

# **Forensic Pathology Evaluation of the 1993 Branch Davidian Deaths and Other Pertinent Issues**

Prepared for the

**Office of Special Counsel  
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By

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## I. Introduction

At the request of the Office of Special Counsel (OSC), I reviewed a variety of materials pertinent to the Mount Carmel, Texas confrontation. I was asked to evaluate the authority under which the examinations of the decedents were carried out; evaluate adequacy and accuracy of the recovery and examination processes; identify significant obstacles to the recovery and examination processes; evaluate the reliability of the data; comment on opinions and statements made by other experts and non-experts; interpret the available information in order to offer independent opinions as to the nature, extent and effects of injuries/diseases, their potential significance and how they may have been sustained; offer opinions as to the causes and manners of the deaths; address other pertinent issues as they arise during the investigation; and, serve as a source of information/advice to the staff of the Office of Special Counsel. My review does not include evaluating the deaths of the four government agents killed by gunfire during the initial confrontation on February 28, 1993. All of my opinions are stated to a reasonable degree of medical certainty unless otherwise specified.

My opinions are based on my review of the following information:

1. Tarrant County Medical Examiner's Office records including the autopsy records, toxicology reports, dental charting, summary sheets and forensic laboratory reports
2. Tarrant County Medical Examiner's Summary Report (September 29, 1993)
3. Radiographs of the decedents
4. Photographs of the bodies at the scene and during the examinations in the morgue
5. Anthropology reports prepared by Drs. Owsley and Ubelaker
6. Transcribed preliminary anthropology notes
7. DNA test results (Armed Forces DNA Identification Laboratory)
8. Death certificates
9. Schematic drawings of the complex (pre- and post-fire)
10. Fire investigation expert report
11. Dr. Jerry Spencer's report and deposition testimony
12. United Kingdom (UK) forensic experts' reports and accompanying documents pertaining to second autopsies performed on repatriated Davidian remains
13. Greater Manchester (UK) Police witness' statements
14. Dr. Joseph Burton's forensic pathology consultation report regarding his review of information about several of the Davidian deaths
15. Dr. Patrick Fardal's (forensic pathologist) affidavit summarizing his opinions based on his review of information about several of the Davidian deaths
16. Dr. Paul Radelat's (consulting pathologist) report regarding his review of information about several of the Davidian deaths
17. Dr. Ronald Graeser's report and letter containing his opinions based on his examination of the remains of James Riddle

18. List of FBI Hostage Rescue Team (HRT) munitions present on April 19, 1993
19. Portions of FBI laboratory reports
20. Manuscripts of article for publication and published article (Owsley DW, J Forensic Sci, JFSCA, Vol 40, May 1995, pp 341-348) regarding the forensic anthropology aspects of the event at Waco
21. Excerpts from David Thibodeau's book A Place Called Waco—A Survivor's Story (excerpts dealing with a listing of the dead and specific details about the deaths of Perry Jones, Winston Blake, Peter Gent, Peter Hipsman and Jaydean Wendell)
22. Excerpt from Kathryn Schroeder's testimony discussing the deaths of Perry Jones and Peter Hipsman
23. Records from the State of Maryland Medical Examiner's Office (including police reports) pertinent to the death of Carlos Ghigliotty
24. Select medical records relating to the treatment of Clive Doyle
25. Select portions of U.S. Treasury Department, FBI and Texas Department of Public Safety (DPS) investigation reports pertaining to Judy Schneider's hand gunshot injury

The Branch Davidian complex, known as Mt. Carmel, was located in McLennan County, Texas, near the city of Waco. Jurisdiction over the death investigation, as per Texas state law, was assumed by the McLennan County Justices of the Peace. The Tarrant County Medical Examiner's Office (TCMEO) assisted the Justices of the Peace as independent examiners. The examinations of the remains were carried out at the Tarrant County Medical Examiner's Office. The death certificates were completed by McLennan County officials.

TCMEO personnel examined the bodies of four law enforcement agents who were killed by gunfire during the initial confrontation on February 28, 1993. They also examined the body of Davidian Michael Schroeder (currently referred to as MC 81) who was also killed by gunfire on February 28, 1993, and whose body was recovered on March 4, 1993, from a low lying area in a catch pen property (hereafter referred to for convenience as a "ravine").

On April, 20, 1993, the first remains of the Branch Davidian decedents was received at the TCMEO. TCMEO personnel went to the fire scene on April 21, 1993, to help in planning and carrying out the recovery of other decedents. TCMEO personnel were later supplemented at the scene by anthropology personnel from the Smithsonian Institute and the FBI. Surface and excavation recoveries including documentation, evidence recovery/preservation, body recovery, transport and storage were carried out using standard accepted techniques. Remains were recovered from the areas of the stage at the rear of chapel, stage stairways, communications room, kitchen/serving area, kitchen—stairways, front of concrete bunker, hallways, top of concrete bunker and concrete bunker (surface and excavated). In addition, bodies that had been buried within the complex after the initial confrontation on February 28, 1993, were exhumed from grave sites near the front of the complex (1) and from a concrete tornado shelter (4).

2. The remains were processed and examined by a multi-agency multi-disciplinary team of experts and support personnel under the overall supervision of Nizam Peerwani, M.D. (forensic pathologist and Tarrant County Chief Medical Examiner). The processing/examining personnel consisted of forensic pathologists, dentists, anthropologists, latent print examiners, toxicologists, criminalists, photographers, radiology technician and support personnel. Additional anthropology assistance was rendered by personnel from the University of Tennessee (Knoxville).

Prior to examination, each single body was fluoroscoped, radiographed and photographed. Evidentiary material accompanying the bodies, including a large amount of munitions, was removed and packaged. Co-mingled remains were separated by the anthropology personnel. Clothing on the bodies was inventoried and preserved. The bodies underwent full autopsy examination by a forensic pathologist. Examinations, when applicable, were also carried out by the anthropologists. The dental examinations were carried out by the dentists.

The identifications of the bodies were established scientifically using dental, fingerprint, radiographic and DNA techniques. The identities of some bodies were confirmed using a combination of methods.

The repatriated remains of 10 Davidian decedents (MC 2, 21, 22, 23, 27, 37, 61, 74, 75, 77) underwent second postmortem examinations in the UK by Home Office forensic pathologists assisted by other personnel including individuals with expertise in odontology and firearms. It appears that the UK pathologists did not have access to all the information in the original examination autopsy reports, with the exception of Rosemary Morrison (MC 75). Some documentation, including the TCMEO-determined causes of the deaths, was available.

The examinations by the UK pathologists were complicated by the presence of decomposition, fire effects and alterations incurred during the previous examinations. The UK pathologists did not recover any bullets that had been discharged through a firearm barrel.

A UK firearms expert does indicate he reviewed a variety of investigative reports. He speculated about the nature of some of the wounds and ammunition, apparently without knowledge of pertinent findings made during the TCMEO autopsies (MC 37, 21, 77), which are critical to the proper interpretation of the injuries, contradict his statements and demonstrate them to be incorrect. In addition, the firearms expert's statements about MC 37 appear erroneous and contradictory to both the TCMEO and the UK autopsy pathologists' observations.

In general, the UK examinations did not add any significant new observations regarding the injuries or causes of the deaths. Specific comments about the UK examinations and conclusions are included in the individual case summaries. The causes of a few inconsistencies between the TCMEO and UK observations are not readily apparent (see MC 22 case synopsis).

## II. Review Summary

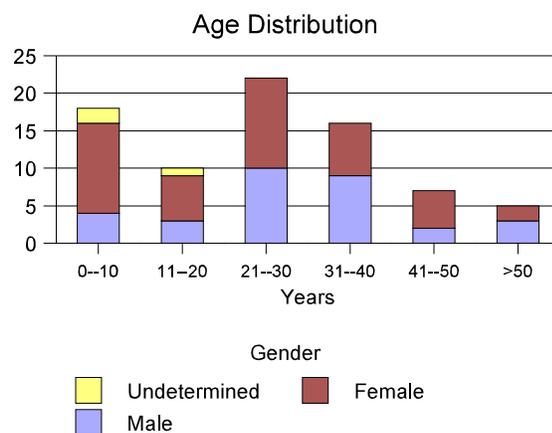
The overall process for recovering, identifying and examining the Branch Davidian bodies was carried out with proper authority and planning in an appropriate fashion by properly qualified personnel. The examinations were significantly hindered by the effects of fire, decomposition and, to a lesser extent, structural collapse. In some cases these hindrances detrimentally affected the pathologists' abilities to offer opinions about the cause of death and other pertinent issues. Overall, the descriptions of the observations made during the postmortem examinations appear to be accurate and reliable.

The recovered remains indicate the presence of at least 82 persons (not including 2 fetuses). DNA analyses indicate that some of the separately recovered remains originate from the same individual. In addition to these fragmented remains that are associated via DNA analyses, circumstantial evidence suggests that other separately numbered remains of some children may also originate from a common source. For instance, it is likely that MC-70 and MC-51A are the same child. It is possible, although not quite as convincing, that MC 67-7 and MC 67-8 are from a single child (distinct from the MC-70/51A child). The presented numerical data is based on a total of 28 children (18 years of age or less). If the 2 presumptive associations noted above are inaccurate and the remains, in fact, originate from 3 or 4 separate persons, the numerical data would be altered accordingly.

There is also circumstantial evidence strongly supporting the presence of another adult Branch Davidian decedent (Paulina Henry, 24 years old, Black, female) whose remains were not recovered. Her presumed death (cause undetermined) is not included in the numerical data expressed in this report.

The identities of the Branch Davidian decedents were established using standard forensic techniques including fingerprint, radiographic, dental and DNA comparisons. More than one technique was used in identifying some of the individual decedents. Five individuals, all children, remain unidentified.

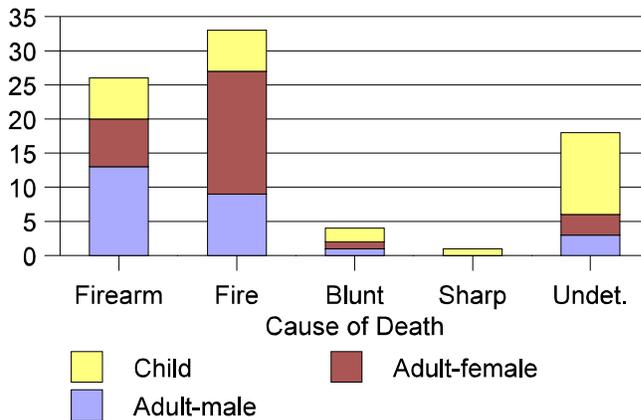
The recovered remains include 54 adults (26 men and 28 women), 28 children (4 males, 21 females and 3 of undetermined gender) and 2 fetuses. The ages of the decedents range from 1-76 years (mean/median age-25/27 years). The mean age of the adults is 34 years (median age 31 years). Adult males and females are of similar ages (mean/median age-35/32 years and 33/30 years respectively).



The children range in age from 1-18 years with a mean age of 8 years (median age 6 years). The mean/median ages of the males and females are 6/7 years and 8/6 years respectively.

Forty eight of the adults and all the children were recovered from the burned structure. Most of the children were found in proximity to their mothers. An additional 4 adults were recovered from a subterranean grave site, 1 adult from a different shallow grave and 1 from a ravine.

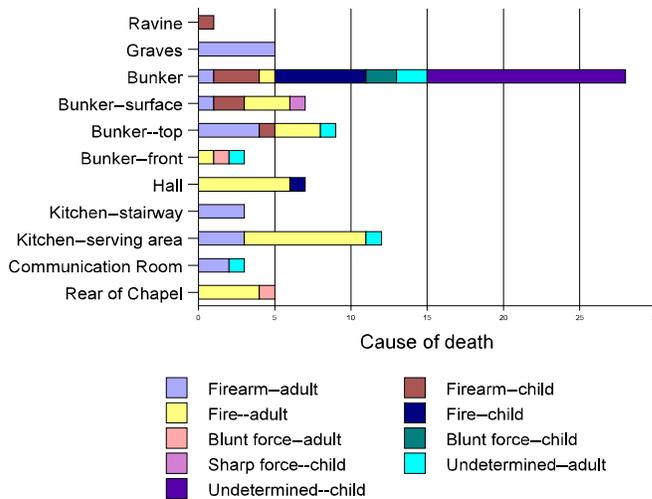
## Cause of Death

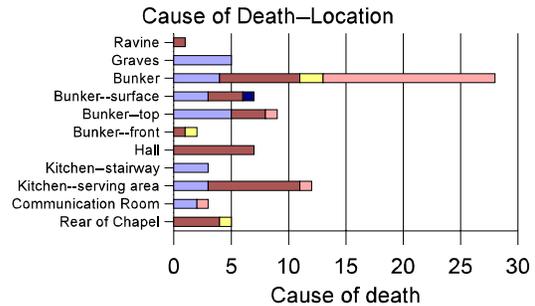
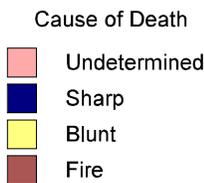
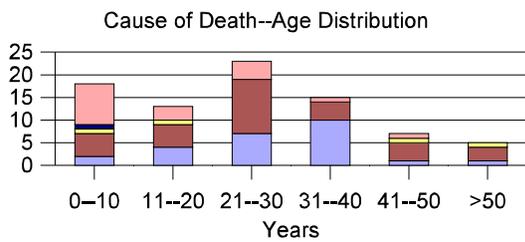


I determined the cause of death in 64 of the decedents and in 18 others I concluded the cause of death was indeterminate. Branch Davidian decedents recovered from the burned structure died of firearm injuries (20), smoke inhalation/thermal burns (20), blunt trauma (4), sharp trauma (1) and undetermined causes (18). The 6 bodies, all adults, recovered from the graves and ravine all died of gunshots.

Among the adults, 20 died of firearm injuries, 26 of smoke inhalation/thermal burns, 2 of blunt trauma and 6 of undetermined causes. The children died due to gunshot wounds (6), fire (7) blunt trauma (2), sharp trauma (1) and undetermined causes (12). Some of the cases having an identified cause of death also demonstrate other injuries that may have played a contributory role in the death. These contributory injuries are described in the individual case synopses. In other cases, the conditions of the remains prevent determining or excluding the presence of potentially lethal or disabling injuries.

## Cause of Death--Location / Age



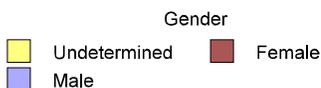
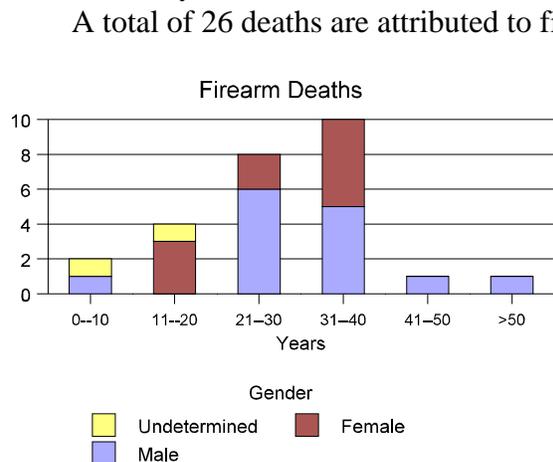


It is not

possible to determine the cause of death of a particular child based upon the cause of death of the mother. It is also difficult to discern any general trends between the cause of death of the mother and those of her children. Much of this difficulty is due to the large number of undetermined causes of death. Of the liveborn children parented by David Koresh, fire killed 4, 1 was stabbed and the causes of the deaths of 5 others could not be determined. Each of these children, along with the two women pregnant by David Koresh, were found in the concrete bunker.

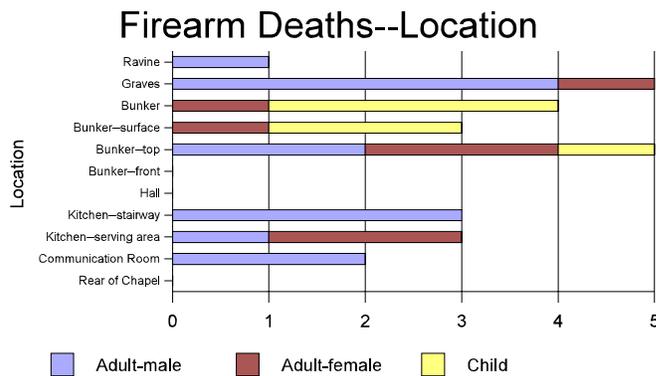
## II-2. Firearm Injuries

Deaths were ascribed to firearm injuries when the wounding resulted in demonstrable or reasonably predictable injuries typically associated with lethality in the absence of medical care (the observed gunshot wounds of the head would have predictably been lethal even if medical care had been readily available). The deaths of some individuals with gunshot wounds may have been hastened by the structural fire.



A total of 26 deaths are attributed to firearm injuries--20 from the burned structure, 4 from the concrete tornado shelter graves (MC 77, MC 78, MC 79, MC 80), 1 from a shallow grave (MC 76) and 1 from a ravine (MC 81). Of the 20 individuals recovered from the burned structure, 14 were adults (MC 7, 8, 43, 44, 45, 20, 21, 22, 34, 36, 39, 41, 47 and 66) and 6 were children (MC 35, 31A, 31 DE, 53, 56, 67-7/67-8). The ages of the children were circa 13 months, 5 ½-6 ½ yr, 11 yr, 11-14 yr, 17 yr and 18 yr. Only adults were recovered from the graves and ravine.

Davidians killed by firearms and later recovered from the burning structure were found in the communications room (MC 7, 8), kitchen/stairway/serving area (MC 43, 44, 45), (MC 20, 21, 22), top of concrete bunker (MC 34, 35, 36, 39, 41), on the surface in the concrete bunker (MC 31A, 31DE, 47) and in the concrete bunker debris (MC 53, 56, 66, 67-7/67-8). Each of the Branch Davidian decedents succumbed to handgun/rifle injuries except one, MC 47, who died of a shotgun wound to the head. There were 16 Branch Davidian decedents with gunshot/shotgun wounds restricted to the head (12 adults and 4 children) (14 with single shots and 2 with multiple shots), 6 with gunshot injuries isolated to the torso (4 adults and 2 children) and 4 having gunshots to the head and torso (4 adults).



The determination of muzzle-victim distance, i.e. range of fire, involves identifying the presence and/or absence on or in the body of a variety of materials that are discharged from the muzzle of the gun in addition to the projectile. These materials include flame, gas, smoke and gunpowder particles. The presence of searing, tissue disruption by gas and/or soot-powder propelled into the wound track indicates the muzzle of the gun was in contact with or very close to the surface when the gun was discharged.

Gunsmoke deposited on the surface of the body, usually in conjunction with marks caused by powder particles striking the body (powder stippling or tattooing) denote a close range wound (usually within approximately 1 foot). Powder stippling in the absence of smoke indicates a maximum range of fire of 2-3 feet depending on a variety of factors including the physical configuration of the gunpowder particles. Any material between the muzzle and the skin surface (such as clothing, dense scalp hair or other intermediate target) may affect the ability of these firearm discharge products from reaching the skin and thus affect the ability to accurately determine the range of fire. In the absence of material interposed between the muzzle and the target, wounds lacking the aforementioned features are classified as distant wounds. It should be remembered that in scientific parlance a distant wound is generally any wound received in excess of a few feet and does not necessarily entail great distances between the shooter and target. The progressive spread of shotgun pellets as the muzzle-target distance increases is also used to further estimate the range of fire in shotgun wounds caused by pellets.

All of the gunshot injuries seen in the decedents recovered from the burned structure are

consistent with having been received from guns fired from within the structure itself. I do not see any evidence to indicate any of the Branch Davidian decedents recovered from the burned structure received gunshot injuries originating outside the complex on April 19, 1993. There is no pathological evidence to suggest that any firearm death on April 19, 1993, was caused by a U.S. Government agent. Determination of the range of fire is able to be made in 12 Davidian gunshot fatalities and, to a limited degree, in the shotgun wound death. The effects of fire and decomposition preclude determining the range of fire in 13 decedents. Range of fire determinations are made in individuals recovered from the burned structure (MC 7, 8, 20, 21, 41, 31DE, 47), burial sites (MC 76, 77, 78, 79, 80) and ravine (MC 81). Of the 20 individuals recovered from the burned structure, range of fire is able to be determined in wounds involving 6 of them (5 adults and 1 child). Each of these individuals (MC 7, 8, 20, 21, 41, 31DE) have head wounds involving very close-contact range. Ranges of fire of other gunshot wounds are not able to be determined due to the loss of tissue at the entry sites and, in some cases, the loss of interposed clothing. The absence of the aforementioned markers used to determine the range of fire in those cases where alterations of the body (i.e., decomposition, fire, loss of interposed clothing) may have obscured or erased them does not mean the wounds are distant range wounds. The adult with the shotgun wound (MC 47) sustained the injury at a muzzle-target distance before the pellets extensively spread (certainly from a shotgun discharged within the complex).

The extent of the tissue damage and the ammunition recovered from the bodies indicates wounding by low velocity ammunition with the exception of 1 person recovered from a grave (MC 77) who sustained a very close/contact range high velocity gunshot injury to the head (.223 caliber). Although one of the experts who previously reviewed some of the deaths opined that the .223 injury was received from a substantial distance or through an intermediate target because the bullet did not perforate the head as, according to this expert, a high velocity bullet would, the deposition of grossly apparent gunpowder in the depths of the wound conclusively indicates that the gunshot was received at very close/contact range. I did not see any wounds that suggested to me the use of a sniper rifle (.50 caliber or .308 caliber).

Branch Davidian decedents with wounds consistent with being self-inflicted were found in the burned structure (MC 7, 8, 43, 20, 21, 41) and graves (MC 77, 80). Some areas of the burned structure contained remains of more than one person having wounds consistent with being self-inflicted. However, even though these wounds could have been self-inflicted, the possibility that they were inflicted by another person cannot be excluded. Determining whether a gunshot wound is self-inflicted or not involves assessing the range of fire, accessibility of the entry site and physical/mental capability of the person. Any wound that is consistent with being self-inflicted could also have been inflicted by another person. Self-inflicted wounds are usually in relatively predictable sites but are not exclusive or restricted to these sites.

A large number of the gunshot wounds of the head found in the remains involved entry sites typical of self-infliction (forehead, temple, oral cavity). The range of fire of some of these wounds was able to be determined and found to be very close-contact. All the contact gunshot wounds of the head found in adult Branch Davidian decedents recovered from the burned structure involved entry sites typical of being self-inflicted. However, when interpreting these

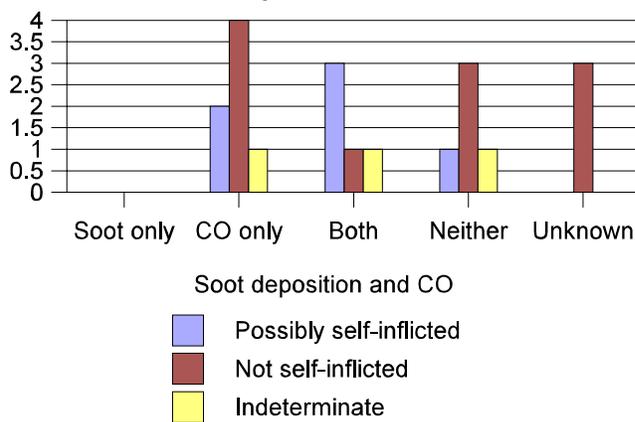
“typical” injuries it must be remembered that they were not sustained in a “typical” event; instead, they have been sustained in an “atypical” situation by individuals who are not “typical” members of the general population.

Overall, the pattern of the gunshots involving the head supports self-destruction either by overt suicide, consensual execution (suicide by proxy) or, less likely, forced execution by “death squad.” At least one child (MC 31DE) sustained a very close-contact gunshot wound. The wounds sustained by 5 adults (MC 45, 22, 36, 39, 66) and 6 children (MC 35, 31A, 31DE, 53, 56, 67-7/67-8) recovered from the burned structure do not appear to be self-inflicted. Not enough information is available to assess whether the wounds of 3 other Branch Davidian decedents (MC 34, 44, 47) were likely self-inflicted. Two bodies recovered from the concrete tornado shelter grave site have gunshot wounds involving the head which may have been self-inflicted. The entry site involving the .223 injury (MC 77) is accessible to self-infliction using this type of weapon but is not a typical entry site of a self-inflicted rifle injury and is more likely a wound inflicted by someone else. The other body (MC 80) has an intraoral gunshot entry site which, although it is a very typical entry site for a self-inflicted injury, it is not necessarily self-inflicted and can be inflicted by someone else. In this case (MC 80), surviving Branch Davidians Kathryn Schroeder and David Thibodeau indicate Mr. Jones may have been killed by another Branch Davidian. The wounds of the other individuals recovered from the graves and from the ravine are not consistent with being self-inflicted.

Some of the distant entry wounds found in the Branch Davidian decedents buried in graves or found in the ravine were caused by government agents during shooting incidents on February 28, 1993. One Branch Davidian decedent (MC 79) sustained gunshot wounds of the torso and arm apparently from government agents’ fire and was subsequently executed by a fellow Branch Davidian who administered two lethal close-contact wounds to the head/neck area. One Branch Davidian (MC 8) apparently received a non-lethal gunshot during the firefight associated with the initial confrontation at the complex and subsequently received a lethal gunshot to the head on the day of the fire. Another Branch Davidian (MC 51) who died of undetermined cause on the day of the fire had received a gunshot wound of the hand on February 28, 1993.

The characteristics of the wounds also allow some assessment of the accuracy of accounts offered by various individuals involved in the incident describing the course of events (see case evaluations regarding MC 76, 77, 79, 80 and 81).

### Firearm Injuries/Smoke Inhalation



The demonstration of smoke inhalation as evidenced by the presence of soot in the airway and elevation of the blood/tissue CO saturation indicates that at least 4 adults (MC 8, 41, 43, 44) and 1 child (MC 53) who died of firearm injuries were alive when they were exposed to smoke from the fire. Four other Davidian adults (MC 20, 22, 36, 47) and 1 child (MC 56) who died of firearm injuries showed no evidence of breathing smoke as indicated by the lack of soot in the airways and no elevation of blood/tissue CO saturation. The presence or absence of smoke inhalation cannot be definitively assessed in another 5 adults (MC 7, 45, 21, 34, 39) and 2 children (MC 35, 31A) in whom elevated CO saturation

was reported in the absence of airway soot (see toxicology section discussion regarding interpretation of CO laboratory results) and in an additional adult (MC 66) and 2 children (MC 31DE, 67-7/67-8) in whom the postmortem effects of fire and decomposition prevent smoke inhalation assessment. As noted above, the deaths of some of the individuals who sustained firearm injuries may have been hastened by the fire.

Among individuals with firearm injuries who were recovered from the burned structure, soot and CO were identified in 4 adults (MC 8, 41, 43, 44) and 1 child (MC 53), CO alone was reported in 5 adults (MC 7, 45, 21, 34, 39) and 2 children (MC 35, 31A) [see toxicology discussion regarding CO interpretation], neither soot nor CO in 4 adults (MC 20, 22, 36, 47) and 1 child (MC 56) and soot/CO were not evaluated in 1 adult (MC 66) and 2 children (MC 31DE, 67-7/67-8). Thus, there is evidence that at least 5 Davidians who died of firearm injuries were alive when exposed to smoke and 5 others showed no evidence of being exposed to smoke while alive. As noted above, the deaths of some of the individuals who sustained firearm injuries may have been hastened by the fire.

Circumstantial evidence strongly suggests that at least 2 other Davidians died of firearm injuries--MC 6 and MC 64 and/or MC 65. MC-6 has no evidence of smoke inhalation to indicate he was alive when exposed to smoke from the fire. He has no identifiable lethal injury but postmortem burning has destroyed most of the head preventing adequate examination to establish or exclude the presence of a head wound. MC-6 was found in the same area as two other adult Davidians, both of whom died of gunshot wounds of the head. MC 64 and MC 65 were recovered along with a bloody blanket in which there is a defect consistent with a gunshot hole. Both MC 64 and MC 65 have apparent antemortem injuries; however, postmortem changes prevent definitive assessment of the nature of the injuries.

Finally, decomposition and the effects of the fire preclude definitive exclusion of head/torso firearm injuries in 34 individuals (MC 4, 6, 9, 10, 11, 14, 15, 17, 18, 23, 24, 25, 26, 28, 29, 13, 38, 40, 30, 32, 62, 65, 67-1, 67-3, 67-4, 67-6, 59, 64, 51, 74, 61/50, 63, 75, 60). Other Branch Davidian decedents without gunshot wounds of the head/torso conceivably could have gunshot wounds of the extremities that are concealed by the extensive destruction by fire of many of their extremities. Since extremity gunshot wounds are typically (although not necessarily) non-lethal, Branch Davidian decedents having an intact head/torso without evidence of gunshot injury are considered to have most likely died of some other type of injury.

### **II-3. Fire/Smoke Injuries**

Deaths due to fires are most commonly due to smoke inhalation, flame/heat, atmospheric oxygen deficiency and falling debris/structural collapse. In most structural fires smoke inhalation is a prominent cause of disability and mortality. Smoke is a complex mixture of liquid and solid aerosols, fumes, gases and vapors including such potentially injurious substances as carbon monoxide (CO), cyanide (CN), irritating gases, humidity, particulate matter and carbon dioxide, to name but a few.

CO is the product of incomplete combustion of organic fuels and its production is particularly high in smoldering fires, less so in flame combustion, and it may be minimal in certain fires such as flash fires. The amount of carbon monoxide production will also be affected by the efficiency of the burning process and the nature of the materials being burned (i.e., natural vs synthetic). CO is the primary constituent of smoke responsible for death in most structural fires. However, in some fires the other constituents of smoke may play a prominent role in disability and death.

Primary issues in the investigation of a death occurring in relation to a fire involve establishing, when possible: the identity of the decedent, whether or not the decedent was alive during the fire, the cause of death and the presence and/or absence of factors contributing to death, disability and/or hindering the person's ability to escape the fire. Antemortem injuries need to be separated from postmortem injuries related to the fire, fire suppression endeavors and recovery activities.

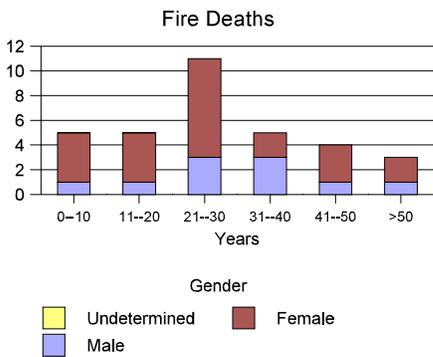
In most decedents whose bodies are recovered from a burned structure, the presence of life during the fire is established by determining that they breathed smoke. The presence of soot in an intact airway past the level of the vocal cords is generally considered evidence of breathing during the fire. Soot in the intact stomach can also be used as an indicator of life since it indicates swallowing. Care must be taken to exclude passive deposition of smoke if the airway or upper digestive tract is not intact.

In most structural fires the presence of CO unaccounted for by other environmental exposure such as tobacco smoking (average CO saturation in a smoker is 6% with heavy smokers having circa 10%) is also indicative of breathing during the fire. Death due to smoke inhalation during a structural fire is usually associated with blood CO saturation in the range of 25-85%. Death may occur at lower CO saturation depending on the constituents of the smoke, other fire-related effects and the presence of other injuries, toxic substances or diseases that may increase a person's susceptibility to the effects of smoke/CO. At sublethal concentrations, CO can also cause debilitation. Blood CO saturation of less than 10% usually does not cause any noticeable effects unless the person has some predisposing condition such as coronary artery disease. Symptoms and signs of CO exposure may become apparent in many people when CO saturation is in excess of 15-20%. However, there is not a predictable correlation between blood CO saturation and symptoms. Most people who breath smoke will have demonstrable soot in the airway and elevated CO in their blood. Exceptions do occur.

Victims of flash fires often have minimal, if any soot, in their airways and do not demonstrate elevated blood CO saturations. Exposure to very high concentrations of atmospheric CO (in excess of 50,000 ppm) can cause death by inducing a cardiac rhythm disturbance prior to significant elevation of the blood CO saturation. Infrequently, elevated CO saturation and smoke deposition are minimal or absent in a victim recovered from a typical structural fire when there is a reliable history or convincing circumstantial evidence that the victim was alive in the burning structure.

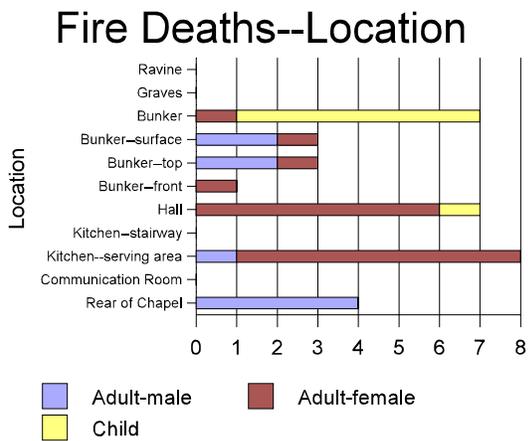
The Branch Davidian complex fire was not a typical structural fire. The fire progression was rapid and involved some fuels not typically present in significant amounts in typical structural fires. The Branch Davidians used accelerants at multiple ignition sites (see OSC expert reports of Dr. Ulf Wickstrom and Mr. Walter Wetherington).

In my evaluation of the Branch Davidian decedents, death is ascribed to the fire when: (1) there is definitive evidence of smoke inhalation (soot in the distal airways or intact stomach) and I believed I could reasonably exclude the presence of some other lethal injury. Due to the apparent effect of decomposition on the analytic process for CO (see toxicology discussion), I do not think a positive CO measured in a markedly decomposed specimen is a reliable indication that the individual was alive and breathing smoke during the fire without other supporting information; (2) where the airways are not able to be assessed for smoke inhalation but CO was reportedly present in the blood/tissue (see toxicology discussion), no other lethal lesion is demonstrable and other lethal lesions are reasonably excluded or there is no compelling evidence to suspect the presence of a lethal injury unrelated to the fire; and, (3) if some other lethal injury cannot be definitively excluded (such as a gunshot wound of the head) and/or smoke inhalation is not able to be assessed due to postmortem burning/decomposition, but the body was recovered in proximity to other definite fire-related deaths and no compelling circumstantial evidence is present to suggest a reasonable likelihood of a different cause of death.



Death is ascribed to fire in 26 adults and 7 children. Among these 33 decedents, 23 (MC 1, 2, 4, 10, 11, 14, 16, 17, 18, 19, 25, 26, 27, 12, 37, 42, 30, 32, 49, 52, 54, 71, 67-5/69) have soot deposited in the airway and CO reported in the blood/tissue. Two of the decedents (MC 5, 38) have smoke in the airway, but no CO was detected. Eight of the decedents (MC 9, 23, 24, 28, 29, 72, 73, 70/51A) are reported to have CO, but are not able to be assessed for airway smoke deposition. It is not clear why the two individuals who have soot clearly described in the lung tissue airways, a reliable sign of smoke inhalation,

fail to demonstrate CO in the blood. As noted previously, a variety of circumstances may be associated with this finding.



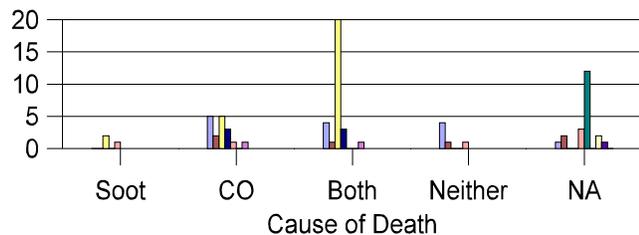
Fire deaths were recovered from the rear of the chapel (MC 1, 2, 4, 5); kitchen serving area (MC 9, 10, 11, 14, 16, 17, 18, 19); hallway (MC 23, 24, 25, 26, 27, 28, 29); the front (MC 12) and top (MC 37, 38, 42) of the concrete bunker; and, on the surface (MC 30, 32, 49) and in the debris in the concrete bunker (MC 67-5/69, 70/51A, 52, 72, 54, 71, 73). No fire deaths were recovered from the communications room, kitchen stairwell, tornado shelter graves or the ravine.

In some cases, smoke/thermal burns may have hastened death caused by some other injury such as a gunshot wound. In other cases, where the fire did not contribute to death, the presence of non-lethal smoke inhalation does indicate the decedent was alive during the fire.

Many of the bodies experienced postmortem burning which resulted in extensive distortion, loss of tissues (bone, soft tissue, organs) and bone fractures.

The reports of the OSC fire experts indicate the fire was intentionally set from within the complex. There were at least three sites of origin and evidence of the use of accelerants. The manner of death is most appropriately certified as homicide for any death due to the fire itself (smoke

### Cause of Death / Smoke Inhalation



NA--smoke and/or CO not assessed



inhalation, thermal burns) or to its secondary effects (falling debris, falls due to limited visibility, etc) since the fire was arson.

#### **II-4. Blunt Force Injuries**

I attributed deaths to blunt force injuries when: (1) the presence of a lethal blunt force injury is demonstrable; or (2) when there are fractures (unrelated to heat or firearm injuries) of a type usually associated with vital organ injuries having significant lethal potential and no evidence of more rapidly lethal injuries. Some of these deaths may have been hastened by the fire.

I attributed four deaths to blunt force injuries. Two of the decedents are adults (MC 3 and MC 13) and two are children (MC 59 and MC 63). The children were recovered from the concrete bunker. Both have head injuries and one also has a chest injury. The cause of the injuries cannot be definitively established. No definitive assessment for smoke inhalation is possible.

One of the adults (MC 3) was found in the rear of stage stairwell with injuries consistent with being received in a fall. MC 3 has evidence of smoke inhalation and also has heart disease. The other adult (MC 13) died of a broken neck. The exact nature of the broken neck is not apparent but could have been the result of a fall or being struck by falling debris. No definitive evidence of smoke inhalation is identified in MC 13.

#### **II-5. Sharp Force Injuries**

A single death (MC 33/47B) is attributed to sharp force injury. A 3 year old child, whose remains were found at the surface in the concrete bunker, died of a stab wound to the chest. This wound was inflicted by another person. No definitive evidence of smoke inhalation is present. The autopsy pathologist indicated the possible presence of a minimal amount of soot within severely decomposed lung tissue.

#### **II-6. Explosives**

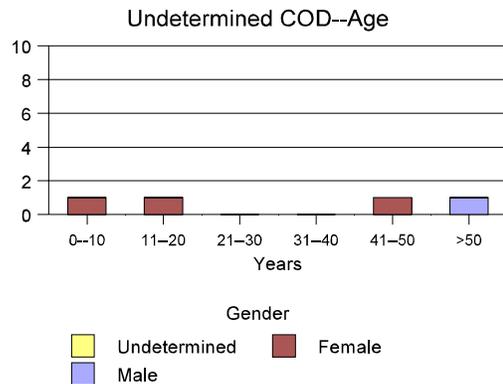
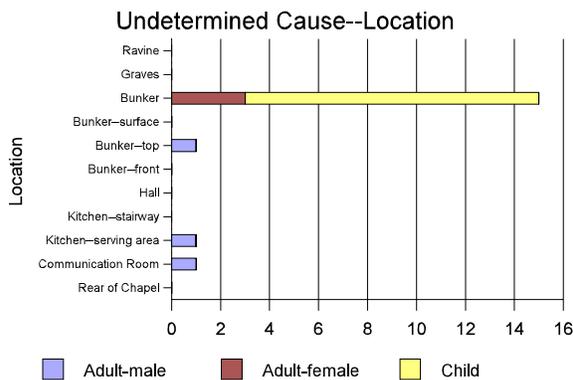
There were no deaths caused by the effects of any explosive device. No evidence of blast injury is seen in any of the Branch Davidian decedents. A small number of Branch Davidian decedents were struck by shrapnel from exploding hand grenades. Fragments of hand grenades were recovered from 7 bodies who were found in the areas of the communications room (MC 6, 7, 8), kitchen/serving area (MC 18), kitchen/stairway (MC 20, 21) and the top of the concrete bunker (MC 40). Although some of these pieces of metal penetrated the soft tissues, there was minimal, if any, hemorrhage associated with these wounds. No injury to any vital organ by hand

grenade shrapnel is identified. All the grenade fragments appear to have struck the bodies after death. No antemortem grenade injuries are identified. Several Branch Davidian decedents received postmortem injuries from heat-induced explosions (“cooking off”) of unchambered ammunition.

## II-7. Undetermined Causes of Deaths

The cause of death is listed as undetermined when: (1) there is no apparent injury or disease condition adequate to cause death in a body having all vital organ systems substantially intact; (2) a possible cause of death is present but other potential causes of death cannot be reasonably excluded; and (3) the circumstances indicate a reasonable likelihood that a particular cause of death was operative even though it cannot be scientifically adequately demonstrated due to postmortem damage or decomposition.

In all, 18 deaths are listed as being due to undetermined causes. The effects of decomposition and fire prevented a cause of death determination of these persons. Of these, 6 are adults (MC 6, 15, 40, 51, 75, 67-3) and 12 are children (MC 55, 57, 60, 61/50, 74, 62, 64, 65, 67-1, 67-2, 67-4, 67-6). Fifteen of the 18 were found in the concrete bunker. For a detailed discussion of each of these deaths please refer to the particular case summaries.



## **II-8. Suffocation/Smothering/Overlaying**

The Tarrant County Medical Examiner's Office attributed the deaths of 10 individuals to smothering/suffocation/overlaying (MC #s 51, 51A, 55, 57, 61, 62, 67-2, 67-3, 67-4 and 70). A non-OSC consultant pathologist ascribed the deaths of 6 persons to "suffocation rather than fire"(MC #s 55, 67-2, 67-6, 70, 75 and "Isiah Martinez." It is likely that the "Isiah Martinez" referred to by this non-OSC consultant pathologist is actually Crystal Martinez because the body of Crystal Martinez was initially misidentified as being Isaiah Martinez. DNA studies have identified MC 57 as Crystal Martinez and MC 53 as Isaiah Martinez.) Each of these bodies was recovered from the concrete bunker. Based upon the information that is currently available, I do not believe these deaths can be demonstrated with reasonable certainty to be included in this causation group. I believe two of these cases, certified by the medical examiner, represent a single person (MC 51A and MC 70). When these remains are combined, the cause of death of this person (MC 51A/70) can be attributed to smoke inhalation/thermal burns. I believe the rest of these cases (MC 51, 55, 57, 61, 62, 67-2, 67-3, 67-6 and 75) lack sufficient information to establish a specific cause of death and I think are best certified as undetermined.

To make the diagnosis of suffocation/smothering/overlaying in deaths occurring under the circumstances encountered at the Branch Davidian complex requires reasonably excluding other causes of death. The condition of most of the remains does not allow adequate exclusion of other potentially lethal injuries such as gunshot wounds, smoke inhalation/thermal burns or blunt trauma. Other bodies found in proximity to these bodies demonstrate evidence of other lethal injuries (gunshot wounds, blunt force injuries and smoke inhalation/thermal burns). One of the bodies (MC 57) shows evidence of some smoke inhalation (small amount of soot) but no toxicologic data is available and no other injury is apparent. Another body (MC 55) had a moderate amount of clotted blood involving the lower right chest and no respiratory structures sufficient to examine for soot deposition. However, the possibility that some of the deaths are due to suffocation/smothering/overlaying cannot be categorically excluded. It is not likely that falling material from the ceiling caused widespread compression asphyxia. It is my understanding that the fallen ceiling material was limited and dislodged at a very late stage of and after the fire. Due to the characteristics of the fire, I would expect the occupants of the room to be dead of smoke inhalation and/or thermal burns prior to fire-induced collapse of significant areas of the ceiling.

## II-9. Toxicology

Comprehensive screening for ethanol, CO, and a variety of other potentially toxic substances was performed by the TCMEO when samples could be obtained. Sampling was affected by the effects of fire and decomposition. Analysis was affected by decomposition.

There is no evidence of any mass ingestion of a toxic substance such as occurred at Jonestown. Many samples did contain cyanide and/or ethanol. The ethanol is consistent with postmortem production during decomposition. The cyanide is consistent with decomposition and/or smoke inhalation.

CO is normally present in low concentration in the blood (saturation <1%). Increased blood CO saturation most commonly results from exposure to atmospheric CO which is a product of incomplete combustion of organic materials. CO is a major component of smoke produced during structural fires. Atmospheric CO is not passively absorbed by a dead body in a fire, but requires active breathing to be inhaled into the lungs where it is transferred to the blood and binds to (saturates) the oxygen-carrying molecules (hemoglobin) in red blood cells. On occasion, elevated blood CO saturation is the result of exposure to a substance such as dichloromethane which forms CO in the body as it is metabolized.

The amount of CO in the blood is generally measured as the percent of the hemoglobin in the blood that is bound to (saturated by) CO. Tissue measurements of CO saturation reflect the red blood cell content within the tissues as well as any binding of CO to hemoglobin-like molecules that are present in the tissues (such as myoglobin in muscle tissue). Care must be taken when interpreting laboratory measurements of CO concentration to consider the possibility that the reported test values do not accurately reflect the true blood/tissue CO concentration in the body during life, but are erroneous due to some interfering factor in the analyzed specimen such as may occur with decomposition. These erroneous values occur even when the analytic procedure has technically been performed correctly and may be either higher or lower than the true value (false positive or false negative value, respectively). The elevated blood/tissue CO saturations reported by the TCMEO laboratory are consistent with smoke inhalation, inhalation or metabolic production of CO from some other source and/or the effects of decomposition on the analytic process. I do not see any evidence of any primary or secondary source of exposure that would cause a significant antemortem elevation of CO saturation except for the fire. Decomposition affects the interpretation of reported positive CO values. A variety of changes that occur during decomposition may interfere with some analytic techniques for CO and result in false positive results.

The analysis of the samples from the Branch Davidians involved the use of a spectrophotometer having a direct numerical readout. This methodology is commonly used to measure CO but is susceptible to interference by decomposition and may yield false positive results. The decomposition effects are inconsistent and inconstant, but I would expect them to be more pronounced as decomposition becomes more advanced. Mild-moderate decompositional changes probably would not significantly affect the analysis of blood. However, the apparent detection of CO in blood samples that are markedly decomposed is not definitive evidence of antemortem smoke (or other CO source) inhalation. Interpretation of CO content of tissues that do not have molecules that avidly bind CO (such as myoglobin in skeletal muscle) is dependent on the amount of blood within the tissue. Loss of blood from these tissues, inherent analytic interference by the tissues and decomposition related analytic interference make interpretation of decomposed tissue CO saturation especially difficult. Destruction of oxygen/CO binding compounds during decomposition can result in false negative analyses.

The effect of decomposition on CO analysis in the Branch Davidian samples is illustrated by cases MC 78 and MC 80. These two persons were recovered from the concrete tornado shelter grave sites and were decomposed to the extent that blood samples could not be obtained and liver tissue was submitted for analysis. MC 78 and MC 80 had been killed by gunfire nearly two months prior to the fire. In addition, there is no evidence to suggest that they were exposed to a non-fire CO source that would account for significant antemortem CO elevations. The reported CO saturations of these two individuals are 43% (liver) and 52% (liver). These analytic results appear to be false positive values caused by the effects of decomposition on the analyses. It should be noted that the demonstrably false positive CO measurements are restricted to analyses of visceral organ tissues such as liver. Demonstrably false positive analyses of samples of blood are lacking. Analyses of blood samples recovered from the other buried bodies were reported as “negative” for CO.

Since some of the samples submitted to the laboratory from the Branch Davidian decedents consisted of tissues other than blood and exhibited significant decomposition, reportedly positive CO values involving these specimens must be interpreted with great caution. CO analyses performed on organ and liquefied decomposed tissue specimens are likely not reliable and more than the usual reliance needs to be placed on other corroborative information to prevent misinterpretation of decomposition-related false positive CO values. CO analyses of samples grossly recognizable as blood are likely reasonably reliable. For these reasons, I would explicitly qualify the opinion of the non-OSC consultant forensic pathologist, who states that a CO saturation of >5% indicates the person was alive and breathing during the fire, by adding that the detected CO must accurately reflect an antemortem elevated CO saturation and not be an analytic artifact. I agree with this expert’s statement that a decedent with soot in the respiratory passages (assuming an intact airway and soot deposition distal to the vocal cords) can be “safely assumed to have been at least breathing at some point during the fire and in contact with its carbonaceous residues.”

The TCMEO also conducted specific analyses for CS and its hydrolytic products. None

of these compounds were identified. The available circumstantial and physical/chemical evidence does not support the presence of death due to CS exposure.

## **II-10. Manner of Death**

The manner of death is a classification of death made on the basis of the type of condition that caused death and the circumstances under which the condition occurred. The manners of death include natural, accident, homicide and suicide. In addition, the manner of death may be certified as “undetermined” if the available information does not allow a particular manner of death to be determined. It should be noted that homicide, the killing of one individual by another through a volitional act, may or may not involve contravention of the criminal code.

The deaths of all but possibly two of the six Davidians killed on February 28, 1993, are homicides. It can be determined that four of these people (MC 76, 78, 79, 81) were killed by gunshots fired by other persons and thus are homicides. One person (MC 77) was probably shot by some other Davidian, but a self-inflicted gunshot wound cannot be excluded. MC 77 is probably a homicide but suicide cannot be ruled out. MC 80 died of an intraoral gunshot wound that is very characteristic of a self-inflicted injury (suicide); however, surviving Davidians have indicated that he may have been killed by another Davidian (homicide).

Among the deaths that occurred in the burning structure, several are homicides because they were caused by injuries inflicted by other Davidians. The manner of death of anyone succumbing from the effects of the fire, either directly or indirectly, is homicide because the origin of the fire was arson, i.e. it was deliberately started by other Davidians.

Many of the deaths of undetermined causes, including those of the young children, are homicides because there are no other reasonable alternatives for these deaths except the fire or at the hands of another individual. As previously discussed, some of the deaths of undetermined causation may have been caused by suicidal or homicidal gunshots that postmortem changes prevent from being identified.

The firearm deaths that occurred on April 19, 1993, include homicides and, most likely, some suicides. At least eleven of these deaths were at the hands of other Davidians and thus are homicides. Insufficient information is available to determine if the wounds of three Davidians could have been self-inflicted (suicide) or whether they were received at the hands of another person (homicide). There are six persons with gunshot wounds that are consistent with being self-inflicted (suicide); however, as discussed previously, infliction by other Davidians cannot be excluded (homicide).

### III-1A. Davidian Decedents—Alphabetical listing *(children—italics)*

<u>Name</u>	<u>MC#</u>	<u>Cause of Death</u>	<u>Page</u>
<i>Andrade, Chanel</i>	62	<i>Undetermined</i>	126
Andrade, Jennifer	12	Smoke inhalation, thermal burns	81
Andrade, Katherine	30	Smoke inhalation, thermal burns	96
Bennett, Alrick	37	Smoke inhalation, thermal burns	87
Benta, Susan	23	Smoke inhalation, thermal burns	74
Blake, Winston	77	Gunshot wound of head	137
Borst, Mary Jean	45	Gunshot wounds of head and chest/abdomen	65
Cohen, Pablo	42	Smoke inhalation, thermal burns	95
Davies, Adebowala	15	Undetermined	58
<i>Doyle, Shari</i>	35	<i>Gunshot wound of head</i>	85
Elliott, Beverly	29	Smoke inhalation, thermal burns	80
Fagan, Doris	27	Smoke inhalation, thermal burns	78
Fagan, Yvette	25	Smoke inhalation, thermal burns	76
Farris, Lisa	43	Gunshot wound of head	63
Friesen, Raymond	1	Smoke inhalation, thermal burns	43
<i>Gent, Pages</i>	64	<i>Undetermined</i>	127
Gent, Peter	76	Gunshot wound of chest	146

<u>Name</u>	<u>MC#</u>	<u>Cause of Death</u>	<u>Page</u>
Hardial, Sandra	17	Smoke inhalation, thermal burns	60
Henry, Diana	18	Smoke inhalation, thermal burns	61
Henry, Vanessa	16	Smoke inhalation, thermal burns	59
Henry, Phillip	22	Gunshot wounds of chest and head	72
Henry, Stephen	21	Gunshot wound of head	70
Henry, Zilla	28	Smoke inhalation, thermal burns	79
Hipsman, Novelette	39	Gunshot wound of head	90
Hipsman, Peter	79	Gunshot wounds of head	141
Houtman, Floyd	3	Blunt force injuries–chest	46
<i>Howell, Cyrus</i>	<i>67-2</i>	<i>Undetermined</i>	131
Howell, Rachel	67-3	Undetermined	132
<i>Howell, Star</i>	<i>67-1</i>	<i>Undetermined</i>	130
Jewell, Sherry	11	Smoke inhalation, thermal burns	56
Jones, David	36	Gunshot wound of head	86
Jones, Perry	80	Gunshot wound of head	144
<i>Jones, Serenity</i>	<i>72</i>	<i>Smoke inhalation, thermal burns</i>	119
<i>Jones twin</i>	<i>63</i>	<i>Blunt force injuries–head</i>	116
<i>Jones twin</i>	<i>73</i>	<i>Smoke inhalation, thermal burns</i>	120
<i>Koresh (Howell), Bobbie</i>	<i>67-5/69</i>	<i>Smoke inhalation, thermal burns</i>	134
Koresh, David (aka Howell, Vernon)	8	Gunshot wound of head	52

<u>Name</u>	<u>MC#</u>	<u>Cause of Death</u>	<u>Page</u>
<i>Little, Dayland</i>	33/47B	<i>Stab wound of chest</i>	102
Little, Jeffrey	44	Gunshot wound of chest	64
Little (nee Gent), Nicole	47	Shotgun wound of head	103
<i>Little, fetus (Nicole)</i>	47C	<i>Maternal injury (shotgun wound)</i>	103
Malcolm, Livingston	2	Smoke inhalation, thermal burns	45
<i>Martin child</i>	26	<i>Smoke inhalation, thermal burns</i>	77
<i>Martin child</i>	61/50	<i>Undetermined</i>	115
Martin, Daisy	13	Blunt force injuries–neck	82
Martin, Douglas	5	Smoke inhalation, thermal burns	48
Martin, Wayne	49	Smoke inhalation, thermal burns	104
<i>Martinez, Abigail</i>	56	<i>Gunshot wound of head</i>	111
<i>Martinez, Audrey</i>	55	<i>Undetermined</i>	110
<i>Martinez, Crystal</i>	57	<i>Undetermined</i>	113
<i>Martinez, Isaiah</i>	53	<i>Gunshot wound of chest</i>	108
<i>Martinez, Joseph</i>	52	<i>Smoke inhalation, thermal burns</i>	107
Martinez, Juliet	54	Smoke inhalation, thermal burns	109
McBean, John	32	Smoke inhalation, thermal burns	101
Monbelly, Allison	24	Smoke inhalation, thermal burns	75
<i>Morrison, Melissa</i>	74	<i>Undetermined</i>	121
Morrison, Rosemary	75	Undetermined	122
Murray, Sonia	10	Smoke inhalation, thermal burns	55

<u>Name</u>	<u>MC#</u>	<u>Cause of Death</u>	<u>Page</u>
Nobrega, Beryl Teresa	19	Smoke inhalation, thermal burns	62
Riddle, James	20	Gunshot wound of head	68
Saipaia, Rebecca	38	Smoke inhalation, thermal burns	89
Schneider, Judy	51	Undetermined	105
<i>Schneider, Mayanah</i>	<i>70/51A</i>	<i>Smoke inhalation, thermal burns</i>	117
Schneider, Steven	7	Gunshot wound of head	50
Schroeder, Michael	81	Gunshot wounds of head, chest, abdomen	147
Sellors, Clifford	9	Smoke inhalation, thermal burns	54
Sonobe, Florecita	34	Gunshot wound of head	84
Sonobe, Scott	4	Smoke inhalation, thermal burns	47
<i>Summers, Aisha</i>	<i>31A</i>	<i>Gunshot wound of chest</i>	97
<i>Summers, fetus (Aisha)</i>	<i>31B/58</i>	<i>Maternal injury (gunshot wound)</i>	97
Summers, Gregory	40	Undetermined	92
<i>Sylvia, Hollywood</i>	<i>67-4</i>	<i>Undetermined</i>	133
Sylvia, Lorraine	66	Gunshot wounds of chest	129
<i>Sylvia, Rachel</i>	<i>67-6</i>	<i>Undetermined</i>	135
<i>Thibodeau, Michelle (nee Jones)</i>	<i>71</i>	<i>Smoke inhalation, thermal burns</i>	118
<i>Unidentified</i>	<i>31DE</i>	<i>Gunshot wound of head</i>	99
<i>Unidentified</i>	<i>59</i>	<i>Blunt force injuries–head</i>	124
<i>Unidentified</i>	<i>60</i>	<i>Undetermined</i>	114
<i>Unidentified</i>	<i>65</i>	<i>Undetermined</i>	128

<b><u>Name</u></b>	<b><u>MC#</u></b>	<b><u>Cause of Death</u></b>	<b><u>Page</u></b>
<i>Unidentified</i>	<i>67-7/67-8</i>	<i>Gunshot wound of head</i>	136
Vaega, Margarida	14	Smoke inhalation, thermal burns	57
Vaega, Neru Neil	41	Gunshot wound of head	93
Wendel, Jaydean	78	Gunshot wound of head	140
Wendel, Mark	6	Undetermined	49

### III 1B.–Davidian Decedents–MC # listing (*children–italics*)

<u>MC#</u>	<u>Name</u>	<u>Cause of Death</u>	<u>Page</u>
1	Friesen, Raymond	Smoke inhalation, thermal burns	43
2	Malcolm, Livingston	Smoke inhalation, thermal burns	45
3	Houtman, Floyd	Blunt force injuries–chest	46
4	Sonobe, Scott	Smoke inhalation, thermal burns	47
5	Martin, Douglas	Smoke inhalation, thermal burns	48
6	Wendel, Mark	Undetermined	49
7	Schneider, Steven	Gunshot wound of head	50
8	Howell, Vernon (aka Koresh, David)	Gunshot wound of head	52
9	Sellors, Clifford	Smoke inhalation, thermal burns	54
10	Murray, Sonia	Smoke inhalation, thermal burns	55
11	Jewell, Sherry	Smoke inhalation, thermal burns	56
12	Andrade, Jennifer	Smoke inhalation, thermal burns	81
13	Martin, Daisy	Blunt force injuries–neck	82
14	Vaega, Margarida	Smoke inhalation, thermal burns	57
15	Davies, Adebawalo	Undetermined	58
16	Henry, Vanessa	Smoke inhalation, thermal burns	59
17	Hardial, Sandra	Smoke inhalation, thermal burns	60
18	Henry, Diana	Smoke inhalation, thermal burns	61

<u>MC#</u>	<u>Name</u>	<u>Cause of death</u>	<u>Page</u>
19	Nobrega, Beryl Teresa	Smoke inhalation, thermal burns	62
20	Riddle, James	Gunshot wound of head	68
21	Henry, Stephen	Gunshot wound of head	70
22	Henry, Phillip	Gunshot wounds of head and chest	72
23	Benta, Susan	Smoke inhalation, thermal burns	74
24	Monbelly, Allison	Smoke inhalation, thermal burns	75
25	Fagan, Yvette	Smoke inhalation, thermal burns	76
26	<i>Martin child</i>	<i>Smoke inhalation, thermal burns</i>	77
27	Fagan, Doris	Smoke inhalation, thermal burns	78
28	Henry, Zilla	Smoke inhalation, thermal burns	79
29	Elliott, Beverly	Smoke inhalation, thermal burns	80
30	Andrade, Katherine	Smoke inhalation, thermal burns	96
31A	<i>Summers, Aisha</i>	<i>Gunshot wound of chest</i>	97
31B/58	<i>Summers, fetus (Aisha) Maternal injury (gunshot wound)</i>		97
31DE	<i>Unidentified</i>	<i>Gunshot wound of head</i>	99
32	McBean, John	Smoke inhalation, thermal burns	101
33/47B	<i>Little, Dayland</i>	<i>Stab wound of chest</i>	102
34	Sonobe, Florecita	Gunshot wound of head	84
35	<i>Doyle, Shari</i>	<i>Gunshot wound of head</i>	85
36	Jones, David	Gunshot wound of head	86

<b><u>MC#</u></b>	<b><u>Name</u></b>	<b><u>Cause of death</u></b>	<b><u>Page</u></b>
37	Bennett, Alrick	Smoke inhalation, thermal burns	87
38	Saipaia, Rebecca	Smoke inhalation, thermal burns	89
39	Hipsman, Novellette	Gunshot wound of head	90
40	Summers, Gregory	Undetermined	92
41	Vaega, Neru Neil	Gunshot wound of head	93
42	Cohen, Pablo	Smoke inhalation, thermal burns	95
43	Farris, Lisa	Gunshot wound of head	63
44	Little, Jeffrey	Gunshot wound of chest	64
45	Borst, Mary	Gunshot wounds of head and chest/abdomen	65
46	Human bone	(No further information)	67
47	Little (nee Gent), Nicole	Shotgun wound of head	103
47C	<i>Little, fetus (Nicole)</i>	<i>Maternal injury (shotgun wound)</i>	103
49	Martin, Wayne	Smoke inhalation, thermal burns	104
50/61	<i>Martin child</i>	<i>Undetermined</i>	
51	Schneider, Judy	Undetermined	105
51A/70	<i>Schneider, Mayannah</i>	<i>Smoke inhalation, thermal burns</i>	117
52	<i>Martinez, Joseph</i>	<i>Smoke inhalation, thermal burns</i>	107
53	<i>Martinez, Isaiah</i>	<i>Gunshot wound of chest</i>	108
54	Martinez, Juliet	Smoke inhalation, thermal burns	109
55	<i>Martinez, Audrey</i>	<i>Undetermined</i>	110
56	<i>Martinez, Abigail</i>	<i>Gunshot wound of head</i>	111

<b><u>MC#</u></b>	<b><u>Name</u></b>	<b><u>Cause of death</u></b>	<b><u>Page</u></b>
57	<i>Martinez, Crystal</i>	<i>Undetermined</i>	113
59	Unidentified	Blunt force injuries–head	124
60	<i>Unidentified</i>	<i>Undetermined</i>	114
61/50	<i>Martin child</i>	<i>Undetermined</i>	115
62	<i>Andrade, Chanel</i>	<i>Undetermined</i>	126
63	<i>Jones twin</i>	<i>Blunt force injuries–head</i>	116
64	<i>Gent, Pages</i>	<i>Undetermined</i>	127
65	<i>Unidentified</i>	<i>Undetermined</i>	128
66	Sylvia, Lorraine	Gunshot wounds of chest	129
67-1	<i>Howell, Star</i>	<i>Undetermined</i>	130
67-2	<i>Howell, Cyrus</i>	<i>Undetermined</i>	131
67-3	Koresh (Howell), Rachel	Undetermined	132
67-4	<i>Sylvia, Hollywood</i>	<i>Undetermined</i>	133
67-5/69	<i>Koresh (Howell), Bobbie</i>	<i>Smoke inhalation, thermal burns</i>	134
67-6	<i>Sylvia, Rachel</i>	<i>Undetermined</i>	135
67-7/7-8	Unidentified	Gunshot wound of head	136
70/51A	<i>Schneider, Mayannah</i>	<i>Smoke inhalation, thermal burns</i>	117
71	<i>Thibodeau, Michelle</i> <i>(nee Jones)</i>	<i>Smoke inhalation, thermal burns</i>	118
72	<i>Jones, Serenity</i>	<i>Smoke inhalation, thermal burns</i>	119
73	<i>Jones twin</i>	<i>Smoke inhalation, thermal burns</i>	120

<u>MC#</u>	<u>Name</u>	<u>Cause of death</u>	<u>Page</u>
74	<i>Morrison, Melissa</i>	<i>Undetermined</i>	121
75	Morrison, Rosemary	Undetermined	122
76	Gent, Peter	Gunshot wound of chest	146
77	Blake, Winston	Gunshot wound of head	137
78	Wendel, Jaydean	Gunshot wound of head	140
79	Hipsman, Peter	Gunshot wounds of head	141
80	Jones, Perry	Gunshot wound of head	142
81	Schroeder, Michael	Gunshot wounds of head, chest, abdomen	143

**III-1C. Davidian Decedents–Children (up to 18 years of age) (including 2 fetuses)**

<u>Name</u>	<u>MC</u>	<u>Age (yrs)</u>	<u>Gender</u>	<u>Cause of death</u>
Andrade, Chanel	62	1	F	Undetermined
Doyle, Shari	35	18	F	Gunshot wound of head
Gent, Pages	64	1	F	Undetermined
Howell, Cyrus	67-2	8	M	Undetermined
Howell, Star	67-1	5-6	F	Undetermined
Jones, Serenity	72	4-5	F	Smoke inhalation, thermal burns
Jones twin	63	1 ½	F	Blunt injuries
Jones twin	73	1 ½	F	Smoke inhalation, thermal burns
Koresh (Howell), Bobbie	67-5/69	1	F	Undetermined
Little, Dayland	33/47B	3	M	Stab wound of chest
Martin child	26	Teen	F	Smoke inhalation, thermal burns
Martin child	61/50	Teen	F	Undetermined
Martinez, Abigail	56	11	F	Gunshot wound of head
Martinez, Audrey	55	13	F	Undetermined
Martinez, Crystal	57	6	F	Undetermined
Martinez, Isaiah	53	5 ½- 6 ½	M	Gunshot wound of chest

<u>Name</u>	<u>MC#</u>	<u>Age</u>	<u>Gender</u>	<u>Cause of death.</u>
Martinez, Joseph	52	8	M	Smoke inhalation, thermal burns
Morrison, Melissa	74	6	F	Undetermined
Schneider, Mayannah	70/51A	2 ½-3 ½	F	Smoke inhalation, thermal burns
Summers, Aisha	31A	17	F	Gunshot wound of chest
Sylvia, Hollywood	67-4	1-2	F	Undetermined
Sylvia, Rachel	67-6	13	F	Undetermined
Thibodeau, Michelle	71	18	F	Smoke inhalation, thermal burns
Unidentified	31DE	11-14	–	Gunshot wound of head
Unidentified	59	14-19	F	Blunt force injuries
Unidentified	60	2-5	–	Undetermined
Unidentified	65	1 ½-2 ½	F	Undetermined
Unidentified	67-7/67-8	1 1/12	–	Gunshot wound of head
-----				
Little fetus	47C	16-18 weeks gestation		Maternal injury
Summers fetus	31B/58	8 ½ –9 months gestation		Maternal injury

**III-1D. Davidian Decedents—Listing by cause of death** (*children—italics*)

**Firearm Injuries (26)**

<b><u>Name</u></b>	<b><u>MC#</u></b>	<b><u>Location</u></b>
Blake, Winston	77	Concrete tornado shelter
Borst, Mary Jean	45	Kitchen/serving area
<i>Doyle, Shari</i>	<i>35</i>	<i>Top of concrete bunker</i>
Farris, Lisa	43	Kitchen/serving area
Gent, Peter	76	Front of complex grave
Henry, Phillip	22	Kitchen/stairway
Henry, Stephen	21	Kitchen/stairway
Hipsman, Novelette	39	Top of concrete bunker
Hipsman, Peter	79	Concrete tornado shelter
Jones, David	36	Top of concrete bunker
Jones, Perry	80	Concrete tornado shelter
Koresh, David (aka Howell, Vernon)	8	Communications room
Little, Jeffrey	44	Kitchen/serving area
Little (nee Gent), Nicole	47	Concrete bunker surface
<i>Martinez, Abigail</i>	<i>56</i>	<i>Concrete bunker</i>
<i>Martinez, Isaiah</i>	<i>53</i>	<i>Concrete bunker</i>
Riddle, James	20	Kitchen/stairway

<u>Name</u>	<u>MC#</u>	<u>Location</u>
Schneider, Stephen	7	Communication room
Schroeder, Michael	81	Ravine
Sonobe, Florecita	34	Top of concrete bunker
<i>Summers, Aisha</i>	<i>31A</i>	<i>Concrete bunker surface</i>
Sylvia, Lorraine	66	Concrete bunker
<i>Unidentified</i>	<i>31DE</i>	<i>Concrete bunker surface</i>
<i>Unidentified</i>	<i>67-7/67-8</i>	<i>Concrete bunker</i>
Vaega, Neru Neil	41	Top of concrete bunker
Wendell, Jaydean	78	Concrete tornado shelter

**Smoke inhalation/thermal burns (33)**

Andrade, Jennifer	12	Front of concrete bunker
Andrade, Katherine	30	Concrete bunker surface
Bennett, Alrick	37	Top of concrete bunker
Benta, Susan	23	Hallway
Cohen, Pablo	42	Top of concrete bunker
Elliott, Beverly	29	Hallway
Fagan, Doris	27	Hallway
Fagan, Yvette	25	Hallway
Friesen, Raymond	1	Stage at rear of chapel
Hardia, Sandra	17	Kitchen/serving area

<b><u>Name</u></b>	<b><u>MC#</u></b>	<b><u>Location</u></b>
Henry, Diana	18	Kitchen/serving area
Henry, Vanessa	16	Kitchen/serving area
Henry, Zilla	28	Hallway
Jewell, Sherry	11	Kitchen/serving area
<i>Jones, Serenity</i>	72	<i>Concrete bunker</i>
<i>Jones twin</i>	73	<i>Concrete bunker</i>
<i>Koresh (Howell), Bobbie</i>	67-5/69	<i>Concrete bunker</i>
Malcolm, Livingston	2	Stage stairwell
<i>Martin child</i>	26	<i>Hallway</i>
Martin, Douglas	5	Stage stairwell
Martin, Wayne	49	Concrete bunker surface
<i>Martinez, Joseph</i>	52	<i>Concrete bunker</i>
Martinez, Juliet	54	Concrete bunker
McBean, John	32	Concrete bunker surface
Monbelly, Allison	24	Hallway
Murray, Sonia	10	Kitchen/serving area
Nobrega, Beryl Teresa	19	Kitchen/serving area
Saipaia, Rebecca	38	Top of concrete bunker
<i>Schneider, Mayanah</i>	70/51A	<i>Concrete bunker</i>
Sellors, Clifford	9	Kitchen/serving area
Sonobe, Scott	4	Stage stairwell

**Name**                      **MC#**                      **Location**

*Thibodeau, Michelle*  
*(nee Jones)*                      71                      *Concrete bunker*

*Vaega, Margarida*                      14                      *Kitchen/serving area*

**Blunt Force Injuries (4)**

*Houtman, Floyd*                      3                      *Stage stairwell*

*Jones twin*                      63                      *Concrete bunker*

*Martin, Daisy*                      13                      *Front of concrete bunker*

*Unidentified*                      59                      *Concrete bunker*

**Sharp Force Injuries (1)**

*Little, Dayland*                      33/47B                      *Concrete bunker surface*

**Undetermined (18)**

*Andrade, Chanel*                      62                      *Concrete bunker*

*Davies, Adebowala*                      15                      *Kitchen/serving area*

*Gent, Pages*                      64                      *Concrete bunker*

*Howell, Cyrus*                      67-2                      *Concrete bunker*

*Howell, Rachel*                      67-3                      *Concrete bunker*

*Howell, Star*                      67-1                      *Concrete bunker*

*Martin child*                      61/50                      *Concrete bunker*

*Martinez, Audrey*                      55                      *Concrete bunker*

<u>Name</u>	<u>MC#</u>	<u>Location</u>
<i>Martinez, Crystal</i>	57	<i>Concrete bunker</i>
<i>Morrison, Melissa</i>	74	<i>Concrete bunker</i>
Morrison, Rosemary	75	Concrete bunker
Schneider, Judy	51	Concrete bunker
Summers, Gregory	40	Top of concrete bunker
<i>Sylvia, Hollywood</i>	67-4	<i>Concrete bunker</i>
<i>Sylvia, Rachel</i>	67-6	<i>Concrete bunker</i>
<i>Unidentified</i>	60	<i>Concrete bunker</i>
<i>Unidentified</i>	65	<i>Concrete bunker</i>
Wendel, Mark	6	Communication room

**III-1E. Decedents–Listing by recovery location of body**  
*(children–italics)*

<u>Location</u>	<u>MC#</u>	<u>Name</u>	<u>Cause of Death</u>
<b>1. Rear of chapel (5)</b>			
A. Stage (1)–	MC 1	Friesen, Raymond	Smoke/thermal burns
B. Stairwell (4)–	MC 2	Malcolm, Livingston	Smoke/thermal burns
	MC 3	Houtman, Floyd	Blunt trauma
	MC 4	Sonobe, Scott	Smoke/thermal burns
	MC 5	Martin, Douglas	Smoke/thermal burns
<b>2. Communication Room (3)</b>			
	MC 6	Wendel, Mark	Undetermined
	MC 7	Schneider, Steven	Gunshot wound of head
	MC 8	Koresh, David (aka Howell, Vernon )	Gunshot wound of head
<b>3. Kitchen/Serving Area (12)</b>			
	MC 9	Sellors, Clifford	Smoke/thermal burns
	MC 10	Murray, Sonia	Smoke/thermal burns
	MC 11	Jewell, Sherry	Smoke/thermal burns
	MC 14	Vaega, Margarida	Smoke/thermal burns
	MC 15	Davies, Adebowalo	Undetermined
	MC 16	Henry, Vanessa	Smoke/thermal burns
	MC 17	Hardial, Sandra	Smoke/thermal burns
	MC 18	Henry, Diana	Smoke/thermal burns
	MC 19	Nobrega, Beryl Teresa	Smoke/thermal burns
	MC 43	Farris, Lisa	Gunshot wound of head
	MC 44	Little, Jeffrey	Gunshot wound of chest
	MC 45	Borst, Mary	Gunshot wounds of head and chest/abdomen
	MC 46	(bone)	
<b>4. Kitchen/Stairway (3)</b>			
	MC 20	Riddle, James	Gunshot wound of head
	MC 21	Henry, Stephen	Gunshot wound of head
	MC 22	Henry, Phillip	Gunshot wounds of head and chest

## 5. Hallway (7)

MC 23	Benta, Susan	Smoke/thermal burns
MC 24	Monbelly, Allison	Smoke/thermal burns
MC 25	Fagan, Yvette	Smoke/thermal burns
MC 26	<i>Martin child</i>	<i>Smoke/thermal burns</i>
MC 27	Fagan, Doris	Smoke/thermal burns
MC 28	Henry, Zilla	Smoke/thermal burns
MC 29	Elliott, Beverly	Smoke/thermal burns

## 6. Front of Concrete bunker (2)

MC 12	Andrade, Jennifer	Smoke/thermal burns
MC 13	Martin, Daisy	Blunt trauma

## 7. Top of Concrete bunker (9)

MC 34	Sonobe, Florecita	Gunshot wound of head
MC 35	<i>Doyle, Shari</i>	<i>Gunshot wound of head</i>
MC 36	Jones, David	Gunshot wound of head
MC 37	Bennett, Alrick	Smoke/thermal burns
MC 38	Saipaia, Rebecca	Smoke/thermal burns
MC 39	Hipsman, Novellette	Gunshot wound of head
MC 40	Summers, Gregory	Undetermined
MC 41	Vaega, Neru Neil	Gunshot wound of head
MC 42	Cohen, Pablo	Smoke/thermal burns

## 8. Concrete bunker Surface (7 + 2 fetuses)

MC 30	Andrade, Katherine	Smoke/thermal burns
MC 31A	<i>Summers, Aisha</i>	<i>Gunshot wound of chest</i>
MC 31B/58	<i>Summers fetus (Aisha)</i>	<i>Maternal gunshot wound</i>
MC 31DE	<i>Unidentified</i>	<i>Gunshot wound of head</i>
MC 32	McBean, John	Smoke/thermal burns
MC 33/47B	<i>Little, Dayland</i>	<i>Stab wound of chest</i>
MC 47	Little, Nicole	Shotgun wound of head
MC 47C	<i>Little, fetus (Nicole)</i>	<i>Maternal shotgun wound</i>
MC 49	Martin, Wayne	Smoke/thermal burns

## 9. Concrete bunker (28)

### A. Area closest to cooler (12)

MC 62	Andrade, Chanel	Undetermined
MC 65	Unidentified	Undetermined
MC 66	Sylvia, Lorraine	Gunshot wounds of chest
MC 67-1	Howell, Star	Undetermined
MC 67-2	Howell, Cyrus	Undetermined
MC 67-3	Howell, Rachel	Undetermined
MC 67-4	Sylvia, Hollywood	Undetermined
MC 67-5/69	Koresh (Howell), Bobbie	Smoke/thermal burns
MC 67-6	Sylvia, Rachel	Undetermined
MC 67-7/67-8	Unidentified	Gunshot wound of head
MC 59	Unidentified	Blunt trauma
MC 64	Gent, Pages	Undetermined

### B. Concrete bunker–Area furthest from cooler (16)

MC 51	Schneider, Judy	Undetermined
MC 70/51A	Schneider, Mayannah	Smoke/thermal burns
MC 52	Martinez, Joseph	Smoke/thermal burns
MC 53	Martinez, Isaiah	Gunshot wound of chest
MC 60	Unidentified	Undetermined
MC 72	Jones, Serenity	Smoke/thermal burns
MC 74	Morrison, Melissa	Undetermined
MC 61/50	Martin child	Undetermined
MC 54	Martinez, Juliet	Smoke/thermal burns
MC 55	Martinez, Audrey	Undetermined
MC 56	Martinez, Abigail	Gunshot wound of head
MC 57	Martinez, Crystal	Undetermined
MC 63	Jones twin	Blunt trauma
MC 71	Thibodeau, Michelle (nee Jones)	Smoke/thermal burns
MC 73	Jones twin	Smoke/thermal burns
MC 75	Morrison, Rosemary	Undetermined

## 10. Concrete tornado shelter (4)

MC 77	Blake, Winston	Gunshot wound of head
MC 78	Wendel, Jaydean	Gunshot wound of head
MC 79	Hipsman, Peter	Gunshot wounds of head
MC 80	Jones, Perry	Gunshot wound of head

11. Front of complex grave (1)

MC 76    Gent, Peter

Gunshot wound of chest

12. Ravine (1)

MC 81    Schroeder, Michael

Gunshot wounds of head, chest and  
abdomen

## **III-2. Specific location and case synopsis and comments**

### **III-2A. Listing by Location of Davidian Remains (*children—italics*)**

This section of the report includes an overview of the remains found in each particular location followed by a synopsis and discussion of information pertinent to each decedent.

The case synopses include descriptions of the general characteristics of each body; the presence of significant diseases, antemortem injuries and postmortem changes (injuries and decomposition); results of pertinent laboratory analyses including those from the toxicology and crime laboratories; a brief analysis of the information; and, my opinion as to the cause and manner of death. In some cases, I also address issues raised by other individuals who have made statements about particular decedents.

### **Rear of chapel—Stage (MC 1) and Stairwell (MC 2 – MC 5)**

There were five men found in the area of the rear of the chapel. One was found in the area of the stage and the others were found at the stairwell. All of the men exhibit evidence of smoke inhalation. Three died of smoke inhalation/thermal burns and the other died primarily of blunt force chest injury with possible contribution by heart disease and smoke inhalation. Firearms were found in proximity to each of these individuals. No firearms injuries were identified in any of these men.

#### **MC 1– Raymond Friesen**

Mr. Friesen, a 76 year old White man (DOB 7/14/16), was found alone in the area of the stage at the rear of the chapel. A charred rifle barrel lays vertically along the right anterolateral torso. The body is charred but the tissues and organs are well-preserved.

There is evidence of smoke inhalation. The airway is intact. There is a large amount of soot deposited in the large and small airways. The lungs demonstrate profuse congestion and edema. The blood CO saturation is reported as 66%.

There is global charring with heat fractures of the skull. Heat fractures and loss of tissues of the extremities are also present.

Natural disease processes include enlargement of the left ventricle of the heart (left ventricular hypertrophy), arteriosclerotic severe narrowing of the left anterior descending coronary artery (75-80%), aortic moderate atherosclerosis, renal small vessel arteriosclerosis and benign enlargement of the prostate gland.

There is no evidence of a gunshot wound. No wound tracks are identified involving the reconstructed skull, brain or chest/abdominal organs. No collections of blood are found within the body cavities. The anthropology examination demonstrates two perforations of the anterior surface of the chest in the region of each first rib. However, as noted previously, no evidence of any wound track through the body is found. These surface defects do not represent antemortem gunshot wounds.

The toxicology report indicates the presence of benzene. Benzene is a component of a variety of petroleum products including gasoline and paint remover. Exposure to one of these substances or a similar product may have been the source of the benzene identified in the blood.

Conclusion: The presence of soot in the airway past the level of the vocal cords and the elevated blood CO saturation are indicative of smoke inhalation. The extent of smoke inhalation is sufficient to have been lethal. His pre-existing heart disease due to longstanding atherosclerosis (hardening of the arteries) and hypertension (high blood pressure) would enhance the lethal potential of smoke inhalation. However, his blood CO saturation was elevated to the extent that death would be likely in a person without heart disease. Other lethal injuries can be reasonably excluded.

Cause of death: Smoke Inhalation, thermal burns.

Manner of death: Homicide.

## **MC 2– Livingston Malcolm**

Mr. Malcolm, a 26 year old Black man (DOB 5/16/66), was found in the area of the stairwell at the rear of the chapel. A burned rifle and a crow bar were adjacent to the body. He was found in the proximity of three other men, all of whom had evidence of smoke inhalation. Two of these men died of smoke inhalation/thermal burns and the other died of blunt chest injuries.

The preservation of the body is good. The vascular intima is stained by hemoglobin.

There is evidence of smoke inhalation. The airways in the lungs contain a large amount of soot. The lungs are markedly congested and edematous. The blood CO saturation is reported as 26%.

There is global charring with tissue loss and fire-related fractures. Portions of the extremities are absent.

There is no evidence of a gunshot wound. No gunshot wound track was found involving the internal organs or reconstructed skull.

Toxicologic evaluation demonstrates the presence of cyanide in the blood (0.04 mcg/ml). The source of the cyanide can be decomposition and/or inhaling products of combustion.

Mr. Malcolm was repatriated to the UK where his body was re-examined by a team of UK officials. The UK examination indicates the amount and condition of the tissue precludes evaluation of the cause of death, confirming smoke inhalation or excluding the presence of a gunshot wound.

**Conclusion:** The presence of smoke in the airway past the level of the vocal cords and the presence of an elevated blood CO saturation are indicative of smoke inhalation. No potentially lethal injuries unrelated to the fire are identified.

**Cause of death:** Smoke Inhalation, thermal burns.

**Manner of death:** Homicide.

### **MC 3–Floyd Houtman**

Mr. Houtman, a 61 year old Black man (DOB 11/26/31), was recovered from the stairway at the rear of the chapel. A rifle stock was adjacent to the body. He was found in the proximity of three other men, all of whom had evidence of smoke inhalation. Two of these men died of smoke inhalation/thermal burns and the other died of blunt chest injuries.

Moderate decomposition is present.

There is blunt force injury to the chest. The posterior right 4-6 ribs are fractured. A “considerable amount” of clotted blood is present in the right chest cavity. The exact nature of the blunt force injury is not apparent.

There is evidence of smoke inhalation. The proximal trachea is absent due to fire. The distal trachea, mainstem bronchi and intrapulmonic airways contain a small amount of soot. The blood CO saturation is reported as 3.75%.

There is global charring with absence of the lower extremities, pelvis and portions of the skull.

Natural disease processes include arteriosclerotic severe narrowing of the coronary arteries (left anterior descending coronary artery narrowing 95% and right coronary artery narrowing 85%). The left ventricle of the heart is probably heavier than normal (hypertrophic).

No evidence of a gunshot wound is seen.

Toxicologic evaluation demonstrates the presence of cyanide (0.16 mcg/ml) in the blood. The source of the cyanide can be decomposition and/or inhaling products of combustion.

Conclusion: His chest injury was sustained while he was alive as evidenced by the “considerable quantity” or “significant quantity” of clotted blood in his right chest cavity. The presence of smoke in the portions of the airway within the lung tissue indicates smoke inhalation. His pre-existing heart disease would make him more susceptible to the asphyxiating effects of smoke inhalation as well as to the effects of the chest injury. The fire most likely played some role in his death, either being a factor in his sustaining the chest injury or via smoke inhalation.

Cause of Death: The major factor in causing death is the blunt injury to the right chest. Arteriosclerotic heart disease and smoke inhalation may have contributed to his death.

Manner of Death: Homicide.

## **MC 4—Scott Sonobe**

Mr. Sonobe , a 36 year old Asian man (DOB 11/26/57), was recovered from the area of the stairwell at the rear of the chapel. Two handguns were adjacent to the body. He was found in the proximity of three other men, all of whom had evidence of smoke inhalation. Two of these men died of smoke inhalation/thermal burns and the other died of blunt chest injuries.

There is evidence of smoke inhalation. The proximal airway is absent due to fire. The distal trachea and mainstem bronchi contain a mild-moderate amount of soot. The blood CO saturation is reported as 15%.

There is global charring. Heat fractures are present. Most of the extremities are absent. There is extensive destruction of the chest and abdomen including the portions of the viscera. The heart is relatively intact and shows no evidence of injury.

No firearm injuries are identified. A firearm injury involving the chest/abdomen cannot be definitively excluded due to the effects of the fire.

Toxicologic evaluation demonstrates the presence of cyanide (0.32 mcg/ml) in the blood. The source of the cyanide can be decomposition and/or inhaling products of combustion.

Conclusion: The cause of death is indicated by the evidence of soot deposition coupled with the lack of any other lethal injury unrelated to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 5–Douglas Martin**

Mr. Martin is a 42 year old Black man (DOB unknown) who was found in the area of the stairway at the rear of the chapel. A rifle and handgun were adjacent to the body. He was found in the proximity of three other men, all of whom had evidence of smoke inhalation. Two of these men died of smoke inhalation/thermal burns and the other died of blunt chest injuries. Mr. Martin's daughters were found in the area of the hallway (MC 26) and concrete bunker (MC 50/61).

There is evidence of smoke inhalation. The proximal trachea is absent due to fire. A 4 inch segment of distal trachea, mainstem bronchi and the portions of the airway within the lung tissue contain soot and debris. The esophagus and stomach are intact and contain soot/debris. No CO is reported in the blood.

There is global charring. Much of the extremities and torso are absent. The viscera is charred and cooked. Heat fractures are present.

No firearm injuries are identified. The presence of a lethal gunshot involving the head, chest or abdomen can be reasonably excluded even though there is extensive fire damage involving these areas.

Toxicologic evaluation demonstrates the presence of cyanide (0.25 mcg/ml) in the blood and urine (0.60 mcg/ml). The source of the cyanide can be decomposition and/or inhalation of products of combustion.

Conclusion: The soot within the lung tissue and within the stomach indicate smoke inhalation even in the absence of CO in the blood. The reason the blood CO saturation is not elevated is not apparent. There are a number of reasons that smoke inhalation can occur in the absence of elevated blood CO saturation. There are no lethal injuries identified that are unrelated to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## Communication Room

Three men were found in the area of the communication room. Two of these men died of gunshot wounds that could have been self-inflicted. The cause of death of the other man cannot be determined; however, a gunshot wound is a reasonable possibility. Firearms were found in proximity to the bodies. The gunshot wounds were caused by low velocity projectiles and were not caused by the high velocity rifles that were found in this area. These men were struck after death by hand grenade fragments.

### **MC 6–Mark Wendel**

Mr. Wendel, a 37 White man (DOB 11/18/55), was recovered along with 2 other men in the communication room area. The other two men died of gunshot wounds of the head that are consistent with having been self-inflicted.

There is moderate decomposition. Charring is widespread and there is extensive loss of tissue.

There is no evidence of smoke inhalation. No soot is identified in the airway and no carbon monoxide is demonstrated in the blood.

There is extensive fire-related destruction of the head which prevents adequate examination to identify or exclude the presence of an injury unrelated to the fire. A gunshot wound involving the head cannot be excluded.

Two exploded hand grenade magnetic fragments penetrated the front of the stomach. These fragments were not associated with defined wound tracks or with hemorrhage indicating that they penetrated the body after death. Both of the other bodies found in this area also had been struck by grenade fragments after death.

Toxicologic evaluation demonstrates the presence of cyanide (0.56 mcg/ml) in the blood. The source of the cyanide is consistent with decomposition.

Conclusion: The cause of Mr. Wendel's death cannot be determined. I suspect Mr. Wendel died from a gunshot wound of the head. No other cause of death is evident and there is no evidence that Mr. Wendel inhaled smoke. The other men (MC 7 and MC 8) found in this area died of gunshot wounds to the head and both of these men have evidence of smoke inhalation.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

## MC 7–Steven Schneider

Mr. Schneider, a 43 year old White man (DOB 10/16/49), was recovered along with 2 other men from the area of the communications room. An assault rifle was adjacent to the body. One of the other men died of a gunshot wound to the head. The cause of death of the other man cannot be determined but a lethal gunshot wound is suspected.

The internal organs are relatively well preserved.

There is a gunshot wound perforating the head. The gun was discharged with the muzzle in the mouth. The entry site is via the posterior palate. The track in this area is obscured by the effects of heat. The bullet passed upward and backward through the base of the skull (sphenoid body demonstrates internal beveling) where there is deposition of soot, brain (including the brainstem) to impact the skull in the upper occipital area and exit through a right parietal externally beveled defect (inner surface 13 mm diameter). The exit site edges are not charred. No bullet fragments are identified. A gunshot primer residue test failed to demonstrate antimony (exact site of sampling not specified). Testing for lead and/or barium was not performed. The wound features are those of a low velocity projectile. The wound was not caused by the assault rifle that was laying adjacent to the body. No other lethal injuries sustained prior to death are identified.

There is generalized charring of the torso along with portions of the skull. The distal extremities are absent as are portions of the chest/abdominal wall. There is focal charring of the viscera. The brain is markedly altered by heat.

No soot is identified in the airway. The blood CO saturation was reported as 35%. It cannot be definitively established that the measured CO saturation accurately reflects the antemortem CO and is not an artifact of decomposition (see toxicology section discussion). However, the reported elevated CO saturation probably reflects antemortem CO elevation because the analysis was performed on blood and the body was relatively well-preserved.

A relatively small amount of blood (<100-200 ml) was described in the pleural cavities. The source of this blood is not apparent. No intrathoracic injuries unrelated to the fire were described.

There were multiple rectangular magnetic metallic fragments recovered from the superficial and deep soft tissues of the right lateral and anterior abdomen, left hip and anterior pelvis. The fragments appear to represent portions of a hand grenade. No visceral injuries are ascribed to these fragments. The fragments were associated with minimal or no hemorrhage. The injuries caused by the grenade appear to have been sustained after he died. Both of the other bodies found near this man had also been struck after death by grenade fragments.

Toxicologic evaluation demonstrates the presence of cyanide in the blood (1.18 mcg/ml). The source of the cyanide can be decomposition and/or inhaling the products of combustion. The ethanol in the blood (0.09 gm%) and urine (0.05 gm%) is consistent with postmortem production.

Conclusion: The gunshot wound was sustained when the firearm was discharged while the muzzle of the gun was in the oral cavity. The gunshot wound would have been immediately incapacitating and rapidly lethal since it passed through the brainstem. The entry site location, range of fire (intraoral discharge) and direction and track of the bullet are typical of those seen in self-inflicted gunshots. Although most intraoral gunshot wounds are suicidal in nature, they may be sustained in a homicidal fashion. In this scenario, the possibility of a consensual execution (suicide by proxy) or an execution involving prior restraint of the decedent should be considered. Suicide or consensual execution seems more likely given the presence of at least one other firearm death, and probably two, in the same area (assuming the injuries were received in the area in which the bodies were found) having a contact/near-contact gunshot wound entering through the forehead.

Cause of Death: Gunshot Wound of Head

Manner of Death: Undetermined (Suicide or Homicide).

## **MC 8–Vernon Howell (David Koresh)**

Mr. Howell (Koresh), a 33 year old White man (DOB 8/17/59), was found in the communication room area along with two other men. A high power rifle was adjacent to the body. One of the other men died of a gunshot wound to the head and the other man's cause of death is undetermined but I suspect he also had a gunshot wound of the head.

The internal organs are “essentially well preserved” but there is “variable degree of postmortem decomposition.”

There is a perforating gunshot wound of the head that entered through the lower forehead slightly to the right of the midline. The underlying skull defect is internally beveled and has soot deposited on the bone. Although the skin is charred, the bone is not charred. Antimony and lead were demonstrated in this area. Gunpowder was identified in the soft tissues of the forehead. The bullet passed backward through the skin, skull and brain to exit the occipital bone creating an externally beveled defect below and to the right of the occipital protuberance. The gunshot is associated with fractures of the calvarium and base of the skull. The gunshot-related injuries are associated with the presence of a large amount of blood in the airway. The range of fire is contact/near-contact. The range of fire, location of the entry site and the bullet track and path demonstrated in this Davidian are commonly seen in self-inflicted gunshot wounds of the head. However, a similar wound could be inflicted by someone else (homicide).

There is a healing gunshot wound of the pelvis that was apparently sustained on February 28, 1993. Granulation tissue and scar tissue which are indicative of healing and are consistent with a wound that was received on the previously indicated date are found within the injured soft tissues. The bullet entered the front 1/3 of the external surface of the left ilium (pelvic bone) and traveled towards the back to exit the posterolateral lower back. The bone has an internally beveled 43 mm displaced chip of bone.

There is evidence of smoke inhalation. Soot is present in the airway. The midtrachea is partially destroyed by fire. However, there is dense soot described in the small airways. Microscopic examination of lung tissue reportedly also demonstrates the presence of soot. The blood CO saturation is reported as 24%.

Global charring is present. There is extensive destruction of the extremities. The abdomen and posterior right chest wall are destroyed and the chest/abdomen contents are focally charred. The burning of the skull occurred after the gunshot wound was sustained.

There is a small shrapnel fragment that has penetrated the greater trochanter of the left femur. No hemorrhage is associated with this wound. This wound was caused by a fragment of a hand grenade striking the body after death. The other two men found in this area also had postmortem grenade shrapnel injuries.

Toxicologic examination demonstrates the presence of ethanol in the blood (0.1 gm%) and bile (0.14 gm%) which is consistent with postmortem production.

DNA studies performed on the bodies recovered from the complex indicate to a reasonable degree of probability that David Koresh fathered at least 12 of the children who died. These include the Summers fetus (MC 31B/58), Dayland Little (MC 33), Little fetus (MC 47C), Pages Gent (MC 64), Chanel Andrade (MC 62), Star Howell (MC 67-1), Cyrus Howell (MC 67-2), Bobbie Koresh (MC 67-5/69), Hollywood Sylvia (MC 67-4), Mayannah Schneider (MC 70/51A) and the Jones twins (MC 63 and MC 73). Each of these children, including the two that were unborn, were found in the concrete bunker.

Conclusion: The lethal injury is the gunshot wound of the head. The extent of the damage indicates the gunshot wound of the head was caused by a low velocity projectile and excludes a high velocity gunshot wound. This man was also breathing when he was exposed to the smoke from the fire. At the time he sustained the lethal gunshot wound to the head he already had a gunshot wound involving the pelvis that had been present since February 28, 1993.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Undetermined (Suicide or Homicide).

## **Kitchen / Serving Area**

There were twelve adults found in the kitchen/serving area. Two of the twelve persons found in this area were sisters. Both died from the effects of the fire. Eight of these persons succumbed from the fire and three died of gunshot wounds. At least one of the firearm injuries is consistent with being self-inflicted. The cause of death of one person in this area cannot be determined. One person was struck after death by a hand grenade fragment.

### **MC 9–Clifford Sellors**

Mr. Sellors, a 33 year old White man (DOB 3/28/60), was recovered from the kitchen/serving area. There were 11 other persons found in this area. Some of the decedents in this area died of the effects of the fire while others had sustained lethal gunshot wounds.

There is evidence consistent with smoke inhalation. The CO saturation is reported as 66% in the clotted blood submitted for analysis. The airways could not be assessed for the presence of soot since the trachea and other portions of the pulmonary system are incinerated.

Global charring is present with incineration of the extremities and the head except for extremely rudimentary fragments of the skull base. Charred fragments of the posterior portion of the brain, midbrain and medulla were present. Few visceral organs were present. These tissues demonstrated the effects of heat but advanced decomposition was not described. No injuries to the heart or liver were identified. No firearm injuries were identified. However, gunshot wounds involving the head or portions of the chest/abdomen cannot be excluded.

Toxicologic evaluation demonstrates the presence of cyanide in the blood (0.25 mcg/ml) and urine (0.35 mcg/ml) which is consistent with decomposition or the inhalation of smoke. The ethanol that was demonstrated in the blood (0.01 gm%) and urine (0.02 gm%) is consistent with postmortem production.

Conclusion: The CO detected in the clotted blood submitted for toxicologic evaluation probably reflects antemortem elevation of the blood CO saturation. Decomposition of this specimen does not seem to be advanced enough to account for a completely false positive laboratory result. No lethal injuries unrelated to the fire are identified. I do not see any compelling reason to believe that there was a gunshot wound of the head or portions of the chest/abdomen although gunshot wounds to these areas cannot be categorically excluded. The three persons in this area who definitely had gunshot wounds were clustered together. Mr. Sellors was near this group of three persons but did not constitute a portion of the cluster. On balance, I believe Mr. Sellors' death was most likely caused by the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 10–Sonia Murray**

Ms. Murray, a 30 year old Black woman (DOB 8/18/62), was recovered from the kitchen/serving area along with 11 other persons. Some of the decedents in this area died due to the effects of the fire and others had sustained lethal gunshot wounds. She was found immediately adjacent to MC 9 and did not form a portion of the cluster of bodies with definite gunshot wounds.

There is moderate decomposition. Global charring is present. Portions of the extremities are absent. Postmortem fractures of the skull are present. The brain is cooked.

There is evidence of smoke inhalation. The tracheobronchial system contains mild-moderate soot. The CO saturation in a sample of clotted blood is reported as 79%.

There appears to be a pre-fire fracture of the margin of the right temporal bone. The right middle cranial fossa was noted to contain a “significant quantity of clotted blood.”

No gunshot wounds are identified. However, a gunshot wound involving the head cannot be excluded due to the fire-related damage.

Toxicologic evaluation indicates the presence of cyanide in the blood (0.26 mcg/ml) which could have arisen due to decomposition or the inhalation of smoke. The ethanol in the blood (0.01 gm%) is consistent with postmortem production.

**Conclusion:** The presence of soot in the lower portions of the airway indicates she was breathing when she was exposed to the smoke from the fire. Elevation of the CO saturation measured in a sample of clotted blood is probably related to smoke inhalation. I think it is unlikely that the effects of decomposition within a specimen of clotted blood would account for the observed CO. In addition to injuries caused by the fire, she also appears to have a fracture of the right temporal bone that was not directly caused by the fire. There was clotted blood in the floor of the skull adjacent to the fractured area which indicates she was alive when she received the head injury. The nature of her head injury is not ascertainable. Fire-related damage prevents excluding the presence of a gunshot wound involving the head; however, the extent of the damage reasonably excludes a high velocity gunshot. I cannot determine whether or not she was conscious for some period of time while she was breathing the smoke or whether she was conscious when she sustained the head injury.

**Cause of Death:** Smoke Inhalation, thermal burns. Antemortem head trauma may have contributed to death.

**Manner of Death:** Homicide.

## **MC 11–Sherry Jewell**

Ms. Jewell , a 43 year old White female (DOB 3/10/50), was found along with 11 other persons in the kitchen/serving area. Some of these persons died of gunshot wounds and others died due to the effects of the fire. Ms. Jewell was found across from the 3 persons who had demonstrable gunshot wounds but there was some separation between her and the cluster of these three bodies.

There is moderate decomposition.

There is evidence of smoke inhalation. Soot is present in the airway. The blood CO saturation is reported as 15%.

Global charring is present. The head, extremities and portions of the torso are missing.

No evidence of a gunshot injury is seen. No clotted blood was identified in the airway. A gunshot wound of the head cannot be excluded due to the fire damage.

Decomposition and/or smoke inhalation can account for the cyanide found in the blood (3.5 mcg/ml) and urine (3.3 mcg/ml). The ethanol found in the urine (0.01 gm%) is consistent with postmortem production.

Conclusion: Soot in the lower portion of the airway is indicative of smoke inhalation. No lethal injuries unrelated to the fire are demonstrated. However, the extensive fire damage prevents excluding a gunshot wound of the head. I do not see any compelling evidence to suggest the presence of a gunshot wound. The lack of clotted blood within the airway does offer some support for excluding a large caliber gunshot wound of the head. On balance, I believe her death was most likely caused by the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 14–Margarida Vaega**

Ms. Vaega, a 47 year old Asian woman (DOB 3/17/46), was found in the kitchen/serving area along with 11 other persons. Some of these persons died due to the fire and others died of demonstrable gunshot wounds. Ms. Vaega's body was not a part of the cluster of the three bodies exhibiting gunshot wounds.

Decomposition is relatively mild.

Evidence of smoke inhalation includes minimal soot within a small fragment of the right lung lower lobe and a reported blood CO saturation of 33%.

There is global charring. The body is fragmented and there is loss of viscera. The skull is absent.

There is no evidence of a gunshot wound. However, the fire damage does not allow definitive exclusion of gunshot wounds of the head and chest/abdomen.

The presence of cyanide in the blood (0.51 mcg/ml) can be due to decomposition or smoke inhalation. Postmortem production can account for the ethanol found in the blood (0.02 gm%).

Conclusion: Soot in the lower portions of the airway indicates smoke inhalation. Elevated CO saturation in the clotted blood submitted for analysis is also likely related to smoke inhalation. The extent of decomposition does not appear to be sufficient to account for a completely false positive CO analysis. I do not see any compelling evidence of a gunshot wound. Her remains were not found immediately adjacent to a decedent having a demonstrable gunshot wound. However, the extent of the thermal damage prevents definitely excluding the presence of a gunshot wound. On balance, I believe her death was most likely the result of the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 15–Adebowalo Davies**

Mr. Davis, a 30 year old Black man (DOB 10/30/62), was found in the kitchen/serving area along with 11 other persons. Some of these persons died of gunshot wounds and others succumbed to the effects of the fire. Mr. Davis was not found within the cluster of persons with definite gunshot wounds of the head.

There is extensive fire damage to the respiratory system. “Only a small quantity of soot” is described in the lung tissue. No carbon monoxide is found in the sample of clotted blood submitted for analysis.

There is extensive charring of the body. The recovered remains consist primarily of a charred torso/pelvis and some remnants of skull base.

There is no evidence of a gunshot wound. However, a gunshot injury of the head cannot be excluded due to the fire damage.

Cyanide found in the blood (0.37 mcg/ml) and urine (0.51 mcg/ml) is consistent with decomposition and/or smoke inhalation.

Conclusion: Although it may be related to breathing smoke, I am not sure that the small quantity of soot described within the lung tissue is proof of smoke inhalation in light of the extensive thermal damage involving the respiratory structures and the lack of demonstrable CO in the blood. In addition, the extent of the fire damage prevents excluding gunshot or other injury involving the head. I believe the cause of death is best left undetermined since a lethal injury cannot be definitively demonstrated.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

## **MC 16--Vanessa Henry**

Ms. Henry, a 19 year old Black woman (DOB unknown), was found in the kitchen/serving area along with 11 other decedents. Some of these persons died of gunshot wounds and others died of the effects of the fire. Ms. Henry was not found within the cluster of persons having demonstrable firearm injuries. Her body is found reasonably close to the body of Diana Henry (MC 18) and in the area of the side of the room near the stairway where Stephen Henry (MC 21) and Phillip Henry (MC 22) were found. Her mother, Zilla Henry (MC 28), was found in the hallway .

Decomposition is relatively mild. There is global charring. The skull is fragmented. The forehead and much of the face is absent. The reconstructed bone fragments from the skull show no evidence of a firearm injury. The extremities are missing. The chest/abdominal wall is missing except for the upper left chest.

The airway is intact except in the region of the midtrachea. A small amount of soot is present within the airway. The blood CO saturation is reported as 29%.

There is no evidence of any gunshot wound.

Conclusion: Soot deposition in the lower airway is evidence of smoke inhalation. The elevated CO saturation demonstrated in the blood also supports smoke inhalation. The extent of decomposition does not seem sufficient to account for a false positive blood CO analytic result. No lethal injuries unrelated to the fire are demonstrable.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 17--Sandra Hardial**

Ms. Hardial, a 27 year old Black woman (DOB 2/9/66), was found in the kitchen/serving area along with 11 other persons. Some of these persons died of gunshot wounds and others succumbed to the effects of the fire. Ms. Hardial was not found within the cluster of bodies having demonstrable firearm injuries.

There is mild decomposition

There is evidence of smoke inhalation. Soot is present in the tracheobronchial tree. The blood CO saturation is reported as 38%.

There is global charring. The remains consist primarily of a torso with much loss of tissue including the chest wall. The lungs are charred. There is loss of substantial portions of the skull. The left middle fossa and the petrous ridge of the skull are present.

No gunshot wounds are identified. Gunshot wounds of the head and chest/abdomen cannot be excluded because of the fire damage.

The cyanide found in the blood (0.51 mcg/ml) and bile (0.09 mcg/ml) is consistent with decomposition and/or smoke inhalation. Postmortem production can account for the ethanol found in the bile (0.01 gm%).

Conclusion: The smoke within the lower airway indicates smoke inhalation. The elevated blood CO saturation is also likely due to smoke inhalation in that the extent of decomposition does not seem sufficient to account for a false positive CO analysis. No lethal injuries unrelated to the fire are demonstrable. There is no compelling evidence suggesting the presence of a firearm injury; however, the extent of fire damage prevents definitively excluding a gunshot involving the head or chest/abdomen.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 18--Diana Henry**

Ms. Henry, a 28 year old Black woman (DOB unknown), was found in the kitchen/serving area along with 11 other decedents. Some of these persons died of gunshot wounds and others succumbed to the effects of the fire. Ms. Henry was not found within the cluster of persons having demonstrable gunshot wounds. A gun was adjacent to her body. She was found in the same general area as Vanessa Henry (MC 16). Her body was recovered near the wall of the room closest to the stairway in which Stephen (MC 21) and Phillip Henry (MC 22) were found. Her mother, Zilla Henry (MC 28), was found in the adjacent hallway.

The proximal trachea is absent. The distal trachea/mainstem bronchi has a small amount of soot. The right lung is congested and a small amount of soot is present in the bronchi. The blood CO saturation is reported as 26.5%.

There is global charring. The right anterior chest/abdomen and portions of the pelvis are missing. Extensive tissue loss is seen involving the extremities. The calvarium, brain (except for a portion of the medulla) and portions of the facial bones and base of the skull are absent. A portion of the right mandible and a portion of the base of the skull remain.

No gunshot wounds are identified. A gunshot wound of the head cannot be excluded because of the fire damage.

A fragment of magnetic metal consistent with a part of a hand grenade was recovered along with other materials from "under the body and from the residual skull." There is no evidence of an antemortem injury caused by a grenade.

The cyanide found in the blood (0.12 mcg/ml) could be due to decomposition or smoke inhalation. Postmortem production can account for the ethanol found in the blood (0.02 gm%).

Conclusion: The soot in the lower portion of the airway represents smoke inhalation as does the elevated CO saturation demonstrated in the blood. I think it is unlikely decomposition was advanced enough to account for a false positive CO analysis. No lethal injuries unrelated to the fire are demonstrated. However, fire damage prevents definitive exclusion of a gunshot wound to the head. There is no compelling evidence to suggest that a gunshot wound is present.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 19–Beryl Teresa Nobrega**

Ms. Nobrega, a 48 year old Black woman (DOB 2/15/45), was found in the kitchen/serving area with 11 other persons. Some of these persons died of gunshot wounds and others succumbed to the fire. She was not found within the cluster of persons having demonstrable gunshot wounds to the head.

There is evidence supporting the presence of smoke inhalation. The proximal trachea is absent. The 9 ½ inches of mid-distal trachea contains soot. Some of the muscle tissue is described as being red. The CO saturation is reported as 29% (liver) and 35% (spleen).

There is global charring. The base of the skull and the calvarium to the level of the squamosal sutures is present. The brain is charred but appears reasonably intact and no antemortem injury is discerned.

No evidence of gunshot injury is identified.

Toxicologic evaluation demonstrates the presence of cyanide in the urine (0.15 mcg/ml). The cyanide could be related to decomposition and/or smoke inhalation.

Conclusion: The presence of soot in the long segment of residual trachea probably reflects some smoke inhalation, although passive deposition cannot be entirely excluded. Smoke inhalation is further supported by the laboratory detection of CO in liver and spleen tissue (see toxicology discussion regarding CO interpretation). The tissues appear reasonably well preserved. The anthropology description of the muscle tissue as being “red” would be consistent with binding of CO to the muscle forming carboxymyoglobin. On balance, I believe the evidence indicates smoke inhalation. This interpretation is further supported by the lack of any demonstrable lethal injury unrelated to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 43--Lisa Farris**

Ms. Farris, a 24 year old White woman (DOB 9/18/68), was found in the kitchen/serving area along with 11 other decedents. Some of these persons died of gunshot wounds and others succumbed to the fire. Ms. Farris was found immediately alongside of 2 other persons having lethal gunshot wounds.

There is a gunshot wound perforating the head. There is a 23 x 12 mm entry site of the squamosal portion of the left temporal bone immediately posterosuperior to the temporomandibular joint. The bullet exited through the right frontal bone (20 mm externally beveled defect) slightly anterior to the coronal suture. The range of fire cannot be determined due to the effects of burning and fragmentation.

There is extensive fire damage involving the respiratory tract. The proximal airways are incinerated and the lungs are burned. There is evidence consistent with smoke inhalation. The posterior lung small airways “appear blackened due to soot deposition.” The blood CO saturation is reported as 41%.

There is global charring. The torso is extensively charred with extensive loss of the tissues of the extremities.

Decomposition and/or smoke inhalation could account for the cyanide detected in the blood (0.25 mcg/ml). The ethanol measured in the blood (0.02 gm%) is consistent with postmortem production.

Conclusion: There is a gunshot wound of the head having the characteristics of a low velocity projectile. The features of the wound exclude a high velocity gunshot. The entry site (temporal area) is a common entry site for a self-inflicted injury. Self-inflicted gunshots entering the left temple are less common than those entering the right temple but nevertheless they do occur. The fire damage in the area of the entry site prevents determining the muzzle-scalp distance. Thus, no opinion can be rendered as to whether or not this injury could have been self-inflicted. On balance, I believe there is sufficient evidence to indicate smoke inhalation. It cannot be ascertained whether or not she was conscious when she began breathing smoke.

Cause of Death: Gunshot Wound of the Head. Smoke inhalation may have hastened death.

Manner of Death: Undetermined (Suicide or Homicide).

## **MC 44--Jeffrey Little**

Mr. Little, a 31 year old White man (DOB 7/13/61), was found along with 11 other decedents in the kitchen/serving area. Mr. Little was found in a cluster with two other persons who had gunshot wounds. Other decedents in the kitchen/serving area succumbed to the fire.

There is a wound of the left chest. A 70 x 66 mm perforation is present between the left 5-7 ribs. The adjacent ribs are fragmented. A large amount of blood is present in the left chest, across the mediastinum and to the right chest. The esophagus, stomach, pericardium and heart are not injured. No gunshot defects are noted in the lungs. Blood is present within the airways. Fire has destroyed most of the right chest wall. The range of fire cannot be determined.

There is a 4 x 4 x 2 mm defect in the left anterior iliac crest. A 9 x 3 x 2 mm defect of the lateral left ilium is present. These do not appear to be antemortem firearm injuries. The exact cause of these defects is not apparent.

There is global charring with tissue loss. The right portion of the skull is absent. The left aspect of the skull appears intact. The intrapulmonary airways contain soot. The blood CO saturation is 17.5%.

The cyanide in the blood (0.25 mcg/ml) and bile (0.04 mcg/ml) is consistent with decomposition or the inhalation of smoke. Decomposition can also account for the ethanol detected in the blood (0.12 gm%) and bile (0.01 gm%).

Conclusion: Although a discrete wound track cannot be identified, overall, the findings support a lethal projectile wound of the chest. The wound is consistent with a low velocity gunshot or some other projectile such as a fragment from one of the hand grenades. The lack of any other evidence of a grenade injury involving Mr. Little and the presence of other Branch Davidian decedents with gunshot wounds in proximity to this person makes it most likely that the observed injury is a low velocity gunshot with the corresponding entry/exit site obliterated by postmortem burning. No evidence of contusion or laceration of the adjacent thoracic organs is reported. I would expect more extensive damage if a high velocity firearm projectile was responsible for the injuries. I also think it is unlikely that the chest defect is entirely an artifact of burning. The perforation through the chest wall, fragmentation of adjacent ribs and the distribution of the hemorrhage within the chest reasonably excludes blunt force as the causative mechanism of injury. No assessments of range of fire or whether the injury could have been self-inflicted are possible due to fire damage.

In addition to the gunshot wound, there is evidence of smoke inhalation. I cannot ascertain if Mr. Little was conscious when he began to inhale smoke from the fire.

Cause of Death: Gunshot Wound of Chest.

Manner of Death: Undetermined (Homicide or Suicide).

## **MC 45--Mary Borst**

Ms. Borst, a 39 year old White woman (DOB 9/13/43), was found in the kitchen/serving area along with 11 other persons. She was found clustered with two other bodies having gunshot wounds. Some of the other persons in the kitchen/serving area succumbed to the fire.

There is a gunshot wound of the chest/abdomen. The wound track is via the apex of the left lung lower lobe, left lung upper lobe perihilar lung, basilar cardiac left ventricle, diaphragm, esophagogastric junction/proximal stomach, inferior left lobe of the liver. The gunshot damage is associated with a significant amount of hemorrhage. The entry and exit sites are not seen due to the effects of fire. The direction of fire is not able to be definitively established. The autopsy report suggests the direction is forward based on the size of the wound track at the lung/heart. However, this opinion does not appear to take into account the different physical characteristics of these tissues.

A defect is described in the left occipital bone lateral to the midline and superior to the external occipital protuberance. The defect is circular and externally beveled. If this is a gunshot exit site, the likely entry site would be in the right frontal bone which is too fragmented to allow identification of an entry defect. No wound track is identified within the brain; however, the brain has been damaged by the fire.

There is a fracture of the anterior left third rib associated with minimal hemorrhage in the adjacent soft tissue. A plastic disc is present in the soft tissue. Other high velocity munitions are present. The left third rib defect and the plastic appear to be related to postmortem penetration by a cooked off cartridge.

There is a non-displaced minimal fracture at the fifth cervical vertebra. Minimal blood is associated with this injury. This is probably also postmortem.

No soot is described within the intact airway. The blood CO saturation is reported as 37.5%.

Global charring is present. The extremities and portions of the pelvis are absent. There is extensive skin and soft tissue loss.

There is an old fracture of the mandible which had been surgically wired.

The ethanol found in the bile (0.03 gm%) is consistent with postmortem production. No ethanol was found in the blood.

Conclusion: She was alive when she received the gunshot wound of the chest/abdomen as evidenced by the extensive hemorrhage from the organs/tissues damaged by the gunshot. The extent of the organ damage is characteristic of a low velocity projectile. I would expect more tissue disruption if the wounding was done by a high velocity projectile. Fire damage prevents identifying the entry/exit sites, range of fire and whether or not the injury could have been self-inflicted.

I believe she most likely also had a gunshot wound that entered the front of her head and exited through the defect identified in the back of the head. Fire damage prevents identifying the entry site, the range of fire and whether or not the wound could have been self-inflicted. The wound has the features of a low velocity gunshot and does not have the expected features of a high velocity projectile.

Although persons having more than one gunshot are most often shot by someone else, multiple self-inflicted gunshots occasionally occur. If her chest/abdomen wound was sustained first, there is nothing about the vital organ damage that would preclude these wounds from being self-inflicted. Based on the expected path of the bullet through the head, I would expect the gunshot wound of the head to be immediately incapacitating. As noted above, no assessment of the possibility of either wound being self-inflicted is possible since the entry sites are not available for examination.

It is not entirely clear if there was antemortem inhalation of smoke or if the postmortem CO measurement is a false positive result due to decomposition. However, the amount of decomposition does not seem to be to the extent to account for a false positive blood CO analysis. In addition, the other persons in this area having gunshot wounds demonstrate evidence of smoke inhalation. On balance, I think the elevated CO saturation is due to smoke inhalation.

Cause of Death: Gunshot wounds of Head and Chest/abdomen.

Manner of Death: Undetermined (Homicide or Suicide).

**MC 46--Human bone**

No further information is available about this isolated specimen.

## **Kitchen--Stairway**

The remains of three men were recovered from the area of the kitchen stairway. Two of these men are brothers. All three of these men died of gunshot wounds. The wounds of two of the men are consistent with being self-inflicted. The other man's wounds were likely received at the hands of another Davidian. No evidence of smoke inhalation is seen in two of the men. Two of these men were struck after death by hand grenade fragments.

### **MC 20--James Riddle**

Mr. Riddle, a 32 year old White man (DOB 4/25/60), was found in the area of the kitchen stairway. He was found along with two other men. Lethal gunshots are present in all these men.

There is advanced decomposition.

There is a gunshot wound of the head of contact/near-contact range. The entrance is in the anterior left forehead. Soot is present on the margin of the internally beveled 3/8 inch defect. Barium, antimony and lead are identified on the wound margin. The wound track is backward and downward. The bullet passed through the left cerebrum and cerebellum to exit the left occipital area 1 inch below and 2 inches to the left of the nuchal crest. Residual hemorrhage is present in the region of the wound track through the head even though the exact wound track is obscured by the effects of decomposition, insect infestation and fire. Skull fractures associated with the gunshot are present. The wound is consistent with being self-inflicted; however, a gunshot at the hands of another person cannot be excluded.

No evidence of smoke inhalation is noted. There is no soot identified in the airway and no CO is found in the blood.

There are shrapnel injuries consistent with a postmortem grenade explosion. The anterior right second rib has an internally beveled defect with a metallic fragment in the adjacent soft tissue. Other fragments were reportedly recovered from the right chest wall, left posterior chest wall, superficial aspect of the right liver and the clothing at the left elbow.

Postmortem production accounts for the ethanol found in the urine (0.02 gm%) and bile (0.03 gm%).

Subsequent to the original examination of this person's remains, the remains were examined by a forensic pathologist who was retained by the decedent's family or their representative. This expert indicated the presence of displacement of the 2-5 lumbar vertebral spinous processes, portions of the sacrum at the innominate articulation, right femur greater trochanteric tuberosity, left innominate ala, distal left humerus, some left ribs, some right ribs and the lateral portion of the right clavicle. Some of the avulsed areas show burn marks and others do not. The portions of the skull involved by the gunshot defects were not available for re-evaluation. This expert opined that the skeletal findings are "consistent with a military tank having torn the body apart" and that the avulsion of bones can be caused by "a military tank driving over a body or a portion of the body."

I do not agree with this expert's opinion that the observed injuries are consistent with having been caused by a military tank. Photographs of the body at the scene and the subsequent examination at the morgue do not indicate the presence of the extensive crush injuries that I would expect if this person had been struck or run over by a military tank or other tracked vehicle. In my opinion, the findings are not consistent with having been struck or run over by a military tank or other tracked vehicle.

Conclusion: There is a lethal contact/near-contact gunshot wound of the head that is consistent with being self-inflicted. However, a gunshot at the hands of another person cannot be excluded. No other definite antemortem injuries are demonstrated. There is no evidence of smoke inhalation. Shrapnel from an exploding hand grenade struck the body after death.

Cause of Death: Gunshot wound of the head.

Manner of Death: Undetermined (Suicide or Homicide).

## **MC 21--Stephen Henry**

Stephen Henry, a 26 year old Black man (DOB 10/26/66), was found along with two other men in the area of the kitchen stairway. One of the other men was his brother Phillip Henry (MC 22). A firearm magazine accompanies the body. A wrist watch was found near the left shoulder. The watch stopped at 12:28. Lethal gunshot wounds were found in all the men in this area. Vanessa (MC 16) and Diana Henry (MC 18) were found in the kitchen/serving area. Zilla Henry (MC 28) was found in the area of the hallway.

Decomposition is advanced.

There is a contact/near-contact gunshot wound of the head. The entry is in the right anterior forehead. Soot is present on the wound edges. Barium, antimony and lead are identified on the bone at the entry site. The wound track is backward. The bullet passed through the right cerebrum to exit the right occiput creating an externally beveled defect. The wound track through the brain is not apparent due to postmortem liquefaction of the brain tissue. Hemorrhage is present in the subdural space. Skull fractures related to the gunshot are present. The gunshot is consistent with being self-inflicted; however, a gunshot at the hands of another person cannot be excluded.

There is a separate fracture perpendicular to the midline across both parietal bones (103 mm) located 23 mm from the bregma.

There is extensive burning.

No soot is identified in the airways. The blood CO saturation is reported as 24%. It is not clear if the CO is a true reflection of the antemortem CO or if it is a false positive related to the advanced decomposition (see toxicology section discussion regarding the interpretation of CO).

Grenade fragments were recovered from the soft tissues of the legs during the TCMEO autopsy. These fragments are noted in the evidence collection section of the autopsy report. No wound tracks or hemorrhage are described in relation to these fragments.

Toxicologic evaluation demonstrates the presence of ethanol in the blood (0.02 gm%), chest fluid (0.06 gm%) and vitreous (0.01 gm%). The ethanol is consistent with postmortem production.

Mr. Henry's remains were re-examined upon his repatriation to the UK. The UK evaluation identified the right frontal entry defect and the occipital exit site. Determination of the cause of death was deemed to be precluded except to say that it was consistent with a gunshot wound of the forehead. No range determination was possible. A firearms expert indicated the presence of unfired 5.56 mm ammunition, primer units and cast iron grenade fragments in the region of the left thigh. He indicates that the body was lying on or near live cartridges and further indicated that "bearing this in mind, the injury to the head could have been caused by a high velocity rifle bullet fired so as to enter the front of the head and exit from the back of the head" seemingly suggesting that a cooked off unchambered bullet may have perforated the head. He also indicates the possibility that the head wound is the result of the base plug or some "other substantial fragment" of the same grenade that caused the "other" (thigh) injuries.

The TCMEIO observations clarify and refute some of the UK observations/speculations. The range of fire of the bullet that passed through the head is contact/near-contact as evidenced by the soot and primer residue deposited on the bone at the entry site. It would be unlikely that a cooked off unchambered round would create a round entry hole in the bone as seen on the photographs of the skull, leave primer residue in substantial amounts around the entry defect and have sufficient velocity to perforate the head, especially through two relatively thick bones.

Similarly, these features of the entry site are not consistent with a hand grenade fragment. A hand grenade exploded at contact/near-contact range would be associated with more damage to the skull than is present and would not be associated with deposition of gunshot primer components. Additionally, the distribution of the hand grenade fragments in the thigh without any fragments in the chest or abdomen would also make it unlikely that a fragment from the grenade responsible for the thigh fragments would also be responsible for a single fragment perforating the head (notwithstanding the other features of the head wound that exclude any reasonable possibility that is related to a grenade).

Conclusion: There is a lethal gunshot wound of the head that is consistent with being self-inflicted. However, a gunshot would at the hands of another person cannot be excluded. The features of the wound are those of a low velocity firearm and not of a high velocity projectile. The body was struck by shrapnel from a hand grenade after death.

Cause of Death: Gunshot wound of head.

Manner of Death: Undetermined (Suicide or Homicide).

## MC 22--Phillip Henry

Phillip Henry, a 22 year old Black man (DOB 4/26/70), was found in the area of the kitchen stairway. The rubber face portion of a gas mask was present. He was found along with two other men who also died of gunshot wounds. One of these men was his brother Stephen Henry (MC 21). Vanessa (MC 16) and Diana Henry (MC 18) were found in the kitchen/serving area. Zilla Henry (MC 28) was found in the area of the hallway.

There is a penetrating gunshot wound of the upper chest. Although the entry site is not specifically seen, the wound track indicates an entry site in the upper right chest. The wound track is backward, rightward and downward. The wound track is via the anterior right upper ribs, right lung upper lobe apex, right lung upper lobe, posterior right 2-4 ribs (primarily the fourth rib) to come to rest in the right shoulder soft tissue. A brass jacketed bullet (6R) in the .38 caliber family of Chinese Norinco origin was recovered. There is a right hemothorax (500 ml) and a large amount of blood in the tracheobronchial tree. The entry site and wound track are not typical of a self-inflicted wound. This wound appears to have been received at the hands of another person.

There is a perforating gunshot wound of the head. The entry and exit sites are not able to be identified because of the effects of burning. No estimation of the range of fire can be made. The wound track is not evident due to loss of bone and brain tissue. The calvarium is absent above the midtemporal level. There is fracturing of the left temporal bone with complete separation beginning anterior to the mastoid process and dissociating the petrous portion of the temporal bone. The occipital bone fracturing extends to the foramen magnum. This area is not burned. Blood is present in the sphenoid sinuses. The lungs are congested and edematous. In view of the other gunshot, this wound is also probably at the hands of another person.

No evidence of smoke inhalation is seen. No soot is identified in the lungs. No CO is found in the blood.

There is extensive burning.

Decomposition can account for the ethanol found in the blood (0.01 gm%), bile (0.02 gm%) and urine (0.03 gm%). The cyanide in the blood (0.16 mcg/ml) and urine (0.04 mcg/ml) is consistent with decomposition.

The repatriated remains were re-examined in the UK. The UK examination report indicates they were unable to confirm the presence of a gunshot wound of the head since any structures involved by this gunshot were not available for examination. The report also indicates that they did not find any evidence of a right upper torso gunshot wound. It is noted that the rib cage appears complete and no gunshot-related bony injury is observed. The UK firearms expert indicates no gunshot injury was identified involving bone from "what was left of the chest." The presence of advanced decomposition is noted. It is also noted that the received tissues showed no

evidence of having been subjected to significant heat.

The inability of the UK examiners to confirm the presence of a gunshot wound of the head is obviously related to the lack of adequate tissue from this area for evaluation. The wound track through the visceral organs identified during the initial autopsy was not apparent during the UK exam due to the advanced decomposition of the viscera. However, other observations made in the UK are at odds with the observations made during the initial autopsy. The initial examination indicates the presence of fractures of the right 1-4 ribs. The anthropologist's report indicates these ribs were removed for further examination. There are photographs of radiographs of these ribs after they have been removed. The photographs clearly depict damage to these ribs. In addition, a bullet that had been fired through a gun barrel was recovered from the body. The reports of the initial examination indicate and the photographs confirm that there are extensive fire-related alterations of the body.

Conclusion: There are gunshot wounds of the head and the torso. It cannot be definitively established whether or not the wounds could have been self-inflicted. The range of fire of the wounds cannot be determined. The gunshot entering the upper right chest is not a typical entry site for a self-inflicted gunshot of the chest and was most likely inflicted by another person. The entry site of the gunshot wound of the head cannot be demonstrated. The presence of a gunshot wound of the chest not typical of a self-inflicted wound increases the probability that the head wound was also not self-inflicted. However, self-infliction of either or both wounds cannot be definitively excluded on the basis of the currently available information. On balance, I believe he most likely sustained these injuries at the hands of another person. The wound involving the torso was caused by a low velocity projectile. The nature of the projectile injuring the head cannot be determined; however, there is nothing about the damage to the head that particularly suggests damage by a high velocity projectile. No other significant antemortem injuries are identified. There is no evidence of smoke inhalation.

Cause of Death: Gunshot Wounds of the Head and Chest.

Manner of Death: Homicide.

## **First Floor Hallways**

Six adult women and one teenage female were found in the area of the hallway. Two of the adult women are in-laws. Family members of one of the women were found in the areas of the kitchen. Each of the persons found in the area of the hallway succumbed from the effects of the fire.

### **MC 23--Susan Benta**

Ms. Benta, a 31 year old Black woman (DOB 9/15/61), was found in the area of the first floor hallway. A gun was adjacent to the body. She was found with 6 other women.

The blood CO saturation is reported as 59%. The pulmonary tissues are absent due to fire.

There is global charring with extensive destruction and loss of chest/abdominal tissues.

No evidence of a gunshot wound is present. Although portions of the skull are absent, there is enough of the skull present to reasonably exclude a gunshot of the head. A gunshot of the chest/abdomen cannot be excluded due to the fire damage.

The cyanide detected in the blood (1.9 mcg/ml) can be accounted for by decomposition and/or smoke inhalation.

The repatriated remains were re-examined in the UK. The UK examination indicates the inability to evaluate the cause of death due to the amount and condition of the tissue available for evaluation.

**Conclusion:** The elevated blood CO saturation supports the presence of smoke inhalation. Fire damage prevents evaluation of the lower portions of the airway for soot deposition. No lethal injuries unrelated to the fire are demonstrated, although fire damage prevents excluding a gunshot involving the chest/abdomen. There is no compelling evidence suggesting that a gunshot of the chest/abdomen is present. No lethal injuries unrelated to the fire were definitively established in the other individuals found in this area. On balance, I believe the currently available information indicates she succumbed to the effects of the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 24--Allison Monbelly**

Ms. Monbelly, a 31 year old Black woman (DOB 8/8/61), was found in the area of the first floor hallway. She was found along with 6 other women.

There is global charring with extensive loss of tissue and destruction and distortion of viscera. The head/neck is destroyed.

The pulmonary system is absent. The blood CO saturation is reported as 15%.

The cyanide detected in the blood (0.65 mcg/ml) is consistent with decomposition and/or smoke inhalation.

Gunshot wounds to the head/neck and chest/abdomen cannot be excluded because of the thermal damage.

Conclusion: The reported blood CO saturation supports the presence of smoke inhalation. Fire damage prevents evaluating the lower portions of the airway for soot deposition. No lethal injuries unrelated to the fire are demonstrated. Although gunshot wounds of the head and chest/abdomen cannot be excluded because of fire damage, there is no compelling information suggesting the presence of a gunshot. No lethal injuries unrelated to the fire were definitively established in any of the persons found in this area. On balance, I believe the current information indicates she succumbed to the effects of the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 25--Yvette Fagan**

Ms. Fagan, a 30 year old Black woman (DOB 8/30/60), was found in the area of the first floor hallway. She was found along with 6 other women including her mother-in-law.

The small airways of the right lung contain soot. Most of the trachea and portions of the left lung are absent. The blood CO saturation is recorded as 68%.

Global charring has resulted in extensive tissue loss. Heat fractures are present.

There is a 17 x 14 mm ovoid defect of the right mandible. No fractures are present in this area or internally. This appears to be a postmortem defect.

No evidence of a gunshot is found. Thermal damage precludes definitively excluding a left chest gunshot. There is nothing to suggest the presence of a gunshot involving the left chest.

The cyanide found in the blood (0.14 mcg/ml) is attributable to decomposition and/or smoke inhalation. The bile ethanol (0.01 gm%) is consistent with decomposition.

Conclusion: There is evidence of smoke inhalation. No evidence or suggestion of a lethal injury unrelated to the fire is present.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

### ***MC 26--Martin child***

A teenage Martin woman (15-19 years old) was found in the area of the first floor hallway. She was found along with 6 other women. She was identified as one of the Martin children by DNA analysis. Her father, Douglas Martin(MC 5), was found in the rear of the chapel and her sister was found in the concrete bunker (MC 50/61).

Only the distal trachea is present. Soot, debris and blood are present. The lungs are charred. The blood CO saturation is reported as 38%.

There is global charring with extensive tissue loss. Most of the head is absent. A segment of the basilar skull is present.

No gunshot injuries are observed. A gunshot wound of the head cannot be excluded.

The cyanide found in the blood (0.7 mcg/ml) and bile (0.05 mcg/ml) are consistent with decomposition and/or smoke inhalation. The ethanol in the bile (0.02 gm%) is also consistent with decomposition.

Conclusion: There is evidence supporting smoke inhalation. Fire damage prevents definite assessment of soot deposition within the airway. Although the presence of smoke and debris in the remaining segment of the airway outside the lung tissue could be due to smoke inhalation, I do not think passive deposition of soot into the fire-damaged airway can be definitively excluded. The CO found in the blood does support smoke inhalation. There is no evidence of any lethal injury unrelated to the fire although a gunshot wound of the head cannot be excluded. There is no compelling information suggesting the presence of a gunshot wound. No lethal injuries unrelated to the fire are definitively identified in any of the other persons found in this area. On balance, I believe the evidence indicates she succumbed to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 27--Doris Fagan**

Ms. Fagan, a 60 year old Black woman (DOB 8/13/32), was found in the area of the first floor hallway. She was found along with 6 other women in this area including her daughter-in-law.

The neck is incinerated resulting in the extensive loss of tissue. Soot and debris are present in the mainstem bronchi. The autopsy diagnoses indicates the presence of moderate soot in the tracheobronchial tree. The right lung is charred. The left upper lobe/lingula is absent. The blood CO saturation is reported as 58%.

Global charring is present. Skull fragments, mostly calcined, include parts of the occipital bone, both temporal bones, left parietal bone and sphenoid bone.

Although gunshot wounds of the chest/abdomen and head cannot be definitively excluded, I think a gunshot of one or both of these areas is unlikely based upon the reconstruction of the tissue fragments and no evidence of damage/hemorrhage of the tissue except related to fire.

The cyanide found in the blood (0.23 mcg/ml) is consistent with decomposition and/or smoke inhalation. The ethanol in the urine (0.02 gm%) and bile (0.02 gm%) are consistent with postmortem production.

Her remains were re-examined in the UK upon repatriation. The UK examination indicates an inability to evaluate the cause of death due to the amount and condition of the tissue available for evaluation.

Conclusion: There is evidence supporting smoke inhalation. The soot deposition in the fire damaged airway may be related to passive deposition. The presence of CO in the blood does support smoke inhalation. There is no evidence indicating or suggesting the presence of any lethal injury unrelated to the fire. None of the other persons found in this area had definite lethal injuries unrelated to the fire. On balance, I believe the evidence indicates she succumbed to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 28--Zilla Henry**

Ms. Henry, a 55 year old Black woman (DOB 5/21/37), was found in the area of the first floor hallway. She was found along with six other women. Diana (MC 18) and Vanessa (MC 16) Henry were found in the area of the kitchen/serving area. Steven (MC 12) and Phillip (MC 22) Henry were found in the area of the kitchen/stairway.

The neck structures and lungs are absent. The blood CO saturation is reported as 29%.

There is global charring with extensive tissue loss.

Gunshot wounds of the head and chest cannot be excluded.

The cyanide found in the (0.18 mcg/ml) and urine (0.04 mcg/ml) is consistent with decomposition and/or smoke inhalation. The blood (0.01 gm%) and urine (0.02 gm%) ethanol is consistent with decomposition.

Conclusion: Fire damage prevents assessment of the airway for soot deposition. The blood CO does support smoke inhalation. There is no evidence indicating or suggesting the presence of any lethal injury unrelated to the fire although gunshot wounds of the head and chest cannot be excluded. No lethal injuries unrelated to the fire are established in any of the other persons found in this area. On balance, I believe the current information indicates she succumbed to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 29--Beverly Elliott**

Ms. Elliott, a 27 year old Black woman (DOB 3/30/66), was found in the area of the first floor hallway. She was found along with six other women in this area.

The neck structures and other tissues are incinerated. Only the bases of the lungs are present. The remainder of the lung tissue has been incinerated. No comment about the presence or absence of soot in the residual airways is in the autopsy report. The blood CO saturation is reported as 38%.

There is global charring with extensive tissue loss. Significant portions of the skull are absent.

No evidence of a firearm injury is seen. Gunshot wounds of the head and chest cannot be excluded due to the thermal damage.

The cyanide found in the blood (2 mcg/ml) can be due to decomposition and/or smoke inhalation.

Conclusion: The elevated CO saturation in the blood supports the presence of smoke inhalation. Airway soot deposition could not be assessed due to fire damage. There is nothing to indicate or suggest the presence of a lethal injury unrelated to the fire although gunshot wounds of the head and chest cannot be excluded. No lethal injuries unrelated to the fire are established in any of the other persons found in this area. On balance, I believe the current information indicates she succumbed to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **Front of Concrete bunker**

Two adult women were found in the area in the front of the concrete bunker. One woman died of smoke inhalation/thermal burns and the other appears to have died of a broken neck.

### **MC 12--Jennifer Andrade**

Ms. Andrade, a 20 year old White woman (DOB 7/17/72), was found in the area of the front of the concrete bunker. Gun barrels are adjacent to the body. She was found with another woman who had died of a broken neck.

Moderate decomposition is present.

There is evidence of smoke inhalation. The proximal trachea is destroyed. There is scant soot in the distal trachea and peripheral bronchi. The lungs are charred, congested and edematous. CO saturation measured in the liver is reported as 43%.

There is global charring with extensive loss of tissue from the extremities. The skull is fragmented. The skull appears relatively intact at the scene except for some possible damage in the right lateral calvarium. The left side of the skull is not well-visualized in the scene photographs. The skull is charred.

Cyanide measured in the blood (0.09 mcg/ml) is consistent with decomposition and/or smoke inhalation.

Conclusion: There is evidence of smoke inhalation including the deposition of soot in the lower portions of the airway. There is no evidence indicating or suggesting the presence of a lethal injury unrelated to the fire.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 13–Daisy Adina Martin**

Ms. Martin, a 41 year old Black woman (DOB 6/6/51), was found in the area of the front of the concrete bunker. She was found along with one other woman who succumbed to the fire.

Moderate decomposition is present.

There are multiple fractures of the cervical spine. The first cervical vertebra has a fracture on the anterior lateral portion between the facet for the dens and the left articular cartilage (19 x 6 mm) resulting in complete separation of two portions of the vertebra. There is also a fracture of C1 on the right lateral portion just posterior to the articular condyle. The C2 dens is fractured obliquely and detached, the left condyle is fractured and somewhat detached and hinged along the vertebral foramen, the right lamina is fractured and the spinous process has multiple comminuted fractures that extend to the inferior surface of the spinous process. There is a small fracture involving the anterior aspect of C3. Radiographs reportedly demonstrate small opacities on C1 and the spinous process of C2.

The anthropologist opined that these fractures may represent a gunshot wound entering below the chin, passing through the cervical spine and foramen magnum into the cranium to most likely exit through the upper right portion of the calvarium. There is a portion of cranium which was thought to display a possible gunshot exit site. No metallic opacities appear on a radiograph of this segment of bone. I do not see any convincing evidence of bullet fragments depicted on the radiographs in the region of the cervical spine damage. A photograph of the remnants of the base of the skull including the foramen magnum show no defects that would establish the presence of a firearm injury. The autopsy report opines the fractures of the neck are related to a fall.

There is global charring with extensive tissue loss. Much of the skull is missing. Portions of the base and posterior calvarium are present. No defects with definite beveling are seen. A gunshot wound of the head or, to a lesser degree, the chest cannot be excluded.

The proximal portion of the trachea is incinerated. The autopsy report indicates no soot was identified in remnants of the distal trachea and lungs. However, the autopsy findings sheet indicates “carbon deposits in the tracheobronchial tree.” The blood CO saturation is reported as 37.5%.

Decomposition and/or smoke inhalation can account for the cyanide found in the urine (0.25 mcg/ml). Decomposition can also account for the ethanol in the urine (0.01 gm%).

Conclusion: The exact nature of the neck fractures is not apparent. However, I think that a gunshot wound can be reasonably excluded. The neck fractures are most likely related to the fire. The elevated blood CO saturation is consistent with smoke inhalation. I cannot determine if there was soot deposition within the lower portions of the airway due to conflicting statements in

the autopsy report about this issue. If present, smoke inhalation could have hastened death due to the neck fractures.

Cause of Death: Cervicospinal Blunt Trauma. Death may have been hastened by smoke inhalation.

Manner of Death: Homicide.

## **Top of Concrete bunker**

There were nine adults and one teenager found in the area on the top of the concrete bunker. Five deaths, including that of the teenager, were due to gunshots. Three of the firearm deaths were likely caused by someone else, one is consistent with being self-inflicted and there is insufficient information to establish whether the other gunshot could have been self-inflicted. Three of the gunshot victims were shot in the back of the head. Three persons succumbed from the fire and the cause of death of one person was unable to be determined. One person was struck after death by a hand grenade fragment.

### **MC34–Florecita Sonobe**

Ms. Sonobe, a 34 year old Asian woman (DOB 5/11/58), was found along with 8 other persons in the area of the top of the concrete bunker.

There is a gunshot wound of the head. The entry site is not identified and the range of fire cannot be determined. There are extensive fractures of the base of the skull with extension onto the calvarium and palate. The proximal airway is absent. There is inhaled blood in the distal trachea, bronchi and lungs. There is a poorly-defined region of hemorrhage in the brain and an anatomic defect outside the residual basal ganglia and internal capsule. Clotted blood is present in the cerebral ventricular system. There is not enough information available to determine if this wound could have been self-inflicted.

There is global charring with extensive tissue loss. Most of the calvarium above the superior orbital ridges and mid-occiput is absent. A charred segment of right parietal bone is also present. No soot is described in the airways. The “urine” CO saturation is reported as 37.5%. TCMEO toxicologist Dr. Angela Springfield informed the OCS that the toxicology report should indicate the CO was measured in blood and that the “urine” is a clerical error. The cyanide in the urine (0.38 mcg/ml) can be accounted for by decomposition and/or smoke inhalation.

Conclusion: There is a lethal gunshot wound of the head. The features of the wound are those of a low velocity projectile. I would expect more extensive damage to the tissues if the wound track through the brain was caused by a high velocity projectile. There is not enough information upon which to base an opinion as to whether or not the gunshot could have been self-inflicted. The elevated blood CO saturation is consistent with smoke inhalation. However, soot deposition within the airway which would confirm smoke inhalation is lacking. At least one other Davidian decedent having a gunshot wound was found in this area appearing to lack smoke inhalation. If, in fact, she did breath smoke, it cannot be determined whether or not she was conscious at the time she was breathing the smoke.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Undetermined (Homicide or Suicide).

### *MC 35–Shari Doyle*

Shari Doyle, an 18 year old White woman (DOB 8/1/74), was found in the area of the top of the concrete bunker along with 8 other persons.

There is a gunshot wound of the head. The entrance is probably in the posterior left parietal area (back side of the head) where there is an area of slight internal beveling near the lamboid suture. No estimate of range of fire is possible. The wound track is forward and slightly rightward. The bullet passed through the scalp, skull and brain prior to exiting through the lower forehead slightly to the right of the midline. There are gunshot-related skull fractures. The entry area and path of the bullet would be unusual for a self-inflicted injury. This gunshot was most likely sustained at the hands of another person.

No soot was identified in the trachea. No comment was made in the autopsy report about soot in the portions of the airways within the lungs. CO saturation is reported as 50% in the liver and 44% in the spleen.

There is global charring which is most severe on the posterior aspect of the body.

A green towel is wrapped around the right upper extremity.

Cyanide found in the urine (0.10 mcg/ml) can be accounted for by decomposition and/or smoke inhalation. Decomposition can also account for the ethanol measured in the vitreous (0.01 gm%).

Conclusion: There is a lethal gunshot wound of the head. Insufficient information exists to determine the range of fire. The entry site is not typical of a self-inflicted injury. I believe this injury was most likely inflicted by another person. There is some evidence supporting smoke inhalation. Elevated CO saturations were measured in the liver and spleen. However, the interpretation of CO saturation involving visceral organ tissues is difficult, especially when decomposition is present. The lack of identifiable soot in the lower portions of the airway weighs against smoke inhalation. At least one other Davidian decedent having a gunshot wound was found in this area appears not to have inhaled smoke.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Homicide.

## **MC 36–David Jones**

Mr. Jones, a 38 year old White male (DOB 10/17/45), was found along with 8 other persons in the area of the top of the concrete bunker.

There is a gunshot wound of the head. The bullet entered through the back of the head. The exact entry site is not identified due to the thermal damage to the skull. No estimation of the range of fire is possible. The bullet passed forward through the head to exit the midline in the frontal area creating an externally beveled defect having a 14 mm internal surface diameter. The bullet track through the brain was obscured by the effects of fire. Patchy hemorrhage was present on the surface of the brain. The entry site and path of the bullet indicate it would be unlikely that this wound was self-inflicted. This wound was most likely received at the hands of another person.

The autopsy report indicates no soot was identified in the airway. The toxicology report indicates no CO was identified in the blood. However, the case summary sheet indicates a blood CO saturation of 17%.

There is global charring with loss of tissue.

The cyanide (1.32 mcg/ml) and ethanol (0.01 gm%) found in the urine can be accounted for by decomposition.

Conclusion: The range of fire of the gunshot wound that entered the back of the head cannot be determined due to the effects of the fire. However, the entry site is not typical of a self-inflicted injury. The gunshot was most likely sustained at the hands of another person. The features of the wound indicate a low velocity projectile. I would expect more damage if the wound was due to a high velocity projectile. Although the case summary report indicates the presence of CO in the blood, the actual toxicology report indicates no CO was found in the blood. The lack of CO correlates with the absence of soot deposition in the airways. On balance, the currently available information supports the absence of smoke inhalation.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Homicide.

## **MC37–Alrick Bennett**

Mr. Bennett, a 35 year old White man (DOB 7/23/67), was found in the area of the top of the concrete bunker along with 8 other persons.

The internal organs are relatively well-preserved.

There is evidence of smoke inhalation. The trachea contains a small amount of soot. Scant soot is also found in the distal airways. The lungs are congested. The blood CO saturation is reported as 24%.

There is global charring. Fire-related fractures of the skull are present.

There is blood (approximately 40 grams) mixed with soot and debris extending from the nares to the upper trachea. Blood is also present in the sphenoid sinus. No discrete injuries unrelated to the fire are identified. No intracranial hemorrhage is present. No evidence of a firearm injury is seen.

The cyanide measured in the blood (0.43 mcg/ml) is consistent with decomposition and/or smoke inhalation.

The repatriated remains were re-examined subsequent to their arrival in the UK. The UK examination of the body was unable to verify the TCMEO-stated cause of death because the condition of the tissue available for evaluation did not allow confirmation of smoke inhalation. The UK firearms expert indicated the presence of massive injury to the left frontal rib cage and the presence of numerous small radio-opaque objects in the body which he felt were likely due to an explosion of a grenade or some other item of explosive ordnance.

Neither the UK nor the TCMEO examiners indicate massive damage to the front of the left rib cage. There is some fire damage to the left posterolateral ribs. There is extensive fire damage to the front of the right chest. None of the pathologists or the anthropologist described any damage other than fire-related damage. The visceral organs were reasonably well-preserved at the time of the initial examination. The organs and body cavities showed no evidence of any blast effect, shrapnel defects or hemorrhage. No grenade fragments were recovered from the viscera. Radio-opaque debris is widespread among the bodies recovered from the burned structure. I do not see any evidence to suggest the extensive damage seen on this body is related to the explosion of a grenade or other explosive device. As noted above, the evidence to the contrary is substantial.

Conclusion: The elevated blood CO saturation and the deposition of soot in the lower portions of the airways indicates smoke inhalation. No lethal injury unrelated to the fire is identified. No compelling information suggesting the presence of some other lethal injury is present.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## **MC 38–Rebecca Saipaia**

Ms. Saipaia, a 24 year old White female (DOB 7/13/68), was found along with 8 other persons in the area of the top of the concrete bunker. A “Quant” brand watch that had stopped at 12:20 was present. A large hunting knife was adjacent to the body.

The visceral organs are relatively well-preserved.

There is evidence of smoke inhalation. Patchy deposition of soot is identified in the left lung airways. The left lung is edematous. The right lung is extensively burned. CO was not identified in the blood.

There is global charring. The base of the skull is intact. The calvarium is fragmented, collapsed and portions are missing. There is outward bursting of bone flaps which is a typical finding in heat-related skull fractures.

No evidence of a gunshot wound is seen. A gunshot wound involving the right chest or head cannot be definitively excluded due to the burning.

Toxicologic evaluation indicates the presence of cyanide in the urine (0.20 mcg/ml) which is consistent with decomposition and/or smoke inhalation. Decomposition can account for the ethanol measured in the blood (0.02 gm%).

Conclusion: The presence of soot deposition within the lower portions of the airway indicates smoke inhalation even though CO was not identified in the blood. There is no demonstrable lethal injury unrelated to the fire. There is no compelling information that suggests the presence of some other lethal injury although a gunshot wound involving the right chest or the head cannot be definitively excluded.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

## MC 39–Novellette Hipsman

Ms. Hipsman, a 36 year old Black woman (DOB 5/2/56), was found along with eight other persons in the area of the top of the concrete bunker. The body was face down at the fire scene. A Timex watch stopped at 1:00 was present. There was a gas mask with the filter in two pieces. Both pieces of the filter were melted to her shirt and jacket.

There is a gunshot wound of the head. The bullet entered the right lower back of the head (10 mm defect) 15 mm to the right of the midline. The range of fire cannot be determined. The bullet passed forward and slightly leftward to transect the brainstem prior to exiting the skull through the cribriform plate/septum. There is prominent hemorrhage in the posterior cranial fossa and within the ventricular system. There are gunshot-related fractures of the left maxillary sinus and left frontal bone. The lungs are congested and edematous. This wound resulted in immediate incapacitation. The wound site would be very atypical for a self-inflicted injury and was, in reasonable probability, sustained at the hands of another person.

There is a gunshot wound of the chest. The entry site is not identified. No range of fire determination can be made. The wound track involves the anterior right first intercostal space, left lung upper lobe, heart (guttering along anterior wall of the right ventricle), left diaphragm, left lobe of the liver, gastric cardia to a large charred defect of the left lateral abdominal wall. There are fractures at the lower left 11-12 ribs. The left chest cavity contains 250 g of blood. The entry site and track of this bullet are atypical for a self-inflicted wound and in reasonable probability is a wound inflicted by another person.

There is no clear evidence of smoke inhalation. No soot is described in the airways. The blood CO saturation is reported as 3.75%. If it accurately reflects antemortem CO saturation, the CO source could be smoke (structural fire or tobacco).

There is global charring.

The cyanide found in the urine (0.44 mcg/ml) can result from decomposition and/or smoke inhalation. The ethanol in the blood (0.02 gm%), bile (0.02 gm%), vitreous (0.03 gm%) and urine (0.01 gm%) is consistent with postmortem production.

Conclusion: The gunshot wound of the head that transected the brainstem would be immediately incapacitating and I would expect it to be very rapidly lethal. The gunshot wound of the chest would not necessarily be immediately incapacitating, but I would expect incapacitation and death to occur in a relatively short period of time. Both wounds appear to have been caused by low velocity bullets. I would expect more damage if the projectiles were high velocity. The range of fire cannot be determined for either gunshot. The gunshots are not typical of self-inflicted injuries and I believe they were sustained at the hands of another person. She was alive when she received both shots as evidenced by the hemorrhage associated with the damage resulting from each projectile. Evidence for smoke inhalation is relatively weak. There is a

slight increase in the reported blood CO saturation. Confirmatory soot deposition within the lower portions of the airways is lacking. On balance, I'm not convinced she breathed smoke from the fire but I cannot definitively exclude the possibility she breathed a small amount of smoke. At least one other Davidian decedent dying of a gunshot wound was found in this area who appears not to have inhaled smoke.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Homicide.

## **MC 40–Gregory Summers**

Mr. Summers, a 28 year old White man (DOB 1/9/65), was found along with eight other persons in the area of the top of the concrete bunker.

There is global charring. The majority of the head/skull is burned away. Some fragments of the skull are present. The segment of base that is present is not fractured. The neck and chest/abdomen walls are incinerated.

No definite airway soot is documented. The blood CO saturation is reported as 20%.

No gunshot wounds are identified. Thermal damage does not allow a gunshot wound of the head to be excluded.

A metal fragment consistent with a hand grenade was collected as evidence. No wound track or hemorrhage related to the fragment is described in the autopsy report. The body appears to have been struck by the shrapnel after death.

Cyanide found in the blood (0.40 mcg/ml) and urine (0.30 mcg/ml) is consistent with decomposition and/or smoke inhalation. Decomposition can account for the ethanol found in the blood (0.02 gm%), bile (0.03 gm%) and urine (0.02 gm%).

**Conclusion:** The presence of elevated blood CO saturation is consistent with smoke inhalation. However, the confirmatory deposition of soot in the lower portions of the airway is lacking. Fire damage prevents adequately excluding a gunshot wound involving the head. In addition, there are other decedents found in this area who clearly had sustained lethal gunshot wounds. The grenade fragment appears to have struck the body after death. On balance, I do not think the currently available information allows the cause of death to be identified.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

## **MC 41–Neru Neil Vaega**

Mr. Vaega, a 36 year old Pacific Islander man (DOB 12/25/55), was found along with 8 other persons in the area of the top of the concrete bunker.

The autopsy report indicates a gunshot wound of the head. The entry site is in the right forehead just to the right of the midline. Soot is deposited circumferentially around the wound. The wound is a contact/near-contact wound. The bullet passed backward, rightward and downward through the head to exit through the right occipital area. The lungs are congested and edematous. A large amount of blood is in the airways. The base of the skull and most of the calvarium were intact at the time of the initial TCMEO examination.

The anthropology examination reports fragmentation of the cranium. It also indicates all the trauma observed is consistent with being due to heat. The anthropology examination was performed 4 days after the autopsy examination. Autopsy-related fragmentation of the fragile skull may account for the apparent discrepancy between the autopsy and anthropology examinations.

The scene photographs demonstrate extensive burning of the skull; however, at least the front and left sides appear relatively intact. The photographs demonstrate a defect in the frontal area to the right of the midline. The photographs do not demonstrate this area in enough clarity to allow independent analysis of the characteristics of the defect. Photographs of the exit site described in the autopsy are not available.

There is evidence of smoke inhalation. Dense soot is present in the airways. The lungs are congested and edematous. The blood CO saturation is reported as 66%.

There is global charring.

The death certificate indicates the cause of death as smoke inhalation and does not mention a gunshot wound. The autopsy protocol indicates the cause of death as a gunshot wound and global charring.

The cyanide found in the blood (0.20 mcg/ml) and bile (0.07 mcg/ml) is consistent with decomposition and/or smoke inhalation.

Conclusion: There is a contact/near-contact gunshot wound that entered the right lower forehead and exited through the right occipital (back ) of the head. The features of the wound indicate a low velocity projectile. I would expect more damage if a high velocity projectile perforated the head. The wound is consistent with being self-inflicted. However, the wound could also have been caused by someone else. The wound was probably immediately incapacitating. The copious soot deposition in the airways and the elevated blood CO saturation indicate smoke inhalation. Smoke inhalation may have hastened death. I cannot determine if he was conscious when he began breathing smoke from the fire.

Cause of Death: Gunshot Wound of Head. Smoke inhalation may have hastened death.

Manner of Death: Undetermined (Suicide or Homicide).

## **MC 42–Pablo Cohen**

Mr. Cohen, a 28 year old White man (DOB 10/6/64), was found along with 8 other persons in the area of the top of the concrete bunker.

There is evidence of smoke inhalation. A large amount of soot, dirt and debris are present in the intact tracheobronchial tree. Soot, dirt and debris are also found in the esophagus. CO saturation was measured in the liver (50%) and spleen (37.5%).

There is global charring. Heat-related fractures are present.

There is no evidence of a gunshot wound.

The cyanide in the urine (0.06 mcg/ml) is consistent with decomposition and/or smoke inhalation.

Conclusion: The deposition of soot and other debris in the intact airway indicates smoke inhalation. Smoke inhalation is further supported by the material deposited in the esophagus and the elevated CO saturation (see toxicology section discussion regarding CO interpretation). No lethal injuries unrelated to the fire are identified.

Cause of Death: Smoke Inhalation, thermal burns.

Manner of Death: Homicide

## **Concrete Bunker Surface**

There were four adults, one older teenager and two young children recovered on the surface in the concrete bunker. Two of the women were pregnant with fetuses fathered by David Koresh. One adult, the older teenager and a young child died of firearm injuries. One child died of a stab wound and three adults succumbed from the fire. Other bodies were recovered under debris in the bunker.

### **MC30–Katherine Andrade**

Ms. Andrade, a 24 year old White woman (DOB 7/19/68), was found along with 6 other persons on the surface in the concrete bunker. Her daughter, Chanel Andrade (MC 62), was found in the concrete bunker.

Decomposition is moderately advanced.

There is evidence of smoke inhalation. Prominent soot deposition is present within the lungs' airways. The better preserved portions of the lungs are congested and edematous. The neck structures are absent. The blood CO saturation is reported as 15%. A portion of the "blood" specimen appears to have been obtained from the decomposing left chest contents.

There is global charring with extensive tissue loss.

A blood clot (13 x 10 x 7 cm) is reported to be present in the left chest cavity but no injuries unrelated to the fire are identified in this area or in other areas. The sternum, anterior ribs and soft tissues have been destroyed by fire and the lungs are burned. A gunshot wound cannot be definitively excluded.

The cyanide found in the blood (1.05 mcg/ml) can be attributed to decomposition and/or smoke inhalation.

Conclusion: The airway soot deposition indicates smoke inhalation. The elevated CO saturation is also consistent with smoke inhalation. No definite injuries unrelated to the fire are identified. I do not see any compelling evidence suggesting the presence of a gunshot wound. The "blood clot" described in the left chest cavity may be an artifact of decomposition of the markedly congested lung tissue.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

### ***MC 31A–Aisha Summers***

Ms. Summers, a 17 year old White woman (DOB 10/4/75), was found along with 6 other persons on the surface in the concrete bunker. Garb included a military web belt with attached ammunition pouch, knife scabbard, and a portion of an apparent gun cleaning kit.

There is marked decomposition. The heart, great vessels and lungs are not seen.

There is multifocal charring with tissue loss. Only portions of the posterior fossa and left middle fossa of the skull remain.

There is a gunshot wound of the chest. The entry site is obscured by decomposition and loss of soft tissue. The entrance is probably on the anterior/anterolateral left chest where there is an internally beveled fracture along the superior edge of the ninth rib. The wound track is upward, backward and rightward. No range determination is possible. Hemorrhage is present in the left chest, mediastinum and midesophageal area. The right second rib is fractured 86 mm from its sternal end. The entry site and wound track would be unusual for a self-inflicted injury. This injury was most likely sustained at the hands of another person.

No lung tissue was identified so airway assessment of soot deposition is not possible. The CO saturation measured in the liver is reported as 52.5%. It cannot be determined if the liver CO reflects antemortem CO exposure or if it is a false positive laboratory value related to decomposition (see toxicology section discussion regarding CO interpretation).

There is a 1 1/4 inch postmortem depressed fractured on the right posterior aspect of the skull. The left base of the skull is also fractured.

There is a postmortem injury over the left scapula. The surface wound has an irregular margin with marked soot deposition on the edges. No defect is present in the bone. This wound is consistent with heat-induced explosion of unchambered ammunition (“cooked off” round).

A gunshot wound of the head cannot be excluded due to the thermal effects. Only a portion of the base of the skull is present.

A near-term (8 ½-9 months gestation) fetus (**MC 31B/58**) is present. Based on the gestational age the fetus would be considered viable. DNA studies link this fetus to David Koresh (MC-8).

The ethanol detected in the bile (0.04 gm%) and liver (0.05 gm%) is consistent with postmortem production. The cyanide measured in the bile (0.05 mcg/ml) is consistent with decomposition and/or smoke inhalation.

Conclusion: The features of the gunshot wound of chest entrance are primarily obscured by decomposition. The range of fire cannot be determined. The features of the wound indicate it was caused by a low velocity projectile. I would expect more damage if a high velocity projectile caused the injury. The entry site and wound track would not be typical of a self-inflicted injury. The gunshot was likely caused by another person. Decomposition prevents adequate assessment for smoke inhalation. Postmortem defects caused by heat-related explosion of ammunition are present. The fetus is nearly full term and I would expect it to be viable. The fetus died as the result of the death of the mother. No direct mechanical injury to the fetus is apparent.

Cause of Death: Gunshot Wound of Chest.

Manner of Death: Homicide.

### ***MC 31DE–Unidentified***

The limited remains of this 11-14 year old child were found on the surface in the concrete bunker along with 6 other individuals.

The remains are limited to a fragmented skull including the mandible. No DNA analysis was performed.

There are two gunshot wounds. One gunshot entry is in the left temporal bone. This defect is relatively round and 6 mm in diameter. The wound track is rightward. The exit site is not identified. An estimate of the range of fire is not possible. It cannot be established on the basis of the currently available information if this wound could have been self-inflicted.

The other gunshot is at the left zygomaxillary border (7.5 mm). Bone fragments are deeply displaced and there is slight internal beveling. Soot is described on the margins of the wound. The wound is a contact/near-contact wound. The posterior left maxillary sinus is broken away and is probably the exit site. The location of this entry site is not typical of a self-inflicted wound and was most likely inflicted by another person.

There is also an 18 x 14 mm depressed fracture of the right occiput which is hinged inferiorly and has the superior end displaced towards the midline. The exact mechanism through which this fracture was sustained is not apparent.

Conclusion: There are two gunshot wounds. One projectile entered through the left temporal bone and the other entered the left face. The left face wound is a contact/near-contact wound and is not typical of a self-inflicted gunshot. I believe this person was most likely shot by another individual. The wounds appear to have been caused by low velocity projectiles. I would expect more extensive damage if high velocity projectiles caused the injuries. The cause of the fracture involving the back of the skull (occipital bone) is not apparent. No assessment of smoke inhalation is possible.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Homicide.

**MC 31C–Male distal right leg with foot (not further described)**

There is some burning and charring of the fractured ends of the tibia and fibula.

This portion of an extremity was not matched with any particular body. No DNA studies were performed. No photographs are available. There is currently not enough information to match this fragment with a particular body.

## **MC 32–John McBean**

Mr. McBean, a 27 year old Black man (DOB 9/23/65), was found along with 6 other persons on the surface in the concrete bunker.

There is evidence of smoke inhalation. A large amount of smoke deposition is present in the tracheobronchial tree. The neck structures are absent. The lungs are acutely congested and edematous. The blood CO saturation is reported as 46%.

There is global charring with much tissue loss including the anterior chest/abdomen wall. The internal organs are exposed and charred but appear intact. The head is absent.

No gunshot wounds are identified. A gunshot wound of the head cannot be excluded due to the thermal damage.

The cyanide found in the blood (0.05 mcg/ml) and urine (0.02 mcg/ml) can be related to decomposition and/or smoke inhalation. The ethanol in the urine (0.02 gm%) is consistent with postmortem production.

**Conclusion:** The smoke in the lower portions of the airway indicates smoke inhalation. The elevated blood CO saturation also supports smoke inhalation. No lethal injuries unrelated to the fire are identified. Although a gunshot wound to the head cannot be excluded, there is no compelling information suggesting the presence of a gunshot wound. The lack of blood in the airways supports the lack of damage to the base of the skull, which often accompanies a gunshot wound of the head.

**Cause of Death:** Smoke inhalation, thermal burns.

**Manner of Death:** Homicide.

***MC 33/47B–Dayland Little (Gent)***

Dayland Little is a 3 year old White male (DOB 7/22/89) who was found along with 6 other persons, including his mother, Nicole Little (MC 47), on surface in the concrete bunker.

There is a stab wound of the left chest. There are cuts on adjacent left ribs in the mid-axillary line. There is a “considerable quantity” of apparently localized blood in the upper left chest. Blood is apparently present at the decomposed lung. This stab wound was inflicted by another person.

There were no large airways available to assess for the presence of soot. An observation of a possible minimal amount of soot within severely decomposed lung tissue was made. No toxicologic testing for CO was apparently performed.

Extensive charring is present.

No gunshot wounds are observed. Although a gunshot wound of the head cannot be categorically excluded, I think it is unlikely that there is a gunshot wound. The likely sites for involvement of a gunshot of the head are intact.

Conclusion: There is a stab wound of the chest that was inflicted by another person. Postmortem changes prevent adequate assessment for smoke inhalation. The description of a “possible minimal amount” of soot within decomposing lung is not sufficient to definitively establish that soot was present within the airways.

Cause of Death: Stab Wound of Chest.

Manner of Death: Homicide.

## **MC 47–Nicole Little (Gent)**

Ms. Little (Gent), a 24 year old White woman, was recovered along with 6 other individuals, including her son, Dayland Little (MC 33/47B), on the surface in the concrete bunker. Her other child, Pages Gent (MC 64), was found in the concrete bunker.

There is a shotgun wound of the head. The entry site is not identified. Most of the calvarium is absent. There are multiple fragments of the skull with variable burning adjacent to the body. The base of the skull is extensively fractured. Shotgun pellets (1.5-2 mm) with faceting are present in brain tissue found within and adjacent to the body. The large airways and the peripheral airspaces contain blood due to massive aspiration. Left scalp hair is matted with apparent dried blood and contains 2 pellets. The extent of the damage indicates that the gun was discharged close enough to the decedent so the pellets would not have spread extensively prior to striking the person. It cannot be determined if the wound was self-inflicted or was received at the hands of another person.

There is no evidence of smoke inhalation. No soot is described in the airways. The neck structures are absent. No CO was detected in the blood.

There is global charring with extensive loss of tissue. The base of the skull is present. The skull vault, orbits, nasal bone and portions of the mandible/maxilla are absent. Other separate bone fragments are also present. The anterior chest soft tissue and the lateral right chest wall are absent.

A fetal skeleton (**MC 47C**) was recovered from the soft tissues of the upper left thigh. The fetus was extruded from the burned uterus and through a fire-induced abdominal defect. The gestational age of the fetus is 16-18 weeks. A fetus at this stage of development is non-viable. DNA studies link this fetus to MC 47 (Nicole Little [Gent]) and MC 8 (David Koresh).

The urine ethanol (0.03 gm%) is consistent with decomposition.

**Conclusion:** The shotgun wound of the head was received at a range short enough that there was not extensive pellet spread prior to the pellet column striking her head. There is not enough information available to determine if the shotgun wound could have been self-inflicted. There is no evidence of smoke inhalation. The fetus was not viable and died due to the death of the mother. No direct mechanical damage to the fetus is identified.

**Cause of Death:** Shotgun Wound of Head.

**Manner of Death:** Undetermined (Homicide or Suicide).

## **MC 49--Wayne Martin**

Mr. Martin is a 20 year old Black man (DOB 1/5/73) who was found along with 6 other persons on the surface in the concrete bunker.

There is moderate decomposition.

There is evidence of smoke inhalation. A small amount of soot is present in the larynx and lung bronchi. Blood CO saturation is reported as 46%.

Global charring is present. The head and torso are intact.

There is no evidence of any gunshot wounds.

Ethanol found in the urine (0.03 gm%) can be attributed to decomposition.

Conclusion: There is smoke inhalation as evidenced by the presence of soot within the lower portion of the airway and an elevated saturation of CO in the blood. No evidence of any lethal injuries unrelated to the fire is identified.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide

## **Concrete bunker**

There were 5 adults and 23 children recovered in the debris in the concrete bunker. Most of the young children were found in this area. At least one adult and three children were killed by gunshots. One adult and 6 children succumbed from the fire. Two children died of blunt injuries. The causes of deaths of 3 adults and 12 children cannot be determined. The inability to determine the causes of the deaths of most of these individuals is due to the effects of the fire and decomposition.

### **Area Farthest From Cooler**

#### **MC 51--Judy Schneider**

Ms. Schneider, a 41 year old White woman (DOB 9/20/51), was found along with 27 other persons, including her daughter (MC 51A/70), in the concrete bunker.

There is marked decomposition of the viscera.

There is a perforating defect through the right hand consistent with a gunshot wound. There appears to be some hemorrhage associated with the wound. Investigative reports indicate she had received a gunshot wound involving the right hand on February 28, 1993. This wound appears to have been caused by a low velocity projectile. I would expect significantly more damage if the wound would have been caused by a high velocity projectile.

There is a fracture of the right tenth rib, 56 mm from the vertebra. There is a small amount of blood (30 g) in the right chest cavity. This injury is consistent with perimortem blunt trauma.

No evidence of smoke inhalation is identified. Soot deposition within the airways could not be assessed due to the postmortem changes. No CO was identified in the blood.

There is global charring with extensive tissue loss including the skull, portions of the upper spine, extremities and chest. The left lung is charred.

Gunshot wounds of the head and chest cannot be excluded.

Decomposition can account for the ethanol (0.01 gm%) and cyanide (0.12 mcg/ml) found in the blood.

Conclusion: There is insufficient information available to determine the cause of death. No definite antemortem lethal injuries are identified. Postmortem changes prevent an adequate assessment for smoke inhalation. A lethal gunshot wound cannot be excluded. She does have a non-lethal gunshot wound involving the right hand which she apparently received on February 28, 1993.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

***MC 52--Joseph Martinez***

Joseph Martinez, an 8 year old Hispanic male (DOB 4/21/84), was found along with 27 other persons, including many children, in the concrete bunker. His mother, Juliet Martinez (MC 54), and other family members (MC 53, 55, 56, 57) were among the decedents found in this area.

There is advanced decomposition.

There is evidence of smoke inhalation. The airways contain a large amount of soot. The blood CO saturation is reported as 72.5%. The lungs are congested and edematous.

There is extensive burning; however, the body is relatively intact. Fire-related fractures of the skull are present. There is absence of portions of the skull including the posterior frontal and parietal bones. The brain is intact.

There is no evidence of a gunshot wound. The “summary sheet” accompanying the autopsy indicates the presence of a lethal gunshot wound of the torso. However, the autopsy report description and findings do not indicate any gunshot wound. The summary report also does not indicate death due to a gunshot.

The cyanide found in the blood (0.07 mcg/ml) and bile (0.10 mcg/ml) is consistent with decomposition and/or smoke inhalation. The ethanol measured in the blood (0.14 gm%) and bile (0.03 gm%) is also consistent with decomposition.

**Conclusion:** The presence of soot in the lower airways indicates smoke inhalation. The elevated blood CO saturation is also consistent with smoke inhalation. There is no evidence to indicate or reasonably suggest the presence of any lethal antemortem injury unrelated to the fire.

**Cause of Death:** Smoke inhalation, thermal burns.

**Manner of Death:** Homicide.

***MC 53--Isaiah Martinez***

Isaiah Martinez, a 5 ½- 6 ½ year old Hispanic male, was found along with 27 other persons, including many children, in the concrete bunker. His mother, Juliet Martinez (MC 54), and other family members (MC 52, 55, 56, 57) were among the decedents found in this area.

There is marked decomposition.

There is a gunshot wound of the left chest. The clothing has 3 circular perforations on both sides of the zipper in the midline over the heart area. The garment demonstrates burning. Definitive range determination cannot be made on the basis of the currently available information. The entry site into the body is obscured by the decomposition. There is a 7 x 4 mm soft tissue defect at the anterior left sixth rib. The defect along the superior edge of the rib is internally beveled. There is some black discoloration of the rib defect which is due to deposition of material later identified as lead. No heat damage to the ribs is present. The wound track is backward and downward. The bullet passed through the left lung lower lobe (10 mm) where there is hemorrhagic fluid. The exit site is not identified and is probably obscured by decomposition. No projectile is identified in the body.

There is evidence of smoke inhalation. The pulmonary airways contain soot. CO saturation in the liver is reported as 37.5%. The lungs are congested and edematous.

Marked charring is present. The neck structures are absent.

Conclusion: There is a gunshot wound of the chest that damaged the left lung. Hemorrhage along the wound indicates he was alive when he received the wound. The wound was received at the hands of another. The range of fire cannot be determined. The wound was caused by a low velocity projectile. More damage would be expected if a high velocity projectile caused the injury. The presence of soot in the lower portions of the airway indicates smoke inhalation. The significance, if any, of the liver CO is difficult to determine (see toxicology section discussion regarding CO interpretation). The effects of the fire may have contributed to death.

Cause of Death: Gunshot wound of chest. The effects of the fire may have hastened death.

Manner of Death: Homicide.

## **MC 54--Juliet Martinez**

Ms. Martinez, a 30 year old Hispanic female, was found along with 27 other persons, her children (MC 52, 53, 55, 56, 57) among them, in the concrete bunker.

Relatively mild decomposition is present.

There is evidence of smoke inhalation. Moderate soot is found in the airways. The blood CO saturation is reported as 33%. The lungs are congested.

There is light-moderate charring of the face, upper neck and distal upper extremities.

No evidence of gunshot wounds is present. There is blood (50 g) in the right pleural space. However, no evidence of injury to the lung or to the chest/abdominal wall is identified.

The blood ethanol (0.11 gm%) is consistent with decomposition.

**Conclusion:** The presence of soot deposition within lower portions of the airway indicates smoke inhalation. The elevated blood CO saturation is consistent with smoke inhalation. No antemortem lethal injuries unrelated to the fire are identified. The exact source of the small amount of bloody material in the chest cavity is not apparent. The blood is not convincing evidence of an antemortem injury and may represent a postmortem artifact. There is no compelling information suggesting the presence of any other lethal injury.

**Cause of Death:** Smoke inhalation, thermal burns.

**Manner of Death:** Homicide.

***MC 55--Audrey Martinez***

Audrey Martinez, a 13 year old Hispanic female (DOB 1/23/80), was found along with 27 other persons, including many children, in the concrete bunker. Her mother, Juliet Martinez (MC 54), and other family members (MC 53, 53, 56, 57) were among the decedents found in this area.

Marked decomposition is present.

The right lower chest has a moderate amount of clotted blood.

There is a 12 mm low velocity compression fracture of the anterior right maxilla. It cannot be determined if the wound was received before or after death.

There are avulsion injuries of the lateral right 8-9 ribs that are consistent with being received postmortem.

There is a small amount of clotted blood in the nasopharynx and right middle cranial fossa. The blood in the head is probably a postmortem artifact. The calvarium and base of the skull are intact. Blood in the nasopharynx is a non-specific finding. It could be secondary to trauma or agonal congestion with extravasation.

Exposed body surfaces demonstrate charring.

There is no evidence of smoke inhalation. The neck organs appear absent. The lungs are amorphous masses of tissue due to decomposition. No CO was detected in the blood.

The ethanol found in the blood (0.04 gm%) is consistent with decomposition. The acetone (0.02 gm%) detected in the blood was also likely related to decomposition.

Conclusion: The presence of marked decomposition prevents adequate assessment for smoke inhalation. No definite antemortem lethal injuries are identified. Although suffocation due to overlaying or a chest injury related to being struck may have caused death, on balance I do not think there is enough information to confirm a particular cause of death. However, it does appear that her death was most likely related to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide.

***MC 56--Abigail Martinez***

Audrey Martinez, an 11 year old Hispanic female (DOB 5/29/81), was found along with 27 other persons, including many children, in the concrete bunker. Her mother, Juliet Martinez (MC 54), and other family members (MC 52, 53, 55, 57) were among the decedents found in this area.

There is advanced decomposition.

There is at least one gunshot wound, and probably two, involving the head. The available photographs are not sufficient for me to definitively resolve this issue.

There is an entrance wound in the posterior portion of the left temporal bone. The left temporal defect is 3/8 x 1/4 inch and has some possible slight internal beveling. The autopsy report indicates the bullet creating this wound exited through the left maxilla. Although possible, this would be a somewhat unusual wound track to be associated with the relatively uniform appearance of the entry site. I think the left temporal entry site is most likely associated with an exit defect of the right side of the calvarium. The right side of the calvarium is absent.

The anthropologist described a penetrating injury of the left maxilla at the border of the palatine bone that has an interiorly directed hinged segment of bone. The wound suggested to the anthropologist a likely site of entry in the upper nasal area. A large blood clot is present in the left chest cavity. The left lung and heart are absent and the right lung is partially charred. The right chest wall is charred. I think there is most likely a second gunshot that entered the body in the upper nasal area, created the maxillary defect and then continued to pass downward into the chest.

The range of fire of either gunshot cannot be established with certainty. The wounds were likely sustained at the hands of another person.

There is no evidence of smoke inhalation. No soot is identified in the periphery of the right lung. No CO was detected.

Burning, as noted above, is present.

There is a 4 mm cut on the posterior distal left ulna.

Ethanol (0.28 gm%) and acetone (0.03 gm%) were detected in the blood. Although the amount of ethanol found in the blood is higher than usually associated with decomposition, occasionally decomposition results in the production of relatively large amounts of ethanol. Overall, I think the ethanol and the acetone in this case are most likely related to postmortem production.

Conclusion: There are gunshot wounds involving the head and probably the left chest. Postmortem changes obscure many of the features of these wounds. No range of fire determination can be determined. The wounds were likely sustained at the hands of another person. There is no evidence of smoke inhalation. The source of the small cut involving one of the bones of the left forearm is not apparent.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Homicide

***MC 57--Crystal Martinez***

Audrey Martinez, a 6 year old Hispanic female, was found along with 27 other persons, including many children, in the concrete bunker. Her mother, Juliet Martinez (MC 54), and other family members (MC 52, 53, 55, 56) were among the decedents found in this area.

There is moderate decomposition.

There is some evidence of smoke inhalation. The trachea and bronchi contain bloody debris mixed with a variable, generally small, amount of soot. The lung tissue is congested and autolyzed. No toxicologic data is available.

No definite burning of the body is noted. Soot is present on the surface of the body.

No evidence of lethal firearm, sharp or blunt force injuries is seen. The body is intact.

Conclusion: The cause of death cannot be determined with adequate certainty. Death is most likely related to smoke inhalation; however, the lack of toxicologic data coupled with the small amount of soot deposition does not allow this diagnosis to be established with sufficient certainty. Overlaying cannot be definitively excluded. On balance, death is most likely the related to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide.

***MC 60--Unidentified***

This unidentified 2-5 year old child was found along with 27 other persons, including several other children, in the concrete bunker.

The remains consist of a left humerus and a mandible that were co-mingled with MC-63. There is no matching DNA profile among the other remains that were analyzed. No evidence of trauma is seen.

Conclusion: There is insufficient information to determine the cause of death. Most of the vital structures of the body are not available for examination. The only reasonable cause of death is either at the hands of another or due to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide.

### ***MC 61 and MC 50--Martin child***

The remains of an adolescent Martin female were recovered along with the remains of 27 other individuals, including several children, in the concrete bunker. DNA analysis established that she was a Martin child. Her father, Douglas Martin (MC 5), was found in the area of the rear of the chapel. Her sister was found in the area of the hallway (MC 26).

There is extensive thermal damage and decomposition. The torso is disrupted and the head is absent. The viscera are partially absent and the remaining viscera are decomposed.

No assessment for smoke inhalation is possible. The respiratory system structures are not available to examine for soot. No toxicologic data is available.

Antemortem injuries to the head and torso cannot be excluded due to the fire damage.

Shearing injuries to the pelvis, left femur and right humerus are present. It cannot be determined if these are antemortem or postmortem.

The repatriated remains were re-examined in the UK. The UK evaluation (MC 61) indicates an inability to evaluate the cause of death or to confirm smoke inhalation due to the amount and condition of the tissue available for evaluation.

Conclusion: The available information is insufficient to determine the cause of death. No assessment for smoke inhalation is possible. No definite antemortem lethal injuries are identified. Some vital structures are not available for evaluation.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

### ***MC 63--Jones Twin***

This 1 ½ year old White female was recovered along with the remains of 27 other persons, including several children, in the concrete bunker. Her mother, Michelle Thibodeau (MC 71), and sisters (MC 72, 73) were also found in this area.

There are blunt force injuries of the head and chest. There is extensive fracturing and collapse of the posterior calvarium. There is subgaleal hemorrhage in the posterior right parietal area. There is a fracture of the lateral left tenth rib associated with a chest wall hematoma and a defect in the garment. An anterior right rib is fractured. These injuries are probably due to falling debris.

Burning of the calvarium is present.

The respiratory system is not available to evaluate for the presence of soot. The CO saturation in the liver is reported as 46%. It cannot be established if the liver CO accurately reflects antemortem CO content or if it is a false positive laboratory value related to the effects of decomposition (see toxicology section discussion regarding CO interpretation).

There is a probable postmortem parietal skull fracture due to shrapnel.

A gunshot wound involving the chest/abdomen cannot be excluded. Even though portions of the skull are absent, I think a gunshot wound of the head can reasonably be excluded.

Conclusion: The blunt trauma to the head and chest are likely related to falling debris. The hemorrhage associated with the injuries indicates the child was alive when the chest injury was received. An adequate evaluation for smoke inhalation is not possible. The child appears to have been struck by shrapnel after death.

Cause of Death: Blunt trauma to the head.

Manner of Death: Homicide

***MC 70 / 51A--Mayannah Schneider***

The remains of Mayannah Schneider, a 2 ½-3 ½ year old female were found along with those of 27 other persons, including her mother, Judy Schneider (MC 51), in the concrete bunker. Her remains are composed of the separately recovered body parts labeled MC 70 and MC 51A.

MC 70: Advanced decomposition is present.

There is global charring.

The respiratory tissues are decomposed to the extent that soot determination is not possible. No assessment of CO saturation was performed on this portion of the remains.

MC 51A: Only the skull and mandible are present. Some charred scalp is present. No DNA analysis was performed.

There is heat damage/fracture of the right occipitoparietal area.

There are no anatomic structures of the airway available to assess for soot deposition. The blood CO saturation was reported as 37.5%.

Conclusion: The elevated blood CO saturation is consistent with smoke inhalation. Confirmation of smoke inhalation by airway soot deposition is not possible due decomposition. Overall, no injuries unrelated to fire are observed. On balance, a lethal gunshot wound, blunt trauma or sharp trauma can be reasonably excluded.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide

***MC 71--Michelle Thibodeau (nee Jones)***

Ms. Thibodeau, an 18 year old White woman (DOB 7/4/74), was found along with 27 other persons, including her daughters (MC 63, 72, 73), in the concrete bunker.

There is advanced decomposition.

There is evidence of smoke inhalation. Small deposits of soot are present in the large and small airways. The airways also contain a large amount of frothy hemorrhagic fluid. The CO saturation of the liver is reported as 8.75%.

There is focal charring.

No evidence of a gunshot wound is present.

The ethanol found in the liver (0.05 gm%) and bile (0.07 gm%) is consistent with decomposition. The cyanide found in the bile (0.06 mcg/ml) is attributable to decomposition and/or smoke inhalation.

Conclusion: The presence of soot in the lower portions of the airway indicates smoke inhalation. No lethal injuries unrelated to the fire are identified or reasonably suspected.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

***MC 72--Serenity Jones***

Serenity Jones is a 4-5 year old White female who was found with 27 other persons, including her mother, Michelle Thibodeau (MC71) and sisters (MC 63, 73), in the concrete bunker.

There is marked decomposition.

Decomposition precludes adequate assessment of the airways for soot. The liver CO saturation is reported as 50%. It is not possible to definitively establish if the reported CO saturation is a reflection of antemortem CO content or if it is a false positive laboratory value related to the effects of decomposition (see toxicology section discussion regarding CO interpretation).

The ethanol measured in the liver (0.01 gm%) is consistent with postmortem production.

There is focal charring.

No firearm injuries are identified.

Conclusion: Although there is not much information available upon which to base an opinion about the cause of death, the lack of demonstrable other injuries makes it likely that death was related to the fire (smoke inhalation and thermal burns).

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

***MC 73--Jones Twin***

This 1 ½ year old White female was recovered along with the remains of 27 other persons, including several children, in the concrete bunker. Her mother, Michelle Thibodeau (MC 71) and sisters (MC 63, 72), were also found in this area.

Decomposition is advanced.

Decomposition precludes adequate evaluation of the airway for soot. The liver CO saturation is reported as 52.5%. It cannot be definitely established if the recorded CO saturation accurately reflects the antemortem CO content or if it is a false positive laboratory value related to the effects of decomposition.

There is charring of the head and portions of the torso.

No evidence of any other type of injury is noted. The head and body cavities are intact.

The ethanol measured in the liver (0.03 gm%) is consistent with postmortem production.

Conclusion: Although definitive evidence of smoke inhalation is lacking, overall, I think death was most likely related to the fire. No lethal injuries unrelated to the fire are identified or reasonably suspected.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide

***MC 74--Melissa Morrison***

Melissa Morrison, a 6 year old Black female (DOB 7/9/86), was found along with 27 other persons, including her mother, Rosemary Morrison (MC 75), in the concrete bunker.

The remains primarily consist of the lower extremities, portions of the upper extremities, pelvis and right scapula. There is focal charring.

The possibility of smoke inhalation cannot be assessed. Gunshot injury to the head and chest/abdomen cannot be excluded.

The repatriated remains were re-examined in the UK. The UK examination indicates they were unable to evaluate the cause of death due to the amount and condition of the tissue available for evaluation.

Conclusion: Insufficient information is present to determine the cause of death. Major vital structures are not available for evaluation. The only reasonable cause of death is either at the hands of another person or due to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide.

## **MC 75--Rosemary Morrison**

Ms. Morrison, a 30 year old Black woman (DOB 10/1/63), was found along with 27 other persons, including her daughter (MC 74), in the concrete bunker. A Seiko watch on the left wrist had stopped at 4:00 o'clock.

There is advanced decomposition.

Decomposition precludes adequate evaluation of the airways for soot. Decomposition fluid from the left chest cavity had a CO saturation reported as 50% (see toxicology section discussion regarding CO interpretation).

The upper torso is charred.

The head is absent. The anthropology report indicates the head had separated at C7 with part of C6 being present and that the separation may be related to avulsion of the head.

A gunshot wound or other injury involving the head cannot be excluded.

The ethanol found in the chest fluid (0.01 gm%) can be attributed to decomposition. The cyanide measured in the chest fluid (0.07 mcg/ml) is consistent with decomposition and/or smoke inhalation.

The repatriated remains were examined in the UK. The first examination of the remains thought to be those of Rosemary Morrison were actually those of MC 61 (Martin child). The remains of Rosemary Morrison were subsequently obtained and examined. The amount and condition of the tissue available for evaluation precluded evaluating the cause of death and confirming smoke inhalation. The report does conclude that the presence of CO (TCMEO toxicology) indicates she was alive during the fire and that smoke/CO inhalation was the sole or a significant factor in her death. A head injury could not be excluded due to the lack of adequate tissues for evaluation. Doubt about death due to suffocation was expressed.

The interpretation of CO measured in decomposing material in the absence of airway soot as an indicator of smoke inhalation must be made with great caution because of potential interference by decomposition products with the analytic process (see toxicology discussion). The UK examiners were apparently unaware of the reported presence of CO in two bodies recovered from graves that had been buried prior to the fire and had no apparent exposure to any other source of significant CO.

Conclusion: Although the chest fluid CO may be due to smoke inhalation, there is insufficient information to definitely establish the presence of smoke inhalation. A lethal head injury cannot be excluded. On balance, I do not think there is enough information to determine the cause of death.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

**Concrete bunker**  
*Area Closest to Cooler*

***MC 59--Unknown***

This unidentified 14-19 year old White female was recovered along with 27 other persons, including several children, in the concrete bunker. An Armitron watch had stopped on 4/20/93 at 6:00 o'clock.

There is marked decomposition. The body is relatively intact above the inferior pelvic area. Some of the facial structures and a portion of the lower left calvarium are absent. The head and torso are disarticulated.

There is a skull fracture involving the right frontal and both parietal bones. There is a 5 mm round non-beveled perforation in the right frontal area. A partially beveled perforation with a small radiating fracture is present in the parietal area. The fracture pattern indicates the right frontal defect was present prior to the parietal defect. No brain tissue remains. There are fractures on the first maxillary molars. The nature of the blunt force injury is not apparent but appears consistent with falling debris. No photographs depicting the skull defects in sufficient detail are available for my independent assessment. The perforating defects are probably postmortem and due to exploding ("cooked off") unchambered ammunition.

The "evidence collected" list includes "blood clot and soft tissue" from the chest cavity. Neither the autopsy findings list nor the autopsy description section indicates the presence of any localized accumulations of blood. The chest, abdominal and pelvic organs are described as being "reduced to mushy pasty foul smelling partially liquified tissue" as the result of decomposition.

Smoke inhalation cannot be assessed. The neck organs and the lungs are absent. No toxicology data is available.

There is no evidence of an antemortem gunshot wound.

I have been advised by the OSC that a non-OSC expert has stated that the posture demonstrated by the body of MC-59 after it was recovered and removed from the bunker indicates the child had seizures before death that were an indication of cyanide toxicity.

I disagree with this expert's opinion for a variety of reasons. In general, postmortem posture cannot be used as a direct indicator of antemortem posture or activity, including seizures. This is especially true when the body has been removed from the environment in which it was found. Information about the position of the body at the time of collapse can be obtained by examining the body before it is removed from its resting place and by correlating marks on the

body with the causative agents at the scene. Information pertaining to the position of the body after death obtained during examination of the body after it has been removed from its resting place is more limited. Alterations in the posture of the body caused during recovery and transport, such as easily occur when manipulating a body that is flaccid due to decomposition, further complicate any attempt to determine antemortem positioning.

There is no postmortem posture that specifically indicates the decedent experienced seizure activity prior to death. The muscles of the body initially become flaccid when death occurs and body positioning is dictated by gravity and environmental constraints upon passive movement of the body. The postmortem position or posture of the body may have little, or no, similarity to the position or posture of the body prior to death. During the hours after death, the muscles stiffen (rigor mortis) and the postmortem posture may be maintained until flaccidity of the body returns as decomposition progresses.

MC-59 was markedly decomposed, buried in debris in the bunker and was manipulated during the recovery process. Any attempt to correlate the postmortem posture of the body as it appeared after she had been removed from the bunker with her antemortem activity is futile and not scientifically sound.

Furthermore, there is nothing unique about the appearance of seizures induced by cyanide when compared to seizures having other causes such as those that occur as a consequence of smoke inhalation, head injury or as non-specific activity during the process of dying. Determining the cause of a seizure involves correlating pertinent information from the decedent's history, the circumstances surrounding death, the death scene, the examination of the body and the results of laboratory studies. There is no toxicologic data supporting the presence of cyanide toxicity in MC-59. Other potential causes of terminal seizure activity, such as smoke inhalation, are not able to be excluded. However, there is currently no evidence suggesting MC-59 experienced seizures prior to her death.

**Conclusion:** The skull fractures are consistent with blunt head injury. No other definite antemortem lethal injuries are identified. The presence of smoke inhalation cannot be assessed. If present, smoke inhalation may have contributed to death.

**Cause of Death:** Blunt Head Injury.

**Manner of Death:** Homicide.

***MC 62–Chanel Andrade***

Chanel Andrade, a 1 year old White female (DOB 2/6/92), was found along with 27 other persons, including several children, in the concrete bunker. Her mother, Katherine Andrade (MC 30), was found on the surface in the concrete bunker.

There is advanced decomposition. The remains consist of decomposing soft tissue mixed with skull bones, vertebrae, ribs, pelvic bones and bones from the extremities. The viscera consist of amorphous decomposing tissue. Straight brown scalp hair is present.

The possibility of smoke inhalation cannot be assessed. No airways are available to assess for soot deposition. No toxicologic data is available.

There is a compression fracture of the anterior left ninth rib.

There is a 9 x 7 mm defect in the right temporal bone which has a small area of beveling of the internal table of the skull bone. Numerous radiodense particles surround the defect. The nature of the wound is not ascertainable based on the available written description. Photographs of the wound are not available. The description of the wound is not particularly suggestive of an antemortem gunshot. A 12 gauge shotgun wad and 1 pellet accompany the body. The skull defect is not particularly suggestive of a shotgun wound. This may be a postmortem defect caused by exploding unchambered ammunition.

Conclusion: Insufficient information is present to determine the cause of death. The only reasonable cause of death is either at the hands of another person or due to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide.

## ***MC 64–Pages Gent***

Pages Gent, a 1 year old White female, was found along with 27 other persons, including several other children, in the concrete bunker. Her mother, Nicole Little (MC 47), was found on the surface in the concrete bunker.

This body was co-mingled. The body was apparently received in a bag which also contained a blanket that was badly stained red (the anthropology report indicates the red material was probably blood) having at least one perforation that might be a bullet or shrapnel hole. The margin of the hole is partially burned. It is not clear whose blood is on the blanket (see MC 65). No mention of any other burning of the blanket is noted. The left posterior flank area of a t-shirt had a 20 x 8 mm defect.

Decomposition with disarticulation is present. The body is focally charred. The occipital and left temporal bones are absent. The tissues of the respiratory tract are absent. The liver CO saturation is reported as 56%. It cannot be established if the reported CO saturation accurately reflects the antemortem CO content or if it is a false positive laboratory value related to the effects of decomposition (see toxicology section discussion regarding CO interpretation).

A piece of scalp with brown hair and blood is present. The frontal bones have blood on the periosteal surface. Blood is also present in the right temporalis area and in the maxillary sinuses. The anthropology report indicates a large area of hemorrhage (22 x 7 cm) in the left chest cavity and adherent to the lateral right parietal pleura. No bone damage is identified.

Ammunition primers are present in the neck, deep in the maxilla and in the soft tissues of the right arm, thorax and distal radius/ulna. Laboratory examination of a fragment of metal associated with these remains indicates it originated from “cooked off” ammunition.

A gunshot wound to the chest/abdomen cannot be excluded. Blunt trauma to the chest/abdomen and head also cannot be excluded.

The liver ethanol (0.02 gm%) is consistent with decomposition.

Conclusion: Insufficient information is present to determine the cause of death. Smoke inhalation cannot be adequately assessed and an antemortem lethal injury unrelated to the fire cannot be excluded. The only reasonable cause of death is at the hands of another person or due to the effects of the fire. The body was struck after death by fragments of heat-exploded ammunition.

Cause of Death: Undetermined.

Manner of Death: Homicide.

## ***MC 65–Unknown***

This unidentified 1 ½-2 ½ year old female was found amount 27 other persons, including several children, in the concrete bunker.

There is advanced decomposition. Focal charring is present. This body was co-mingled. The body was apparently received in a bag which also contained a blanket that was badly stained red (the anthropology report indicates the red material was probably blood) having at least one perforation that might be a bullet or shrapnel hole. The margin of the hole is partially burned. No mention of any other burning of the blanket is noted. The source of the blood is not known (see MC 64).

The respiratory organs are absent or not recognizable due to decomposition. The blood CO saturation is reported as 73%. It cannot be definitively established if the reported CO saturation accurately reflects the antemortem CO content or if it is a false positive laboratory value due to the effects of decomposition (see toxicology section discussion regarding CO interpretation).

There are fractures of the right clavicle, right first rib, lateral right second rib and lateral right sixth rib. The left mandible is fractured. Most of the bones of the cranial vault are fractured. There is an area of missing bone in the midline of the posterior 1/3 of the sagittal suture which along the left side suggests that a roughly circular perforation might have been present. This area demonstrates internal beveling with associated radiating fractures. Clotted red blood is seen within the decomposing brain tissue. An antemortem gunshot wound cannot be excluded.

There are five transverse processes of thoracic vertebrae fractured at the midline. A fragment of metal is embedded within the fractured surface. I do not see any record that this piece of metal was recovered and submitted for laboratory examination.

Projectile injuries which appear to be related to exploding non-chambered ammunition are also present.

The cyanide detected in the blood (0.27 mcg/ml) is consistent with decomposition and/or smoke inhalation.

Conclusion: Insufficient information exists to determine the cause of death. Smoke inhalation cannot be adequately evaluated. An antemortem gunshot wound cannot be excluded. The only reasonable cause of death is either at the hands of another person or due to the effects of the fire. The body was struck after death by heat-exploded ammunition fragments.

Cause of Death: Undetermined.

Manner of Death: Homicide.

## **MC 66–Lorraine Sylvia**

Ms. Sylvia, a 40 year old White woman (DOB 5/23/52), was found along with 27 other persons, including her daughters (MC 67-4, 67-6), in the concrete bunker.

There is advanced decomposition. There is some charring of the body. Only the upper area of the torso is present.

There are gunshot wounds of the chest. The clothing is burned and partially absent. There is a round defect in the left bra cup and the adjacent portion of the t-shirt. No corresponding defect is seen in the coat but the burn pattern suggests the coat was open. There are at least six perforations (4-11 mm) of the left scapula. Five of the scapula defects on the anterior surface demonstrate anterior displacement of bone fragments. There are defects involving multiple ribs. Some of the rib defects are circular. A radiograph demonstrates radiodense particles within a fractured burned segment of the medial portion of the left clavicle. No range of fire determination can be made. At least 150 ml bloody material is present in the left chest. These wounds entry sites were on the back and were received at the hands of another person.

A gunshot wound of the head cannot be excluded.

There is an 8 mm circular defect in the proximal left humerus.

No assessment for smoke inhalation is possible. The respiratory structures are absent. No toxicologic data are available.

A consultant forensic pathologist (not retained by OSC) who reviewed this death indicates that this woman was shot by someone else or the wounds were caused by “exploding ordinance rounds.” I do not agree that unchambered heat-exploded ammunition (cooked off) would create these injuries. I would not expect cooked off bullets to perforate the entire thickness of the chest, including passing through the shoulder blade, and clothing covering the front of the chest (bra).

**Conclusion:** There are multiple gunshot wounds that entered through the back. The bloody material localized in the left chest indicates she was alive when she was shot. The features of the wounds indicate they were caused by low velocity projectiles. I would expect significantly more damage to the shoulder blade if the projectiles were high velocity. These wounds were sustained at the hands of another person. No assessment of smoke inhalation is present. Some small defects in other portions of the body may have been caused by being struck after death by heat-exploded ammunition fragments.

**Cause of Death:** Gunshot Wounds of Chest.

**Manner of Death:** Homicide.

### ***MC 67-1--Star Howell***

Star Howell, a 5-6 year old White female, was found along with 27 other persons, including her mother, Rachel Howell (MC 67-3) and siblings (MC 67-2, 67-5/69), in the concrete bunker.

There is advanced decomposition. The body is fragmented. Charring is accompanied by heat fractures. Most of the skull is absent except for a fragment of left parietal bone and possibly a fragment of temporal bone.

The structures of the respiratory tract are not present. The liver CO saturation is reported as 43.75%. It cannot be established if the reported CO saturation accurately reflects the antemortem CO content or if it is a false positive laboratory value related to the effects of decomposition (see toxicology section discussion regarding CO interpretation).

A gunshot wound or significant blunt trauma to the head cannot be excluded. There is a non-heat related fracture of the inferior left parietal bone.

A shrapnel defect is present in the left humerus. This is consistent with a postmortem injury related to heat-induced explosion of non-chambered ammunition.

Conclusion: There is insufficient information to determine the cause of death. The presence of smoke inhalation cannot be definitely established. A lethal antemortem injury unrelated to the fire cannot be excluded. The only reasonable cause of death is either at the hands of another person or due to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide.

***MC 67-2--Cyrus Howell***

Cyrus Howell, an 8 year old White male (DOB 3/22/85), was recovered along with 27 other persons, including his mother, Rachel Howell (MC 67-3) and siblings (MC 67-1, 67-5/69), from the concrete bunker.

Decomposition and extensive charring are present. The head, right chest wall and chest/abdominal organs are absent. No assessment for smoke inhalation is possible due to the lack of intact respiratory structures and the lack of toxicologic data.

Injuries, including firearm injuries, cannot be excluded.

Conclusion: There is insufficient information to determine the cause of death. Smoke inhalation cannot be adequately assessed. An antemortem lethal injury unrelated to the fire cannot be excluded. The only reasonable cause of death is either at the hands of another person or due to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide.

### **MC 67-3--Rachel Howell**

This 23 year old White woman (DOB 5/2/69) was recovered along with 27 other persons, including her children (MC 67-1, 67-2, 67-5/69), from the concrete bunker.

There is extensive charring. The calvarium and portions of the base of the skull missing. No assessment for smoke inhalation is possible. The proximal trachea is decomposed. The distal trachea and lungs are absent. No toxicologic data is available.

There are non-heat fractures of the right 2-3 ribs. There is a slight defect of the right first rib. Clotted blood (100-150 ml) is present on the abdominal side of the right diaphragm. The anthropology report indicates an area of clotted blood in the left middle rib area suggestive of trauma. The protocol indicates a finding of left leg crush injuries, but a detailed description of the left leg is not present. There are fractures of the midportion of the right radius and ulna.

A gunshot wound of the head cannot be excluded.

Conclusion: Smoke inhalation cannot be adequately assessed. There is evidence of some blunt trauma to the chest area which may have played a role in the death. A gunshot wound to the head cannot be excluded. Overall, I believe the available information is insufficient to reliably establish the cause of death.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

***MC 67-4--Hollywood Sylvia***

Hollywood Sylvia, a 1-2 year old White female, was found along with 27 other persons, including her mother, Lorraine Sylvia (MC 66) and sister (MC 67-6), in the concrete bunker. The front of a garment has extensive blood staining.

Advanced decomposition and focal charring are present.

The respiratory structures are not in suitable condition to assess for soot deposition. The liver CO saturation is reported as 33%. It cannot be established if the reported CO saturation reflects antemortem CO content or if it is a false positive laboratory value related to the effects of decomposition (see toxicology section discussion regarding CO interpretation).

A gunshot wound involving the head or chest/abdomen cannot be excluded. Blunt force injuries also cannot be excluded. There appears to be a large blood clot matted into decomposing tissue which appears to be lung. No injuries to bone are observed.

Conclusion: There is insufficient information to establish the cause of death. Smoke inhalation cannot be established and the presence of a lethal antemortem injury unrelated to the fire cannot be excluded. The only reasonable cause of death is either at the hands of another person or due to the effects of the fire.

Cause of Death: Undetermined.

Manner of Death: Homicide

**MC 67-5/MC 69--Bobbie Koresh** (DOB 10/14/91)

Bobbie Koresh, a 1 year old White female (DOB 10/14/91), was found along with 27 other persons, including her mother (MC 67-3) and siblings (MC 67-1, 67-2), in the concrete bunker.

Advanced decomposition is present. There is focal charring at the vertex of the skull and the right chest. The remains are fragmented.

Some soot is described in the right lung tissue. The left lung, larynx and trachea are absent. The blood CO saturation is reported as 50%.

There are several relatively superficial compression defects involving the bones of the skull and extremities. No wound tracks or focal areas of hemorrhage are seen within the decomposing brain tissue. Taken in their entirety, these are not particularly suggestive of antemortem firearm injuries. They are most likely postmortem defects related to heat-induced explosions of unchambered ammunition.

The autopsy protocol indicates “simply an impression” of an ill-defined area that may be clotted blood against a background of marked decomposing tissue. The left lung is absent. No damage to the heart is evident. No definite evidence of an antemortem mechanical injury to this area is present. I think this discoloration is probably related to decomposition.

The blood ethanol (0.06 gm%) is consistent with postmortem production.

Conclusion: The presence of soot in the lower portion of the airway indicates smoke inhalation. The elevated CO saturation in the blood is consistent with smoke inhalation. No lethal injuries unrelated to the fire are identified or reasonably suspected. The body was struck after death by fragments most likely from heat-exploded ammunition.

Cause of Death: Smoke inhalation, thermal burns.

Manner of Death: Homicide.

***MC 67-6--Rachel Sylvia***

Rachel Sylvia, a 13 year old White female (DOB 6/6/79), was found along with 27 other persons, including her mother, Lorraine Sylvia (MC 66) and sister (MC 67-4), in the concrete bunker.

There is severe charring of the partial remains. The upper torso and skull are absent. Isolated rib fragments are present. No assessment for smoke inhalation can be made. The respiratory tract structures are absent. No toxicologic data is available. Gunshot wounds of the head or chest/abdomen cannot be excluded.

Conclusion: Insufficient information is present to determine the cause of death. Smoke inhalation cannot be adequately assessed. Antemortem injuries unrelated to the fire cannot be excluded.

Cause of Death: Undetermined.

Manner of Death: Undetermined (Homicide or Suicide).

***MC 67-7 / MC 67-8--Unknown***

This unidentified child (circa 13 month old) was found along with 27 other persons in the concrete bunker. The separately identified remains 67-7 and 67-8 most likely originated from the same person.

MC 67-7: There is global charring of the partial remains which consist of the pelvis, legs, feet and left ulna. No DNA analysis was performed.

MC 67-8: The remains consist of a portion of the frontal bone, right maxilla, ethmoid and vomer.

There is a gunshot entry site in the midportion of the left frontal bone. The 15 mm circular perforation has internal beveling and is associated with radiating fractures. A 6 x 3 mm perforation of the left greater wing of the sphenoid is present. The range of fire cannot be determined.

There also appears to be a 9 mm circular defect with slight internal beveling involving the right border of the frontal bone near the midline. Only the left ½ of the this defect is present.

Conclusion: There is at least one, and possibly two, gunshot wounds of the head. Smoke inhalation cannot be adequately assessed. The gunshots were sustained at the hands of another person.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Homicide.

## **Concrete tornado shelter**

Four adults were recovered from a grave in this area. Each of these persons died of gunshot wounds on February 28, 1993.

### **MC 77–Winston Blake**

Mr. Blake, a 28 year old Black man (DOB 1/31/65), was found in a grave along with three other persons in the concrete tornado shelter. Each of these persons died of gunshots on February 28, 1993.

There is moderate-marked decomposition. The body is clothed and intact.

There is a gunshot wound of the head that entered through the right postauricular area (behind the right ear). The range of fire is very close/near-contact. No soot or powder stipple is seen on the surface surrounding the gunshot defect except for some possible slight soot deposition along the immediate edge. However, there is loss of epidermis due to decomposition. Soot/gunpowder is present in the dermis, in the subcutaneous tissue and on the underlying bone at the entry site. Laboratory testing confirmed the presence of gunpowder in the wound. Dark material in the petrous portion of the right temporal bone contained lead and antimony, but the amount of barium detected was below the laboratory's cutoff for a "positive" result. The entry site measured 5/8 inch and the scalp was extensively torn (avulsed) from the underlying skull. It is possible, although not necessary, that some reduction in damage is related to dissipation of gas in the atmosphere through the use of a suppressor. The wound is not consistent with the presence of any substantive intermediate target. The bullet passed leftward through the skull to penetrate the cranial cavity causing extensive fragmentation of the skull and damaging the brain. The fragmented bullet was recovered from the cranial cavity. The bullet was identified as a high velocity rifle bullet, specifically .223 caliber. The wound could have been received at the hands of another person. It is possible that the wound was self-inflicted. However, the location of the wound is somewhat unusual for a self-inflicted rifle wound.

No other injuries are evident.

The ethanol (0.09 gm%) and cyanide (0.03 mcg/ml) found in the blood are consistent with postmortem production. The blood CO saturation was reported as negative.

MC 77's repatriated remains were re-examined in the UK. The UK examination report indicates the presence of a right retroauricular wound consistent with a ballistic injury and having features strongly suggestive of a low weight high velocity bullet. The scalp defect was reported to measure 5 x 4 cm. The condition of the remains was felt to preclude a determination of the cause of death. The firearms expert said that the US file indicates the decedent sustained a high velocity gunshot injury during the initial gun battle. The firearms expert indicates the presence of a gunshot to the left side of the head and opines that the wound probably was caused by a high velocity relatively low weight bullet destabilized when it passed through a light intermediate target such as "material reported to have been used in the construction of the building walls."

The opinion of the UK firearms expert as to the destabilization of the bullet by the presence of an intermediate target such as the building wall is contradicted by the demonstration (visual and chemical) of gunpowder in the wound track. As noted above, the range of this gunshot is very close-near contact and enters the head through the right side.

A forensic pathologist retained during litigation about this person's death (not retained by OSC) indicates that the failure of the bullet to exit the head is inconsistent with the wound being a contact wound since it is his "experience that rifle injuries fired at close range do not remain in the body." He also points to the lack of secondary tearing of the scalp. While it is true that most high velocity bullets perforate the body, it is well recognized that some high velocity bullets, notably .223 bullets, do not always perforate and may remain in the body, as was the case with this decedent. Secondary tearing of scalp is the expected finding in contact wounds of the head using this type of gun and was not present in Mr. Winston's scalp. A number of factors may account for the absence of the usual extensive scalp tearing. The muzzle may have been close to the surface, but not in firm contact with the head, thus allowing the muzzle gasses to dissipate to some extent in the atmosphere. Any soot deposited on the skin surface would have been lost as the superficial layer of the skin (epidermis) was sloughed during decomposition. The ammunition may have been faulty. The use of a suppressor attached to the muzzle would also allow some dissipation of gas even if the suppressor was in contact with the skin surface when the gun was discharged. Some of the extensive scalp avulsion noted in the autopsy report may have been due to gas dissipation along the plane between the scalp and skull. Expansion of the gas through this area may also have played a role in preventing extensive scalp tearing. In addition, some individuals having this type of injury inexplicably lack the usual extensive tearing.

The consultant forensic pathologist's report also indicates that some other person speculated that the dark sooty material in the wound track may be remnants of tar paper from the roof of the structure. This contention is also refuted by the currently available information. A bullet, especially a high velocity small bullet such as a .223, would not carry and deposit in this fashion any material from an intermediate target, such as tar paper, through which it passed. In addition, the presence of grossly apparent gunpowder within the wound track is inconsistent with this contention.

David Thibodeau's book indicates Mr. Blake was sitting and eating breakfast when a bullet "crashed through the water tanks outside his window..." and hit him under the right ear. The postmortem examination indicates Mr. Blake's gunshot could not have been sustained in this manner. Mr. Blake's gunshot wound was caused by a gun which was being held very close to or nearly in contact with his head when it was discharged and could not have been caused by a gun fired outside of the complex. The wound is not consistent with the presence of any substantial intermediate target as Mr. Thibodeau claims. The fragmented bullet remained in the head and no defects which could be construed as exit sites were present.

Mr. Thibodeau's contends that a doctor with the Manchester, England police, who later examined the body, "found that Winston's injury could have been covered up by a subsequent point-blank shot to make it seem as if we'd [Davidians] killed him." The postmortem findings of a single entry site, no exit site and a single fragmented bullet in the body preclude this possibility. The UK pathologist who conducted the second postmortem examination was not able to examine the actual entry defect since the bone and some of the skin and subcutaneous tissue were removed and retained during the initial autopsy. Dr. Krouse, the TCMEO pathologist who examined Mr. Blake, informed the OSC that the skin and soft tissues were also very fragile due to the decomposition. These tissues likely underwent further disruption due to handling of the body subsequent to the first autopsy.

Cause of Death: Gunshot Wound of Head

Manner of Death: Undetermined (Homicide or Suicide).

## **MC 78--Jaydean Wendel**

Ms. Wendel, a 34 year old White woman (DOB 12/10/58), was recovered from the concrete tornado shelter grave site. Her body was recovered along with the bodies of three other Davidians who also died of gunshot wounds on February 28, 1993.

There is moderate-marked decomposition. The body is intact and clothed.

There is a low velocity projectile gunshot wound of the head. The entry site is in the right parietal scalp. The wound lacks any evidence of soot deposition or powder stippling. The wound is consistent with a distant wound (muzzle to target distance in excess of approximately 2-3 feet, depending on the type of gunpowder) or a wound involving the bullet passing through an intermediate target. The wound track is leftward, downward and slightly backward. The bullet passed through the scalp, skull (right parietal bone), brain to perforate the skull (left parietal bone). Bullet fragments were recovered and identified as a Hydra-Shok bullet. This wound was likely inflicted by another person.

The ethanol measured in the liver (0.03 gm%) is consistent with decomposition. The toxicology report also indicates the presence of CO in the liver (43% saturation). There is no evidence of soot deposition in the airway to support a diagnosis of smoke inhalation. In addition, there is no information suggesting this Branch Davidian decedent was exposed to any other source of CO that would result in such a high CO saturation. In view of the lack of apparent sources of CO that Ms. Wendel could reasonably have been exposed to, I believe that the reported CO saturation of 43% represents an analysis-related false positive laboratory test result that arose because of decomposition (see toxicology section discussion regarding CO interpretation).

Cause of Death: Gunshot Wound of Head.

Manner of Death: Homicide.

## **MC 79--Peter Hipsman**

Mr. Hipsman, a 28 year old White man (DOB 3/15/65), was recovered along with three other persons from the concrete tornado shelter grave. Each of these persons died of gunshot wounds sustained on February 28, 1993.

There is moderate decomposition. The body is clothed and intact. The clothing includes a hooded sweatshirt.

There are four gunshot wounds caused by low velocity projectiles:

There is a gunshot entry site on the anterolateral lower left chest. The bullet passed rightward through the left seventh rib, left diaphragm, stomach, liver, right diaphragm, right seventh rib to come to rest in the lower right axilla. The recovered bullet was a semi-jacketed 9 mm HP. It was noted to have a fragment of wood imbedded in the nose. The bullet passed through a wood intermediate target prior to striking the decedent. The bullet also apparently passed through the clothing prior to striking the decedent. No powder residue was seen on the skin or the clothing at this site. Dr. Krouse, the TCMEO autopsy pathologist, informed the OSC that the wound track through the liver was at least a couple of centimeters in diameter, maybe as wide as 3-5 cm and that it did not appear surgically repairable. A small amount of blood was present in the chest and abdominal cavities. This wound would not necessarily have been immediately lethal or incapacitating. This wound would definitely be fatal if medical care was withheld and, based on Dr. Krouse's description of the liver damage, would probably be lethal even if medical care was available.

A bullet entered the posterolateral left arm. It traveled forward through the subcutaneous soft tissue to exit the anterolateral aspect of the left arm. No gunpowder was identified on the skin. However, the bullet apparently passed through clothing prior to striking the skin. There is no physiologic reason for this wound to incapacitate the person.

There is a gunshot wound of the head that has the entry site on the back of the neck near the base of the skull. No soot or gunpowder stippling were seen on the skin around the entry site. Soot was identified in the subcutaneous soft tissue. Gunpowder from the wound track was demonstrated microscopically and by laboratory analysis. This wound was received with the muzzle of the gun in contact with the body's surface (contact wound). The wound track is upward and forward and somewhat leftward. Damage to the head/neck from the two gunshots involving this area has obscured the course of this bullet. There does appear to be an internally beveled defect with radiating linear fractures involving the left occipital bone. No bullet related to this wound was found within the calvarium. A fully jacketed 9 mm bullet was recovered from the upper midback of the clothing.

There is a gunshot entry in the posterior right parietal scalp. Soot was present around the margin of the wound. Soot was also identified on the surface of the underlying bone. Numerous gunpowder particles were identified microscopically and chemically. This wound is a near-contact/loose contact wound. The wound track is downward through the skull and brain to exit the skull through the right posterior fossa. A semijacketed HP 9 mm Winchester Silvertip bullet was recovered from the right neck below the posterior fossa.

The intersecting fracture lines created by the bullets striking the skull (neck and scalp entries) indicate that the parietal gunshot wound was sustained prior to the neck entry wound.

The three bullets belonged to the .38 caliber family. Two of the bullets (chest and “loose”) had copper jackets and one bullet (suboccipital head) had an aluminum jacket. The Tarrant County firearms laboratory indicates “intercomparison of the three bullets listed above fails to reveal any correspondence between the three.” The FBI laboratory report indicates that the aluminum jacketed bullet and one of the other bullets were discharged through the same gunbarrel.

None of the gunshot wounds appear to have been self-inflicted.

Kathryn Schroeder’s testimony indicates that she was told by Neil Vaega that Peter Hipsman had been shot in the head and abdomen while on the top floor of the tower but was still alive when he was “finished off” by Neil Vaega. Neil Vaega reportedly told her it required 2 shots to kill Mr. Hipsman. The postmortem examination of Mr. Hipsman supports a portion of this account. Mr. Hipsman did have two contact/near-contact gunshot wounds in locations consistent with shots incurred with the intent to “finish off” someone. Mr. Hipsman also had a gunshot that entered the lower left chest that would be consistent with a lay person referring to it as a gunshot of the abdomen. Contrary to the account described in the testimony, Mr. Hipsman did not have any gunshot wounds of the head except for the one previously noted. He had a relatively minor gunshot wound of the left arm that was not mentioned in the testimony.

David Thibodeau’s book indicates Mr. Hipsman was in a room at the top of the four-story residential tower when helicopter gunmen fired and Mr. Hipsman was struck in the side by a bullet which passed through him. The book indicates Mr. Hipsman was shot twice in the head to be put of his “misery” after other Davidians saw that “Peter’s wound was fatal.” The postmortem findings are consistent with the book’s description of Mr. Hipsman being killed by two gunshot wounds of the head delivered by another Davidian. The bullet that struck Mr. Hipsman in the “side” (chest) remained in the body and was not matched to any known US government agent’s gun. The book also claims that the gunshot that struck Mr. Hipsman in the side came “from above” through the ceiling. The trajectory of the shot entering the side (basically level from left to right) would only be consistent with this scenario if Mr. Hipsman was markedly bent over sideways at the waist or lying horizontal when he received this wound.

The ethanol detected in the blood (0.13 gm%) is consistent with postmortem production. No CO was detected in the blood.

Cause of Death: Gunshot Wounds of Head.

Manner of Death: Homicide.

## **MC 80--Perry Jones**

Mr. Jones, a 64 year old White man (DOB 1/20/29), was recovered along with three other persons from the grave in the concrete tornado shelter. Each of the individuals recovered from this site died of gunshot wounds on February 28, 1993.

There is moderate decomposition. The body is clothed and intact.

There is a gunshot wound of the head. The gunshot was sustained with the muzzle in the oral cavity when the gun was fired. The anterolateral right edge of the tongue is disrupted and has soot deposited on it. The wound track is backward, slightly upward and minimally rightward. The bullet passed through the palate/posterior nasopharynx, base of the skull, brainstem area, posterior fossa to lacerate the tentorium, occipital bone to exit the right occipital scalp. This gunshot could either be self-inflicted or could have been administered by another person. Although the vast majority of intra-oral gunshot wounds are self-inflicted there are occasional intra-oral gunshots that are sustained at the hands of another person. The wound features indicate it was caused by a low velocity projectile. A high velocity projectile would have caused more extensive damage.

No other injuries are identified. No significant natural diseases are found.

The ethanol in the liver (0.04%) is consistent with decomposition. The laboratory also reports the liver CO saturation as 52%. There is no indication of a CO source that would cause saturation to the extent reported by the laboratory. The reported elevated CO saturation is a false positive laboratory value related to the effects of decomposition (see toxicology section discussion regarding CO interpretation).

Kathryn Schroeder's testimony indicates Neil Vaega twice asked David Koresh if he (Vaega) could "finish off" Perry Jones. Neil Vaega reportedly then returned and told Koresh that it had been done. This testimony appears to contradict the postmortem findings, in that, the autopsy failed to reveal any wound or other physical condition that would prompt a need or desire for someone to "finish him [Mr. Jones] off." Only one wound was present and was received with the muzzle of the gun in the oral cavity when it was discharged. This wound is very typical of a self-inflicted injury, but certainly can result from the actions of some other person.

In his book, David Thibodeau indicates that he doesn't know if Mr. Jones "had died from his wounds, or if he'd killed himself, or if he'd gotten one of the guys to put him out of his suffering. Kathy Schroeder later claimed that Neal Vaega killed Perry as an act of mercy..." Mr. Thibodeau acknowledges that the autopsy demonstrated a single bullet wound fired "point-blank into his mouth." However, Mr. Thibodeau indicates all "those autopsies" were suspect. He indicates the bodies were stored in a faulty cooler at the medical examiner's office and partially decomposed prior to the autopsy. With regard to the faulty cooler, the OSC has advised me that

any refrigeration defect in the storage of the bodies was for a short period of time and occurred after the autopsies were already completed.

As noted above, the only physical injury that was demonstrated in this otherwise intact body was the intraoral gunshot. The contention that the body decomposed prior to autopsy due to faulty storage is also contrary to the postmortem findings. It is clear that the body already demonstrated moderate decomposition when it was exhumed. No significant additional decomposition occurred prior to the autopsy. In any event, the body was intact and other significant injuries would have been demonstrated regardless of any decomposition that was present.

Cause of Death: Gunshot Wound of Head.

Manner of Death: Undetermined (Homicide or Suicide).

## **Front of Complex Shallow Grave**

One adult man was recovered from a grave in the front of the complex. He had been shot and killed on February 28, 1993.

### **MC 76--Peter Gent**

Mr. Gent, a 24 year old White man (DOB 6/28/68), was recovered from a grave in the front of the complex where he was buried after being shot to death on February 28, 1993.

There is mild-moderate decomposition. The body is clothed and intact. The clothing has a defect consistent with a bullet hole.

There is a gunshot wound of the chest caused by a low velocity projectile that entered the upper anterior left chest. No soot or powder is seen on the clothing or the skin. The wound track is backward and slightly rightward passing through the anterior left second intercostal space damaging the aorta, pulmonary artery, heart, trachea and esophagus to terminate in the posterior mediastinum near the right lung hilum at the level of the sixth thoracic vertebra. The recovered bullet has copper jacketing and was identified as having been discharged through the particular barrel of an ATF agent's gun.

The ethanol found in the blood (0.14 gm%) and urine (0.05 gm%) is consistent with decomposition. No CO was detected in the blood.

Cause of Death: Gunshot Wound of Chest.

Manner of Death: Homicide.

## Ravine

One adult man was recovered on March 4, 1993 laying on the ground of a ravine where he was shot and killed on February 28, 1993.

### **MC-81 Michael Schroeder**

Mr. Schroeder, a 29 year old White man (DOB 6/12/63), was recovered on March 4, 1993 from a ravine on the Perry Barn catch pen property. Mr. Schroeder had been shot and killed during a shootout with government agents on February 28, 1993.

There are six gunshot wounds that were caused by low velocity projectiles:

There is a gunshot entrance on the anterior right shoulder. No soot or powder stipple was seen on the skin. The wound track is backward, leftward and downward. The bullet passed through the lateral right third rib, right lung upper lobe, right middle lobe passing through the hilum and transecting a large bronchus and pulmonary artery segment, pericardium to penetrate the heart. There was mild subcutaneous emphysema of the anterior right chest wall, blood in the mediastinum, blood in the right chest cavity (1225 cc) and blood in the pericardium (155 cc). The bullet is a semi-jacketed HP.

There is a gunshot entrance through the lower anterior right flank. No soot or powder stipple is noted on the skin. The bullet traveled backward, downward and leftward. The wound track is via the lateral abdominal wall, right psoas muscle, right iliac artery/vein to graze the left innominate bone and come to rest in the medial left thigh. There was approximately 1000 cc blood in the pelvis. The bullet was noted to be consistent with a Hydra-shok bullet.

There is an entry site on the anterolateral left thigh. No soot or stipple is noted on the skin. The bullet traveled leftward and downward through the soft tissue to come to rest in the posterior distal left thigh. Hemorrhage is present within the soft tissues along the wound track. The bullet was noted to be consistent with a Hydra-shok bullet.

There is an entry site in the right temporal scalp. No soot or stipple is noted on the skin. The wound track is backward, leftward and slightly downward. The bullet passed through the scalp, skull creating an internally beveled defect on the lateral floor of the right middle fossa, brain (right temporal lobe, right occipital lobe, right cerebellum) to come to rest in the right occiput. Gunshot-related skull fractures are present. Hemorrhage is present along the wound track. A large caliber semi-jacketed fragmented bullet was recovered.

There is an entrance in the right supra-auricular area (upper front corner area of the ear). No soot or powder stipple are present on the skin. The bullet passed backward and slightly downward through the superior base of the ear to re-enter the right superior post-auricular area, right temporal bone (graze) to exit the right posterior auricular area. The gunshot fractured the right temporal bone and caused laceration of the right temporal lobe of the brain.

There is a graze wound of the anterolateral left chest. The wound track is vertical.

There is no evidence to indicate any of the gunshot wounds were contact, close or medium range.

The four bullets recovered from the body were 9 mm Hydra-Shock. Three of the bullets were matched to a particular barrel. The other bullet was not matched to or excluded from being discharged from any particular barrel.

Other injuries include a 1/4 inch superficial laceration with minimal hemorrhage on the ventral distal left thumb. There are some very superficial perimortem abrasions on the upper shin.

Conclusion: Overall, the wounds and scene photographs support the agents' accounts of the shooting incident that occurred on February 28, 1993. The evidence is not consistent with an "execution" of the Davidian involving the agents standing over him and shooting as he lay on the ground as depicted in the scene photographs.

Cause of Death: Gunshot Wounds of Head, Chest and Abdomen.

Manner of Death: Homicide

### **III-2B. Clive Doyle**

Mr. Doyle arrived at the hospital circa 1 pm on 4/19/93. He had first and second degree thermal burns. His hands were burned circumferentially. The burning appears to be uniform and sharply demarcated at the wrists. One note in the medical records indicates a possibility that the thermal burns on the palmar surfaces of the hands were deeper than the other thermal burns. There was also some burning of the right ear. There were some first degree thermal burns scattered on the anterior/lateral neck and chin but these were not circumferential. No nasal soot or singed hair were identified. He was not short of breath at 1:42 pm and his oxygen saturation was 86%. Later assessment of his thermal burns indicated some full thickness thermal burns on the hands. The thermal burns were assessed as involving 6% of his body surface area (4% full thickness). Autografts were applied to the hands on April 21, 1993.

I have been advised by the OSC that Mr. Doyle was seen leaving the burning complex. At that time, his hands were described as being in flames. The police laboratory detected the presence of an accelerant on his clothing, including on the sleeves of his jacket.

Conclusion: The uniform diffuse burning of his hands and his hands being in flames is consistent with being caused by ignition of an accelerant that had been spilled or splashed onto the skin of the hands. Pushing against a burning door or wall does not typically cause this type of burning.

### **III-2C. Carlos Ghigliotty**

The OSC asked me to review the death of Carlos Ghigliotty (DOB 5/4/57). I understand Mr. Ghigliotty was a FLIR expert retained by the Government Reform and Oversight Committee and was in contact shortly before his death with Mr. Caddell, Davidian plaintiffs' attorney, regarding the ongoing civil litigation. Mr. Ghigliotty's death was officially investigated by the Laurel, Maryland Police Department and the State of Maryland's Office of the Chief Medical Examiner.

Mr. Ghigliotty had not been seen for approximately 2 weeks prior to the discovery of his body. The owner of the building in which the body was found used a pass key to enter Mr. Ghigliotty's office to check on his welfare on April 28, 2000. Mr. Ghigliotty was dead and the owner immediately contacted the police department. The decedent was laying supine on an air mattress in his office. The room was deadbolted and the blinds were closed. The office was secure and no evidence of foul play was apparent. A partially eaten sandwich was present. A wrapper dated April 3 was found in the trash. A torn cold/flu medication packet was present in the room. The decedent was known to spend extended periods of time in his office.

A thorough complete autopsy was performed on April 29, 2000 by the Maryland State Medical Examiner's Office (00-2354-027 OCME-MD). The body was moderately decomposed. No injuries were identified. The circumflex coronary artery was narrowed 40-80% by atherosclerosis. Microscopic examination of the heart demonstrated focal scarring of the heart muscle (myocardium). There was also some arteriosclerosis of the small blood vessels of the kidneys. Toxicologic studies demonstrated acetaminophen (non-narcotic analgesic and antipyretic agent) and chlorpheniramine (antihistamine) in the urine. These agents are common components in over the counter cold/flu medications such as were found in his office. No other drugs were identified. Ethanol and isopropanol were found in the blood and urine. The alcohols are consistent with decomposition. The cause of death was ascribed to a cardiac rhythm disturbance due to arteriosclerotic cardiovascular disease. The manner of death was indicated as natural. The cause/manner of death opinions were signed by the associate, assistant and chief medical examiners.

Conclusion: My review of the investigative and autopsy reports along the with photographs of the scene of death and the body support the observations and conclusions of the Maryland medical examiners. I agree with their opinion that Mr. Ghigliotty's death was a natural death due to his arteriosclerosis. There is no evidence to suggest foul play caused or contributed to his death.

Cause of Death: Arteriosclerotic heart disease.

Manner of Death: Natural

Report submitted on September 26, 2000.

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Michael Graham, M.D.

**CURRICULUM VITAE**

**NAME:** Michael Alan Graham

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**PERSONAL HISTORY:**

Date of Birth-- 9/26/51  
Place of Birth- East Liverpool, Ohio  
Citizenship---- United States of America  
Marital Status- Married  
Children----- Christopher (12-11-87)  
                  Patrick      (4-8-90)

**EDUCATION:**

1965-1969 Ursuline High School, Youngstown, Ohio  
1969-1973 B.A.(biology), St. Louis University, St. Louis, Missouri  
1973-1977 M.D., St. Louis University School of Medicine, St. Louis, Missouri

**PROFESSIONAL TRAINING:**

1977-1981 Resident, Anatomic and Clinical Pathology, St. Luke's Episcopal Hospital,  
Houston, Texas  
1981-1982 Fellow, Forensic Pathology, St. Louis University School of Medicine,  
St. Louis, Missouri

**MEDICAL LICENSURE:**

1. Missouri

**SPECIALTY CERTIFICATION:**

1. Diplomate, American Board of Pathology
  - A. Anatomic and Clinical Pathology, 1981
  - B. Forensic Pathology, 1982

**ACADEMIC APPOINTMENTS:**

- 1979-1981 Lecturer in Pathology, School of Pharmacy, University of Houston, Houston, Texas
- 1982-6/30/89 Assistant Professor of Pathology, St. Louis University School of Medicine, St. Louis, Missouri
- 7/1/89-6/30/96 Associate Professor of Pathology, St. Louis University School of Medicine, St. Louis, Missouri
  1. Pathology Residency Committee(1986-1989)
  2. Director, Division of Forensic and Environmental Pathology (1989-1996)
  3. Director, Medicolegal Death Investigator Training Course (1989-1996)
- 7/1/96-current Professor of Pathology, St. Louis University School of Medicine, St. Louis, Missouri
  1. Co-director, Division of Forensic and Environmental Pathology (1996-current)
  2. Co-director, Medicolegal Death Investigator Training Course (1996-current)

**PROFESSIONAL ACTIVITIES:**

- 1982-1985 Assistant Medical Examiner, St. Louis, MO
- 1985-1989 Deputy Chief Medical Examiner, St. Louis, MO
- 1985-current Deputy Medical Examiner, St. Louis County, MO
- 1985-current Diagnostic Cardiac Pathology, St. Louis University School of Medicine, St. Louis, MO
- 1988-current Medical Staff, St. Louis University Hospital, St. Louis, MO
- 1986-current Deputy Chief Medical Examiner, St. Charles County, MO
- 1989-current Chief Medical Examiner, St. Louis, MO
- 1992-current Deputy Chief Medical Examiner, Jefferson County, MO

**INVITED LECTURES (Partial Listing):**

Medicolegal Death Investigator Training Course, St. Louis  
University School of Medicine

1982-current Asphyxial Deaths  
1985-current Deaths Due to Bombs and Explosions  
1985-current Deaths Due to Firearms  
1988-current Introduction to Forensic Pathology  
1997-current Deaths Occurring in Custody

Forensic Administration Conference, St. Louis University  
School of Medicine

1986 Decision-Making Methods That Will Aid in Determining Standard Operating  
Procedure for Case Acquisition and Handling Techniques

Washington University Dental School

1984-88 Basic Forensic Pathology

St. Luke's Episcopal Hospital (Houston, Texas)

1984 Selected Topics in Forensic Pathology (5 day lecture series)

St. Louis Metropolitan Major Case Squad

1986-87 Asphyxial and Firearm Deaths  
5/22/90 Asphyxial and Firearm Deaths

St. Louis Police Academy Homicide Investigation Training Course

1985-87 Asphyxial and Firearm Deaths

American Academy of Forensic Sciences

1988 Annual Lectureship in Forensic Toxicology  
"Safe Handling of Contagious Specimens"

Symposium on Care of the Multiple Trauma Patient sponsored by The University Hospital  
and The American Association of Critical Care Nurses, St. Louis, MO

"Mechanisms of Firearm Injuries" (5/24/89)  
"Investigative Aspects of Forensic Pathology" (5/11/90)  
"Interpretation of Firearm Injuries" (5/3/91)

Annual Court Conference, Missouri Association for Court Administration (5/25/89)

"The Risk of AIDS Among Courtroom Personnel"

Statewide Conference on Sudden Infant Death Syndrome, Columbia, MO (10/6/89)

"SIDS - Evaluation of the Death Scene as a Necessary Component of the  
Diagnosis"

Pre-hospital Trauma Symposium sponsored by St. Louis University Medical Center, St.  
Louis, MO

"Postmortem Perspectives" (3/2/90)  
"Postmortem Forensic Examination" (9/28/90)

Southwestern Illinois Law Enforcement Commission Homicide & Criminal Sexual Assault Seminar (4/19/90)

"Modes of Violent Death"

Symposium on Pediatric Trauma ("A step beyond resuscitation for the severely injured child") sponsored by Cardinal Glennon, Children's and St. Louis Children's Hospitals (11/2/90)

"Forensic Aspects of Pediatric Trauma"

Fifth Annual Mid-America Transplant Association "Gateway to Life" Symposium, St. Louis, MO (4/26/91)

"Role of the Medical Examiner in Organ & Tissue Donation"

National Convention of the National Association of Legal Investigators, St. Louis, MO (6/18/92)

"The Role of the Forensic Pathologist in Medical/Legal Investigations"

Eighth Medicolegal Investigation of Death Seminar, West Virginia University School of Medicine, Morgantown, WV (4/3/93)

"Deaths Due to Asphyxia"

"Deaths Due to Bombings and Explosions"

Forensic Pathology Symposium, Peoria, IL (5/15/93)

"Deaths Due to Firearms"

"Deaths Due to Bombings and Explosions"

Missouri Department of Health Seminar ("SIDS-Taking Care of the Caregiver"), St. Louis, MO (6/30/93)

"Diagnosis of SIDS-Parameters and Significance"

Citizen's for Missouri's Children Seminar (Kids Count in Missouri), St. Louis, MO (11/3/93)

"What Kids Count Outcome Measures Tell Us About Child Safety"

Washington University Medical Center, Department of Neurosurgery Grand Rounds, St. Louis, MO (1/12/94)

"Interpretation of Firearm Injuries"

Washington University Medical Center, Trauma Symposium ("Crisis in the Streets"), St. Louis, MO (2/25/94)

"Recognition & Interpretation of Injuries & Evidence"

Cardinal Glennon Children's Hospital, Grand Rounds, St. Louis (4/6/94)

"Identifying Death Due to SIDS-Where are we and Where are we Going?"

International Society for Clinical Laboratory Technology (8/11/94)

"Forensic Medicine and the Laboratory"

Minnesota Coroners' and Medical Examiners' Association Annual Forensic Science Seminar (October 6-7, 1994)

- "Medicolegal case management"
- "Injury and Death Due to Firearms"
- "Asphyxial Deaths"
- "Bombs and Explosions"
- "Role of the Medical Examiner in Organ and Tissue Transplantation"
- "Deaths in Police Custody"

Medicolegal Investigation of Death and Injury in Child Abuse and SIDS Seminar, Federal Bureau of Investigation and the College of American Pathologist, Salt Lake City, UT (August 14, 1995)

- "Sudden Infant Death Syndrome-Investigation and Diagnosis"

American Society of Clinical Pathology --College of American Pathologists fall meeting, New Orleans, LA (September 21, 1995)

- "Forensic Aspects of Pulmonary Pathology"

1996 Spring Training Session, Missouri Coroners & Medical Examiners Association, Jefferson City, MO (March 14, 1996)

- "Asphyxial Deaths"
- "Deaths in Police Custody"

American Society of Clinical Pathology - College of American Pathologists spring meeting, Boston, MA (4/24/96)

- "Medicolegal Evaluation of Deaths in Custody"

American Association of Pathologists' Assistants Annual Conference, St. Louis, MO (9/20/96)

- "Medicolegal Case Management - What to Do, When to Do it & What it Means"

American Society of Clinical Pathology -- College of American Pathologists fall meeting, San Diego, CA (October 3, 1996)

- "Forensic Aspects of Pulmonary Pathology"

Missouri State Public Defenders Trial Skills Workshop, Lake of the Ozarks, MO (12/96)

- "Introduction to Forensic Pathology"
- "Injuries due to Firearms"

American Society of Clinical Pathology -- College of American Pathologists spring meeting, Chicago, IL (April 5, 1997)

- Covert Hazards in the Work place" in "The Role of the Pathologist in the Evaluation of Work-Related Illness, Injury and Death"

POST Blast Investigation Training, Fort Leonard Wood, MO (6/5/98)

- Forensic Pathology-Explosions"

Northwestern University Traffic Institute 21<sup>st</sup> National Vehicular Homicide/DUI Conference, Chicago, IL (7/7/98)

- "Forensic Pathology and the Vehicular Homicide Case"

Department of Surgery Grand Rounds, St. Louis University, St. Louis, MO (9/3/98)  
"Firearm Injuries"

Child Death Investigation Seminar; Idaho Dept. of Health and Welfare,  
St. Luke's Regional Medical Center CARES program, Idaho Dept. of Law Enforcement POST  
Academy; Boise, Idaho (9/8-9/98)

"Child Fatality Review in Missouri"  
"Introduction to Death Investigation Principles"  
"Evaluation of Suspected Rebreathing Incidents"  
"Head and Neck Injury and Shaking"  
Presentation of cases (multiple topics)

American Academy of Forensic Sciences workshop: Postmortem Pediatric Forensic  
Toxicology-Issues in Childhood Poisoning, Orlando, FL (2/19/99)

"Preparing for and recognizing potential toxicologically-related pediatric deaths:  
A forensic pathology perspective"  
"Case roundup: A survey of interesting and unique cases"

American Academy of Forensic Sciences Annual Meeting, Orlando, FL (2/22/99)  
"Asphyxial deaths"

Greater St. Louis Area Major Case Squad 34<sup>th</sup> Annual Retraining Session, St. Louis, MO  
(3/8/99)

"Evaluation of Deaths Related to Custody"  
"Medicolegal Evaluation of Death and Injury due to Explosion"

POST Blast Investigation Training, Fort Leonard Wood, MO (4/20/99)

"Explosion Investigation-Role of the Forensic Pathologist"

Emergency medicine grand rounds, Barnes-Jewish Hospital, St. Louis, MO (8/10/99)

"Firearms and ballistics"

Barnes-Jewish Hospital Trauma Symposium, St. Louis, MO (2/4/00)

"Interpretation of Patterns of Injury"

Missouri Dental Association, Missouri Emergency Response Identification Team,  
Jefferson City, MO (2/5/00)

"Introduction to Forensic Pathology"  
"Firearm Injuries"  
"Investigation of Deaths Due to Explosions"  
"Asphyxial Deaths"

American Academy of Forensic Sciences Annual Meeting, Reno, NV (2/24/00)

"Asphyxial Deaths"  
"Gunshot Wounds"

American Society of Clinical Pathology-College of American Pathologists Spring  
Meeting, Boston, MA (4/8/00)

"Forensic aspects of pulmonary pathology"

**SOCIETIES & ACTIVITIES:**

American Academy of Forensic Sciences

- Program Co-chairman, 1984 national meeting, Anaheim, California
- Plenary Program Co-chairman, 1987 national meeting, San Diego, California
- Pathology/Biology Section Secretary (1991-92)
- Pathology/Biology Section Chairman (1992-1993)
- Pathology/Biology Section Program Committee (1997-1998)

National Association of Medical Examiners

- Education and Publications Committee (1986-1996)
- Tissue Banking Committee (1986-1993)
- Committee on Pediatric Toxicology Registry (1986-1992)
- Committee on Medical Device Malfunction (1987)
- Board of Directors (1988-current)
- Secretary-Treasurer (1989-current)

College of American Pathologists

- Forensic Pathology Committee (1989-1999)

United States and Canadian Academy of Pathology

Society for Cardiovascular Pathology

Sudden Infant Death Syndrome Resources

- Medical Advisory Board (1988-1995)

American Board of Pathology

- Forensic Test Committee (1992-1997)

Mid-America Transplant Association

- Board of Directors (1991-current)

American Journal of Forensic Medicine and Pathology

- Editorial Board (1992-current)

State of Missouri East Regional Trauma Committee

- Member (1992-disbanded circa 1994)

Missouri State Child Fatality Review Board

- Spokesperson, Pathologists' Network (1992-1996)

American Red Cross, Tissue Services

- National Medical Examiner/Coroner Advisory Committee (1999-current)

**AWARDS:**

President's Award, Sudden Infant Death Syndrome Resources (1986)  
Health Professional of the Year (1992), Combined Health Appeal of Greater St. Louis  
Gift of Life Award, Mid-America Transplant Services and the National Kidney Foundation  
(1995)  
Outstanding Service Award, National Association of Medical Examiners (1999)  
Roland Quest Annual Award, Dept. of Pathology, St. Louis University (4/26/00)

**PUBLICATIONS:**

1. Graham, M., Butler, D. and Milam, J., "Thoracic Aortic Thrombi and Hypercoagulability," *Cardiovascular Diseases*, Dec. 1981, pp. 475-479.
2. Graham, M., Poklis, A., Mackell, M. and Gantner, G, "A Case of Suicide Involving the Concomitant Intravenous Injection of Barbitol and the Oral Ingestion of Arsenic," *Journal of the Forensic Sciences, JFSCA*, Vol. 28, No. 1, Jan. 1983, pp. 251-254.
3. Bagherian, V., Graham, M., Gerson, L.P. and Armstrong, D.L., "Double Pituitary Glands with Partial Duplication of Facial and Forebrain Structures with Hydrocephalus," *Computerized Radiol.*, Vol. 8, No. 4, 1984, pp. 203-210.
4. Cohle, S.D., Graham, M.A., "Sudden Death in Hemodialysis Patients," *Journal of Forensic Sciences, JFSCA*, Vol. 30, No. 1, Jan. 1985, pp. 158-66.
5. Mackell, M., Gantner, G., Poklis, A. and Graham, M., "An Unsuspected Arsenic Poisoning Murder Disclosed By Forensic Autopsy" *American Journal of Forensic Medicine and Pathology*, 6(4):358-361, Dec, 1985.
6. Cohle, S.D., Graham, M.A. and Pounder, D.J., "Nonatherosclerotic Sudden Coronary Death," *Pathology Annual*, Vol. 21, Part 2: pp. 217-249, 1986.
7. Poklis, A., Mackell, M. and Graham, M., "Disposition of Cocaine in Fatal Poisoning in Man," *J Analytical Toxicology*, Vol. 9, Sept/Oct, 1985.
8. Graham, M., Hileman, F., Kirk, D., Wendling, J. and Wilson, J., "Background Human Exposure to 2,3,7,8-TCDD," *Chemosphere*, Vol. 14, No. 6/7, pp. 925-928, 1985.

9. Graham, M., Hileman, F. D., Orth, R. G., Wendling, J. M. and Wilson, J. D., "Chlorocarbons in Adipose Tissue From a Missouri Population," *Chemosphere*, Vol. 15, Nos. 9-12, pp 1595-1600, 1986.
10. Newman, A.J., Graham, M.A., Carlton, C.G., Jr., Lieman, S.: "Incidental carcinoma of the prostate at the time of transurethral resection: Importance of evaluating every chip." *J. Urol* 1982; 128:948-50.
11. Hope, W., William, J., Gantner, G. and Graham, M., "Unacceptable Causes of Death," *Metro Medicine*, pp. 432-435, September, 1986.
12. Sotelo-Avila, C., Graham, M., Hanby, D. and Rudolph, A., "Nevus Cell Aggregates in the Placenta--A Histochemical and Electron Microscopic Study," *Am J Clin Path* 1988; 89:395-400.
13. Cohle, S., Graham, M., Dowling, G. and Pounder, D., "Sudden Death and Left Ventricular Outflow Disease," *Pathology Annual* 1988 (Part 2): 97-124.
14. Cohle, S., Trestrail, J., Graham, M., Oxley, D., Walp, B. and Jachimczyk, J., "Fatal Pepper Aspiration," *Am J Dis Child* 1988:633-636
15. Cohle, S., Graham, M., Sperry, K. and Dowling, G., "Unexpected Death Due to Infective Endocarditis," *Journal of the Forensic Sciences, JFSCA*, Vol 34, No. 6, Nov. 1989, pp 1374-1386.
16. Poklis, A., Graham, M., Maginn, D., Branch, C. and Gantner, G., "Phencyclidine and Violent Deaths in St. Louis, Missouri: A Survey of Medical Examiners' Cases from 1977 through 1986," *Am J Drug Alcohol Abuse*, 16(3&4), pp 265-274 (1990).
17. Kemp, J., Kowalski, R., Burch, P., Graham, M. and Thach, B., "Unintentional Suffocation by Rebreathing: A Death Scene and Physiological Investigation of a Possible Cause of Sudden Infant Death," *J Pediatr* 1993; 122:881-6
18. Miller, L., Wesp, A., Jennison, S., Graham, M., Martin, T., McBride, L., Pennington, D. and Peigh, P., "Vascular Rejection in Heart Transplant Recipients," *J Heart Lung Transplant*, 1993; 12:S147-52.
19. Zimmerman, S., Adkins, D, Graham, M., Petruska, P., Bowers, C., Vrahnos, D. and Spitzer, G., "Case Report: Irreversible, Severe Congestive Cardiomyopathy Occurring in Association with Interferon Alpha Therapy," *Cancer Biotherapy* 1994; 9:291-299.
20. Tracy, T.F., Silen, M.L. and Graham, M.A., "Delayed Rupture of the Abdominal Aorta in a Child Following a Suspected Handlebar Injury," *J Trauma*, 1996; 40:119-120.
21. Filkins, J.A., Cohle, S., Levy, B.K. and Graham, M.A., "Unexpected Deaths Due to Colloid Cysts of the Third Ventricle," *J Foren Sci, JFSCA*, 1996; 41:521-523.

22. Donoghue, E.R., Graham, M.A., Jentzen, J.M., Lifschultz, B.D., Luke, J.L., and Mirchandani, H.G., "Position paper: Criteria for the Diagnosis of Heat-Related Deaths," National Association of Medical Examiners, *Am J Forensic Med & Pathol* 1997; 18(1):11-14
23. Winters, G.L., McManus, B.M., for the Rapamycin Cardiac Rejection Treatment Trial Pathologists, "Consistencies and Controversies in the Application of the International Society of Heart and Lung Transplantation Working Formulation for Heart Transplant Biopsy Specimens," *J Heart and Lung Transplantation*, 1996; 15:728-735.
24. Long, C., Crifasi, J., Maginn, D., Graham, M., and Teas, S., "Comparison of Analytical Methods in the Determination of Two Venlafaxine Fatalities," *J Analytic Tox*, 21:166-169.
25. Graham, M and Hutchins, G, "Forensic Pathology-Pulmonary Pathology," *Clin Laboratory Med*, 1998; 18:241-262.
26. Randall BB, Fierro MF and Froede RC for the Members of the Forensic Pathology Committee, College of American Pathologists, "Practice Guideline for Forensic Pathology," *Arch Pathol Lab Med*, 1998; 122:1056-1064
27. Kemp J, Unger B, Wilkins D, Psara R, Ledbetter T, Graham M, Case M and Thach B, "Unsafe Sleep Practices and an Analysis of Bedsharing Among Infants Dying Suddenly and Unexpectedly: Results of a Four-Year, Population-based, Death-scene Investigation Study of Sudden Infant Death Syndrome and Related Deaths," *Pediatrics*, 2000; 106(3). URL: <http://www.pediatrics.org/cgi/content/full/106/3/e41>

#### BOOKS AND CHAPTERS:

1. Graham, M. and Gantner, G., "Certification of Death," in Forensic Pathology, A Handbook For Pathologists, second edition. Northfield, IL: College of American Pathologists; 1990:pp 35-43.
2. Graham, M. and Gantner, G., "Interacting With the Media," in Forensic Pathology, A Handbook for Pathologists, second edition. Northfield, IL: College of American Pathologists; 1990:pp 271-274.
3. Graham, M. and Gantner, G., "Heat and Cold," in Forensic Pathology, A Handbook for Pathologists, second edition. Northfield, IL: College of American Pathologists; 1990: pp 165-169.
4. Gantner, G. and Graham, M., "Death Associated With Fire and Burns," in Forensic Pathology, A Handbook for Pathologists, Northfield, IL: College of American Pathologists; 1990: pp 159-163.
5. Gantner, G. and Graham, M., "Evaluating the Quality of the Medicolegal Autopsy Protocol," in Forensic Pathology, A Handbook for Pathologists, second edition. Northfield, IL: College of American Pathologists; 1990:pp 11-17.

6. Graham, M., "Pathology: Its Role in Personal Injury Litigation," in Medical Evidence, IICLE, Springfield, IL Chapter 8 (pp 1-22), 1990.
7. Graham, M., "Role of the Medical Examiner in Child Abuse," in Child Maltreatment, eds Brodeur, A. and Monteleone, J., G.W. Medical Publishing, Inc. St. Louis, MO, 1994
8. Graham, M., "Pathology: Its Role in Personal Injury Litigation" in Medical Evidence, IICLE, Springfield, IL (1997)
9. Graham, M., "Key Differences between the Role of the Coroner in the United States and the United Kingdom" in the Oxford Textbook of Critical Care, Webb A et al (eds), Oxford University Press, Oxford, UK; 1999:pg1044
10. Graham, M., and Hanzlick, R., Forensic Pathology in Criminal Cases, Lexis Law Publishing, Carlsbad, CA, 1997
11. Graham, M., "Role of the Medical Examiner in Child Abuse," in Child Maltreatment, second edition, eds Brodeur, A and Monteleone, J, G.W. Medical Publishing, Inc., St. Louis, MO, 1998
12. Graham, M., "The Medical Examiner, part 2," in Child Maltreatment, A Comprehensive Photographic Reference Identifying Potential Child Abuse, second edition, Monteleone, J, G.W. Medical Publishing, Inc., St. Louis, MO, 1998
13. Graham, M and Monteleone, J, "Identifying, Interpreting and Reporting Injuries," in Quick Reference--Child Abuse, Monteleone, J, G.W. Medical Publishing, Inc., St. Louis, MO, 1998
14. Graham, M, "Working with the Media and Methods of Disseminating Information," in CAP Handbook for Postmortem Examination of Unidentified Remains, Fierro, M (ed), College of American Pathologists, Northfield, IL, 1998.
15. Graham, M, "The Medicolegal Autopsy: Description of the Process," in Medicolegal Death Investigation: Treatises in the Forensic Sciences, 2<sup>nd</sup> edition, Caplan YH and Frank RS (eds), The Forensic Sciences Foundation, Colorado Springs, CO, 1999
16. Graham M and Hanzlick R, Forensic Pathology in Criminal Cases-1999 Companion, Lexis Law Publishing, Charlottesville, VA, 1999
17. Dix J and Graham M, Time of Death, Decomposition and Identification-An Atlas, CRC Press, Boca Raton, FL, 2000
18. Dix J, Graham M and Hanzick R, Asphyxia and Drowning-An Atlas, CRC Press, Boca Raton, FL, 2000
19. Dix J, Graham M and Hanzlick R, Investigation of Road Traffic Fatalities-An Atlas, CRC Press, Boca Raton, FL, 2000

**PAPERS PRESENTED:**

1. Newman, A., Graham, M. and Carlton, E., "ABO Antigens in CIS and Dysplasia of the Urinary Bladder," American Urologic Assn., San Francisco, California (1980)
2. Newman, A., Graham, M., et al, "Incidental Carcinoma of the Prostate at the Time of Transurethral Resection: Importance of Evaluating Every Chip," American Urologic Assn., Boston, Mass. (1981)
3. Newman, A., Graham, M., et al, "ABO Antigens in Upper Urinary Tract Transitional Cell Tumors," American Urologic Assn., Boston, Mass. (1981)
4. Graham, M., Hayes, D., Gantner, G., "Medical Center Suicides," American Academy of Forensic Sciences, Anaheim, California (1984)
5. Graham, M., McGivney, J., "Fatal Mediastinitis Following Dental Extraction," American Academy of Forensic Sciences, Anaheim, California (1984)
6. Cohle, S.D., Graham, M.A, "Sudden Death in Hemodialysis Patients," American Academy of Forensic Sciences, Anaheim, CA (1984)
7. Cohle, S.D., Graham, M.A., "Nonatherosclerotic Sudden Coronary Death," International Academy of Forensic Sciences, Oxford, England (September, 1984)
8. Graham, M., Hileman, F., Kirk, D., Wendling, J. and Wilson, J., "Background Human Exposure to 2,3,7,8-TCDD," Fourth International Symposium on Chlorinated Dioxins and Related Compounds, Ottawa, Canada (October, 1984)
9. Graham, M., Wong, S. and Poklis, A., "Death Due to Inhalation of Maleic Anhydride," American Academy of Forensic Sciences, Las Vegas, Nevada (1985)
10. Gantner, G., Graham, M. and Gantner, T., "Provision of Lay Autopsy Reports to Families," American Academy of Forensic Sciences, Las Vegas, Nevada (1985)
11. Graham, M., Hileman, F., Wendling, J. & Wilson, J. "Chlorocarbons in Adipose Tissue Samples," Fifth International Symposium on Chlorinated Dioxins & Related Compounds, Bayreuth, Federal Republic of Germany (Sept. 1985)
12. Graham, M., Tsai, C., Miller, L., Williams, G., Tsai, L., and Martin, T., "Active Lymphocytic Myocarditis in Sudden Unexplained Death," International Academy of Pathology, Annual Meeting, New Orleans, Louisiana (March, 1986)

13. Graham, M., Hileman, F., Wendling, J., and Wilson, J., "Chlorocarbons in Adipose Tissue and Liver Tissue Samples," Sixth International Symposium on Chlorinated Dioxins and Related Compounds, Fukuoka, Japan (September, 1986)
14. Graham, M., and McCallister, HA, "The Spectrum of Myocardial Lesions Due to Catecholamines," National Association of Medical Examiners, Annual Meeting, Tucson, AZ (Nov., 1986)
15. Graham, M., "Evaluation of Human Exposure to Dioxins and Other Environmental Trace Contaminants," American Academy of Forensic Sciences (Plenary Session), San Diego, CA (Feb., 1987)
16. Burch, P., Graham, M., Poklis, A., "Sudden Death Associated with Phencyclidine," American Academy of Forensic Sciences, San Diego, CA (Feb., 1987)
17. Graham, M., Burch, P., Cohle, S., Bux, R., Poklis, A. and Lynch, R., "Recreational and Iatrogenic Fatal Water Intoxication," American Academy of Forensic Sciences, Philadelphia, PA (Feb., 1988)
18. Burch, P. and Graham, M., "SIDS or Infanticide?--Differentiating SIDS From Overlying and Other Forms of Infant Death When Autopsy Findings are Non-diagnostic," American Academy of Forensic Sciences, Philadelphia, PA (Feb., 1988)
19. Poklis, A., Maginn, D., Graham, M. and Gantner, G., "Drug Abuse Trends in St. Louis, MO; 1977-86," American Academy of Forensic Sciences, Philadelphia, PA (Feb., 1988)
20. Graham, M., "The Forensic Examination of the Cardiac Transplant Recipient," National Association of Medical Examiners, Boston, MA (Nov., 1988)
21. Cohle, S., Graham, M., Sperry, K. and Dowling, G., "Unexpected Death Due to Infective Endocarditis," American Academy of Forensic Sciences, Las Vegas, NV (Feb., 1989)
22. Pegors, C., Vogler, C., Graham, M. and Beeson, R., "Skeletal Muscle in Victims of SIDS: A Morphometric Assessment," American Society of Clinical Pathology, San Francisco, CA (1990) (Poster)
23. Kemp, J., Kowalski, R., Graham, M. and Thatch, T., "Positional Ventilatory Impairment in a Serial Study of 23 SIDS Cases", The American Pediatric Society and The Society for Pediatric Research, Boston, MA (May, 1992)
24. Jennison, S., Wesp, A., Graham, M., McBride, L., and Miller, L., "Through Cyclosporin Levels in the Early Postoperative Period Do Not Influence the Rate of Subsequent Acute Cardiac Rejection," Third International Congress on Cyclosporine, Seville, Spain (March, 1994)

25. Graham, M., "Rebreathing - It's Role in SIDS," National Association of Medical Examiners Interim Meeting, Seattle, WA (February, 1995)
26. Case, ME, Graham, MA and Wood JE, "Spinal Cord Injury in Child Abuse", National Association of Medical Examiners, Traverse City, Michigan (September, 1996)
27. Graham, MA and Case, ME, "Hyperthermia in St. Louis - Evolution of a Community Response", National Association of Medical Examiners, Traverse City, Michigan (September, 1996)
28. Case ME, Graham MA and Wood JE, "Spinal cord injury in Child Abuse by Shaking," The Second National Conference on Shaken Baby Syndrome, Salt Lake City, Utah (September, 1998)

9/8/2000