between caravans 6 and 7 and spread to caravan 6 and thereafter to caravans 5 and 4. The most probable cause of that fire, and so the accident resulting in Mr. Adamik's death, was a thermal hot spot associated with a high resistance joint or connection.

Being satisfied that Mr. Adamik and Robin Sejval were sleeping within caravan 5, the only evidence available to the inquiry as to how they became involved in the fire and exited caravan 5 is the hearsay evidence of Mr. Sejval, contained within his police statements, Crown Production numbers 77 and 78. That evidence was in the following terms:

'The first thing I remember was opening my eyes and seeing flames. I could smell the smoke and it was a terrible smell. I looked around and saw that there was lots of fire at the far end of the caravan away from the beds and nearer the door. I got up and tried to get out. I couldn't see as there was a lot of smoke and was trying to find the door using my hands. I could see Petr lying on the other bed and thought he was sleeping. I eventually found the door and managed to open it, but it was all in flames and I burnt my hands really badly trying to get it open. When I managed to get out I ran around to the window.'

After he had summoned help, Mr. Sejval's statement recorded:

'When I got to the caravan, I saw Petr lying on the ground, outside the caravan door. I'm not sure if Petr was in flames or if the flames were coming out of the caravan door.'

A number of witnesses spoke to the door of caravan 5 opening onto caravan 6. Firefighter Grant Taylor feared for anyone stepping from caravan 5 into the immediate environment of a fire fully involving caravan 6 without protective clothing. Group Manager Gunning accepted that such a scenario could account for Mr. Adamik's injuries. On balance, Mr. Sejval became aware first of the fire within caravan 5 and exited, burning his hands on the door. Shortly thereafter, Mr. Adamik exited the caravan into the fire which had engulfed

caravan 6 and spread to caravan 5. Mr. Adamik was then discovered nearby by other residents, having collapsed and having sustained severe burn injuries. He was carried by the residents a short distance into the field to the rear of the caravans.

I was not invited by any party to find that Mr. Adamik was still within his caravan when the emergency services arrived. Nonetheless, I am satisfied that Mr. Adamik had exited caravan 5 by the time that the first emergency services arrived. I draw support from the evidence to the inquiry of Messrs. Jarabek and Tomasek and of Mrs. Moore.

Reasonable Precautions

1. Arrangements for the installation, supply and maintenance of electricity.

I repeat Mr. Madden's evidence above that electricity has the potential to cause fires. Therefore, electrical systems have to be designed and maintained to prevent these types of faults occurring and to prevent the faults, when they do occur, leading to danger, so far as reasonably practicable. It is obvious but cannot be overstated.

The Crown led evidence from the forensic witnesses and from Peter Dodd of the Health and Safety Executive as to the general state of electrical installation. They, together with fire service and local authority witnesses, were shown a large number of photographs taken in the immediate aftermath of the fire. These are within the books of photographs Crown Production numbers 4 to 9, prepared variously by Scottish Police Services Authority, the Health and Safety Executive and Tayside Fire and Rescue. The inquiry had the considerable benefit of John Madden's evidence and expertise to explain the particular deficiencies in electrical installation but many of the deficiencies were so patent as immediately to be understood by the lay observer.

In summary, the electricity supply arrangements both to the caravans and within the bunkhouse accommodation failed to comply with BS 7671 Requirements for electrical installations and the Electricity at Work Regulations 1989. Mr. Madden spoke to BS 7671

being the widely recognised standard for the design of low voltage power distribution systems and compliance with it providing a presumption of conformity with the relevant parts of the Electricity at Work Regulations 1989. In the immediate context of the fire, he listed the most serious non-conformities as:

1. the unsafe combination of the solid copper cables and the BS 1363 plugs,
2. the installation of the distribution board and socket outlets in the refrigerator, which exposed the electrical equipment to wet environmental conditions and
3. the routing of the cables on the surface of the ground without any form of mechanical protection.

At paragraph 3.4.1 of his report, Crown Production number 13, Mr. Madden tabulated the various hazards revealed by his inspection and the applicable regulations. I reproduce that table for ease of reference.

Part of system	Description of hazard	Relevant British Standard and precautionary measure	Relevant regulation in EAW Regs
BS 1363 plugs connected to solid copper cables supplying the caravans	It is very difficult to make good electrical and mechanical connections inside the plugs. This can lead to poor or open circuit earth connections and high resistance joints, creating the risk of electric shock/burn injuries and fire.	BS 1363 BS 7671 Section 526 Only flexible cable should have been used to supply the caravans if the cables were to be terminated in plugs. Cable with solid conductors could have been used if the cables were terminated into appropriate fittings	Regulation 4(1) Regulation 6 Regulation 10

		designed specifically for non-flexible cables.	
The mounting of the distribution board and sockets in the refrigerator casing.	This electrical equipment was open to the elements, especially rain water. The equipment was not suitable for use in wet environments; eg BS 1363 plugs and sockets provide no protection against the ingress of water and moisture. Water ingress can cause electrical faults, leading to protection devices tripping, and create electrical hazards such as electric shock and burns and fire.	BS 7671 522-03 Power should have been distributed through distribution equipment mounted in a weather-proof enclosure. Such equipment is readily available for use at places such as travelling caravan sites and on construction sites. The equipment has integral weather proof socket outlets.	Regulation 6
Cables running to the caravans on the ground surface	Unless cables are provided with some form of mechanical protection, the outer sheathing and insulation can easily become damaged, exposing the internal conductors. Direct contact with these exposed conductors can lead to electric shock/burn injuries.	BS7671 522-06-3 The cables should have been run in ducting, trunking or conduit, or buried, to protect them against mechanical damage.	Regulation 6
BS 1363 plugs connected to	Domestic plugs to BS1363 are not designed to be	BS 1363 BS 7671 Section 526	Regulation 4(1)

flexible cables containing conductors with cross sectional area greater than 1.5 mm ² supplying the caravans.	connected to cables of this size. It can lead to connections with inadequate electrical and/or mechanical strength, leading to the risk of electric shock/burn injuries and fire.	If cables with cross sectional area greater than 1.5 mm ² had to be used, they should either have been permanently connected or have been connected to suitably sized industrial plugs and sockets.	Regulation 10
Twisted connections in the circuit protective conductors in the farm building and in the wooden hut	Simply twisting wires together is not a suitable means of providing a joint that has adequate mechanical and electrical strength and durability.	BS 7671 526 The wires should have been connected together using connectors that provide adequate electrical and mechanical strength.	Regulation 10
Exposed single-layer insulated wires on the distribution board in the wooden hut.	Wires with only a single layer of insulation must be protected against mechanical damage that may lead to the inner conductors becoming exposed, creating the risk of electric shock and burn injury.	BS 7671 521-07 Non-sheathed cables for fixed wiring should be enclosed in conduit, ducting or trunking.	Regulation 6
Inadequate size of circuit protective conductor in the	The separately-run circuit protective conductor in the farm building was too small for the associated	BS 7671 543-01 The cross sectional area of the circuit protective	Regulation 4(1)

farm building	concentric cable.	conductor should have been the same as that of the phase conductor.	
Bare circuit protective conductors (earth wires) in the farm building and in the distribution board in the wooden hut.	The conductor may be inadequately protected against mechanical and chemical deterioration, leading to the loss of earth continuity and the associated risk of electrical injury.	BS 7671 543-03-02 A protective conductor having a cross sectional area up to and including 6 mm ² must be protected throughout by a covering at least equivalent to that provided by the insulation of a single core non-sheathed cable of appropriate size.	Regulation 6
Connection of wire armouring into the earth bar in the caravan distribution board.	Only 17 out of the possible 36 strands of wire armouring were connected into the earth bar, reducing the effective cross sectional area of the protective conductor by more than one half.	BS 7671 543 Good practice would be for the wire armouring to have been terminated in a metal cable gland at the case of the distribution board and a circuit protective conductor connected between the gland and the earth bar.	Regulation 4(1)
Installation of the RCD in the distribution	Distribution boards are certified by the manufacturers as being	If an RCD was specified for the supply to the distribution board, one	Regulation 4(1)

board in the workshop.	safe. Modifying the assembly by cutting a hole in the cover will negate that certification and could render the distribution board unsafe, particularly as the RCD was not secured inside the enclosure.	should have been provided externally in a suitable proprietary enclosure, or a distribution board with an RCD incomer (rather than a simple disconnecter) could have been used.	
Incorrect colours used on wires	Colours of insulation on live, neutral and earth wires are prescribed. Incorrect colours were used in, for example, the cable supplying the switch in the farm building (the neutral should have been black rather than blue) and the wiring on the distribution board in the wooden building (brown used for neutral and blue used for live, whereas it should have been the opposite way around). Use of incorrect colours creates confusion and the risk of consequential injury.	BS 7671 514 For non-flexible cables installed before April 2006, the live wires should have been red, yellow and blue, and the neutral should have been black. For those installed after April 2006, the live wires should have been brown, black and grey, and the neutral should have been blue.	Regulation 4(1)
Inadequate or no labelling on switchgear	Switchgear such as circuit breakers and switches need to be labelled so that people	BS 7671 514-01-01 Labels should have been	Regulation 12

throughout the installation	know which circuits they are switching. Failure to label can lead to incorrect devices being switched on or off and this can lead to danger.	provided to indicate the purpose of each item of switchgear and controlgear.	
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At paragraph 3.4.2, Mr. Madden provided his overall impression of the electrical installation, supply and inspection arrangements in the following terms:

‘My overall impression is that the electrical distribution arrangement up to and including the socket outlets had been installed by someone who had some electrical knowledge and understanding but who had little competence on safe installation practices. The electricity supply arrangements from the socket outlets to the caravans were haphazard and unsafe. The electrical systems inside the accommodation – the touring caravans, the static caravans, and the rooms in the wooden building – were in a generally poor and in some instances unsafe condition. It is also clear that the electrical installation had not been inspected and tested by anyone with a sound understanding of safe installation requirements and practices, otherwise the defects that I have listed above would have been identified and rectified.’

It was the evidence of Frank Hendry that the electrical work at these caravans and the bunkhouse, as opposed to caravans elsewhere at Birkhill Farm, was carried out by Alexander Longmuir. While the extent of work undertaken was disputed by Mr. Longmuir’s brother Frank Longmuir, both he and Mr. Hendry confirmed that Alexander Longmuir was a time served electrician, employed by a firm of electrical contractors in Montrose. Crown Production number 22 is an email from Fiona Cornwall of Select dated 11 June 2009 to the Health and Safety Executive confirming Alexander Longmuir’s registration as an approved electrician. Alexander Longmuir and Mr. Hendry were acquaintances and any work was instructed by Mr. Hendry outwith Mr. Longmuir’s employment and as, what was referred to as, a homer.

Alexander Longmuir died very shortly after the fire and before he could be questioned about any involvement. John Madden, as stated above, described the electrical work as

having been carried out by someone who had some electrical knowledge and understanding but who had little competence on safe installation practices. By contrast, Frank Longmuir described his brother as having the highest professional standards and as refusing to undertake certain work instructed by Mr. Hendry.

Mr. Hendry's evidence was a portrayal variously of ignorance of all things electrical, reliance upon a skilled tradesman and bewilderment at both the inadequacy of the installation by Mr. Longmuir and its adaptation by the residents of the caravan site. On his behalf, Mr. Donnelly submitted that Mr. Hendry was entitled to expect and to rely upon Mr. Longmuir, as a qualified electrician, to undertake work in accordance with the prevailing British Standards. It was Mr. Longmuir who persuaded Mr. Hendry to use a stripped out refrigerator and that on the basis that a commercially sold, designated waterproof housing unit would only have two keys. Mr. Donnelly concluded that Mr. Hendry was badly let down by Mr. Longmuir.

I reject Mr. Donnelly's submission for a number of reasons. Not only did Mr. Hendry seek to rely upon his instruction of Alexander Longmuir, he gave evidence that he had no idea that one of the bunkhouses had been partitioned to create living and sleeping accommodation. Separately he claimed ignorance that the caravan residents were using electricity in the caravans beyond hairdryers and radios. On seeing any extension cables or electrical connections, he pulled the cables out in a seeming attempt to disconnect any supply which he saw as illicit. In relation to inspection and maintenance of the electrical system, Mr. Hendry's evidence was that Mr. Longmuir would come on site regularly enough to look over the system. On any view, Mr. Hendry's evidence about inspection and maintenance fell short of Mr. Madden's evidence that there should be an annual inspection by a competent party.

My first impression was that the foregoing evidence of Mr. Hendry was incredible and fell to be rejected. However, I came to the conclusion that his evidence on this chapter, in common with his evidence on other chapters, was indicative of a disinterest and carelessness as to what was taking place on site and to the consequences. Such disinterest

and carelessness related to the electrical installation, to its inspection and maintenance and to its use and adaptation by the residents. Such disinterest and carelessness sit very uncomfortably with Mr. Hendry's status as landowner and beneficiary of the rental payments made by the residents. The same disinterest characterises Mr. Hendry's approach to and dealings with Angus Council in relation to planning permission and to a caravan site licence and to any obligations to ensure fire safety. His disinterest was coupled with, it seems to me, a certain convenience in doing the bare minimum. I do not accept that Mr. Hendry was unaware that certain obligations fell upon him, certainly in relation to planning permission and a site licence. I address these issues more fully below.

The inquiry clearly did not hear from Alexander Longmuir nor were any statements available from police or Health and Safety Executive interviews. His brother seemed genuine in his belief that his brother was a diligent tradesman and had shared disquiet about his final involvement at Birkhill Farm. While I can be satisfied that Alexander Longmuir undertook electrical installation work and that the basic installation and certainly the use of a refrigerator are justifiably criticised by John Madden, I agree with the Crown submission that it is impossible to determine the precise scope of the work undertaken by Mr. Longmuir and that the determined cause of fire directly resulted from adaptation or extension of the electrical supply by the site residents. I deal below with this aspect in relation to defects in the system of work. Again, I necessarily make reference to Mr. Hendry's disinterest and carelessness.

I am satisfied that installation, supply and maintenance of the electrical system in conformity with the applicable British Standard and legislation are reasonable precautions which may have prevented Mr. Adamik's death. It was John Madden's evidence, which I accept, that if the electrical system had been designed and installed by a competent person so as to conform to BS 7671, and had been maintained in that condition, the fire would not have occurred.

2. Adherence to the Model Standards for Residential Caravan Sites and in particular for (a) the installation of fire detectors and smoke detectors in caravans and (b) spacing between caravans of not less than six metres.

These reasonable precautions proceed on the basis that the Model Standards for Residential Caravan Sites were applicable to the caravan site at Birkhill Farm. The Model Standards were specified by the Secretary of State in terms of section 5(6), Caravan Sites and Control of Development Act 1960. They were produced by the Scottish Development Department on 31 May 1990. No exception was taken to their application. They are Crown Production number 52.

Birkhill Farm did not fall within the exemption for agricultural and forestry worker sites, that is 'for the use as a caravan site of agricultural land for the accommodation during a particular season of a person or persons employed in farming operations on land in the same occupation' in terms of section 2 and the First Schedule to the 1960 Act. While the terms of the exemption may have given rise to questions of interpretation, there were no such questions in relation to Birkhill Farm as the evidence was that none of the caravan site residents worked at Birkhill Farm and a number resided there throughout the year. In the immediate aftermath of the fire, a questionnaire was compiled for completion with the site residents. These are Crown Production numbers 92 to 107. None of the completed questionnaires disclosed that any of the residents worked at Birkhill Farm. Steven Thomson, a senior Environmental Health Officer with Angus Council spoke to the site falling properly to be considered as a permanent residential site to which the Model Standards would apply.

There was no demurrals from the proposition that the caravan site ought to have complied with the Model Standards. Paragraphs 22 to 30 make provision for fire safety measures.

Paragraph 25 recommended the installation of smoke detectors within individual caravan units. As submitted by the Crown and accepted by Mr. Donnelly on behalf of Mr. Hendry, a system of fire or smoke detectors may have alerted Messrs. Adamik and Sejval to the spread

of fire at an earlier stage. Mr. Donnelly correctly qualifies his acceptance having regard to their drunken state on the particular night.

Nonetheless, it is well established that the terms of section 6(1)(c) of the 1976 Act require a finding of a reasonable precaution whereby the death or accident resulting in death *might* have been avoided. As stated in Carmichael *Sudden Deaths and Fatal Accident Inquiries* Third Edition at paragraph 5.75:

‘The precise wording of Section 6(1)(c) must be kept in mind. What is required is not a finding as to a reasonable precaution whereby the death or accident “would” have been avoided but whereby the death or accident resulting in death “might” have been avoided....Certainty that the accident or the death would have been avoided by the reasonable precaution is not what is required. What is envisaged is not a “probability” but a real or lively possibility that the death might have been avoided by the reasonable precaution.’

Again there was no demurral from the proposition that a reasonable precaution which might have prevented Mr. Adamik’s death would have been for the caravans to be spaced in accordance with paragraph 2 of the Model Standards. Paragraph 2 provides that the distance between any two caravans should not be less than six metres.

The uncontradicted evidence of the police, fire service and Health and Safety Executive witnesses was that the spacing of the eleven caravans was far less than the required six metres. The Tayside Fire and Rescue witnesses spoke to the risk and rate of spread being diminished had the caravans been spaced in accordance with the Model Standards.

Defects in any System of Working

- 1. System of work for the installation, maintenance and inspection of the electrical supply to the caravan site.**

I adopt my observations in terms of section 6(1)(c) above. The electrical system as installed failed to comply with British Standard BS 7671 and the Electricity at Work Regulations 1989. There was no formal system of inspection or testing of the installation. Any inspection took

place on an *ad hoc* basis and failed to identify or rectify the dangers which the installation posed.

As determined above, it is likely that the immediate cause of the fire was a wiring arrangement effected by unidentified site residents. This was possible in the prevailing conditions at Birkhill Farm, namely a climate of disinterest and carelessness on the part of Mr. Hendry. Notwithstanding an insufficiency of power from the refrigerator, the residents put in place a number of improvised wiring solutions -inherently unsafe for outdoor conditions- to include connections on the ground secured in plastic shopping bags and a thermos flask.

Mr. Hendry sought to dissociate himself from the improvised electrical supply and its purpose. He was adamant that the caravans were not to have an electrical supply but he permitted supply by extension cables to power radios, hairdryers and lamps. Given the almost complete disregard for safety, such a fine distinction struck me as curious and highly artificial.

I have accepted John Madden's evidence that the high resistance joint or connection is most likely to have occurred in at least one of the plugs supplying the caravans and most probably a plug supplying either caravan 2 or caravan 11 because those domestic plugs were connected to cables with solid copper conductors. Veronica Moore occupied caravan number 2. Her evidence was that other site residents had been responsible for setting up the electricity supply arrangement to her caravan. Nonetheless, I agree with the Crown submission that firstly Mr. Hendry allowed such improvised electrical arrangements to be made and to persist and secondly that to permit the arrangement was inherently unsafe, was a defect in the system of working and contributed directly to the fire.

2. System of compliance with the Model Standards for Residential Caravan Sites

There was a failure by Mr. Hendry to discharge his duty to apply for and obtain a caravan site licence in terms of the Caravan Sites and Control of Development Act 1960 and to

comply with the Model Standards which would have applied to such a licence. Preliminary to his duty to obtain a site licence was his duty to obtain planning permission under the Town and Country Planning (Scotland) Act 1997.

As set out above, the Model Standards would have regulated not only spacing between caravan units but also fire safety measures. The set up at Birkhill Farm failed to comply with these requirements.

It is relevant to note that Mr. Hendry operated the caravan site prior to 1 October 2006 when the Fire (Scotland) Act 2005 came into force. The fire regulatory regime is considered in more detail below. The significance to caravan sites such as at Birkhill Farm is that prior to 1 October 2006, fire safety measures were regulated in terms of the Model Standards.

The Fire (Scotland) Act 2005 (Consequential Modifications and Savings) Order 2006/475 amended the provisions of the Caravan Sites and Control of Development Act 1960 to include new sections 5(2A) and 5(6A) in the following terms:

‘(2A) Where Part 3 of the Fire (Scotland) Act 2005 (asp 5) applies to the land, no condition shall be attached to a site licence which relates to any matter in relation to which requirements or prohibitions are or could be imposed by virtue of that Part.’ and

‘(6A) No model standards may be specified under subsection (6) as respects land in relation to which Part 3 of the Fire (Scotland) Act 2005 (asp 5) applies if the standards relate to any matter in relation to which requirements or prohibitions are or could be imposed by virtue of that Part.’

Accordingly from 1 October 2006, local authorities such as Angus Council could no longer impose conditions on caravan site licences in respect of matters falling within the regulatory regime of the Fire (Scotland) Act 2005 and the enforcement jurisdiction of then Tayside Fire and Rescue and now of the Scottish Fire and Rescue Service.

The different legislative regimes would each have required similar practical compliance by Mr. Hendry in terms of the fire safety measures. Mr. Donnelly on behalf of Mr. Hendry queries whether compliance with fire safety measures, whether under the Model Standards or under the Fire (Scotland) Act 2005, would have enabled the fire to be fought successfully. He sets that query in the context of the firefighting crew struggling to bring the fire under control with one fire appliance. Much clearly depends on the point at which the fire was discovered; the type of fire safety measures envisaged may have been unequal to the task. Nonetheless, Mr. Hendry's failure to comply with the prescribed spacing under the Model Standards constituted a defect in any system of working which, having regard to the spread of the fire, contributed to Mr. Adamik's death.

3. System of inspection by Angus Council

Angus Council is a local authority constituted and acting under the Local Government (Scotland) Act 1994. As such, Angus Council is the local authority for the purposes of the Caravan Sites and Control of Development Act 1960, as amended, and planning authority for the purposes of the Town and Country Planning (Scotland) Act 1997, as amended.

In respect of each function, Angus Council had both a role and involvement at Birkhill Farm. The Crown led evidence from Steven Thomson, a senior Environmental Health Officer, from Ian Webster, now retired but at the relevant time acting Head of Environmental and Consumer Protection and from Stuart Findlay, a Planning Enforcement Officer. Messrs. Thomson and Findlay remain in post with Angus Council.

Crown Production numbers 24 to 29 comprise the record of Angus Council's involvement with Mr. Hendry and Birkhill Farm. These were recovered by Steven Thomson in the immediate aftermath of the fire. In part the documents were entries in the Flare case management system. They disclose the following chronology in respect of the Environmental Health department:

- (1) a complaint was received by the Environmental Health department in January 2001 relating to a residential caravan site being operated at Birkhill Farm. Crown

Production number 25 records that the site was operating 'for general rent not farm workers'. The entry proceeds to note that 'Therefore a caravan site licence is required and before that can be considered planning permission is required'. It was noted that 'Details passed to planning and a copy of a site licence sent to Mr. Hendry'. I accept Mr. Thompson's submission that the reference to a 'site licence' should be construed as reference to a 'site licence application form'. I also accept the Crown submission that this entry acknowledges that the agricultural workers' exemption under the Caravan Sites and Control of Development Act 1960 did not apply to Birkhill Farm.

(2) the above entry on the Flare system was closed on 18 February 2002 without further action.

(3) in 2005, Mr. Hendry requested additional 'wheelie bins' which prompted further investigation. It was again identified that he required a caravan site licence and an application form was provided to him. Mr. Hendry telephoned Gillian Kinmond, administrative assistant to Ian Webster, to request assistance with completion of the application form. Mrs. Kinmond sent an email dated 26 May 2005 to Steven Thomson, which is Crown Production number 26. Mr. Thomson gave evidence that he had telephoned Mrs. Kinmond to request that the task was reallocated. No further action was taken by the Environmental Health department.

Mr. Thomson attended at Birkhill Farm in April 2007. He spoke to his shock at the number of caravans, the size of the bunkhouse structure and the lack of spacing between the caravan units. He also described his concern at the wiring and cabling found on the site, at cabling hanging out of windows and on the ground and the general standard of the accommodation.

Mr. Thomson, who impressed me as having a sound knowledge of the legislative regime, was clear that not only should the site have been licensed as a caravan site in terms of the Caravan Sites and Control of Development Act 1960 but also the bunkhouse accommodation should have been licensed as a House in Multiple Occupation under the Civic Government (Scotland) Act 1982 (Licensing of Houses in Multiple Occupation) Order 2000.

Ian Webster spoke to the system for the licensing of caravans within Angus Council. He, as acting Head of Environmental and Consumer Protection, was responsible for the licensing of caravan sites falling within the ambit of the 1960 Act. In that role, Mr. Webster was assisted by Gillian Kinmond to whom he delegated the administrative operation of the licensing system. Local area or geographical offices within the Environmental Health department were responsible for any site visits and subsequent inspections. A distinction was made by Mr. Webster between what might be termed the headquarters function of his office and the operational function of the area offices. The distinction was reflected in the Flare case management system which recorded operational entries but not any action taken by Mr. Webster's office. The distinction in functions between offices struck me as artificial and disjointed. To have a case management system to monitor only certain steps in a case seems illogical.

Unfortunately, the practical impact of the disjointed case management system was that the department's involvement with Mr. Hendry's case was not consistently recorded or managed both over time between 2001 and the fire in 2007 and between offices within the department. Mr. Webster showed no disquiet at a case management system which only opened a case entry when a case was passed successfully to the local office and so neither tracked a case from start to finish nor between different personnel or offices within the department. It is not necessary to speculate on the potential faults of such a system. They are unfortunately highlighted in the mismanagement of Mr. Hendry's case, were permissive of Mr. Hendry's apparent disinclination to comply with his statutory duties and, in short, failed to bring Birkhill Farm within the appropriate regulatory regime. Mr. Donnelly's submission on behalf of Mr. Hendry was that the Environmental Health department displayed 'a total lack of managerial integrity and responsibility'. There may be a degree of overstatement but the general criticism is well founded.

Mr. Webster's evidence necessarily attracts comment. I make due allowance for the fact that he had retired some time before the inquiry, the fact that he was no longer immediately familiar with departmental procedures and the time which had passed since the fire. Nonetheless Mr. Webster did not appear to have difficulty in recalling departmental

procedures. He did display throughout his evidence an unwillingness to accept responsibility, even collectively as observed by the Crown, for those matters evidently under his management and control. He sought to absolve himself of any responsibility for matters delegated to his administrative assistant and for the actions of staff in the local area offices. Ultimate responsibility for environmental health issues rested, he asserted, with those senior to him. On being pressed by the Crown to assess critically the departmental procedures, Mr. Webster consistently retreated to the position that his responsibility was for caravan site licences. The irony seemed to be lost on him that the department had failed singularly to address a caravan site licence for Birkhill Farm.

My impression of Mr. Webster's affected position under examination is underlined by the fact that he became much more robust in addressing the demerits of the Caravan Sites and Control of Development Act 1960. He was more comfortable in the territory of wider policy than in its implementation in practice. This was further illustrated in his somewhat remote response to the Birkhill Farm fire. Not only was Steven Thomson tasked to lead the department's immediate response, I found it staggering that Mr. Webster had at no time prior to giving evidence, interrogated the department's documentary records relating to Birkhill Farm.

In contrast, Steven Thomson was a straightforward and candid witness. He clearly carried heavily his involvement, albeit restricted, with Birkhill Farm. He was self-critical and open to any suggestion that he and his department may have done more. I accept that there were indicators that operational staff were under resourced at the time of involvement with Mr. Hendry in 2005. In that connection, I refer to Crown Production number 30 which is a report dated 6 January 2005 by a principal environmental health officer on departmental resources and working practices. Concerningly, it concludes 'we continue to be reactive "firefighters" rather than a unit equipped to tackle longstanding problems which I had hoped we would become. Being overworked has also affected management's ability to monitor staff performance.'

Both Mr. Webster, as acknowledged above, and Mr. Thomson were authoritative in appraising the regulatory regime under the Caravan Sites and Control of Development Act 1960. They identified the following limitations:

1. a local authority could not refuse to grant an application so long as the applicant had planning permission for the use of the land as a caravan site (even if a previously unlicensed caravan site did not comply with the Model Standards)
2. the only remedy available to a local authority in respect of a failure to obtain a caravan site licence was to report the matter to the Procurator Fiscal
3. the only remedy available to a local authority in respect of a failure to comply with any conditions attached to a licence was to report the matter to the Procurator Fiscal
4. that the only means of revoking a caravan site licence in respect of a breach of the conditions attached to the licence was to apply to the Sheriff to make an order revoking the licence but that this could only be done after a person had been convicted of failing to comply with a condition attached to that licence on three occasions
5. that the maximum fine for failing to have a caravan site licence in respect of a caravan site or breaching the terms of a caravan site licence is £2,500.

I found surprising Mr. Webster's assertion, as a former senior local authority officer, that there was no legal requirement on a local authority to require unlicensed caravan sites to be licensed. He acknowledged that legal advice had not been sought on the point. Whatever the limitations in the regulatory regime, it did not seem to me that Angus Council would have discharged properly its statutory function by taking no steps to license an unlicensed site, especially one that was firmly within its sight. Mr. Thompson as solicitor on behalf of Angus Council seemed uncomfortable with any submission to the contrary.

Steven Thomson identified the following reforms to the licensing regime, being the corollary of the defects identified above:

1. caravan sites should be subject to the same regime as Houses in Multiple Occupation
2. stronger powers should be available to local authorities to enforce conditions imposed on site licences
3. local authorities should be given a more general ability to determine whether to grant a licence
4. local authorities should be able to take into account whether or not an applicant was a fit and proper person in determining whether to grant a licence
5. fees should be charged for applying for a caravan site licence and for maintaining a site licence to finance the licensing system
6. local authorities should be permitted to take over the management of a caravan site and carry out work in default of a condition applied to a licence
7. local authorities should have the ability to close a site as an option.

On behalf of Angus Council, Mr. Thompson conceded that there were clear defects in the Environmental Health department's interaction with Mr. Hendry in terms of the opportunity to have a site licence put in place and thereby to seek to bring the site into compliance with the Model Standards.

Notwithstanding those defects, Angus Council reacted with vigour in the aftermath of the fire. The Council sought and obtained, from the Scottish Government, the removal of the agricultural workers' exemption from the requirement to obtain a caravan site licence. This removed any doubt as to whether a caravan site on agricultural land required a licence. A joint initiative was undertaken, in conjunction with Tayside Fire and Rescue and the Gangmasters Licensing Authority, to identify migrant worker sites in Angus and ensure that such sites were either properly licensed as caravan sites or as Houses in Multiple Occupation.

Both Messrs. Thomson and Webster acknowledged that, prior to April 2007, there was a developing awareness within Angus Council of the increase of migrant workers and that work had commenced to identify issues in relation to the influx of migrant workers. However, the specifics of what was being done were lacking in evidence. I return to these matters in terms of section 6(1)(e) of the 1976 Act below.

Defects also existed in respect of Angus Council Planning department's failure to continue to work with Mr. Hendry to reduce the number of caravans on site to an acceptable level in late 2005 and to ensure that planning consent was applied for. Stuart Findlay, a Planning Enforcement Officer, spoke to his dealings with Mr Hendry in 2005. The relevant Crown Productions are numbers 65 to 70. These disclose the following chronology:

1. There was correspondence between Frank Hendry and J. Sutcliffe of Angus Council's Planning department in 2001. Crown Production number 69 is a letter from Mr. Hendry to Mr. Sutcliffe referring to earlier correspondence and to a meeting. Mr. Hendry's letter bears to provide photographic evidence to support his contention that there had been caravans on the corn yard at Birkhill Farm for a number of years. In terms of Crown Production number 70, Mr. Sutcliffe responds 'the siting of caravans on the ground that previously served as a corn yard is long established and planning consent is not required for a continuation of the use.' He concludes, 'I trust the foregoing has allayed any concerns you may have about the planning department resurrecting this issue at some future date.' I accept Mr. Donnelly's submission that there is no indication that there is any limitation on the number of caravans.
2. Stuart Findlay described engaging with Mr. Hendry in 2005 and advising him that the number of caravans on his farm at the time, 17 in number, was in excess of the permitted number of five. Mr. Findlay sought the removal of the caravans which exceeded the permitted number. The letter states 'I am of the opinion that should there be more than five caravans on your farm at any one time then a planning application for them to be there would be required to be submitted to the Department'. Crown Production number 65 refers.

3. Mr. Findlay visited Birkhill Farm on four occasions and noted on 10 June 2005 that 12 caravans were left at the rear of the steadings. Crown Production number 67 refers.
4. Crown Production number 66 is a letter from Mr. Findlay to Mr. Hendry dated 25 October 2005 wherein reference is again made to the limitation to five caravans.
5. Thereafter, Mr. Findlay was redeployed to another role within the Planning department. No further action was taken by the Planning department.

On his last visit to the site on 20 September 2005, Mr. Findlay stated that he found no evidence of the caravans being connected to an electrical supply. There were no electrical cables at or near the caravans. Had those been evident, he would have raised any safety issues.

From the evidence to the inquiry, I have been unable to determine the basis on which it was asserted in 2005 but not in 2001 that there was a limit in number to five caravans after which planning permission was required. Mr. Hendry's evidence was that he tried to ascertain why there had been an apparent change in Angus Council's position. Mr. Hendry referred to what he understood to be his 'grandfather's rights', some form of prescription or limitation, to site caravans on the corn yard. In fairness to Mr. Hendry this does seem to be one area where, at least to a limited extent, he engaged with the Council to assert his perceived rights.

Examined on case management practices within the Planning department prior to the fire, Mr. Findlay said that there was little monitoring of files. He contrasted the system currently in force and implemented following upon the fire whereby two senior planners and the planning enforcement officer meet weekly to review cases.

Mr. Donnelly submitted that it is not fanciful to suggest that had Mr. Findlay or his successor maintained contact with Mr. Hendry then Mr. Hendry would have co-operated and may well have brought the site into compliance. That will remain an unknown and its efficacy would be dependent upon compliance not only with planning measures but with the applicable site licensing, fire safety measures and electrical safety measures. It must not

be forgotten that in each and every one of those respects, Mr. Hendry was the duty holder, the obligation was on him to effect compliance and, significantly, in relation to planning and site licensing he was fully aware of the duties upon him. I am also bound to observe that Mr. Donnelly's submission about co-operation and anticipated compliance sits rather oddly with the fact that the number of caravans had increased between 2005 and the date of the fire in 2007.

On behalf of Angus Council, Mr. Thompson solicitor accepted and acknowledged that both the Environmental Health and Planning departments could have engaged further with Mr. Hendry in an attempt to ensure that his caravan site was properly licensed and that appropriate planning permissions were in place. The submission was framed in the now familiar context that the primary responsibility for ensuring that a caravan site which required a caravan site licence had a site licence and that a development which required planning permission had planning permission rested with Mr. Hendry. It was his legal duty to ensure that such licences and permissions were in place to permit him to use his land as a caravan site. It was further submitted that Mr. Hendry should have obtained a caravan site licence and planning permission prior to commencing to use his land as a caravan site and not after. Mr Hendry was aware since 2001 of the requirement for him to obtain a caravan site licence and was aware since 2005 of the need to obtain planning permission to operate a caravan site in excess of five caravans. Mr. Donnelly could not and did not take issue with this submission.

I am then satisfied that notwithstanding Mr. Hendry's primary duties, that there were clear defects in the system of working of both the Environmental Health and Planning departments of Angus Council in terms of the opportunities to have a site licence put in place and thereby to seek to bring the site into compliance with the Model Standards and to reduce the number of caravans to an acceptable level.

4. System of compliance with fire safety measures

Part 3 of the Fire (Scotland) Act 2005 came into force on 1 October 2006 and replaced the provisions of the Fire Precautions Act 1971 and related regulations in respect of fire safety. There was a change in the legislative regime from one of licensing through inspection of designated premises and the issuing of a fire certificate to an audit regime.

Section 54, Fire (Scotland) Act 2005 provides that:

‘(1) Where a person has control to any extent of relevant premises the person shall, to that extent, comply with subsection (2).

(2) The person shall–

(a) carry out an assessment of the relevant premises for the purpose of identifying any risks to the safety of relevant persons in respect of harm caused by fire in the relevant premises; and

(b) take in relation to the relevant premises such of the fire safety measures as in all the circumstances it is reasonable for a person in his position to take to ensure the safety of relevant persons in respect of harm caused by fire in the relevant premises.’

The onus to ensure the fire safety of premises shifted from the fire service to the duty holder, that is the person who has ‘control to any extent of relevant premises’ and it became the duty of that person to satisfy the fire service that they had complied with the terms of section 54(1) and (2). On behalf of the Crown, Mr. Callaghan made an apt and helpful analogy between the regime under the Fire (Scotland) Act 2005 and that under the Health and Safety at Work etc. Act 1974, with responsibility laid squarely on duty holders to comply with the legislation.

As noted above, the Fire (Scotland) Act 2005 (Consequential Modifications and Savings) Order 2006/475 introduced new Sections 5(2A) and 5(6A) into the Caravan Sites and Control of Development Act 1960. The practical impact thereof was that after 1 October 2006, local

authorities could no longer impose conditions relating to fire safety on caravan site licences. Rather such matters fell within the enforcement jurisdiction of the fire service.

It is necessary to consider the fire safety regime which was or should have been applicable to Frank Hendry and to Birkhill Farm. Mr. Hendry having failed to apply for a caravan site licence, as he clearly was required to do, prior to 1 October 2006, thereby failed to bring himself within the fire safety measures of the Model Standards for Residential Caravan Sites.

Colin Hannigan gave evidence to the inquiry. At the time of the fire, he was a station manager in legislative fire safety with Tayside Fire and Rescue. He had retired by the date of the inquiry. Mr. Hannigan was clear that the statutory regime under the Fire Precautions Act 1971 would not have applied to the caravans at Birkhill Farm which fell to be regulated by the local authority. He opined that the bunkhouse accommodation may have fallen within the 1971 Act.

The Fire (Scotland) Act 2005 came into force six months prior to the fire at Birkhill Farm. In terms of section 54, Mr. Hendry was a person who had 'control to any extent of relevant premises'. He became the duty holder and it was he who was required to carry out a risk assessment and to take reasonable fire safety measures. The evidence to the inquiry enables me to conclude that the caravan site at Birkhill Farm fell within relevant premises under section 78 of the 2005 Act.

However, the evidence of Mr. Hannigan, which I accept, was that prior to the fire, there remained ambiguity within Tayside Fire and Rescue as to whether caravan sites were relevant premises under the 2005 Act. Mr. Hannigan struck me as a careful witness who had grappled with the application of the new legislation. I note Mr. Donnelly's reservations about the clarity of Mr. Hannigan's evidence. I consider that to be an issue of delivery rather than substance. It was his view that caravan sites did fall under the Act; the contrary view was that caravan sites were comprised of multiple domestic premises. Clarification had been sought through the auspices of the Chief Fire Officers Association Scotland. It occurred to me, as it had done during the evidence of the witnesses from Angus Council, that caravan

sites or the grouping of caravans could reflect a number of diverse accommodation arrangements and purposes. Caravan sites are not homogenous in nature.

Had an early corporate view been established within Tayside Fire and Rescue that the 2005 Act applied to caravan sites, it may have been of limited, immediate practical impact. It was Mr. Hannigan's evidence that in the period prior to the fire, caravan sites would not have been considered a high priority for audit. The legislative fire safety team was not auditing migrant worker sites. The wider context was a general and increasing awareness of migrant worker sites. In common with Angus Council, the increasing awareness had not translated into any form of corporate response to an undoubtedly relevant social phenomenon. At its highest, Mr. Hannigan thought that the issue may have been considered by the community fire safety team with a view to identifying such sites and to liaise with Concordia and the Gangmasters Association. Unarguably an appropriate corporate strategy was implemented by both Angus Council and Tayside Fire and Rescue as an immediate response to the fire at Birkhill Farm. It may be concluded then that the necessity of a response was not in issue, only the urgency with which that necessity was recognised.

In his submissions, Mr. Jackson invited me to find that the response of Tayside Fire and Rescue was indicative of the learning process adopted by the fire service with the gathering of operational intelligence and analysis of incidents being applied to achieve ongoing procedural improvements. I accept that Tayside Fire and Rescue's response to the fire was timely and appropriate. However, I disagree with his submission that there was evidence of a proactive approach to fire safety and prevention in this area prior to the fire.

Ross Haggart, Area Manager with Tayside Fire and Rescue also gave evidence. He was an impressive and authoritative witness. He assumed responsibility for the legislative team after the fire, in September 2008. He gave detailed evidence about the operation of the audit regime under the 2005 Act. He also spoke to the various sector guides published by the Scottish Government to assist with interpretation of the Act although these were not all available when the Act came into force. Examined on the applicability of the 2005 Act to caravan sites, Mr. Haggart admitted of no doubt that Tayside Fire and Rescue's corporate

view was that caravan sites were relevant premises under the Act. He seemed surprised at any suggestion to the contrary. I consider that the discrepancy between his evidence and that of Colin Hannigan is simply explained by the fact that Mr. Haggart was not closely involved with legislative compliance in the period prior to the fire and would be unaware of the finer questions of interpretation. Certainly by the date of the fire, if not before, Tayside Fire and Rescue had concluded that caravan sites such as at Birkhill Farm qualified as relevant premises under the 2005 Act, enabling a Prohibition Notice to be issued on 3 April 2007. The notice is Tayside Fire and Rescue Production number 1.

Mr. Haggart was open in his acceptance that the fire at Birkhill Farm precipitated a change in policy and approach to migrant worker sites by Tayside Fire and Rescue. With some urgency, all sites were visited. As a result of the reappraisal, the current audit regime is that such caravan sites are audited annually and the bunkhouse accommodation would fall to be audited three yearly.

Interestingly, Mr. Haggart confirmed that there was considerable coincidence between the fire safety measures specified in the Model Standards and those required by the 2005 Act. Compliance with the Model Standards would have formed the basis of any risk assessment under the 2005 Act. Of course, the reality at Birkhill Farm was that there was a failure to adhere to the rudimentary fire safety measures of either regime. Mr. Haggart perused various photographs of the site, identified a number of risks posed and anticipated that had an audit occurred before the fire, a prohibition notice would have been served. In comparison to the enforcement options available to Angus Council under the Caravan Sites and Control of Development Act 1960, it can be seen that the 2005 Act provided for more immediate and effective enforcement.

Any other relevant facts

- 1. The response of relevant authorities, specifically Angus Council and Tayside Fire and Rescue, to the growing presence of migrant worker sites within Angus.**

I have referred above to the evidence from a number of witnesses from Angus Council and Tayside Fire and Rescue of a growing awareness within their respective organisations of the presence of migrant worker sites within Angus prior to the Birkhill Farm fire in 2007. Ian Webster from Angus Council acknowledged that such sites had been known of from the early 2000s.

Mr. Webster, as former acting Head of Environmental and Consumer Protection, took what might be considered a narrow, legalistic approach. It fell to individual landowners to determine whether any site on their land was exempt in terms of the agricultural workers' exemption, referred to above, under the Caravan Sites and Control of Development Act 1960. There was also a perceived ambiguity as to the precise scope and operation of the exemption. Whilst acknowledging that the sites were unregulated, Mr. Webster expressed an apparently corporate view that the sites related to berry picking and so did not fall within his department's jurisdiction. Mr. Webster variously referred to the lack of any requirement on Angus Council to be proactive in its enquiries and to the resource implications. The Crown, in its submissions, accepts that there was not necessarily a duty on Angus Council to make proactive enquiries of such sites but proposes that it would have been both reasonable and sensible to have explored and determined the type of issues which such sites may have posed.

In common with Angus Council, Tayside Fire and Rescue acknowledged a growing awareness but did not claim that any specific steps had been taken to address the development. Colin Hannigan ventured that community fire safety teams may have given the issue some consideration. Mr. Jackson on behalf of Tayside Fire and Rescue submitted that the visit by Ross Haggart to a migrant worker site in Perthshire was indicative of a proactive approach to fire safety. I agree with the Crown's response that it was indicative of a proactive and efficient approach by that individual officer but that there was insufficient evidence to discern a service wide pattern. Importantly, the visit by Area Manager Haggart, for me, serves to highlight the importance of a proactive approach to information gathering

and to developments in society. I focus on this point below in considering predetermined appliance attendance and site specific knowledge.

Again, this Determination has acknowledged on a number of occasions that the death of Mr. Adamik acted as a catalyst for change and improved practices. Principally these have been internal management, monitoring and audit practices. His death served more widely to ensure information sharing between relevant authorities. Crown Production numbers 32 to 45 record the almost immediate and then regular cross-agency collaborations and response to the Birkhill Farm fire. These involved Angus Council, Tayside Fire and Rescue and Tayside Police. They extended to Concordia and the Gangmasters Association. From the growing awareness referred to above, an audit of migrant worker sites was completed within some three months by Angus Council. This is Crown Production number 41. It discloses 19 sites accommodating 1800 workers and it was accepted that the audit was not exhaustive. Only three of those sites were classed as requiring no further action. I observe that the migrant workers were not only employed in agricultural work but across a variety of commercial sectors. Angus' economy was the beneficiary of the workers' presence but Angus' relevant authorities did not address properly the implications of their presence. Significantly, there was no effective inspection or regulation of accommodation standards. That is true notwithstanding the available statutory frameworks, whatever their deficiencies and ambiguities. The Crown concluded its submission by noting that Mr. Adamik's death was a catalyst for change, that the standards of accommodation have improved and that the risk of recurrence of such an incident was less.

On behalf of Frank Hendry, Mr. Donnelly was critical of Tayside Fire and Rescue in the following respects specific to Birkhill Farm: the immediate response to the telephone call direct to Arbroath Fire Station, the predetermined attendance of one fire appliance to a caravan fire, the tactical plan information or lack thereof, the general level of site familiarisation and the evidence given by Watch Manager Christie.

Watch Manager Christie's credibility was attacked with some care. The purpose of that was to undermine the contention of the firefighters in relation to the order in which the caravans

became involved in fire and the direction of the spread of fire. I have undertaken a detailed analysis of the totality of evidence and preferred the firefighters' evidence, supported by the forensic evidence, to the evidence of the site residents. While Mr. Donnelly's deconstruction of Watch Manager Christie's evidence is careful, it does not reflect properly the substance and integrity of the evidence and I accordingly reject the analysis.

Similarly, I reject any criticism of Tayside Fire and Rescue's policy that any calls to a local fire station were to be redirected immediately to Fire Control. The policy strikes me as clear, well understood and operationally necessary to ensure deployment of appropriate appliances to an incident and a co-ordinated response with other emergency services.

The criticism of a predetermined attendance of one fire appliance to a caravan fire has some merit. I understood the evidence of the firefighters to be that the specific predetermined attendance had been recently implemented. I have referred above to the fact that caravans represent diverse situations and challenges. As illustrated by the Birkhill Farm fire, the reported 'fire in a caravan' did not forewarn of the conflagration which was encountered. In the event, immediately on arrival at the incident Watch Manager Christie radioed Fire Control to 'make pumps 2' which led to the immediate dispatch of a second fire appliance. I accept the Crown submission that standing that Mr. Adamik was outside of the caravan by the time of arrival of the first fire appliance, the initial dispatch of one appliance as opposed to two did not contribute to his death.

I do not seek to criticise the operational tool of predetermined attendance and, indeed, the evidence before the inquiry would not permit me to do so. Rather, the Birkhill Farm fire serves to highlight the importance of site familiarisation and specific tactical plans. The response to the fire, the inspections and audits undertaken, has ensured that such plans will now be in place. More generally, I note that a further response was to increase the predetermined attendance for a caravan fire to two fire appliances. That resulted from the debriefing process after the fire. Area Manager Haggart spoke to the awareness of Tayside Fire and Rescue after the fire that migrant worker sites posed a higher category of sleeping risk site than had been recognised before the fire.

Concluding Remarks

There was no motion for intimation of this Determination to the Scottish Ministers in terms of section 6(4)(a)(iv) of the 1976 Act. However, Mr. Callaghan on behalf of the Crown advised the inquiry that he had undertaken to apprise the Scottish Government of the inquiry's outcome. That was in the context of the Scottish Government's consultation on the regulatory regime for caravan accommodation in Scotland.

I should like to thank the Crown and each of the solicitors representing the interested parties. Throughout the lengthy inquiry the standard of preparation, document management, co-operation and courtesy was high.

Finally, I should like to express my sympathy to Mr. Adamik's family. While they were not present at the inquiry, Mr. Callaghan indicated that on behalf of the Crown he had ensured that they were fully aware of the inquiry's progress. In their written submissions, each of the represented parties expressed condolences to the family. On behalf of Frank Hendry, Mr. Donnelly recorded Mr. Hendry's sincere and unreserved apology for his failings.