

FATAL ACCIDENT INQUIRY

Under the

Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976

Determination by Sheriff Desmond J Leslie, Esquire,

Sheriff for North Strathclyde

following an Inquiry held at Kilmarnock

into the death of Allison Hume

The Sheriff, having resumed consideration of the cause, DETERMINES that in terms of Section 6(1) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 that –

- (a) Margaret Allison Hume, residing formerly at 8 Barrwood Gate, Galston, KA4 8NA, was pronounced dead at Kilmarnock at 9.30 am on 26 July 2008, having been brought from the base from a collapsed mine shaft, attached to a decommissioned colliery known as Goatfoot Colliery, situated at Barrwood Gate, Galston at approximately 7.42 am.
- (b) That the cause of her death was chest injury and hypothermia, arising from her fall into a recently collapsed mine shaft, broadly rectangular in shape and measuring 8 x 6 metres at its entrance, and 14 metres in depth.

(c) The death of Margaret Allison Hume may have been avoided had the following reasonable precautions been taken:

(i) Early identification by the Police and Strathclyde Fire and Rescue Services of the stability of the mine shaft and surrounding area,

(ii) Early assessment of Mrs Hume's medical condition, and appraisal of the likely dangers of a prolonged stay in cold and wet conditions,

(iii) A thorough understanding of the capability and properties of line rescue equipment known as safe working at height (SWAH) equipment, and the level of training of fire fighters in the use of that equipment,

(iv) A rigorous and thorough risk assessment by Strathclyde Fire and Rescue Service balancing the conditions of the terrain with the condition of the Deceased and the passage of time to have prevailed over proscriptive Strathclyde Fire and Rescue Service Corporate Policy,

(d) There were defects in the system of working which contributed to the death, or the accident resulting in the death of Mrs Margaret Hume:

- (i) Inadequate knowledge by Strathclyde Fire and Rescue Service and The Police of the range of potential rescue resources available to assist in a rescue operation and consequent failure to communicate with these resources.
  - (ii) Lack of understanding and familiarity by rescue personnel of the potential for use of the differing medical and rescue equipment supplied to the rescue and emergency services.
  - (iii) Lack of multi-ability training for emergency services personnel, and in particular lack of advanced first aid training among Fire and Rescue Service personnel, lack of rope access capability amongst Fire and Rescue personnel and paramedical personnel
  - (iv) Over reliance on the delegation of rescue functions by Strathclyde Fire Rescue Service.
  - (v) Inadequate pre-planning for mine and mine shaft rescue
- (e) There are other facts relative to the circumstances of the death videlicet:
- (i) The need for continuous assessment of emergency and rescue resources by all rescue and emergency agencies and the capabilities

of these resources regularly communicated throughout senior and junior management of each agency.

**Finds in Fact –**

- (1) Mrs Margaret Allison Hume was born on 4 May 1964, and was resident at 8 Barrwood Gate, Galston. She was married, though separated, and resided at this address with her 2 daughters, Jayne (17), and Sophie (14).
- (2) On 25 July 2008 Mrs Hume attended at the house of Kelly McEwan, 10 Catherine Drive, Galston, at approximately 9.10 pm. She was accompanied by her daughter Jayne. She left this location alone, between 11.30 pm and 11.45 pm, to return to her home at 8 Barrwood Gate. Barrwood Gate and Catherine Drive are separated by open land, which takes approximately 10 minutes to cross by foot.
- (3) At approximately 12.30 am, on 26 July 2008, Jayne Hume left 10 Catherine Drive, and returned to her home at 8 Barrwood Gate, crossing the field which separates the 2 areas. On her return home she became aware that her mother, Mrs Allison Hume, was not present. She tried telephoning her mother, but could only access her mother's voicemail.

- (4) Jayne Hume returned to 10 Catherine Drive, retracing her previous walk across the field. She met her cousin, Judy, and together they returned to Barrwood Gate, by the road which connects the 2 areas, which in time and distance is a longer route than that provided by the path across the field. On arrival at Barrwood Gate they lit candles and went out over the field behind their house. They heard screaming which they traced to a large hole which had appeared on the summit of a hillock to the back of Barrwood Gate, and became aware that Mrs Hume was in the depth of the hole.
- (5) Jayne Hume contacted the rescue services via a "999" communication at 02.12.57 am and advised them of the location of the hole in the ground and her mother's presence therein.
- (6) Strathclyde Fire and Rescue Services arrived at the locus at 02.27.51 am under the command of Watch Commander Christopher Rooney. Two fire appliances attended in answer to the "999" call. It was dark and foggy. At 02.51 am Strathclyde Fire and Rescue Service Heavy Rescue Vehicle attended. This brought the total complement of Fire Fighters in attendance to 18 in number. There was a misunderstanding between Fire Service Control and the Fire Appliances that the incident concerned a fall from an embankment

- (7) Strathclyde Police Sergeant Andrew Whittington attended the locus at approximately 03.15 am. By this time a lighting rig had been constructed by Strathclyde Fire and Rescue Service. At 03.16 am FireFighter Alexander Dunn, with the approval of Watch Commander Christopher Rooney, donned Safe Working at Height (SWAH) equipment, and descended into the hole to carry out an assessment on Mrs Hume's condition and the environmental conditions in which she lay. At the base of the hole Mr Dunn tethered Mrs Hume with a rope to secure her in the event of further ground displacement. He provided her with blankets and oxygen. She was conscious. At 3.01am a call was made by Paisley Ambulance Control to the Aeronautical Rescue Control Centre for assistance with the provision of search or flood lighting from a helicopter. This was declined. A second call was made by Police at 4.05 am to the ARCC who suggested contact be made with the Cave Rescue Organisation. A contact number was provided. This was not followed up.
- (8) At approximately 03.30 am Sergeant Whittington requested through the operational control of Strathclyde Police Overview the assistance and attendance of Strathclyde Police Mountain Rescue Service.

- (9) At 03.25 am Group Commander Fred Howe took over control of the incident from Commander Rooney.
- (10) At 03.45 am Sergeant Whittington received a call from Sergeant Ian Maitland of Strathclyde Police Mountain Rescue Service who advised that he could and would assist at the rescue and was in the process of mustering a team to effect a rescue. Sergeant Maitland stayed locally and was in attendance at the locus at 04.15 am. Sergeant Maitland was contacted by Strathclyde Police Force Overview at approximately 03.30 am, and was advised of the existence of the Mines Rescue Service and the Scottish Cave Rescue Organisation. He declined assistance from either agency. Strathclyde Police Mountain Rescue equipment was stored at Police HQ in Dumbarton and Springburn police office, Glasgow. PC Hindle of Strathclyde Police Mountain Rescue Service received a call at approximately 4.00 am at his home in Greenock and travelled from there to Dumbarton to obtain the fully equipped Strathclyde Police Mountain Rescue Service vehicle, and thereafter travelled on to Galston, arriving there at 05.30 am. PC Mathew Bull and PC Colin Byrne both of Strathclyde Police Mountain Rescue team arrived from their homes in Milngavie and Killearn respectively at 5.30am and 5.50am.

- (11) At the time when Group Commander Fred Howe assumed control of the Incident, a decision had been taken by Mr Rooney, that a paramedic from the Scottish Ambulance Service, Mr Martin Galloway, should enter the hole, using Strathclyde Fire and Rescue Service SWAH (Safe Working at Height) equipment in the manner which had facilitated the Fire Fighter Dunn's descent into the hole. This was to determine the extent and severity of Mrs Hume's injuries. Mr Galloway had arrived at the locus at the same time as Strathclyde Fire and Rescue Service at 2.30am approximately.
- (12) Mr Galloway had movement neutralising equipment within the ambulance in which he had attended which he considered could be used for the extraction of Mrs Hume from the ground, and brought this to the attention of Strathclyde Fire and Rescue Service. This was known as a Kendrick device.
- (13) At 04.03 am Strathclyde Fire and Rescue Service control of the incident was assumed by Commander Paul Stewart. He had attended the locus to manage media information regarding the incident. As Incident Commander he put an immediate stop to Mr Galloway entering into the hole, and ordered that he be disengaged from the SWAH harness. Mr Galloway was not further consulted regarding the rescue operation.



- (14) At 04.30 am Mr William Stafford Executive Director of Neighbourhood Services of East Ayrshire Local Authority was contacted.
- (15) At 04.31 am Strathclyde Fire and Service log recorded that the full team from Strathclyde Police Mountain Rescue Service, together with their equipment, would be in attendance at the site at between 05.00 am and 05.10 am.
- (16) Prior to the attendance of Strathclyde Police Mountain Service, Fire Fighters from Strathclyde Fire and Rescue Service Heavy Rescue Vehicle were anxious to effect a rescue by adapting SWAH equipment to facilitate the use of a "Paraglide" stretcher which formed part of the standard equipment within their vehicle. These Fire fighters donned the SWAH harnesses and prepared the equipment for use down the hole with the intention of adapting it to extract Mrs Hume.
- (17) Commander Paul Stewart made no enquiries as to the level of training undertaken by these Fire Fighters in the deployment of Safe Working at Height Equipment, and in any event, considered that the Safety Working at Height Equipment was unsuitable to effect a rescue. He considered this compliant with the Strathclyde Fire and Rescue Service memorandum dated 14 March 2007 and 27 March 2007 on the use of SWAH pack for rescue.

The Fire Fighters were ordered by Mr Stewart to divest of their SWAH harnesses, and await further instruction. All fire fighters in attendance had to been trained in the use of the SWAH Equipment.

(18) At 04.57 am Group Commander Thomson assumed control of the incident from Commander Paul Stewart.

(19) At 06.21 am, Strathclyde Police Mountain Rescue Service had set up and secured their ropes and prepared to enter the hole. That hole had since been determined to be the shaft of a disused mine. PC Andrew Parker of Strathclyde Police Mountain Rescue descended into the mine shaft with the equipment of Strathclyde Police Mountain Rescue Service which included a stretcher designed specifically for mountain rescue where casualties were likely to have experienced extreme trauma and required immobilisation.. With the assistance of Fire Fighter Dunn Mr Parker manoeuvred Mrs Hume onto the stretcher at the base of the shaft. That process took approximately 30 minutes.

(20) At approximately 07.42 am Mrs Hume was recovered from the shaft, and conveyed to the waiting paramedics. Mrs Hume suffered cardiac arrest in the course of her retrieval from the shaft, and required immediate defibrillation and resuscitation. She was, thereafter, conveyed by air

ambulance to Crosshouse Hospital, Kilmarnock where treatment continued until 09.30 am when she was pronounced dead, her cause of death was due to pneumothorax and hypothermia.

(21) Mr Charles Gill of the Mines Rescue Service was contacted at his home by Cowdenbeath at 06.10 am, and travelled immediately to the locus where he arrived at 07.48 am. He carried out an assessment of the shaft and surrounding terrain and concluded that the sides of the shaft and the surrounding ground were stable.

(22) The hole into which Mrs Hume fell was approximately 6 x 8 metres wide. It lay 300 metres to the south of the A71, and 130 metres south of the housing estate at Barrwood Gate. It was 14 metres deep. It formed part of a mine shaft which had a total depth of approximately 120 metres. The shaft served Goat Foot Colliery which had been decommissioned in 1926; it was recorded as Goat Foot Colliery No 1 shaft; the shaft had been infilled with coal waste or slag material which had been eroded at its base by the ingress of water. This had resulted in a downwards movement of the infill material causing significant displacement at the surface.

(23) The surface of the shaft collapsed within a short time and possibly within twenty four hours before Mrs Hume's fall.

- (24) A survey of the surface area had been undertaken at an undetermined time before 1994 by the British Coal Corporation to determine the location of the Goatfoot Colliery No 1 Shaft but this failed to locate the mine shaft. The records of the investigation were incomplete. Had the mine shaft been located it would have been made secure and its condition would have been subject to periodic appraisal by the Coal Authority.
- (25) Four thousand mine workings have been estimated to exist in Ayrshire, and 130,000 mine workings are thought to exist throughout Scotland. The Coal Authority are aware of 2 previous incidents of mine shaft collapse.
- (26) Piling work undertaken in the construction of Galston Primary School, at a distance of 350 metres from the shaft, undertaken between February 2007 and July 2008, did not destabilise the infill of the shaft.

**Note**

This Fatal Accident Inquiry has attracted wide public interest. It is important, therefore, to set out the purpose and remit of this Inquiry and the parameters within which a Fatal Accident Inquiry determines.

The purpose of this Inquiry is defined the following terms :

*"at the conclusion of the evidence, and in submissions thereon, as soon as possible thereafter, the Sheriff shall make a determination setting out the following circumstances of the death, so far as they have been established to his satisfaction,*

- (a) where and when the death, and any accident resulting from the death, took place,*
- (b) the cause, or causes of such death, and any accidents resulting in the death,*
- (c) the reasonable precautions, if any, whereby by the death, and any accident resulting from the death, might have been avoided.*
- (d) the defects, if any, in any system of working which contributed to the death, or any accident resulting in the death,*
- (e) any other facts which are relevant to the circumstances of the death".*

This Inquiry is a discretionary Inquiry. By that I mean it is not an Inquiry where the circumstances of the death are such as would require, as a matter of law, the holding of an Inquiry under the Fatal Accident and Sudden Deaths Inquiry (Scotland) Act 1976. It is an Inquiry arising from circumstances where the Lord Advocate has considered it expedient to hold in the public interest. She has petitioned the Sheriff Court for a warrant to do so on the grounds that the death

of Mrs Allison Hume was sudden, or suspicious, or unexplained, or has occurred in circumstances which has given rise to serious public concern. In exercising discretion as to whether or not the Sheriff should be petitioned to hold a Fatal Accident Inquiry, the Lord Advocate has taken into account a wide range of factors which include the concerns of the relatives of the deceased, and, in a wider view, concerns as to whether or not the circumstances of the death of Mrs Allison Hume have been fully ventilated in any other forum. I quote Sheriff R J D Scott in his determination after Inquiry into the death of James L Steven, 31 March 1982 –

*"the objects of the Inquiry under the Act seem to be as follows:*

*Morally it is intended that evidence should be given in public so that knowledge of those responsible for investigating the death can be shared with the public and interested parties. It can sometimes be that the information gathered by those responsible for investigating a death is incomplete or inconclusive. In such a case the holding of an Inquiry may help to clarify matters. It may be possible, once the facts are known, to say that if such and such a thing had been done, or had not been done, the death would not have occurred. There may be lessons to be learned from the facts which emerge at the Inquiry. If so, the Sheriff may set out in his determination, circumstances under one or more of paragraphs 6(1)(a), (b), (c), (d) and (e); he may even make recommendations, but in my*

*view the Sheriff should take care not to stray into this area without good cause. If he decides precautions they must be reasonable precautions whereby the death or accident might have been avoided. If he detects a defect in a situation it must be one which contributed to the death or accident”.*

Sheriff Brian Kearney, in his Determination after the Inquiry into the death of Mildred Allen 14 November 1985, states:

*" . . . . . Fatal Accident Inquiries may be regarded as having 2 essential purposes and one important corollary. The essential purposes are the enlightenment of those legitimately interested in a death, ie the relations and dependants of the deceased, as to the cause of death (and of any accident resultant of the death), and the enlightenment of the public at large, including the relations, as to whether any reasonable steps could or should have been taken, whereby the death might have been avoided, so that lessons may be learned, or, at least at the attention of further Inquiries directed into ways whereby practices which have contributed to the death can be improved.*

*The provision of Section 6(1)(c) empowered the Sheriff to make Determinations as to reasonable precautions whereby the death might have been avoided, and the provision that evidence need not be corroborated gives the Sheriff a very wide power to make, including the lack of written pleadings which would give*

*advance notice of any of any line of criticism, must make the Court cautious of drawing sweeping conclusions from the evidence which may be incomplete. The provisions of Section 6(1)(e) are still wider, and in my view, entitle and indeed oblige the Court to comment upon, and where appropriate make recommendations in relation to any matter which is legitimately examined in the course of the Inquiry as a circumstance surrounding the death, if it appears to be in the public interest to make such comments or recommendation. The corollary to the procedure is the accessibility to legitimately interested parties to the evidence made available to and adumbrated in the course of the Inquiry.”.*

Sheriff Stoddart in his determination following the Inquiry into the death of Christine June Foster (25 Feb 2002 ) adopts the approach taken by Sheriff Kearney :

*"An Inquiry under the 1976 Act is an exercise in fact finding and not fault finding, and so it would be quite wrong for me, in the context of these proceedings to ascribe directly to any one named individual or body for blame for the death. Section 6 of the Act does not permit me to do that, but it does entitle me to set out in my determination the reasonable precautions whereby her death, and the accident which resulted in it, might have been avoided. An FAI does not empower a Sheriff to make "a finding as to fault" or to apportion blame between any persons who might have contributed to the accident .....[The*



*Sheriff's] examination of the evidence is conducted with a view only to setting out in his determination, the circumstances to which [Section 6(1)] refers in so far as this has to be done to his satisfaction ( Lord President, Hay Black v Scott Lithgow Ltd, 1990, SLT at 612). AS Sheriff Principal Mowat expressed in his Determination, following upon the Lockerbie disaster:*

*"in terms of Section 6(2) of the Act, a Sheriff's determination may not be founded upon in any other judicial proceedings arising out of the death, and by this method, Parliament has indicated that the finding of fault is not intended as the purpose of the Inquiry".*

The Inquiry into the death of Mrs Allison Hume falls into the category of a "discretionary" Inquiry, where the need for an Inquiry has not been mandated by statute. The Lord Advocate has set out in her petition to the Sheriff the specific issues which, in her opinion, are relevant to the death and the accident to which gave rise to the death of Mrs Hume. In particular, the Lord Advocate, in her petition has invited this Inquiry to consider –

1. The actions of the Emergency Services, and their preparedness for such an event [the circumstances giving rise to the death of Mrs Allison Hume].
2. The public interest issues in relation to the number of mines throughout the country, and the possibility of reoccurrences.

3. The reactive workings of the Coal Authority.
4. The potential use of the Mines' Rescue Service.

These and other matters arising from the evidence are considered by me in the public interest.

### **Personae**

Mrs Allison Hume suffered death after a prolonged period at the base of the mine shaft into which she had stepped shortly before or after midnight on 25 July 2008. This Inquiry is an examination of the circumstances of her fall and the rescue effort to save her.

Evidence at the Inquiry was presented on behalf of the Crown by Mrs Nancy Beresford. Strathclyde Police were represented by Miss Habib, and latterly by Miss Martin.

The Coal Authority was represented by Mr Carr; East Ayrshire Council was represented by Miss Gilmour; Strathclyde Fire and Rescue Service was

represented by Miss Crawford; and Jayne Hume, the elder daughter of Mrs Allison Hume was represented by Mr Forbes.

I am grateful to all solicitors for their detailed examination and cross examination of the witnesses, for their sensitivity to the issues raised by this Inquiry, and for their detailed submissions at the conclusion of the evidence.

Evidence was heard from the following witnesses –

Sergeant Andrew Whittington, Senior Police Officer at the incident,  
 PC Mark McCabe, who was also in attendance and assisted at the incident,  
 Mr Ian Maitland, Retired Police Sergeant, and at the time of the incident  
 Strathclyde Police Mountain Rescue Team Leader,  
 Police Sergeant Grant Hindle, a member of Strathclyde Police Mountain Rescue  
 Team,  
 Police Constable Andrew Parker, a member of the Police Mountain Rescue Team,  
 Mr Hugh McVey, Retired Police Constable and former Police Mountain Rescue  
 Deputy Team Leader,  
 Christopher Rooney, Retired Watch Commander, Strathclyde Fire Rescue Service  
 Andrew Watson, Commercial Manager for Mines Rescue Service ,  
 Ian Wilson, Director of Environment and Property, The Coal Authority.  
 Charles Gill, Training Manager, Mines Rescue Service ,

Alexander Dunn, Retired Fire Fighter,

Group Commander Fred Howe, Strathclyde Fire Rescue Service Officer,

Martin Galloway, Scottish Ambulance Service Paramedic,

Michael Brandon, Project Manager, Barr Construction PLC,

Stewart Cowan, Chartered Civil Engineer and Technical Director,

Jacobs Engineering,

Group Commander Paul Stewart, Strathclyde Fire and Rescue Service,

Dr David Chung, Accident and Emergency Consultant, Crosshouse Hospital,

Kilmarnock

Group Commander William Thomson, Strathclyde Fire and Rescue Service,

Assistant Chief Officer David Hutchison, Strathclyde Fire and Rescue Service,

Director of Training and Operational Review and Member of Corporate Management Team,

Assistant Chief Officer John Walker, Strathclyde Fire and Rescue Director of Operations and Member of Corporate Management Team,

Mr John Bowman, Retired Watch Commander with Strathclyde Fire and Rescue Service,

Mr Charles McGrattan, Project Support Officer, Strathclyde Fire and Rescue Service,

Mr. Alan Jeffries, Warden, the Scottish Cave Rescue Organisation

and

Mr. Alfred Ingram, Chairman of the Mountain Rescue Committee for Scotland.

In addition, evidence in the form of affidavit was given by Sophie Hume and Jayne Hume, daughters of the deceased Allison Hume, William Strafford, Executive Director for Neighbourhood Services, East Ayrshire Council, Kelly Anne McEwan, relative of the Deceased, Kathleen McEwan, relative of the Deceased, Matthew Gary McEwan, relative of the Deceased, John Young, farmer, Galston, Hugh Cowan, step father of the Deceased, and Alex Cowan, friend of the Deceased.

### **The History**

Mrs Margaret Allison Hume was a 43 year old lawyer who was separated from her husband at the time of her death on 26 July 2008. She had two dependent teenage daughters, Jayne and Sophie. Her devotion to and her concerns for each of her daughters were evident from affidavits of relatives and friends with whom she had spent time immediately prior to her death.

Mrs Hume stayed at Barrwood Gate, Galston, a small housing estate adjacent to the A71. To the rear of that estate is farmland, a portion of which remains uncultivated, and beyond that another housing development of which Catherine Drive forms part.

On the evening of 25 July 2008, Mrs Hume with her elder daughter Jayne, crossed the field between Barrwood Gate and Catherine Drive to visit Kelly Anne McEwan. Some people had gathered at Miss McEwan's home and it was clear that something of a party was in process. These two areas, Barrwood Gate and Catherine Drive, were connected by road but that is a longer and more circuitous route between the two estates than the "short-cut" via a more direct trodden path across the open land between the two areas which was commonly used by both communities. It would take approximately 10 minutes to walk between the two estates by this off-road route. This was a summer's night and people were congregating in friends' houses; as might be expected, Mrs Hume had consumed some alcohol but was never described as being drunk; this was supported by subsequent toxicology results. She left Miss McEwan's home between 11.30 pm and 11.45 pm alone. Jayne followed her about 45 minutes later, but on returning home to Barrwood Gate was concerned that her mother, uncharacteristically, was not there. Her attempts to phone her mother's mobile phone met with no success as all calls immediately diverted to voice mail. Jayne immediately returned, this time by road, to Miss McEwan's house with the hope of meeting her mother en route. Jayne had become very worried about her mother, as her mother's absence from home was unusual behaviour. Jayne again left Miss McEwan's home at 01.10 am, and walked some way across the fields towards Barrwood Gate to retrace, at least in part, the route she had traversed with her mother earlier. Having gone half way in this direction she

returned to Miss McEwan's house. Jayne then returned to her own home by road where she obtained candles and set off back across the field in the direction of Catherine Drive. Having gone a short distance she heard screaming which she immediately identified was from her mother. She traced the source of that screaming to the summit of a hillock where she discovered what appeared to be large hole in the ground into which her mother had clearly fallen. Jayne made an immediate "999" call to the emergency services. That call is recorded as having been received at 02.12.57 am. Thereafter, Strathclyde Fire Rescue Service, the Ambulance Service, and Strathclyde Police were contacted by the "999" operations control. Two Strathclyde Fire Rescue appliances were in situ between 12-15 minutes later. The Scottish Ambulance Service with two paramedical staff arrived almost simultaneously. Sergeant Whittington, the senior Police Officer to attend was at the locus shortly after 03.00 am. He then began to assess the rescue assets firstly, by considering, in consultation with Watch Commander Rooney of Strathclyde Fire and Rescue Service, the options and resources available at the locus, and secondly by contacting Strathclyde Police Overview for additional resources from Strathclyde Police Mountain Rescue Team and also to determine the possibility and appropriateness of the attendance of the Air Sea Rescue Facility.

He was advised that Strathclyde Mountain Rescue team would be contacted but that the use of a helicopter in the rescue was not considered to be appropriate. I

was not given a specific reason for this but assumed that there were environmental obstacles and dangers to the helicopter and crew inherent in the descent of a winchman into a deep hole in the ground.

It was evident from the first attendance of the Strathclyde Fire and Rescue Service and the Police that any rescue attempt would present a significant challenge to the rescue and emergency services: the terrain was soft and the land was un-illuminated, there was a significant incline to the summit of the hillock, the vegetation surrounding the hole into which Mrs Hume had fallen was dense and high, and conditions were foggy and extremely dark. In addition, there was uncertainty about the stability of the base and sides of the shaft or hole, and doubt as to the integrity of the land surrounding the shaft or hole; there also appeared to be an overhang of earth around the surface of the hole. Further, the cohesion of the site and the depth of the hole could not, initially, be ascertained.

At the time of the arrival of Strathclyde Fire and Rescue Service Mrs Hume had been down the hole/shaft for approximately 2¼ hours. She was conscious and calling out. That level of responsiveness predicated a decision by Watch Commander Rooney, at that point the senior officer from Strathclyde Fire and Rescue, to consider that before a course of rescue was determined there should be a detailed appraisal of the casualty and the environment in which she lay.



Although it was suspected the subsidence of ground was as a consequence of a collapsed mine shaft this had not yet been formally established. A lighting rig was constructed at the site and carried from the Strathclyde Fire and Rescue Service Heavy Rescue Vehicle which was positioned in Barrwood Gate. Fire Fighter Dunn volunteered to descend into the hole, to carry out what Mr Rooney considered to be the necessary assessment of Mrs Hume's physical state and the conditions in which she lay. This course of action was met with no objection. The one advantageous circumstance at the locus was the existence of what was then thought to be a telegraph or electricity cable pole, which was considered stable and secure, and which could provide a belay for Mr Dunn's descent into the hole. The softness of the ground precluded any of the Fire Appliances approaching the locus to provide an anchor point. No issue was taken by anyone as regards the quality, character, or suitability, of the equipment to be used for Mr Dunn's descent. Each fire appliance is equipped with two sets of what is known as Safety Working at Height equipment (SWAH), which is a line restraint and securing system designed to comply with Health and Safety Regulations for working at height. This equipment replaced "lowering lines" which were carried in each Fire and Rescue appliance and which were not considered compliant with Health and Safety Regulations which had come into force. The SWAH equipment was only provided to a Fire and Rescue appliance on completion of each Watch's training in the use of that equipment. Mr Dunn, in particular, had no reservation about using the equipment for his descent. He

acknowledged that his training in the use of SWAH kit was inclusive of descent and ascent procedures.

Mr Dunn's descent was uneventful. He was provided with a two- way radio to communicate Mrs Hume's condition. At the base of the hole he found Mrs Hume lying in water, conscious, incoherent, and clearly distressed. Physically she appeared to have "panda eyes" and a distended abdomen. He remained secured and tethered by the SWAH equipment. He requested a line be lowered to secure Mrs Hume against further collapse of the hole together with the provision of blankets and oxygen. Mrs Hume was moved by him from the pool of water in which she lay and oxygen was administered to her. Mr Dunn was trained in first aid trauma care provided by the training module which is standard to all firefighters and known as Strathclyde Fire and Rescue trauma care package; but this did not skill him for anything other than a visual characterisation of Mrs Hume's condition. Mr Dunn was with Mrs Hume from approximately 03.20 am or from approximately one hour after the attendance of the emergency and rescue services.

Meanwhile, Police Sergeant Whittington had called upon the assistance of Strathclyde Mountain Rescue Team of which he had some previous knowledge. Communication with the team was made through Strathclyde Police Force Overview, who contacted Strathclyde Mountain Rescue Team leader, Sergeant

Ian Maitland, now retired, who initiated the muster of a team which could effect a rescue which he believed was within his team's capabilities. Police Sergeant Whittington had no knowledge of the Mines Rescue Service. Strathclyde Police Overview flagged up the potential for assistance from the Scottish Cave Rescue Organisation, but Sergeant Maitland declined such help as he considered that they would add little or nothing to his own team's capabilities, nor would they be able to mount a more expeditious or effective rescue effort. The possible deployment of The Caves Rescue Organisation was also raised By the Air Ambulance Control Centre who had been asked if they could provide aerial lighting from a helicopter, a request which was declined.

Sergeant Maitland resided in Kilmarnock, and was at the locus by 04.15 am approximately 30 minutes after first making contact with Sergeant Whittington.

Mr. Dunn continued to relay to the surface Mrs Hume's physical condition. He had not considered that she was noticeably deteriorating. Watch Commander Rooney felt a pressing need to get a rescue underway with the equipment available to him. He considered that, if willing, the paramedical officer, Martin Galloway, who had arrived at Barrwood Gate simultaneously with the Fire and Rescue service should join Mr Dunn and Mrs Hume at the base of the hole and obtain a more accurate assessment of her physical condition as this would best determine the manner of her retrieval to the surface.

By 03.25 am Group Commander Howe, of Strathclyde Fire and Rescue service had attended the locus; he was ranked superior to Watch Commander Rooney, and assumed control of the incident. Mr Howe and Mr Rooney, together, consulted with Mr Galloway who expressed no difficulty with going into the hole, and had no reservations about doing so. Mr Galloway confirmed in his evidence that he was aware of the risks associated with descent into the hole, but that he was the only person with sufficiently expert knowledge to diagnose the condition of the casualty and make a decision based on that. The risks attached to his descent, were not overlooked by Mr Howe: Mr Galloway was untrained in the use of ropes, he had no familiarity with SWAH equipment or any Strathclyde Fire and Rescue equipment, and was inexperienced in line rescue techniques and procedures.

In Mr Galloway's judgement, from what he had been able to hear at the surface, Mrs Hume was grading between twelve and fifteen on the Glasgow Coma Scale and was therefore conscious and alert. The two-way radio contact that had been maintained by Mr Dunn and the surface had been with another Fire Fighter and not with Mr Galloway direct. Mr Galloway had been in situ from around 02.15 am that morning and considered that the survival of Mrs Hume was "time critical".

Group Commander Howe believed that the reports received from Fire Fighter Dunn from the base of the hole were indicative of the degenerating condition of the casualty. He was aware that by allowing Mr Galloway to descent into the hole/shaft using SWAH equipment he, the incident commander, was not compliant with Strathclyde Fire and Rescue Service Policy. However he considered that before a decision could be made as to how he could convey Mrs Hume from the hole there had to be an assessment of the extent of her injuries, as only this diagnosis would determine if her ascent could best be achieved vertically or horizontally and, equally important, expeditiously.

At 04.03 am command of the incident transferred for a third occasion to Group Commander Paul Stewart. Mr Stewart had responded to the incident by attending the locus to set up a media unit, for which he would have responsibility and which he would conduct from one of the fire appliances parked in Barrwood Gate. He had overheard, on an internal broadcast, the decision by Mr Howe to allow Mr Galloway to descend into the hole. His immediate reaction was to attend at the site and assume control for the incident. He was concerned that Mr Galloway was not trained in the use of SWAH equipment nor he was part of Strathclyde Fire and Rescue Service and therefore should not be using Strathclyde Fire and Rescue Service equipment. Mr Stewart determined that Mr Galloway's descent into the hole had not been properly risk assessed, that the stability of the environment in general had not been risk assessed, and that, in

his view such were the serious deficiencies in the conduct of the operation to this point and that there was great potential for catastrophic consequences in the event of further land displacement.

By the time of Mr Stewart's attendance at the locus a team of Fire Fighters had harnessed themselves using SWAH equipment and had assembled by the shaft to attempt a rescue; they had an immobilising stretcher ready which could be deployed to bring Mrs Hume to the surface horizontally and securely. Mr Stewart instructed that the hole be quarantined immediately, that Mr Galloway and the fire fighters should disharness, and that all personnel, including the fire fighters who were preparing for a rescue attempt, should be withdrawn to a safe distance from the hole. He instructed that a cordon be set up beyond which no one should venture and that they should await the arrival of Strathclyde Mountain Rescue team who were specifically tasked with the conduct of a rescue which involved rope access. Mr Galloway was not further consulted.

Mr Stewart, in his evidence, said that he was aware of the Mines Rescue Service but did not consider making contact with them. He was unaware if they were a rescue service, or if they were even contactable organisation. As far as he was aware The Mines Rescue Service was not listed as a specific organisation within his operational procedures which could effect a rescue of the type which was required.

By 04.30 am Mr Stewart was made aware that the estimated time of arrival of Strathclyde Police Mountain Rescue Team would be between 05.00 am and 05.10 am. No additional rescue resource was to attend. The Mountain Rescue team was gathered on site at around 05.50 am, by which time the Fire and Rescue Service command had transferred for a fourth time from Mr Stewart to Group Commander William Thomson, who was graded superior to Mr Stewart. He had no difficulty with any of the decisions Mr Stewart had made.

Strathclyde Police Mountain Rescue Team were equipped with a Land Rover which was able to negotiate the soft terrain which the heavy fire appliances could not traverse, and which was capable of providing a second belay point in addition to the one which was provided by the telegraph or cable pole used for the descent of Mr. Dunn. At 06.21 am PC Parker, equipped with the Strathclyde Police Mountain Rescue immobilising stretcher and using his team's own ropes and harness was entered into the shaft.

The withdrawal of Mrs Hume was extremely difficult. PC Parker and Fire Fighter Dunn took thirty minutes to manoeuvre Mrs Hume onto the stretcher. PC Parker described himself as knee deep in mud at the base of the hole. The base was described as "wedge shaped" which compounded the difficulty. Mrs Hume remained conscious after being placed on the stretcher. Martin Galloway

recalled that for a time he could hear Mrs Hume continuing to shout. Early in the process of extraction there was a marked deterioration in her physical condition and she suffered cardiac arrest. She was eventually brought to a point just below the surface. The stretcher snagged, probably as a result of the ropes cutting into the shaft edge. Mrs Hume was carried manually from the shaft and taken into medical care which was standing by. Strathclyde Fire and Rescue Service log which was maintained as a simultaneous record of the incident records the time of the extraction of Mrs Hume from the shaft as 07.42.55 hours, approximately 5 ½ hours after Strathclyde Fire and Rescue Service had first attended. CPR was applied to Mrs Hume immediately. She was incubated as there had been systolic arrest; she was defibrillated, cardiac life support by intravenous medication was applied, and CPR was continued until she reached hospital. Transport was provided by air ambulance.

Mrs Hume was severely hypothermic; effort was made at Crosshouse Hospital to increase her core temperature with limited success and death was pronounced at 09.30 am. The cause of death was recorded as "chest injury and hypothermia". In his evidence Dr Chung of Crosshouse hospital described Mrs Hume's injuries as "survivable" had prompt action had been taken to rescue her.

At an earlier point in the morning, at approximately 04.30 am, William Stafford, Executive Director of Neighbourhood Services of East Ayrshire Council, was



contacted, and asked to provide advice to Strathclyde Police. Police and Fire Service liaison and emergency planning fell within his remit. He was aware of the existence of the Coal Authority and the Mines Rescue Service and that each would have an interest in the incident. He made contact with both Agencies by telephone using emergency numbers held within East Ayrshire Civil Emergency Plan. Mr Stafford's affidavit does not give a time for his attendance at the locus. However, he was present at the time PC Parker descended into the shaft, and with other surface personnel assisted in pulling the ropes which brought Mr Dunn, Mr Parker and Mrs Hume to the surface.

Mr Gill from the Mines Rescue Service attended at approximately 07.47 am as the helicopter air ambulance conveying Mrs Hume to hospital was lifting off. He had been contacted at 06.10 am at his home near Crossgates by Cowdenbeath, and had attended upon receiving the call. He had been contacted from the central office of the Mines' Rescue Service in Mansefield, Yorkshire. He had not attended to provide any form of rescue, as this had not been requested by Mr Stafford. Mr Gill recalled that on at least three occasions he had sought the clarification as to whether or not that would be his purpose in attending. By the time of Mr Gill's attendance at the locus he could offer no practical advice which would have assisted in the rescue. Mr Gill was later joined by Mr Andrew Watson, the commercial manager for the Mines Rescue Service who had travelled from Yorkshire to attend the locus immediately after being alerted by

Mr Stafford of the incident. He surveyed the area and began the process to stabilise the shaft and secure the surrounding area against intrusion.

### **Opinion**

The task facing Strathclyde Fire and Rescue Service should not be underestimated. They were called to a unique incident which required skills which did not immediately fall within their range of training and expertise. Whilst the weather was not inclement, they were impeded by darkness, by dense undergrowth, by soft under-foot conditions, by ignorance of the terrain and its potential for instability and by the magnitude of the hole into which Mrs Hume had fallen.

### **The Coal Authority**

The mine shaft from which Mrs Hume was extracted was measured by the Coal Authority as being 6 x 8 metres in length and breadth at surface level, and 14 metres deep, a depth which would approximate in height to that of a 4 storey tenement building. In trauma terms, that would equate to Mrs Hume having fallen from the fourth floor of a flatted tenement building onto the ground below.

Whilst it may not have been immediately apparent that this hole was formed from a collapsed mine shaft, it was evident as time progressed that it retained a form of structure. PC McVey of Strathclyde Police Mount Rescue Team had little doubt *"that it looked like a man made shaft than a natural hole"*. All the evidence suggested that the land displacement was recent, and would have occurred within at least 24 hours of Mrs Hume's fall. There was no evidence that there was local knowledge of the shaft, despite its proximity to the regular cross country route between Barrwood Gate and Catherine Drive. Enquiries carried out locally at Barrwood Gate by PC Curran, on behalf of Sergeant Whittington, suggested that no one was aware of the existence of the hole. Mr John Young, who farmed the land, had not noticed any subsidence on his land over the time he had worked it. Mrs Hume's family and friends who regularly walked the path between Barrwood Gate and Catherine Drive had no knowledge that there was the hole adjacent to the path.

Forensic examination at the site by Mr Ian Wilson, Director of Environment and Property for the Coal Authority, suggested that the collapse of the shaft was recent. He concluded that the sides of the shaft were clean giving the appearance of being freshly exposed, and there was no discolouration of the metal pipe, which protruded from the hole, which indicated recent exposure. There was no vegetation to the sides of the shaft, and the level to which the ground had sunk suggested that less than a period of days had elapsed since the

hole had appeared. There were no channels of water flowing into the hole, nor was there evidence to suggest that Mrs Hume had herself triggered the collapse; otherwise she would have been buried, or at least partially buried, by surface material.

It was submitted by Mr Carr on behalf of the Coal Authority that I should treat the evidence of Mr Ian Wilson as that of an expert witness. I am prepared to credit him as such. His experience in the coal industry is extensive: he is a qualified certified mine surveyor, and a Fellow of the Royal Institution of Surveyors. He has current responsibilities on behalf of the Coal Authority to licence the work and exploration of coal, to settle any damages for claims arising from subsidence, to monitor and to remedy surface hazards falling within the remit of the Coal Authority, and to monitor and to treat the issue of water effluent from coal mines. Mr Wilson attended at Galston at around 4.00 pm on the day of Mrs Hume's death to examine the site of the collapsed shaft. He noted the sides of the shaft were not lined by brick but cut into native rock. Within the shaft was a metal pipe which was probably used for pumping water from the mine. He described the shaft as a general purpose shaft used for the access and egress of miners, for ventilation, and for the extraction of coal. The surrounding topography suggested that the shaft was linked by railway to a main line and was therefore used for the transportation of coal. Mr Wilson advised that records of coal mining did not start until 1852 and that from approximately

1872 mine abandonment plans were statutorily required to be registered with Her Majesty's Inspectorate of Mines. The shaft into which Mrs Hume had fallen formed the Goat Foot Colliery No 1 shaft; Mr Wilson had accessed the plans for Goat Foot Colliery and advised that the mine had been worked for 50-60 years and was linked to a number of mines in the area. The construction of mines is such that a minimum of two shafts are required for air ventilation. Records did not disclose another shaft adjacent to Goat Foot No 1 shaft. The ventilation for this assembly of mines was often provided from other collieries through adits, or tunnels, which are carved between two or more coal seams but which do not necessarily emit at the surface. These adits are not thought to present a public hazard. Goat Foot Colliery was abandoned in 1922. Abandonment records disclosed that the approximate depth of Goat Foot Colliery No1 shaft is 130 metres. The records did not disclose how the abandoned shaft was treated. Mr Wilson advised that Goat Foot Colliery No1 shaft was likely to have been infilled with debris from bings (slag heaps) which was heaped onto logs which had been thrown into the shaft to provide a retaining structure at its base. Probes undertaken in the course of treatment of the Goat Foot Colliery No1 shaft suggested that the mine shaft extended in depth to 130 metres. The logs at the base of the shaft may have become eroded by water flowing into the mine which caused destabilisation at the base of the shaft causing a collapse at the surface. Water seeping into the shaft from above may also, through time, have

contributed to a dilution of the foundation of the infill material, causing movement, and ultimately leading, similarly, to a partial collapse.

Mr Wilson advised that records provided to the Coal Authority from its predecessor the British Coal Corporation, itself the successor to the National Coal Board, established that an attempt was made at some time before 1994 by the relevant body to identify Goat Foot Colliery No 1 shaft but without success. The entry on the record after survey states “no sign”. Mr Wilson told the Inquiry that shafts cannot always be easily traced: they are not always clear from visual inspection, records of their whereabouts were often inaccurate, and map references were fallible; often orientation is effected by landmarks which may have been eroded or have been destroyed and early maps may have predated a reliable grid reference.

The Coal Authority was established by Section (1)(1) of the Coal Industry Act, 1994, [the 1994 Act] as a body corporate for the purpose of –

- (a) *Holding, managing, and disposing of interests and rights in, or in relation to the unmarked coal and other property, which is transferred to, or otherwise acquired by it, by or under this Act?*
- (b) *Carrying out functions with respect to the licensing of coal mining operations.*

- (c) *Carrying out functions with respect to coal mining subsidence, and in connection with other matters incidental to the carrying on of any open caste or other coal mining operations.*
- (d) *Facilitating the establishment and maintaining of arrangements for the information to which persons are to be entitled under this Act to be made available to them, and*
- (e) *Carrying out the other functions conferred on it by virtue of this Act.*

The key statutory duties incumbent on the Coal Authority are set out in Sections 2, 3 and 4 of the 1994 Act. I was advised by Mr Carr, in his submission on behalf of the Coal Authority, that in the Report of the Coal Authority for 2008-2009, the Authority had identified four key strategic areas:

- (a) the provision of mining information.
- (b) Public safety and subsidence.
- (c) Environmental projects,
- (d) Property management

The initiative to prioritise public safety and subsidence stems from the 1994 Act. Sections 7(3) and 3(1) of the 1994 Act which provide that:

*S7(3) "on the restructuring date the [British Coal] Corporation's interest in unworked coal and coal mines, including its interests in any coal that, notwithstanding having been worked at some time, is so attached or to be incorporated in any coal mine or other land, as to be part of it, shall vest in the [Coal] Authority."*

*S 3(1) "it shall be the duty of the [Coal] Authority in carrying out its functions mentioned in section 1(1)(a) to -*

*(a).....*

*(b) the need to secure the safety of members of the public."*

It was put to Mr Wilson in the course of his examination by the Procurator Fiscal Depute that additionally the Coal Authority are bound by the terms of Section 151 of the Mines and Quarries Act 1954 (1954 Act). Section 151 provides:

*" it shall be the duty of the owner of every abandoned mine, and of every mine which, notwithstanding that it has not been abandoned, has not been worked for a period of 12 months to secure that the surface entrance to every shaft or outlet thereof, is provided with an efficient barrier, plug or other device, so designed and constituted, as to provide any person from accidentally falling down the shaft, or from accidentally entering the outlet, and that every device so provided is properly maintained"*



Section 181(1) provides:

*"in this Act an owner means, in relation to a mine, the person who for the time being, is entitled to work it"*

Section 5(6) of the 1994 Act defines the constraints on the Coal Authority:

*"the Authority shall not have power*

- (a) for commercial purposes, or with a view to itself using any coal, or product of coal, to carry on any coal mining operation consisting in*
  - (i) the winning, working or getting....of any coal*
  - (ii) the winning ,working or getting of any product of coal*

It was argued by Mr Wilson of the Coal Authority that the duties imposed by Section 151 of the Mines and Quarries Act 1954 did not apply to the Coal Authority as it could not be determined to be an owner as defined by Section 181(1) of the Mines and Quarries Act 1954. It was his opinion that the responsibilities imposed by Section 151 of the 1954 Act did not transfer to the Coal Authority by virtue of the 1994 Act and that therefore there was a lacuna in the legislation in that there was a failure on the part of Parliament to bridge the

responsibilities contained within the 2 Acts and effectively place an onus upon the Coal Authority which was greater than that which was envisaged by the 1994 Act.

I am not entirely satisfied with that submission. The Coal Authority have inferred responsibility for the prevention of hazards from their overarching obligations as set out in Section 1(1) of the 1994 Act. The Report to which Mr Carr referred acknowledges the Coal Authority's responsibility for public safety, and for the effects of subsidence, as being issues of critical importance. This is a prerogative which the Coal Authority has accepted and which, in my view, falls within the responsibilities imposed by Section 3(1) of the 1994 Act which constrain the Coal Authority to have regard to the need for the security and safety of the public. This is particularly so when there is no ostensible owner of a mine. That obligation cannot be a notional consideration; there must be a practical application, wide in its terms, and embracing of Section 151 of the 1954 Act. That is implicit in the owners' responsibilities which the Coal Authority have generously assumed and for which they should be given due respect and credit. Their argument is not actioned literally. Regardless of any legislative lacuna The Coal Authority has it as their policy to assume the responsibilities incurred by virtue of S 151 of the 1954 Act

If that section of the 1954 Act is applicable and is subsumed and extended by the obligation imposed by S 3(1) of the 1994 Act, then consideration to the defence to an alleged breach of Section 151, afforded by Section 157 of the 1994 Act, should be briefly considered.

Section 157 states –

*"it shall be a defence in any legal proceedings to recover damages, and in any prosecution in so far as the proceedings or prosecution are, or is based, on an allegation of a contravention in relation to a mine ..... to prove that it is **impracticable** to avoid, or prevent, the contravention".*

This Inquiry does not involve an action for damages, and it is not a procedure to determine negligence or fault on the part of the Coal Authority. Nor does it form any basis for a criminal prosecution. The definition of "impracticable" is relevant only in so far as it might assist consideration in the determination of any finding under Section 6(1)(c) of the Fatal Accidents and Sudden Deaths (S) Act 1976 Act. Could reasonable precautions have been taken by the Coal Authority whereby the death or the accident leading to the death of Mrs Hume could have been avoided? For the purposes of this Inquiry, the test is whether it is "reasonable" for the Coal Authority to have avoided any obligation imposed by Section 151 of the 1954 Act, or by implication the duty conferred by Section 3(1)

of the 1994 Act. The defence of "impracticability" imposes upon the Coal Authority, in my view, a higher standard than that of "reasonableness" in respect of the precautions that could have been taken. One definition of "impracticable" is: **"when it can only be done at an excessive or unreasonable cost"** [*Maule, J at Moss v Smith, 1950*] 9 CB 94, page 103]. However, that definition, in my view, fails to take account of or recognise other factors which would make a project or fulfilment of an obligation "impracticable". The antonym of "impracticable" is "practicable". The definition of "practicable" in the Oxford English Dictionary, Second Edition, is "feasible". Logically, if an action to be performed is impracticable, then it must also then be considered "unfeasible". That raises issues wider than cost: the danger posed, geography, accuracy of archived records and achievability of the task are also matters which need to be considered in determining what actions are or are not practicable to achieve the stated outcome of securing colliery shafts.

The feasibility and practicability of securing coal mine shafts is reliant on identifying those shafts which present a danger to the public. It was clear from the evidence that the ground disturbance to the rear of the Barrwood Gate estate was very recent to Mrs Hume's fall. There was no local knowledge of there being an open shaft in the area for any length of time. If knowledge of the existence of the open shaft was the sole criterion for action it would have been impossible for the Coal Authority to secure this shaft against any form of

trespass. The Coal Authority must have regard to their duties in terms of Section 3(1) of the 1994:

*"to have regard to the need to secure the safety of members of the public".*

Whether or not that duty has been satisfied, will be determined not only by the reasonable but also by the practicable precautions which could have been taken by the Coal Authority which may have avoided Mrs Hume's death, or any accident leading to her death.

Mr Wilson advised the Inquiry that there is a public safety and subsidence team which operates 365 days a year on a 24 hour response service to incidents associated with collapsed mine workings and which present a danger to public safety. Officers of the Mines Rescue Service Limited are under contract to the Coal Authority to attend any such notified instance within two hours of contact being made. If the hazard is within the remit of the Coal Authority the Mines Rescue Service secure the hazard if possible, survey and investigate its cause, and effect a permanent treatment.

I was advised that regular notification of the availability of this Service is communicated to Local Authorities and to the Emergency and Rescue Services. Mr Wilson advised that there are 170,000 mines entries recorded in the UK. The

Coal Authority receives 500 reports per annum, and, since year 2004, 1605 hazards have been accepted by them. Since year 2004, 87 notifications to the Coal Authority have included the collapse of mine shafts, of which 14 occurred in Scotland, and 2 in Ayrshire. There are 23,000 recorded mine entries in Scotland, 4,000 of which are in Ayrshire. It is thought that there could be as many as 85,000 further mine shafts within the UK which are not recorded. The scale of the responsibility imposed upon the Coal Authority is immense. The average cost of sealing a shaft is £30,000. Since 2006 the Coal Authority has implemented a policy of proactive investigation and security of mine shafts. A programme has been introduced whereby a risk evaluation is undertaken from Coal Authority registers of those shafts likely to pose a risk to public safety and which are not already in a secure state. Since 2006 the Coal Authority has attempted to prioritise shafts requiring stabilisation and security by a process of categorisation of A to E. Shafts in category A are identifiable shafts which pose an immediate risk and those in category E are those mine entries for which no original treatment details are currently available. An inspection target was set initially at 1,500 entries per annum, but this has been increased from year 2008 to 15,000 entries per annum. Category E shafts have no priority in the inspection process.

Goat Foot Colliery No1 shaft was identified as a category D shaft and would therefore have had no priority in the determination of its exact location; it follows

that there would have been no appraisal as to its condition and stability. I was advised that the 2008 Policy Review of the Coal Authority's inspection process set as an additional priority the inspection of those shafts identified within 20 metres of residential property. The Goat Foot Colliery No1 shaft lay 130 metres south of Barrwood Gate estate. Had this system of prioritisation been in place prior to July 2008 Goat Foot Colliery No1 shaft would have remained undetected and would not have been considered to rank high in the inspection prioritisation.

Despite events of 26 July 2008 the secondary shaft relating to Goat Foot Colliery still remains to be located. It is a legitimate concern of Mrs Hume's family that the shaft into which she fell was not detected in the course of the earlier survey of the surface terrain of Goat Foot Colliery which was carried out at some point prior to 1994. However, on the evidence which I heard I cannot be satisfied that the location of the shaft into which Mrs Hume fell would have merited prioritisation in the Coal Authority's survey of where it lay and its state of stability. That process is logical and given the scale of the Coal Authority's obligations and entirely appropriate to the demands placed on it by statute. The shaft was located on a hillock which was in an unproductive area of a field, some distance behind the housing estate, adjacent to, but not on the trodden path across the field between the two housing estates. Its level of obscurity diminished its hazardous character. I cannot accede to any suggestion that the

Coal Authority could have instituted or adopted reasonable precautions additional to those already in place within its structured rolling programme of identification of untreated coal mineshafts. To that end it would have been unfeasible or impracticable, if the statutory defence is applied, for the Coal Authority to have taken additional steps beyond those already in place in 2008 and which have now evolved into an escalated programme of surveillance, detection and securitising of coal mineshafts. Whilst this Inquiry is concerned with “reasonable precautions” which could have been taken the burden imposed by statute upon the Coal Authority is that of “practicability” of measures to prevent accident or death. If that Higher test is satisfied then the lesser standard of “reasonableness” has also been acquitted.

### **Construction of Barrwood Gate Primary School.**

The destabilisation of Goat Foot No1 shaft was likely to have occurred as a result of the ingress of water within the mine workings at the foot of the shaft which sluiced the foundation of the shaft infill causing a partial collapse of the infill material and significant surface depression. I was asked to consider where or not the construction of Barrwood Gate Primary School contributed to the destabilisation of the Goat Foot Colliery No1 mineshaft. However, there was no evidence before the Inquiry which would entitle me to make such a finding. The school was constructed 350 meters north of the shaft. In its construction 700



piles were driven into the ground. I heard evidence from Mr Brady, on behalf of Barr Construction, and Mr Stewart Cannon of Jacobs Engineering which had the responsibility for driving the piles which would form the foundations of the school. Their evidence was to the effect that the construction process was not a factor in the destabilisation. This evidence was supported by Mr Wilson, on behalf of the Coal Authority. This body of evidence was not subject to any challenge. However such evidence as the Inquiry heard may dispel the fears and concerns of the Barrwood Gate community that the new school, which was built 17 months prior to Mrs Hume's death, was a contributory factor to the sequence of events which led to her death.

### **Duration of Rescue**

It took between 5 to 6 hours for Mrs Hume to be uplifted from the collapsed mine shaft from the time of arrival of Strathclyde Fire and Rescue Service. She had probably been in the shaft for about 2 hours before their arrival. By the time she was brought to the surface at 7.42am she was profoundly hypothermic. Her core body temperature was 24 degrees, 13 degrees below normal. She was in a critical physical condition having suffered a pneumothorax, broken ribs and a broken sternum. She had fallen a distance of 14 metres, which in itself would have greatly increased the likelihood of severe contusions to the lungs with associated complications, one of which would have been the release of air to the

lung cavity, causing tensioning and pressure to the heart. Dr Chung from Crosshouse Hospital, Accident and Emergency Department considered *"in the main [her injuries] to be survivable with the right treatment. A pneumothorax is not in itself life threatening, but if tension occurs, then that can be critical and timescales become more narrowed"*.

Dr Chung could not determine whether tensioning within the chest was occurring as Mrs Hume lay at the base of the shaft or whether it could be caused by the event of her extraction from the shaft. However, he was in no doubt that *"the longer the casualty remains within the hole the colder they get and with chest injuries they are less likely to survive"*.

The question of how a casualty is to be raised to the surface was considered by Dr Chung to be a matter of balance between the proposed time frame for an extraction and the physical deterioration of the person. A perfect or imperfect uplift would have to be balanced against the dangers inherent in allowing the casualty to remain in an injured and untreated state. There is, therefore, no hard and fast rule that a casualty had to be raised in a horizontal position rather than a vertical position.. The convention favours horizontal extraction for two reasons: firstly, spinal or neck injuries would be less likely to be exacerbated if there was neutralisation and immobilisation of the casualty; and secondly, the onset of "immersion syndrome", a condition resulting in cardiac arrest, would be

avoided. This latter complication, according to Dr Chung, is not generally understood clinically but has been known to occur when someone is vertically moved from a cold environment. Sergeant Maitland in his experience of mountain rescue considered horizontal extraction was less perilous for the injured person by keeping the body in a neutral alignment and less likely to induce further heat loss leading to cardiac arrest. It was his experience that this latter complication was more commonly associated with vertical rescue. Chief Fire Officer John Walker also made reference to the preference for horizontal recovery, in his understanding, to avoid lowering of blood pressure or what he called "suspension trauma". I assumed by this that he was referring the condition identified by Dr Chung as "immersion syndrome". The only medically qualified person at the incident was Martin Galloway, the paramedic who had been restrained from entering the shaft. He considered the removal of Mrs Hume from the shaft as "time critical". He was prepared, notwithstanding personal danger, to enter the shaft and carry out any invasive procedures to relieve Mrs Hume's distress and assess her condition which might have determined how best she could be lifted and how that might have been achieved balancing her condition against the projected time for her rescue. It was Dr Chung's opinion that *"any medical or clinical person would automatically assume this patient would be at risk of hypothermia, and the longer they stayed down there, you would be expecting to find it"*. Within this context I was surprised at Group Commander Stewart's observation that as far as he could recall *"there was not a huge*

*concern about the time*" [that the rescue was taking]. In Sgr Whittington's view there was "*no great sense of urgency*" about staging a rescue. It was clear, or ought to have been clear, to everyone in attendance at the locus that the passage of time would be a critical factor in determining Mrs Hume's survival. Mr Galloway was asked to play no further role in the rescue despite being the only medically qualified person in attendance and willing at personal risk to descend into the shaft to assess Mrs Hume's condition and needs. By the time he was told to step down by Group Commander Stewart of Strathclyde Fire and Rescue Service there was already a fire fighter, Mr Dunn, in the depth of the shaft administering to Mrs Hume by trying to keep her warm with blankets and providing oxygen; there were also at least 18 fire fighters in attendance willing to attempt a rescue. Nor was there any shortage of equipment which had the potential for raising the casualty to the surface: Strathclyde Fire and Heavy Rescue vehicle carried 2 types of stretcher: a thermal basket stretcher and an immobilising stretcher called a MIBS ( a multi-integrated body-splint [stretcher]); there was also a Kendrick Extraction Device (an immobilising rigid corset) which was carried by the paramedical vehicle and which could be used in conjunction with a neck brace for vertical removal whilst retaining neutral alignment of the casualty; additionally and there was an aggregate of 6 sets of SWAH equipment contained within the 3 fire appliances in attendance which could be adapted for use with the stretchers to bring Mrs Hume from the shaft.

By 4.15am , two hours after the arrival of Strathclyde Fire and Rescue and the paramedical vehicle and one hour after the arrival of Sgr Whittingham, there appeared to be the formulation of a plan by rank and file firefighters to effect a rescue using the resources to hand and utilising the medical advice of Mr Galloway. The actual rescue however was some three and a half hours later.

The decision not to proceed in advance of the attendance of Strathclyde Police Mountain Rescue team was made by Group Commander Paul Stewart. He stopped Mr Galloway from entering the shaft as he lacked training in rope access procedures and had no familiarity with Strathclyde Fire and Rescue Service equipment; further Mr Stewart told the Inquiry he had concerns that the air within the shaft might be toxic, that Mr Galloway might suffer from claustrophobia, that he was not a Fire and Rescue employee and therefore should not be using Fire and Rescue SWAH kit; further the stability of the shaft and the surrounding ground had not been properly risk assessed. Mr Stewart did not consider that the SWAH kit was designed for line or rope rescue and that Strathclyde Fire and Rescue Service procedures or protocols dictated that if line rescue was required the designated Agency was Strathclyde Police Mountain Rescue Team which had already been contact and were being mustered.

Group Commander William Thomson, who assumed control of the operation approximately 45 minutes after Group Commander Paul Stewart, was in accord

with Mr Stewart's reasons for delaying the rescue attempt. He was the fourth person to take control of the incident. At each transfer of control a briefing and appraisal of the circumstances, historical and current, passed between the outgoing and incoming controller. I do not consider that process in itself contributed to delay however it was evident that the structure of command was an issue in that it gave rise to argument as to how best the rescue could be performed and to conflicting risk assessments.

I have said that there is no doubt that this incident presented difficulties which no one in attendance had previously experienced. Whereas it had initially been dark and foggy, as the morning wore on visibility improved significantly and some of the original concerns had or ought to have had dissipated as dawn broke. No further ground dislodgement had taken place and no concerns had materialised about the toxicity of the atmosphere at the base of the shaft. Nor had Mr Dunn made a complaint about an oxygen deficit within the shaft.

No attempt was made to obtain reliable advice on the nature of the terrain even though the fear persisted that the shaft and the surrounding terrain were potentially unstable. Sergeant Whittington had no knowledge of either the Cave Rescue Organisation or the Mines Rescue Service therefore no contact was made by him with either of these potential rescue resources. The Cave Rescue Organisation had been flagged up as a potential rescue resource by Strathclyde Police Overview and by the Aeronautical Rescue Control Centre who had

provided a contact telephone number. Group Commander Stewart had limited knowledge of the potential of these resources. It had taken approximately one hour from receiving the "999" call for Strathclyde Police Overview to contact Strathclyde Police Mountain Rescue Team but it was after 6 am that morning before Sergeant Maitland had his team *in situ* to conduct the rescue. He bears no responsibility for this. Sergeant Maitland had been asked by Force Overview if the Cave Rescue Organisation could assist, but he declined that help on the basis that it would be more expedient for his team to assemble and attempt the rescue having regard to the comparative time it would take for each team to assemble. I make no criticism of that decision. Once Strathclyde Police Mountain Rescue Team was contacted then future progress of the rescue effort was entirely dependent on the time of arrival of that Team.

Deploying Strathclyde Police Mountain Rescue Team was consistent with the Memoranda from Strathclyde Fire and Rescue service dated the 14 and 27 March 2008 which stated that line rescue was a delegated function and should be only undertaken by Strathclyde Police Mountain Rescue Team or by the Trossachs Search and Rescue Team. This had critical implications for the length of time a rescue in the Galston area would be likely to take. The equipment for Strathclyde Police Mountain Rescue team is stored and ready for immediate use at Dumbarton Police office and Springburn Glasgow police office. That equipment had to be collected and brought to the locus. Whereas Mr Maitland was local to Galston the remainder of the team were assembling from Greenock, Killearn and

Milngavie and required to collect the vehicles containing their specialised equipment. It was 5.50 before the whole team had assembled at the locus.

Group Commander Paul Stewart had not thought to contact The Mines Rescue Service. He had no detailed knowledge of what the Mines Rescue Service could offer by way of a rescue facility or by the provision of advice as to the hazardous nature of the terrain. Whereas it is unlikely that the Cave Rescue Organisation or indeed the Mines Rescue Service could have attended the locus prior to Sergeant Maitland and the Strathclyde Police Mountain Rescue Team it would have been of considerable value to the rescue effort, had, in particular, the Mines Rescue Service been in communication to provide an assessment of the stability of the mine shaft and surrounding ground.

Mr Charles Gill from the Mines Rescue Service was alerted to the incident by Mr Stafford of East Ayrshire Council and attended the locus just at the point Mrs Hume was being moved from the shaft. His observation was to the effect that the shaft was "*very competent in its form and structure*". Mr Andrew Watson, Commercial Director of The Mines Rescue Service, who attended from Yorkshire later that day, considered that "*a shaft is usually a stable area*". He further advised the Inquiry that it was unlikely that any mining operations would be carried out close to a mineshaft as these operations could potentially damage the means of ventilation to the mine and affect the access and egress to and from the mine for general purposes or as a means of escape. If that information had been available earlier in the process of the rescue and passed on to Group



Commander Paul Stewart it would have significantly reduced his fear that the shaft and surrounding ground were unstable and ought to have had a considerable influence upon his then current and continuing risk assessment.

The Mines Rescue Service Limited are contracted to the Coal Authority to provide a 24 hour, 365 day emergency rescue service for incidents associated with former coal mining operations which pose a risk to the safety of the public. In terms of their contract with the Coal Authority they must deploy to an incident within 2 hours of contact. I was advised that the Mines Rescue Service Limited make regular contact with the emergency services and with local authorities. I was also advised that the contribution made by the Mines Rescue Service Limited to the rescue undertaken following upon the Stockline disaster in Glasgow was made a matter of commendation by the Chief Fire Officer of Strathclyde Fire and Rescue Service. It was a deficiency in the management of the rescue operation that earlier contact was not made was not made with this Service. They were known to Strathclyde Fire and Rescue Service and should have been included in any protocols where any form of subterranean rescue is required.

Mr Watson told the Inquiry that it was widely recognised that the Mines Rescue Service could provide expertise in confined spaces rescue and rescue from collapsed structures. He confirmed that there was an established liaison with Strathclyde Fire and Rescue Services.

The Mines Rescue Service Limited has a depot in Scotland at Crossgates in Fife. They do not have an equipped vehicle at the ready, and would therefore require assembling equipment appropriate to the circumstances of the incident. They have an "A" frame which could be constructed on site to assist in rescue from a collapsed shaft but use of that apparatus may not have been suitable for this rescue. The Inquiry was told that although the Mines Rescue Service Limited could provide a rescue service they would not necessarily have been able to conduct a rescue on this occasion. The worth of the service, however, was that they could have provided essential and valuable advice to the Fire and Rescue Service to dispel their fears of ground collapse which proved, ultimately, to be unfounded.

Similarly, the Scottish Cave Rescue Organisation would have been able to provide some assistance in dealing with subsurface rescue. I could not be satisfied that their attendance would have accelerated Mrs Hume's removal from the shaft. That Organisation is a voluntary Organisation which operates in much the same way as Strathclyde Police Mountain Rescue Team. They operate from a base in Winchburgh, West Lothian, where all their equipment is stored. They have no dedicated rescue vehicle. The organisation is insured through Lothian and Borders Police and protocols dictate that they are to be summoned via that Police Force in order to maintain effective insurance. I consider that the ability

of this Organisation to attend at Galston was no greater or less than that of Strathclyde Police Mountain Rescue Team. I do not consider, however, that their attendance at the locus in Galston would have been counter productive and it may have been of some advisory assistance. I have little doubt that this Organisation had the capability and competence to bring Mrs Hume to the surface, but they would have been impeded by the similar time constraints to those experienced by Strathclyde Police Mountain Rescue team viz: by the time taken to assemble a team, by the time it would take to requisition and prepare their equipment, and by their travelling time from Winchburgh to the locus at Galston. They were not a "blue light" service and therefore subject to normal highway speed limitation.

Sergeant Whittington found himself in a difficult situation in that he had to assess the type of incident he was dealing with and what resources he could call upon to assist in the rescue. His role was to coordinate potential emergency and rescue services. His previous experience with Strathclyde Police Mountain Rescue Team dictated his use of that Agency although that decision coincided with Strathclyde Fire and Rescue Service Protocol. Mr Maitland made the decision that a rescue by his mountain rescue team was best placed of all the rescue agencies including The Scottish Cave Rescue Organisation and The Mines

Rescue Service to get to the locus, and effect the most expeditious extraction of Mrs Hume. There was no evidence before the Inquiry that he, or his team, felt constrained by the concerns, expressed on behalf of Strathclyde Fire and Rescue Service, to attempt a rescue. The concerns of Group Commander Paul Stewart and Mr Thomson were not articulated by Mr Maitland: he had no worries about the stability of the ground, or of sending a man down into the shaft. Unlike Mr Stewart and Mr Thomson, he had no reservations about the potential toxicity of the atmosphere at the base of the hole.

### **The Role of Strathclyde Fire and Rescue Service**

Strathclyde Fire and Rescue Service were the first emergency service at the scene. A fire appliance from Kilmarnock attended within minutes of the “999” call. This was followed by a fire appliance from Newmilns, and thereafter by the Fire and Rescue Heavy Rescue Vehicle, which was requisitioned from Easterhouse, Glasgow.

The remit of Strathclyde Fire and Rescue Service is contained in Chapter 2 within Sections 9, 10 and within Chapter 3 sections 13 and 14 of the Fire (Scotland) Act 2005, and within The Fire (Additional Function) (Scotland) Order 2005.

The relevant provisions of the Fire (Scotland) Act 2005 –

**Section 9(1)**

*Each relevant authority shall make provision for the purposes of Paragraph (a) extinguishing fires in its area, and (b) protecting life and property in the event of fires in its area . . . . .*

**Section 10(1)**

*Each relevant authority shall make provision for the purpose of Paragraph (a) rescuing persons in the event of road traffic accidents in its area, and (b) to the extent that it considers it reasonable to do so, protecting persons from serious harm in the event of road traffic accidents in its area . . . .*

**Section 13(1)**

*A relevant authority may take any action it considers appropriate (a) in response to an event or a situation that causes, or is likely to cause, sub-paragraph (i) a person to die, be injured or become ill, or (ii) harm to the environment, including the life and health of plants and animals and the fabric of buildings, or (b) for the purpose of enabling it to take action in response to such an event or situation.*

**Section 14**

*(1) A relevant authority may provide- (a) the services of any persons employed by it; or (b) any equipment maintained by it to any person for any purpose that appears to the authority to be appropriate.*

**Section 4 of the Fire (Additional Function) (Scotland) Order 2005 provides:**

*(1) that a specified authority shall make provision for the purpose of rescuing persons who may be trapped, and protecting them from serious harm in the event of (a) a landslide, (b) the collapse of a building, tunnel, or other structure, in its area.*

*(2) the function conferred by paragraph (1) shall not apply where it is reasonable for a specified authority to conclude that another person with search and rescue functions, or specialist search and rescue capabilities can make satisfactory provision for the emergency in connection with which the function is conferred.*

Sections 9 and 10 of the Fire (Scotland) Act 2005 obligates the Fire and Rescue services to provide assistance in the event of fire, or a road traffic accident. Section 13(1) extends that remit by empowering, though not compelling, the Fire and Rescue service to attend, and action as appropriate, an event which causes,

or is likely to cause, a person to die. However, the Fire (Additional Function) (Scotland) Order 2005, specifically mandates the Fire and Rescue Service to make provision for the purposes of rescuing persons where there has been a landslide, the collapse of a building, or other structure. It was a matter of argument whether or not the mine shaft constitutes a structure as was envisaged by the Fire (Additional Function) (Scotland) Order 2005. In the view of Assistant Chief Fire Officer John Walker, a mine shaft would not be considered such a structure. In his reckoning a structure was defined as a building, a collapsed building, a tunnel, a road tunnel, a railway tunnel, or some similar type of structure. He did not consider that Fire and Rescue services had a "sub-surface" remit. That might only arise in the collapse of a building, tunnel, or some other "structure". He did not consider there was a remit, specific or general, to respond to emergencies arising from disused mine workings or from sub-terrain incidents. He did not consider that to be part of the core duty of Strathclyde Fire and Rescue Service.

I was not directed to any legislation, or protocol, which allows me to accept the views expressed by Group Commander Stewart, or Assistant Chief Fire Officer Walker, that the type of rescue they would have required to undertake with Mrs Hume, was not within the parameters of their engagement.

I considered the terms of Section 13(1) of the Fire (Scotland) Act 2005 which provide a wide scope to the Strathclyde Fire and Rescue Service to effect a rescue where, at their discretion, it is appropriate. That section provides a wide remit to undertake rescues which fall outwith the specific range of rescues identified within sections 9(1) and 10(1) of the 2005 Act. Section 4 of the SI, however, mandates the authority to make specific provision for rescue due to the collapse of a building, tunnel, or "other structure". That, in my view, directs the Service to provide a blue print or contingency plan for rescue in an event where a structure, such as a properly constructed mine shaft, collapses.

Interpretation of what constitutes "a structure" in terms of undertaking a rescue ought to be defined expansively. For example, a rescue undertaken as a result of a land slide would potentially be a subterranean or sub-surface rescue, as might a rescue carried out from a collapsed tunnel. If anything, the additional functions of Section 4 of the SI infer a requirement to prepare and plan for sub-surface operations, and therefore "structures" should be interpreted, not only to include an edifice or building, but any manmade or engineered construction which ought to include a descending structure such as a mine shaft.

In 2008 I consider there was an oversight in the planning by Strathclyde Fire and Rescue Service for a contingent event such as the collapse of a mine shaft. Strathclyde Fire and Rescue had regular communication from the Coal Authority



(as the Inquiry heard from Mr Ian Wilson); they operate in Ayrshire within an area historically known to have 4000 mine workings. The wording of Section 4 of the SI is quite specific: It requires the specified authority "*to make provision for the purposes of rescuing of persons ....in the event of collapse...of [a] structure in its area*". This Inquiry is concerned with the collapse of a mine shaft in Galston, Ayrshire. It is my concern that the realistic possibility of a mine shaft collapse in this area was not factored into any contingency planning by Strathclyde Fire and Rescue Service; had there been such foresight then organisations such as the Mines Rescue Service and the Scottish Cave Rescue Organisation, in addition to Strathclyde Police Mountain Rescue Team would have been readily identified and utilised either at a practical or advisory level under the delegating powers conferred on by S 4(2) of the S I to assist in the rescue. That may, but not conclusively, have achieved a more expeditious rescue of Mrs Hume. Whereas the Local Authority and Strathclyde Fire and Rescue Service at corporate level were aware of the potential contribution that could be made by the Mines Rescue Service, and Strathclyde Police Overview were aware of the potential input from the Caves Rescue Organisation, that knowledge did not translate to the decision making either on the ground or at the actual rescue site or in any pre-planning for such an event.

It has concerned me throughout the Inquiry that the members of Strathclyde Fire and Rescue Service who attended the incident on 28 July 2008 were

bracketed into two conflicting camps: there were those rank and file fire fighters who were eager to effect a rescue and to adapt, or customise their equipment to conduct a rescue; and there were the incident commanders - Group Commander Paul Stewart and Group Commander William Thomson - whose caution dictated that the rescue should be conducted in ridged compliance with the procedures of Strathclyde Fire and Rescue Service. The decisions made by the latter camp were supported by Mr Walker, Mr Hutchison, and Mr McGrattan when they gave evidence to the Inquiry.

On the one hand there were the very experienced and long serving firefighters represented by Mr Rooney, Mr Hume, and Mr Dunn, who were anxious to effect a rescue with the equipment available to them; they could not be described as naive or hot blooded in their anxiety to rescue Mrs Hume from the mine shaft. On the other hand the two senior incident commanders, Mr Stewart and Mr Thomson, had no hesitation in vetoing the use of equipment which they did not consider was specifically designed, or could be adapted to carry out a rescue or the deployment of fire-fighters who had not been specifically trained for a rescue effort of the type that was required. In the view of Mr Stewart supported by that of Mr Thomson, the whole operation could potentially have been endangered by

—

(a) an inadequate risk assessment of the prevailing circumstances,

- (b) the adaptation of equipment which, if used, would run counter to Brigade policy,
- (c) the deployment of Fire and Rescue personnel who were not fully trained in rope access, and
- (d) the failure to await the arrival of Strathclyde Police Mountain Rescue Team, who were the delegated rescue resource where rope access was an integral component of the rescue operation.

I found the evidence of Group Commander Paul Stewart, and Group Commander William Thomson, to be focussed on self justification for the action or non-action taken by them and was without any reflection as to the purposes of this Inquiry and the lessons that may be learned from the rescue attempt. I found their evidence to be bullish, if not arrogant, in their determination to justify the subservience of the need to carry out a rescue to the need to fulfil to the letter Strathclyde Fire and Rescue Service "Brigade" policy.

Mr Stewart, in particular, considered that the rescue operation was "a success". In his view he had adhered to the policies and procedures set out by Strathclyde Fire and Rescue Service. He had obtempered to the letter the instruction contained within the Memoranda from Strathclyde Fire and Rescue Service of the 14 and 27 March 2008. There had been no casualties other than the one to whom the Service was called upon to rescue.

Unfortunately this was not a successful operation: a woman died who had not only sustained survivable though life threatening injuries, but who had also ultimately suffered and died from acute hypothermia brought about by a prolonged period down a mine shaft in which she had been partially immersed, for a time at least, in water. I consider that the views expressed by Mr Stewart and Mr Thomson were of a fundamentalist adherence to Strathclyde Fire and Rescue Service policy. They rigidly stood by their operational guidelines. Their justifications for their actions were presented to the Inquiry as their defence to any accusation of culpability in the death of Mrs Hume. Any suggestion to that effect lies out with the remit of this Inquiry. Assistant Chief Fire Officer Walker conceded that the powers given to Strathclyde Fire and Rescue Service under s13 and s14 of The Fire (Scotland) Act 2005 allowed a measure of flexibility to perform a rescue but only in suitable and reasonable circumstances. That statutory licence would have provided the mandate to the fire fighters who were anxious to deploy and adapt the equipment available to them to attempt a rescue.

As I have emphasised this was a unique incident. However it was not one which should not have been unanticipated, or for which there was no pre-planning. It ought, as I have indicated, to have been a matter of prior consideration by the application of the provisions of the Fire (Additional Functions) (Scotland) Order, 2005.

For a rescue to be achieved, some imagination, flexibility, and adaptability were necessary. There was clearly a balance to be struck between the interests and safety of the rescuers, and those of the casualty they were there to rescue. It is the policy of Strathclyde Fire and Rescue Service to issue each fireman with a risk assessment *aide memoir* which sets a flow chart to address the question of risk assessment in any given situation. That flow chart provides "a dynamic risk assessment" and is to be followed by "an analytical risk assessment". However, what presents as a danger to the rescuer, when set against the need to rescue the casualty, can be a matter of fine judgement. Messrs Rooney, Howe and Duff risk assessed the situation differently from Mr Stewart and Mr Thomson. In the latter case, in my view, there was a preoccupation with adherence to Strathclyde Fire and Rescue Service policy which was entirely detached from the event with which Strathclyde Fire and Rescue Service were confronted. Mr Stewart's risk analysis and assessment of the circumstances was flawed and impeded what should have been a more expeditious rescue of Mrs Hume. The core consideration of a risk assessment is a question of whether or not the risks to be taken are proportionate to the benefits gained. That must be an objective consideration. Mr Stewart and Mr Thomson had concerns about the stability of the lining of the shaft, and the stability of the soft surface area around it. They expressed to the Inquiry their concerns about the potentially inadequate air supply at the base of the shaft, and the potential for air toxicity in the

atmosphere in which Mr Dunn and Mrs Hume both lay. They had excluded the use of equipment (SWAH) which was not specifically designed for rescue in these circumstances, and specifically not for the rescue of a civilian. The analysis of risk carried out by Mr Howe and Mr Rooney was disregarded despite their very substantial years of service. Little or no consultation took place with other personnel who had been on site for at least two hours prior to the arrival of the more senior Group Commanders. It must have been self evident that the presence of a significant number of rescuers in the immediate vicinity of the hole had not brought about any further collapse, nor were the two people within the shaft suffering from the effects of air toxicity or from asphyxiation brought about by the lack of oxygen. Nor was there consultation with the paramedic, Mr Galloway, who was effectively ignored despite the potential value of his advice and his skill. Mr Stewart's evidence, in particular, was self contradictory on a number of matters: he denied that he had knowledge that the hole was caused by collapsed mine shaft but agreed that he had information from Mr McMaster, who was in attendance at the locus, that the hole was "a shaft, as opposed to an embankment", as had first been relayed from the control centre; as Mr Stewart did not consider the hole to be a mine shaft he could see no need to call the Mines Rescue Service but then accepted, when asked why he had not alerted them to the incident, that he had not known if the Mines Rescue Service provided a 24 hour rescue service. Mr Stewart was satisfied that Mr Dunn had sufficient first aid and trauma skills, as was common to all firemen, and that he

would deal with the casualty appropriately. No consideration was apparently given by him to the onset of hypothermia despite a disputed conversation with Mr Galloway, the paramedic. Mr Stewart acknowledged that he considered there should remain a contingency plan in place but requested that the fire-fighters from the Heavy Rescue vehicle, who were equipped and harnessed to carry out a rescue, remove their harnesses, and, in order to give them something to do, instructed that they create an equipment dump for contingency purposes. There was no indication that either Mr Stewart or Mr Thomson asked of those who had been present what concerns they had about further surface collapse. Sergeant Whittington gave evidence that he had had no concern about further collapse, as there was nothing to indicate that that was likely to happen. Although Mr Stewart disapproved of Mr Dunn being down the shaft with Mrs Hume and administering to her, his presence there became Mr Stewart's justification for the unhurried approach which was being taken to the rescue on account of the ongoing reports from Mr Dunn as regards Mrs Hume's stability and her level of consciousness. There were conflicting answers given by Mr Stewart on the issue as to whether or not there were concerns as to the length of time Mrs Hume remained within the shaft: when asked by Mrs Beresford if there was such a concern Mr Stewart replied that *"urgency was a watch word"*. In cross examination by Miss Crawford, on behalf of Strathclyde Fire and Rescue Service, his answer on the same point was to the effect that *"there wasn't a huge*

*concern about the time. I don't recall it being mentioned as a significant event in order to take any further action".*

The risk assessment that prevailed was that conducted by Mr Stewart, and subsequently by Mr Thomson. Mr Stewart accepted that the fire-fighters from the Heavy Rescue vehicle would have carried out their own risk assessment before deciding to proceed with a rescue attempt. In his view there could be no adaptation of their skills, or improvisation of the equipment they carried and the skills which they had to use that equipment. It was clear from Mr Stewart's evidence that he made no enquiry as to the experience of the fire-fighters who formed the Heavy Rescue unit. He indicated that nobody volunteered to him that they were members of any crew which had been trained in urban search and rescue. However, under cross examination he accepted that some of the skills of the Heavy Rescue Vehicle crew had been discussed but that the nature of the rescue in hand and the nature of their training were not compatible. As I understand his evidence, unless there was specific training in a particular type of rescue event, then that rescue should not be undertaken.

It is difficult not to form the view that Mr Stewart's, and Mr Thomson's, approach to risk assessment was to effectively eliminate risk. I did not think that a process of risk assessment was adopted whereby risks were identified and those risks accommodated to achieve the central purpose of the attendance of



Strathclyde Fire and Rescue Service. In other words, by identifying the risks evident in a given situation or to be reasonably apprehended from a set of given circumstances there should have been a positive and more constructive way to overcome those perceived difficulties and attempt a rescue . That was not the approach which was taken in Mrs Hume's rescue.

Aside from the environmental issues, there were 2 fundamental constraints in Strathclyde Fire and Rescue Service personnel carrying out a rescue –

1. The restrictions imposed by Strathclyde Fire and Rescue Service policy on firefighters conducting a rope rescue which was a function delegated to Strathclyde Police Mountain Rescue Team, or to the Trossachs Mountain Rescue Team, as ancillary rescue services, where rope access was required.  
and
2. Strathclyde Fire and Rescue Service policy which imposed an inhibition on using SWAH kit in situations other than to secure the safety of fire fighters, whilst working at height.

The procedures followed by Mr Stewart and Mr Thomson underwrote each of these policies. Mr Stewart alluded in his evidence to the understanding that discretion as regards "risk taking" was not only subordinate to but effectively proscribed by "Brigade" policy. Mrs Beresford asked Mr Stewart if there was any

discretion afforded to him in terms of risk taking in a situation where a dynamic risk assessment allowed a course of action to be taken albeit in conflict with "Brigade" policy. In other words would the risk assessment prevail? In answer Mr Stewart unequivocally indicated that he would follow policy and procedure in the first instance, particularly in relation to the use of complicated kit such as the SWAH kit: *"we would not step out with policy or procedure for that"*.

The reservations expressed by Mr Stewart and Walker to step out of established policy were founded upon fear of prosecution in the event of death or injury of firefighters in the course of their duties. That is perfectly understandable. Mr Walker supported the need for extreme caution as he did not consider the Fire and Rescue service to have the same protections in law as those afforded to the police. I was referred to The Health and Safety Executive document "Striking the Balance":

*HSE recognises that firefighters and managers face difficult moral dilemmas and have to make decisions in what are sometimes extremely hazardous emotionally charged and fast moving situations.*

Mr Walker considered that this recognition did not give immunity to the Fire Service in contrast to the level of protection given by HSE to the Police. In the HSE document relevant to Police it states:

*The Health and Safety at Work Act also places duties on employees to take reasonable care of themselves and others to cooperate with their employer. In essence this means that Police officers and staff should act sensibly and*

*reasonably within the command and control of their employer. They should not act recklessly, however HSE recognises that in protecting the public individuals, very occasionally, in extreme cases decide to put themselves at risk in true acts of heroism. In these circumstances HSE takes the view that the Health and Safety at Work Act has not been breached and it would not be in the public interest to take action against this individual. Equally HSE, like the Police Service recognises that in such extreme cases, everyone has a right to make personal decisions and those individuals may choose not to put themselves at unreasonable risk.*

The difference in the two levels of protection lay at the heart of how events were to be interpreted and explained the psychology which underpinned the hesitation to take risks within the Fire Service command structure. I was referred to incidents in England which had given rise to prosecution of firefighters where death in service had occurred in what ostensibly were acts of heroism. It was Mr Walker's view that if HSE paralleled their advice to the Fire Service with that to the Police then such reassurance might reduce risk adversity within the Fire Service Command.

There was no evidence from HSE to explain the diversity of attitude taken by them towards the police and towards the Fire Service. I considered that if there was less liability protection for The Fire Service that ought to be a matter to be addressed by consultation and negotiation. Strathclyde Fire and Rescue Service have validated a system of risk assessment, dynamic and analytical, which

should provide reassurance to the firefighting community. It is the nuances of interpretation of the given circumstances which gave rise to conflict. That may have been resolved had there been greater consultation between the incident commanders and the firefighters at Barrwood Gate.

### **Safe Working At Height Kit**

The rescue of Mrs Hume was predicated upon the rope rescue capability of the Rescue services. Strathclyde Fire and Rescue Service argue that they have no such capability and that in terms of s4 (2) of The Fire (Additional Function) (S) Order 2005 they have delegated such a function to Strathclyde Police Mountain Rescue Team or to the Trossachs Search and Rescue Team. The SWAH kit was introduced by Strathclyde Fire and Rescue Service to satisfy the requirement of Health and Safety regulations to provide a facility to secure safe working at height. It was described by Mr Walker as a restraint system but not as a rope rescue resource. The equipment was designed to secure firemen where they might be at risk of a fall in the course of their work. The equipment covers ropes and a harness, and can be used in conjunction with a Petzel Pitgor casualty harness. It has its own pulley system, and like any rope access/restraint equipment requires anchor points and a belay. The person who is in harness is under the control of persons who are operating the ropes thus allowing the persons in the restraining mode to work hands free.

This equipment replaced what were known as "lowering lines" which were ropes with slings attached, and which would be used for the ascent, or descent, of civilians or firemen in the event of a rescue. "Lowering lines" was the colloquial name given to apparatus known "Marina Rope and Throw Arrest Harness".

"Lowering lines" were removed from fire appliances as the SWAH equipment was provided and installed. Only when crew members of an appliance are trained in the use of the SWAH equipment was it introduced into the appliance and the lowering lines removed. Training was delivered to each fire-fighter on the basis of a one day induction course.

A memorandum of 14 March 2008 (Crown Production 10), from Assistant Chief Officer Walker specifically states that –

*"the SWAH equipment will not be used to effect rescues using work positioning systems of work until further notice. In the event of circumstances arising which can only be resolved in this way, whether personnel are equipped with SWAH equipment, or not, incident Commanders will request assistance with operations control from Strathclyde Police Mountain Rescue Team, Trossachs Search and Rescue Team, or whether appropriate for coastal cliff and shoreline mud rescues, HM Coastguards Rescue Teams ..... In any case, where casualty recovery*

*using a work positioning system may have to be considered, the guidance above as requesting assistance must be followed”.*

That direction was supplemented by a subsequent memorandum dated 27 March 2008, by the same author. That read :

*"However, SWAH equipment cannot be used to effect the rescue of non Fire and Rescue Service personnel using work positioning systems at work as stated in the previous memorandum. In the event of circumstances arising, which can only be resolved in this way, whether personnel are equipped with SWAH equipment, or not, incident Commanders must request assistance via operations control from Strathclyde Police Mountain Rescue Team, the Trossachs Search and Rescue Team, or where appropriate, for coastal cliff and shoreline mud rescues, HM Coastguard Rescue Teams”. This guidance does not preclude the use of SWAH equipment to secure any casualty to prevent their further injury or to prevent the deterioration of existing circumstances”.*

The clear implication of the first memorandum was that no rescue should be conducted using SWAH equipment, and that if rope access was required, this would be delegated to the Agencies which were identified. The strict and non-discretionary terms of that first memorandum were modified by the later direction. That modification ought to have been relevant to the determination as

to whether or not the SWAH kit could have been modified to bring Mrs Hume to the surface. The strictures imposed by the first of the memoranda were the principal factor in Mr Stewart's decision, supported by Mr Thomson, not to use the apparatus. That was a decision taken in tandem with his other environmental misgivings which I would have thought ought to have been evaporating with the passage of time. As I have said earlier the factor which was apparently overlooked was the length of time Mrs Hume was in the mineshaft. That was not factored into the decision making notwithstanding the clear conditional authority contained within the later memorandum that SWAH equipment could be used to **"prevent [the casualty's] further injury or prevent the deterioration of the existing circumstances"**.

I heard evidence from Mr John Bowman, who had not been cited to the Inquiry, but who had written to me to give evidence which he felt was pertinent to the background and development of these memoranda. Mr Bowman was the author of the draft of each memorandum. His concerns were twofold: firstly, that the SWAH equipment should be available to fire fighters to fulfil their obligations more safely but that it should not impose constraints on their ability to carry out a rescue; and secondly that the memorandum should have also deferred to the deployment of Lothian and Borders Fire and Rescue Line Rescue Team, in addition to the mountain rescue teams, who have particular training in rope

access rescues primarily arising from their obligations to perform rescues from Edinburgh Castle .

Mr Bowman had been involved since 2004 in the development of SWAH policy and SWAH training. He considered himself to have greater knowledge and experience in the field of line rescue than either of his superiors, Mr McGrattan or Mr Walker. He expressed surprise at what he considered the arbitrary decisions in the earlier of the two memoranda to restrict the use of SWAH equipment to Fire and Rescue personnel only, and also to exclude Lothian and Borders Fire and Rescue Service Line Rescue Team from the range of Agencies which might affect a line rescue.

Mr Bowman advised the Inquiry that he had voiced his concerns to Mr McGrattan specifically that he had "*reservations about the response times*" [of other rescue agencies attending] to effect a line rescue and that, in his view, such a policy would form the cornerstone of "*an accident waiting to happen*".

I was impressed by Mr Bowman's evidence. He is now retired from Strathclyde Fire and Rescue Service, and enjoined me to hear his evidence which he felt was pertinent to the Inquiry. In particular he considered that a corporate decision had been taken by Strathclyde Fire and Rescue Service to restrict the use of SWAH equipment to Fire and Rescue Service personnel for financial reasons, and



to avoid designation of the equipment as “technical line rescue equipment” which would attract “an additional responsibility payment”, which would be paid to firemen were SWAH kit to be used for line rescue. That, in his view, underpinned the restriction imposed by the earlier of the two memoranda, and marginally modified in the later one.

Mr McGrattan, in his evidence, recalled no conversation with Mr Bowman when Mr Bowman expressed his concerns about the likely impediments to a rescue which the memorandum of 14 March and 27 March 2008 might present. I was not surprised by this response. I was satisfied that the evidence from Mr Dunn that his training in the use of SWAH equipment involved lowering and raising techniques and implied an identifiable rescue capability inherent in the use of the equipment. That training endorsed Mr Bowman’s opinion that the equipment was developed within an ethos which afforded a rescue with enhanced safety capability for the rescuers.

SWAH equipment could afford ascent and descent to an individual without that person having hands on engagement in their movement. The skill in the use of the equipment, therefore, lies with the handlers. Typically a person is strapped in a Pitogor harness (otherwise known as a “nappy”), which allows free movement of hands. The harness is detachable and a stretcher can be attached if necessary. This equipment was used successfully in Mr Dunn’s descent into the

shaft and his retrieval to the surface. It is difficult to see why this equipment was not considered appropriate for Mrs Hume's egress within a timeframe which would have afforded her a greater chance of survival. In the context of a dynamic and analytical risk assessment the capability of this equipment ought to have been assessed against its successful deployment in the descent of Mr Dunn, and his security and that of Mrs Hume whilst within the shaft. That point was ultimately conceded by Mr Walker in his evidence:

*"I can perceive a situation where we could use the small rescue capability contained within the Safe Working at Height Kit to effect a rescue of a member of the Public where the circumstances were suitable and that the carrying out of a risk assessment would [make] it reasonably practical for us to do that."*

*"[There are] circumstances where we could adapt our equipment but it would have to be after a suitable risk assessment".*

The authority to adapt the SWAH equipment is contained within the all-embracing provision of s 14(1) (b) of the Fire (S) Act 2005 (supra). That was acknowledged by Mr Walker and, in any event, it was self evident that the equipment had been deployed successfully in the descent of Mr Rooney into the mine shaft.

### **Other Equipment**

By the conclusion of the rescue there were 4 types of stretcher and associated equipment available to the rescuers; had the Cave Rescue Organisation been in attendance then a fifth type of immobilising stretcher would have been available. There were two types of stretcher from the Heavy Rescue vehicle, the immobilising apparatus used by the paramedics, and the McInness stretcher used by Strathclyde Police Mountain Rescue Team. There was SWAH kit and there were there was the rope access equipment belonging to the Mountain Rescue Team. Each agency had training in the use of its own equipment but no crossover training with the other's equipment. Whereas Sgr Maitland was at the locus within one hour of his alert he was restricted in what he could do until his full team and their equipment arrived. He conceded that he would only use the equipment he was trained to use. Mr Galloway had faith in the SWAH kit but was disengaged from it as he had no training in its use. It is understandable that each rescue service sees the need to carry out their functions in a way that is compatible with their training and expertise. The familiarity with their equipment is an essential component for an efficient and effective operation. However when time ought to have been a critical consideration the absence of familiarity with the range of equipment available to each of the rescue services is of concern. Specifically, knowledge of the technical attributes or disadvantages of the range of available rescue equipment amongst the various rescuers combined with an understanding as to the functionality of that equipment may have contributed to a more expeditious effort to get Mrs Hume from the shaft.

## CONCLUSION

The attempted rescue of Mrs Alison Hume was impeded by:

- (1) A lack of awareness within the rescue services of the range of potential rescue services which could assist and inadequate knowledge, communication and co-ordination between those services;
- (2) Restrictive and proscriptive policies adopted by Strathclyde Fire and Rescue Service which combined with an inadequate appraisal of the equipment available and their training in the use of that equipment;
- (3) Over reliance by Strathclyde Fire and Rescue Service on the delegation of certain rescue functions.
- (4) The failure by Strathclyde Fire and Rescue Services to engage in preplanning for an occurrence such as the collapse of a mine shaft.

The misreporting of the initial message to Strathclyde Fire and Rescue Service that the incident related to a person being trapped down an embankment was dealt with quickly and did not delay or interfere with the rescue attempt. What had greater impact were the piecemeal efforts to contact those agencies who could have made a greater impact on the rescue timetable. For example there was a significant delay in contacting Strathclyde Police Mountain Rescue Service. There was no early contact made with the Mines Rescue Organisation who could have provided relevant

advice on the assessment of the stability of the shaft and allayed the fears expressed by Mr Stewart and Mr Thomson that further subsidence could have been imminent. Similarly, the Cave Rescue Organisation, which was identified by Strathclyde Police Overview and by the Air Ambulance Control Centre as a potential rescue resource was discounted as being surplus to the rescue effort. The potential of these agencies was not known to Strathclyde Fire and Rescue Service incident commanders; there was inadequate knowledge of not only the nature of these resources but of their specific capabilities and their equipment.

Although there were frequent changes in the incident command of Strathclyde Fire and Rescue Service this, in my view, unusual as it may appear was not, of itself, an issue. As the incident escalated I appreciate why operational responsibility would accelerate through the command structure. That does not absolve the incoming incident commander from undertaking a full and detailed consultation with those from whom he has assumed that command. By the time Mr Thomson had taken command he ought to have had the benefit of the advice and experiences of Mr Dunn, Mr Rooney, Mr Howe, Mr Galloway and from Mr Stewart and factored that into his continuing risk assessment. An unwavering adherence to the memorandum of the 14<sup>th</sup> March 2008 without greater appreciation of the limited licence provided in the later memorandum of the 27 March 2008 was manifest in an inflexible and non-discerning approach to the rescue attempt.

This adherence to the corporate policy set out in the memoranda of the 14<sup>th</sup> March 2008 and modified by the memoranda of the 27<sup>th</sup> March 2008 contributed to the delay in effecting a rescue. Safe Working at height equipment was introduced to comply with the safe working at height regulations. By definition it provides a rescue capability which is implicit in the memoranda of each of the two memoranda. The functions of that equipment in March 2008 and the potential of that equipment to be adapted for rescue were not appreciated by the incident controllers. I accept Mr Bowman's evidence that the decision to restrict the use of the equipment was in conflict with the greater aims of a rescue service. The Fire and Rescue personnel at the incident had little doubt the equipment was adaptable and useable in the circumstances of the incident. It was evident that this was so from the use of the equipment in allowing Mr Dunn to descend into the mine shaft and to be retrieved from the mine shaft without incident. There had been training in the use of safe working at height kit in descent and ascent procedures, the equipment was operated from the surface and did not require reliance on the control of movement of those in harness. In a time critical incident the lack of awareness of the potential for the use of this equipment, the extent of the training by personnel in the use of the equipment, and the licence afforded by the memorandum of the 27<sup>th</sup> of March 2008 was a contributory factor in the delay in the recovery of Mrs Hume. The memorandum of the 27<sup>th</sup> March 2008 specifically provides "*this*

*guidance does not preclude the use of SWAH equipment to secure any casualty to prevent their further injury or to prevent the deterioration of the existing circumstances".* Had there been an enhanced experience of the use of SWAH equipment by management and a more thorough appraisal of the potential of that equipment then the memorandum of the 27<sup>th</sup> March 2008 would not have been as restrictive in character as was interpreted by the incident commanders. The evidence of Mr Stewart and Mr Thomson was manifest of a fundamentalist observance to the policy defined in the first memorandum without acknowledgment that the second memorandum clearly introduced a degree of flexibility.

The risk assessment carried out by the incident commanders Stewart and Thomson was clearly flawed. By the time of their attendance at the locus there were no signs of terrain instability or any of the potential dangers which they say dictated their approach to the rescue. The evidence given by Mr Stewart and Mr Thomson was clear and unambivalent: there was a policy in place for line rescue to be conducted by Strathclyde Police Mountain Rescue Service. That policy was inviolable and prevailed over any risk assessment which ought to have had the condition of the casualty and the passage of time as integral considerations. I do not endorse a practice where management policy should prevail over a comprehensive risk assessment particularly so when life is in imminent danger.

There was an over-reliance on the line rescue capabilities of Strathclyde Police Mountain Rescue Service to extract Mrs Hume from the mine shaft. The memoranda of the 14<sup>th</sup> and 27<sup>th</sup> March 2008 instruct line rescue to be carried out by either Strathclyde Police Mountain Rescue Team or the Trossachs Search and Rescue Team. There is no regard to the response times for such engagement. That was a matter which was overlooked in the issue of these memoranda. It was however an issue identified by Mr Bowman in his initial draft of the policy upon which these memoranda were based. Serious injury is the likely consequence of a fall where line rescue is required. Undoubtedly there will be situations where specialised teams such as Strathclyde Police Mountain Rescue Service or the Trossachs' Search and Rescue Team may be required. Lothian and Borders Fire and Rescue Service maintain a line rescue unit. It would be speculative as to whether or not Lothian and Borders line rescue team, if contacted, would have assembled and engaged in the rescue any sooner than Strathclyde Police Mountain Rescue. The ability of Strathclyde Fire and Rescue Service to deploy specialist rescue organisations should be seen as a valuable complementary resource. However in my view the primary rescue functions of Strathclyde Fire and Rescue Service should not be delegated except in exceptional circumstances. Lothian and Borders Fire and Rescue Service have identified a need for a line rescue team given their local operational responsibilities; had such a dedicated unit within Strathclyde Fire and Rescue Service been



available to attend at Galston the chances of Mrs Hume's survival would have been greatly enhanced.

Although this incident was unique in the experience of the local fire and rescue services it should not have been one for which there had been no pre-planning. In my view an incident such as this falls within the remit of the fire and rescue services. That is particularly so in Ayrshire where there are ubiquitous underground mine workings.

Mrs Hume's death came about in consequence of a number of factors: the obscure location of the mine shaft, the depth of the shaft, and the uniqueness of the rescue which was out with the experience of Strathclyde Fire and Rescue Service. However, more specifically, Mrs Hume's death was accelerated by the delay in bringing her to the surface. Mrs Hume's injuries were survivable; hypothermia materially diminished her chances of survival. The gradual onset of that condition was not recognised as a potential problem. There was a gradual accretion of time in this attempted rescue which largely went unnoticed by those in command. By the time of arrival of the Fire and Rescue Service Mrs Hume had already been in the shaft for over two hours. Simple arithmetic would have established that between her point of departure from Catherine Drive, her subsequent discovery by her daughter, and the attendance of Strathclyde Fire and Rescue Service that the element of the passage of time was a critical factor. There is little doubt that the rank and file fire fighters in

attendance were anxious to conduct a rescue as quickly as possible but were prevented from doing so by the superiors.

At the debriefing conducted after the rescue it was clear there was a great deal of frustration by those firefighters in attendance at the incident at their failure to successfully undertake a rescue of Mrs Hume.

Since Mrs Hume's death Strathclyde Fire and Rescue Service have established a rope rescue unit based in East Kilbride. All fire-fighters there will be trained specifically in rope rescue techniques similar to the skills already deployed in Lothian and Borders Fire and rescue service. That training programme should be nearing completion. It is anticipated that 50 fire fighters will be trained in the use of line rescue equipment. That initiative should be applauded and should narrow the opportunity for failure in the event of another similar incident.

The Inquiry was also advised that the Scottish Ambulance Service are in process of developing there own unit known as the Special Operations Response Team (SORT). That unit was primarily developed to provide medical intervention in CBRN (chemical, biological, radiological and nuclear) events. I was advised by Mr Hutchison hat as a member of the Scottish Fire and Rescue Resilience Board he was aware that since the SORT inception there has been a willingness to extend the capability of the team to include rope access training particularly to deal with events caused by flooding. Such a capability would

have been invaluable at the mine shaft in Galston. Progress in this regard should be encouraged.

It is positive that the Organisations which provide a rescue facility now undertake training in cooperation with each other. Individual knowledge and specialisms are vital to undertake rescues in extreme conditions. However it is critical that rescue organisations are familiar with each other, have trust in each other, are aware of the equipment each has and the means of deploying that equipment.

This Inquiry was the focus of great public interest. A number of persons wrote to me expressing opinions and views. I considered that two of those representations went to the heart of the issues which were raised in the Inquiry. Mr John Bowman requested that I consider his input into the Memoranda of the 14 and 26 March 2008. I considered that his evidence might have a critical bearing on my appreciation of the circumstances pertaining to the drafting and operational use of the instructions purported in these documents. I also felt it appropriate to hear the evidence of Mr Alan Jeffrey from the Cave rescue Organisation who felt frustration that his organisation was overlooked despite being a recognised rescue resource. I am grateful to both of these men for their courage in writing to me and accepting the consequences of their representations by giving evidence publicly. The Inquiry was therefore re-opened on 2 separate occasions to enable further evidence to

be lead and cross-examined. It was, in my view, appropriate that Mrs Hume's family should have the fullest exploration of the facts and circumstances surrounding Mrs Hume's death and that there should be transparency in all the actings of the FAI. This was not a civil proof conducted within the parameters of written pleadings. Nor were the issues raised unique to the terms of the Petition presented by the Lord Advocate. The procedure to be applied is fluid and, in my view, should be determined by the need and desire for a comprehensive and open appreciation of the circumstances which caused the death or the accident leading to the death.

I acknowledge Mr Alexander Dunn's bravery and selflessness in volunteering to provide succour to Mrs Hume as she lay at the bottom of the collapsed mineshaft. I also acknowledge the very considerable effort made by Mr Andrew Parker of Strathclyde Police Mountain Rescue Team who with Mr Dunn brought Mrs Hume to the surface. They were supported by colleagues from Strathclyde Fire and Rescue Service Strathclyde Mountain Rescue Team and Paramedical staff and all, despite their frustrations and anxieties endeavoured to do their best in very difficult circumstances to rescue and save Mrs Hume.

I extend the sympathies of the Inquiry to Mrs Hume's family who acted with great dignity and stoicism in the face of some very harrowing evidence.

Sheriff D.J. Leslie

Sheriff of North Strathclyde at Kilmarnock.