

FINAL REPORT

CONCERNING

THE FIRE AT THE BRANCH
DAVIDIAN COMPLEX
WACO, TEXAS
APRIL 19, 1993

PREPARED FOR

THE OFFICE OF SPECIAL COUNSEL
WACO INVESTIGATION

BY

WALTER WETHERINGTON
FIRE INVESTIGATOR

Table of Contents

1	Introduction	4
1.1	Background	4
1.2	Review of Visual and Documented Evidence	4
1.3	Work Performed and Review of Physical Evidence	6
1.3.1	Work Performed	6
1.3.2	Review of Physical Evidence	8
1.4	Conclusions	
2	The U.S. Government's 1993 Fire Investigation	8
2.1	Summary	8
2.2	Assessment of the Complex Structure and Its Contents	10
2.3	Seizures and Processing of Evidence	10
2.4	Accelerant Detection Canine Reliability	10
2.5	Chemical Analysis of Evidence and Structural Debris	11
2.6	Cause and Origin Determination	11
2.7	Conclusions	11
3	The Origins of the Branch Davidian Complex Fire	12
3.1	Summary	12
3.2	Fire A: The Cafeteria	12
3.3	Fire B: The SE Corner	13
3.4	Fire C: The Stage at the Rear of the Chapel	13
3.5	Conclusions	14
4	The Cause of the Branch Davidian Complex Fire	14
4.1	Summary	14
4.2	Physical Evidence of Arson	14
4.2.1	Fuel Cans	14
4.2.2	The Torch	16
4.2.3	Accelerants in the Branch Davidian Complex Debris	16
4.2.4	Accelerants on Davidian Clothing	17
4.3	Davidian Admissions	17
4.3.1	Title III Intercept Tapes	17
4.4	Eye Witness Statements	20
4.5	Conclusions	20

5	Fighting the Branch Davidian Complex Fire	20
5.1	Summary	20
5.2	Multiple Fires and Amount of Time to Escape	20
5.3	Conclusions	21
6	Branch Davidians' Critique of the Governments' 1993 Fire Investigation	21
6.1	Summary	21
6.2	Conclusions	22
7	Final Conclusions	23

Appendices

Appendix A:	Color coded photograph Mt. Carmel Complex
Appendix B:	Photographic Fire Sequence: Aerial
Appendix C:	Photographic Fire Sequence: White Side
Appendix D:	Photographic Fire Sequence: Red Side
Appendix E:	Photographic Fire Sequence: Black Side
Appendix F:	Photographic Fire Sequence: Green Side
Appendix G:	Photographs of the Points of Origin of the Three Fires
Appendix H:	Photographs Origin of Fire: Kitchen/Cafeteria
Appendix I:	Photographs Origin of Fire: Southeast Corner
Appendix J:	Photographs Origin of Fire: Stage/Gym
Appendix K:	Photographs Punctured Fuel Cans
Appendix L:	Photographs Evidence
Appendix M:	Photographs Torch
Appendix N:	Photograph Davidians' Escape Routes from Fire
Appendix O:	Sketch of Complex: Fire Evidence Locations and Grid Sketch
Appendix P:	Photographs Building Materials
Appendix Q:	Resume

1. Introduction

1.1 Background

On December 7, 1999, I was retained by the Office of Special Counsel to evaluate the U.S. Government's independent fire investigation and review evidence related to the fire that destroyed the Branch Davidian complex on April 19, 1993. I was tasked to answer the following questions:

- Did agents of the United States start or contribute to the spread of the fire that killed members of the Branch Davidian group on April 19, 1993;
- Did the United States Government's independent fire investigation accurately and completely define the cause of the fire and its point(s) of origin;
- Can additional information be developed concerning the cause and/or point(s) of origin of the fire; and
- Could firefighters have controlled or stopped the spread of the fire.

1.2 Review of Visual and Documented Evidence

To answer the questions I conducted a careful review of investigative disciplines and methodology utilized by the United States Governments' original fire investigation team.

I have also completed an exhaustive review of documents and visual evidence that relate to the Waco fire and the subsequent investigation. I have examined a wide variety of material including, but not limited to, the following:

Reports

- Orientation materials from the Office of Special Counsel
- Fire investigation report, Congressional testimony and civil litigation testimony of Paul Gray, Department of Justice expert
- Fire investigation report of William Cass, Department of Justice expert
- Fire investigation report of Thomas Hitchings, Department of Justice expert
- Fire investigation report of John T. Ricketts, Department of Justice expert
- Fire investigation report, Congressional testimony and civil litigation testimony of Dr. James G. Quintiere, Department of Justice expert
- Laboratory report of Andrew Armstrong, Department of Justice expert
- Report of John Kaus and John Hudec, accelerant detection dog handlers
- Reports by W. Gene Corley, Hans C. Kosel, and Brian G Stejskal with Construction Technology Laboratories, Department of Justice experts
- Deposition by W. Gene Corley, Department of Justice expert

- Report and civil declaration by Richard L. Sherrow, Branch Davidian expert
- Final report of Patrick M. Kennedy, Branch Davidian expert
- Final report of Systems Engineering & Laboratories Corporation, Branch Davidian expert
- Final report of Andrew Armstrong, Department of Justice expert
- Final report of William Cass, Department of Justice expert
- Final report of Thomas Hitchings, Department of Justice expert
- Final report of James G. Quintiere, Department of Justice expert
- Final report of John Ricketts, Department of Justice expert
- Final report of Michael O. McNamee, Department of Justice expert
- Deposition by Michael O. McNamee, Department of Justice expert
- Final report of Construction Technology Lab, Department of Justice expert
- Deposition of Davidian Graeme Craddock
- Deposition of Dr. Andrew Armstrong, Department of Justice expert
- Vector Data Systems (U.K.) Ltd. Final Report

Videos and Photographs

- Four Forward Looking Infrared video tapes taken by the FBI on April 19, 1993
- Photographs of the Branch Davidian complex fire taken by the FBI (CDs and zip drive-each containing different photographs)
- Video tape “Major Network News Footage” created by the Office of Special Counsel
- Video tape “Fire Footage, Mt. Carmel” created by the Office of Special Counsel
- VHS tape created by the FBI laboratory, and used by Dr. Quintiere in preparing his final report concerning Branch Davidian fire
- Three CDs containing fire photographs, scanned at 600 dpi or higher resolution
- VHS tape copy- KWTX fire coverage
- VHS tape of fire coverage compiled by the Office of Special Counsel
- Twenty-six (26) VHS tapes created by Texas Department of Public Safety of Branch Davidian complex after the fire and during crime scene processing
- Photographs and Video tapes showing Texas Department of Public Safety crime scene security with personnel and tape around perimeter of fire scene
- VHS tape of Methylene Chloride (MC) Experiments
- Two hundred seventy-one (271) photographs of fire on April 19, 1993, from Office of Special Counsel
- One comprehensive set of video tapes containing all available FBI and media coverage of the fire on April 19, 1993
- Five hundred and three (503) crime scene photographs (with index)
- VHS Tape “The Big Lie”

Maps, charts and logs

- Various diagrams and drawings of the Branch Davidian complex
- Fire scene sector and grid plotting of fuel containers, lanterns, lantern parts and knives prepared by investigators of the Office of Special Counsel
- Crime scene sectors used for examination and evidence collection by the U.S. Government's fire investigators
- Texas Department of Public Safety crime scene evidence logs
- Texas Department of Public Safety crime scene photograph logs
- Laboratory report by William J. Stokes of the FBI Laboratory

Miscellaneous

- Briefing Materials prepared by Kennedy & Associates for the Office of Special Counsel

1.3 Work Performed and Review of Actual Evidence

1.3.1 Work Performed

The following is a summary of the work I performed in the course of my investigation:

- Participated in a conference of Office of Special Counsel experts at the Office of Special Counsel Washington, D.C. office, addressing the Branch Davidian complex fire investigation.
- Spent three days at the Office of Special Counsel in Saint Louis, Missouri, meeting with staff, reviewing photographs and evidence of the Branch Davidian complex fire investigation. Developed plans for further investigation.
- Traveled to Peterborough, England where I met with experts for the Office of Special Counsel Vector Data Systems, David Oxlee, Nick Evans, Robert Scully and Dr. Ulf Wickstrom, Head of the Department of Fire Technology at the Swedish National Testing and Research Institute. During this meeting we discussed all aspects of the FLIR tapes as they related to the fire locations and time sequence for the spread of the fire. We also made comparisons between the FLIR and other photographs and videos.
- Participated in conference calls, conferences, letters and faxes with the Office of Special Counsel.
- Traveled to Waco, Texas, with Office of Special Counsel investigators on three occasions to examine fire evidence. I spent a total of fourteen days conducting these examinations. This time also includes a visit to the Branch Davidian complex

site for a better perspective of the layout. Attended interviews conducted by the Office of Special Counsel investigators, including Dr. Andrew Armstrong, in Arlington, Texas, and Texas Ranger Sgt. Lane Akin in Decatur, Texas.

1.3.2 Review of Physical Evidence

- My examination of the physical fire evidence began on March 29, 2000. All fire related evidence located at the Federal Court in Waco was examined. Evidence maintained by the Court offsite and in the large conex containers was also examined. I made these examinations to, determine among, other things, (1) the thoroughness of prior investigations, (2) whether the evidence supported one or more points of origin; and (3) who may have started the fire(s).
- I examined all metal cans recovered from the Branch Davidian complex debris. A total of thirteen (13) had puncture holes that appeared to be created intentionally. I plotted these cans on a sector/grid map for their relationship to the separate fires. The Office of Special Counsel toolmark expert conducted a further examination of these cans. My review of these cans and the results of the examination are further covered under Physical Evidence of Arson 4.2.1.
- I examined all items of clothing that contained evidence of accelerants, including jackets, shoes, and pants. This examination is further covered under 4.2.3, Accelerants on Davidian Clothing.
- A large percent of evidence had to be sifted by hand due to the minute size of the pieces. These very small pieces helped confirm building materials and to assist in establishing fire load within the complex. The information gathered from the building materials was provided to Dr. Ulf Wickstrom, an expert for the Office of Special Counsel. Based on this review, I identified many of the building materials. The materials located were consistent with those identified by experts for the Branch Davidians and the Department of Justice. I further compared these findings to photographs of the complex and statements made by Davidians concerning the building construction. This is further covered under 2.2.2, "The Branch Davidian Complex Structure and Its Contents."
- I also examined all the propane tanks recovered from in and around the Branch Davidian complex. Only one tank showed effects consistent with a "bleve" or a boiling liquid vapor explosion. This bleved tank was located on the exterior of the complex adjacent to the central tower and concrete bunker. I understand that Office of Special Counsel expert, Dr. Jerry Havens, is addressing the damage to this propane tank. Four of the remaining propane tanks had the valves removed before the fire and were empty at the time of the fire. The propane tanks recovered from the scene had nothing to do with the separate fires inside the complex.

- Access to the evidence was coordinated between Office of Special Counsel investigators and the Clerk of the United States District Court for the Western District of Texas. Times of examination were in accordance with the Western District of Texas requirements and all evidence was resealed after examination. Texas Ranger Sgt. Lane Akin assisted, for a short time, during the last part of my evidence examination. He pointed out some of the areas at the Branch Davidian complex where evidence was collected. He also identified a torch that was collected from the Branch Davidian complex cafeteria. A discussion concerning this torch is covered under The Torch, 4.2.2.

1.4 Conclusions

A very careful and detailed examination was made of all the above evidence. The evidence and photographs were examined and then reexamined several times. Photographs were examined using a large shop magnifying glass with an electric bulb. I also enlarged selected photographs to resolve further detail. Many of the videotapes were replayed frame-by-frame for detail and referred to many times before any determinations were made. Cross checks was made between photographs, videotapes and other reported information for comparisons and to verify the conclusions. From my examination of all the evidence, I conclude with absolute certainty that there were three points of fire origin within the Branch Davidian complex. Evidence further supports that each of these fires was intentionally started by the Davidians.

2 The U. S. Government's 1993 Fire Investigation

2.1 Summary

I reviewed all the fire-related material available to the Office of Special Counsel, including the Vector Data Systems, (U.K.) final report concerning the April 19, 1993, FLIR tapes. As noted in Section 1.3, I also met with Vector Data Systems in the United Kingdom to discuss their findings regarding the first visual sighting of fire on the FLIR tapes from April 19, 1993. I also examined physical evidence and viewed the scene. I am not aware of whether all of this information was available to the original fire investigators.

2.2 Assessment of the Structure and its Contents

To evaluate the structure and building materials I reviewed all available resources, including witness's statements and the U. S. Government Fire Investigators' reports. My review also included an examination of all physical evidence, fire debris in Court-maintained conex containers, ground level and aerial photographs, Texas Department of Public Safety crime scene photographs and videos, and TV networks videos. The fire load was not completely determined by the original fire investigators.

The materials used to construct the Branch Davidian complex consisted of the following:

The main structure was a multi-storied, wood-framed building in an irregular shape. Contained within the building on the ground floor were the men's living quarters, a kitchen and dining room with adjacent food storage area (concrete bunker), several utility rooms, a chapel and a gymnasium. The second floor was located over the entire length of the front of the building and above the food storage area, as well as in an area above the northeast portion of the chapel. The second floor was apparently used as quarters for women and children, and also contained the quarters of Vernon Howell, a.k.a., David Koresh. Both the southeast and southwest corners on the front of the building contained a third floor. A third and fourth floor were located over the food storage area (concrete bunker).

The building had been constructed haphazardly over a period of time, with no attention to existing building or fire codes. The building had no bathrooms or plumbing fixtures, with the exception of sinks located in the kitchen area. Lumber from other, previously demolished structures was used in the complex construction.

The interior foundation of the Branch Davidian Complex was made with a variety of materials that included the following: unreinforced concrete blocks and cinder blocks set directly on the earth; unreinforced concrete slabs; and poured concrete blocks made by using five gallon cans and one-half gallon milk containers

The exterior framing consisted of 2" X 4" and 2" X 6". The roof was constructed with of 3/8" plywood laid over 2"X 8"homemade trusses. Several types of flooring were used, including 1/2" plywood, 1" particleboard, and 1" particle board over 1" X 6".

The majority of the materials reported by the Government's Fire Investigators are consistent with my findings. Additional materials not identified in their findings are as follows:

The roof was covered with roofing felt # 15 STD. The roofing felt was then covered with two types of material, each on a different part of the roof. One section was covered with roll asphalt composition material and the other with fiberglass shingles with an asphalt base. The front side of the complex roof was covered with shingles from the apex of the roof to the overhang. This can be seen in FBI photograph 1071850, this photograph was taken from the White side, ground level. The remainder of the roof was covered with roll roofing. See appendix P, photographs of building materials.

The first floor (excluding cafeteria) and second floor walls and ceilings were covered with 1/2" drywall, also referred to as sheet-rock. Drywall on the second floor can be seen in FBI photographs 1071851, 1071852, 1071864, 0850082 and 1071877. See Appendix P, photographs. These photographs were on the ground level. See Appendix P, photographs of building materials. There were no doors to the rooms on the second floor.

The exterior walls were covered with two types of material, each on a different part of the exterior wall. The first type ½” T1-11 panels covered the entire structure except the wall of the cafeteria Black side and the tower over the concrete bunker. The cafeteria wall and tower were covered with wood boards approximately ½ ” thick.

2.3 Seizures and Processing of Evidence

The arson evidence was properly seized and processed. My conclusions are based upon witness statements, examination of the evidence, photographs and video tapes after the fire, evidence logs, plotting sheets, chain of custody and transfer of evidence, laboratory evidence receipts and findings. The security of the scene and sectors used for searching were also reviewed. A copy of the search grid is attached as Appendix L. Photographs of the search scene are included in Appendix L, Photographs L-2 and L-3.

2.4 Accelerant Detection Canine Reliability

After careful review of the manner in which the accelerant canine was utilized at the Branch Davidian fire scene, I conclude that the accelerant canine was used properly by the fire investigators. The handlers, Fire Marshal John Kaus and Detective John Hudec, were well trained in the handling of accelerant canines. The canine, a black Labrador retriever named “Onyx,” was certified in the detection of accelerants.

The manner in which an accelerant canine is used is a discretionary decision. This decision is typically based on the type of scene to be examined. An accelerant detection canine should only be used as a tool to locate flammable liquids for laboratory analysis. They should not be used to determine the fires’ points of origin. In this case, Kaus and Hudec used Onyx only to locate liquids for laboratory analysis.

Every piece of evidence collected from the Branch Davidian complex that the laboratory identified as containing flammable liquids also received an alert by the accelerant canine. There were however, many other alerts by the canine where the laboratory was unable to find flammable liquids. This is not unusual, as the dog’s nose is often more sensitive than the laboratory equipment. Incidentally, fire investigators frequently encountered the same type problem. Although they may smell a petroleum product in the fire debris, when the debris is analyzed it comes up negative for accelerants. The original fire investigators did not make the mistake of relying solely on Onyx’s alerts, and focused solely on accelerant evidence confirmed by the canine and the laboratory.

For the purpose of my report, I too, rely solely on those accelerant detections confirmed by both the canine and the laboratory.

2.5 Chemical Analysis of Evidence and Structural Debris

I conclude that the laboratory analysis performed by Dr. Andrew Armstrong was properly conducted. Moreover, Dr. Armstrong’s results are supported by the flammable liquids identified

by the accelerant canine. Based on Dr. Armstrong's findings, I conclude that most of the Davidians who escaped the fire had some type of flammable liquid on their clothing. Two people were wearing jackets that had sizeable burn effects. In fact, the type of burn on one of the jackets, coupled with burns to the individual's hands, are consistent, in my experience, with those of a fire starter.

Dr. Armstrong's report also supports flammable/combustible liquids at the following point(s) of fire origin:

- (1) In the southeast corner, a cloth-containing residue of a heavy petroleum distillate was found, DPS# 796.
- (2) In the chapel, six different evidence samples containing flammable liquids were found. Four of these samples contained kerosene, DPS# 76, 77, 78, and 79; one contained a mixture of gasoline and kerosene, DPS# 74; the final one contained gasoline DPS# 44.
- (3) A sample taken from the kitchen/serving port area also contained gasoline DPS# 1176.

A test for flammable liquids was negative on the torch located in the cafeteria. This is not unusual considering the amount of fire. See Appendix O, "Sketch of Complex," for fire evidence locations.

2.6 Cause and Origin Determination

The U. S. government fire investigation accurately defined three point(s) of fire origin in the complex. These locations were the southeast corner, cafeteria, and rear of the chapel. The Government's fire investigators also accurately concluded that the fire was intentionally started by the Branch Davidians inside the complex. The fires started within two to three minutes of one another. See Appendix G, "Photograph Points of Origin of the Three Fires."

2.7 Conclusions

All investigation materials and expert opinions submitted by the government's fire investigators Paul Gray, William Cass, Thomas Hitchings, John Ricketts, and fire dynamics experts Dr. James G. Quintiere and Dr. Frederick W. Mowrer were thoroughly reviewed and considered. Materials and opinions of Branch Davidian experts were also taken into consideration before any final conclusions were made.

I believe there was a lack of follow-up and coordination among the Government's fire investigators. There appears to have been little or no coordination on their reports and requests for various forensic tests to support the investigative findings were not submitted. Although

these failures did not materially affect the accuracy of their findings, it did affect the completeness and cohesiveness of their final report.

3. The Origins of the Branch Davidian Complex Fire

3.1 Summary

Based upon my review of all the available physical and documentary evidence, I conclude there were three (3) separate, distinct and unconnected fires in the Branch Davidian complex. All three of these fires were started nearly simultaneously. There is also ample evidence to support combustible materials, such as hay, had been placed at different locations throughout the complex. Evidence also supports flammable liquids being poured in the complex in addition to the three points of origin. Dr. Ulf Wickstrom, a fire dynamics expert retained by the Office of Special Counsel, examined the spread and sequence of the fires. We have coordinated in our investigative findings.

3.2 Fire A: The Cafeteria

The first visible indication of smoke from the fire came from the (Black Side) of the Branch Davidian complex. More specifically, the smoke escaped the back of the cafeteria and traveled towards the Green Side and away from the complex. As shown in photographs H 11-H13 of Appendix H, the smoke from the back of cafeteria appears moments before smoke erupts from the Southeast Corner of the Complex. This first visible smoke occurs at approximately 12:07 p.m.

Vector Data Systems' (U.K.)'s Final Report to the Office of Special Counsel states that a heat source from the cafeteria appears at 12:08:26. The report further points out that the cafeteria heat signature was a strong signature indicating that the heat was intense at that location. In fact, they conclude that the signature was stronger than the one seen in the Southeast Corner at 12:07:43.

The fire located in the cafeteria was along the eastside of the room, next to the concrete bunker, and then extending in a northeast direction. See Appendix H, Photographs H-1 through H-7 that shows the fire in the initial stage. No smoke or fire is seen coming from the left side of these photographs or from the southeast direction. See Appendix H, Photographs H-8 through H-10.

The witness statement of Marjorie Thomas, who was on the second floor close to the steps that lead down to the kitchen area, stated she first observed fire through cracks on the second floor. Davidian Thomas was likely observing the cafeteria fire on the first floor.

Combustible materials located in the cafeteria included the remains of hay, and eight 20-pound and one 35-pound propane tank. These tanks were located at the south side of the

cafeteria adjacent to the concrete bunker, four did not have valves, the threads were not stripped and all were empty. Although these tanks were present in the cafeteria, I do not believe they were responsible for the fire at that location.

A torch was also located in the cafeteria next to the Black Side wall. This is where the fire was first observed coming from the cafeteria through the exterior wall. The recovery of the torch, although not conclusive, is evidence of an intent and highly suggestive of a plan to start a fire at this location. See section 4.2.2, "The Torch," for further description and also Appendix M, for Photographs. Four one-gallon fuel cans were also recovered from the cafeteria. These cans had no holes but are logically involved with the fire at this location. I believe the fire in the cafeteria is also connected with two punctured fuel cans with puncture holes and traces of gasoline located at the door to the cafeteria. See Appendix O, "Sketch of Complex: Fire Evidence Locations and Grid Sketch."

3.3 Fire B: The Southeast Corner

A second fire was started in the southeast corner on the second floor of the complex, adjacent to the roofline of the chapel. See Appendix I, "Photographs Origin of Fire- Southeast Corner." See also Appendix D, "Photographic Fire Sequence, Red Side D-1 through D- 36."

Vector Data Systems (U.K.), in their final report to the Office of Special Counsel, stated the first FLIR visible outbreak of fire on the second floor of the Red/White corner occurs 12:07:43. Combustible materials located in the fire debris of the southeast corner (Fire B), included the following: small particles of wood, hay, remains of three single mattresses (springs), miscellaneous papers, small particles of clothing, curtains, and remains of two overstuffed chair (springs). A cloth located in the southeast corner also contained the residue of a heavy petroleum distillate. (Grid JA-1.) Two one-gallon fuel cans were also located in the same area. Nothing could be determined from these cans due to their rusted condition. I conclude that there was no other obvious purpose for these cans other than to support the fire started at this location. In Grid JB-1, a one-gallon can with holes was identified. I also believe that this can was used to spread fuel for the fire in the southeast corner and is covered under section 4.2.1.

3.4 Fire C: The Stage at the Rear of the Chapel

A third fire was started on the stage at the rear of the chapel. See Appendix J, "Origin of Fire- Stage/Gym J-1 through J-6." These photographs depict the erupting of a fire on the stage towards the rear of the chapel

Vector Data Systems in their final report to the Office of Special Counsel stated that the first visible evidence of fire coming from the collapsed walkway occurs at 12:10:21. They further indicated that this probably resulted from the spread of fire on the Red Side.

3.5 Conclusions

Both conventional photographs and FLIR imagery confirm three points of origin for the fire in the Branch Davidian complex: (A) Cafeteria; (B) The Southeast Corner; (C) The Stage at the Rear of the Chapel. The letters “A, B and C” are not intended to imply order of ignition. The outbreak of these fires was nearly simultaneously and within two or three minutes of one another. For photographic fire sequence of Mt. Carmel complex see Appendices B, C, D, E and F.

4. The Cause of the Branch Davidian Complex Fire

4.1 Summary

The physical evidence, the Title III Intercept tapes, witness statements and other documentary evidence clearly establish that three (3) separate and distinct fires were started by the Branch Davidians on the interior of the complex. These were intentionally set within a two or three minute time span. There was no external source for these fires. All fires were products of the Davidians’ own design. As described in the previous section, the fires originated in the cafeteria, southeast corner and the stage at rear of chapel.

4.2 Physical Evidence of Arson

4.2.1 Fuel Cans

The puncture holes in the fuel cans located at four different areas inside the complex appear to have been by a knife blade or a bayonet. The significance of the cans with numerous, intentionally punctured holes shows that they were used to spread fuel for setting a fire and not for the intended purpose, to store fuel.

The use of punctured fuel cans is an expedient technique for the distribution of fuel with no regard for the safety of those individuals spreading the fuel or for others. The effect is similar to using a watering bucket with a spray for watering flowers. This method gives a wider distribution of fuel than from the can’s normal opening and sustained burning when poured on other combustible materials such as hay, papers, mattress and stuffed chairs. Some of these types of combustible materials were located at all points of fire origin within the complex. Fuel containers were located at all of the points of fire origin, including containers that had not been punctured. This method of spreading fuel could also account for fuel on the clothing and shoes of the individuals spreading fuel. Cans that had numerous puncture holes would be of no value to fill a lantern or stove and, in fact, would be a hazard around any open flame.

Many arsonists have employed the technique of puncturing fuel containers for the purpose of setting a fire. The manner in which they are punctured and their placement are all factors to achieve a desired result. In the case of the Davidians, they obviously had no concern about getting the fuel on themselves as suggested by the number of holes in some cans.

I carefully evaluated the location of the punctured fuel cans and one punctured lantern base to determine how they related, if at all, to the points of fire origin within the complex. See Appendix O, "Sketch of Complex: Fire Evidence Locations and Grid Sketch" for the locations of the fuel cans and lantern base. See Appendix K, "Photographs Punctured Fuel Cans," "K-1 to K-20 to view the cans and K-21 and K-22 to view lantern base.

Three one-gallon fuel cans and a lantern base with puncture holes were found on top of the concrete bunker (Grid M-2) above where a large number of Davidians were located. This would also be indicative of the fact that fuel was dispersed at this location. There is no other logical purpose for taking fuel containers with holes and a punctured lantern base into the tower above the concrete bunker.

Two one-gallon punctured fuel cans were located next to the cafeteria entrance (Grid 1B-1.) This location is also in the serving area adjacent to steps leading to the second floor. It should be further noted that the gasoline was identified from laboratory analysis of debris at this same location. It is logical to conclude that the punctured fuel cans at this location and gasoline is connected with the fire in the cafeteria and possibly connecting to the concrete bunker.

A one-gallon fuel can with holes was located at Grid JB-1; this grid area is adjacent to the southeast corner where one of the fires was started.

Six one-gallon fuel cans with puncture holes were located in the chapel, Grids N-1, N-2 and N-7. The location of these cans is consistent with positive laboratory analysis for flammable liquids at six different points that also included the stage.

The fuel cans, along with other evidence, helped to establish the points of fire origin inside the Branch Davidian complex. The puncture holes to the fuel cans also established intent by the Davidians, and further eliminate as a possibility any accidental causes for the fires.

An examination was conducted by William George and John Kaltenbronn, toolmark experts for the Office of Special Counsel. Their examination included thirty-nine fuel cans plus a lantern base recovered from the fire debris. They established that fourteen (14) fuel cans and one lantern base had holes. From their examination they were able to conclude that three (3) of the containers plus the lantern base had puncture holes consistent with various tools. They also found that the additional eleven (11) fuel containers with holes could have been made by exploding ammunition or by tools. A large number of knives and bayonets were in evidence that could have been used to make the puncture holes.

Two one-gallon Coleman type fuel cans were crushed and these may or may not have had fuel in them at the time of the fire. The one-gallon cans were examined for any indication of tracks from CEVs. From physical examination, the cans did not show any unusual metal stress as if they were full when crushed. There is no reported evidence of any fire from the crushing of any container. A propane tank was also crushed with no indication of a fire as a result.

4.2.2 The Torch

Texas Ranger Lane Akin secured a torch and placed it into evidence as DPS # 2018. When he was interviewed and asked to point out where the torch was located in a sketch of the scene, he pointed out that it was just inside the cafeteria on the east side (Black Side). This is the same location, in the cafeteria, where the initial fire started. The torch is made of material wrapped around a piece of wood or broom handle. See Appendix M, "Photographs the Torch," M-1 through M-6. See Appendix O, "Sketch -Fire evidence location." There is no obvious purpose for the torch in this case, except to use for igniting the fire in the cafeteria.

4.2.3 Accelerants in the Branch Davidian Complex Debris

Accelerants located by the U. S. government fire investigators are consistent with their findings of separate fires in the southeast corner and chapel areas.

Gasoline was found at Sector/Grid I-B1. Specifically it was located in the area of kitchen/serving port between the opening to the kitchen/cafeteria and the steps to the second floor. This is also to the left front of the concrete bunker. This evidence is DPS# 1176. See Appendix O, "Building Sketch, Fire Evidence location."

A cloth was located at the point of fire origin in the southeast corner. This cloth was found to contain residue of heavy petroleum and is DPS# 796. See Appendix O, "Building Sketch, Fire Evidence location." Moreover, the witness statement of Davidian Graeme Craddock supports the fire in the South East Corner.

In the chapel area six (6) different samples were found to contain flammable liquids. Four of these samples contained kerosene, DPS# 76, 77, 78 and 79. One sample contained a mixture of gasoline and kerosene, DPS# 74. The sixth sample contained gasoline, DPS# 44. See Appendix O, "Building Sketch, Fire Evidence location."

- DPS # 76, Sector N, no grid number, concrete found to contain kerosene.
- DPS# 77, Sector N-2, soil and debris, found to contain kerosene
- DPS# 78, Sector N-2, soil and debris, found to contain kerosene.
- DPS# 79, Sector N-2, concrete, found to contain kerosene.
- DPS# 74, Sector N-4, concrete, found to contain mixture of gasoline and kerosene.
- DPS# 44, Sector N- 1, debris, found to contain gasoline. This would be at the Red side of stage.

The accelerants were all documented by laboratory analysis. The torch, photographs, videotapes and the witness statement of Marjorie Thomas support the fire in the cafeteria. The

gasoline sample and two one gallon fuel cans located in front of entrance to kitchen/cafeteria is believed to be connected with this fire. This is DPS# I-B1. See Appendix O, “Building Sketch Fire Evidence Locations.”

4.2.4 Accelerants on the Davidian Clothing

Armstrong Laboratory and “Onyx,” the accelerant canine, also confirmed the presence of accelerants on the surviving Davidians’ clothing. The presence of accelerants suggests that Davidians had been handling flammable liquids or they were close to someone who was handling flammable liquids. Flammable liquids were found on the clothing of five (5) of the surviving Davidians. They were as follows:

- Misty Ferguson – Kerosene on shoes -DPS# 0018B
- Clive Doyle –Camp Stove Fuel on shoes- DPS# 0019C
- Derek Lovelock – Camp Stove Fuel on clothing - DPS# 0024; Kerosene on clothing - DPS# 0024A; Camp Stove Fuel on shoes DPS# 0024 B
- Graeme Craddock - Kerosene and gasoline on left shoe DPS# 0026 A
- Jamie Castillo – Camp Stove Fuel on shoes DPS# 0022A

Clive Doyle’s jacket and hands were also burned in a manner consistent with a “flashback” from a liquid fuel fire. Clive Doyle discarded his jacket when he left the fire. He had denied that the jacket belonged to him until his attorney stipulated that the jacket was his. The jacket was found to contain flammable liquids on both sleeves.

4.3 Davidian Admissions

Graeme Craddock has repeatedly stated to the Office of Special Counsel and prior investigators that he witnessed Davidians spreading fuel in the chapel area. He further stated that he heard Mark Wendell shouting, “Light the fire,” and Pablo Cohen telling Wendell, “Make sure.”

Clive Doyle allegedly made statements to the Texas Ranger that the fire was started intentionally using Coleman fuel as an accelerant. Doyle now denies that he ever made these statements.

4.3.1 Title III Intercept Tapes

The FBI also had Title III intercept devices inside the Branch Davidian complex on April 19, 1993. These devices intercepted the following conversations prior to the fire.

At 6:09 a.m., the intercepts recorded the following conversation among a group of Davidians:

Unidentified Male: Have you poured it yet?
Unidentified Male: Hm.
Unidentified Male: Did you pour it yet?
Unidentified Male: In the hallway . . . yes.
Unidentified Male: David said pour it right?
Unidentified Male: Do you need . . .
Unidentified Male: Come on let's go.
Unidentified Male: David said we have to get the fuel on.
Unidentified Male: Does he want it poured already?
Unidentified Male: We want the fuel.
Unidentified Male: Yeah.
Unidentified Male: We want some here.

At 6:15 a.m., the intercepts recorded this conversation:

Unidentified Male: Have you got the fuel . . . ready?
Unidentified Male: I already poured it.
Unidentified Male: It's already poured.

At 6:22 a.m., the intercepts recorded the following conversation among the Davidians:

Unidentified Male: Nobody comes in huh?
Unidentified Male: Nobody's supposed to come in.
Unidentified Male: Right.
Unidentified Male: They got some fuel around here.
Unidentified Male: Yeah . . . We've been pouring it.
Unidentified Male: Pouring it already.
Unidentified Male: We've got it poured already.

At 7:08 a.m., the intercepts recorded the following conversation among the Davidians:

Unidentified Male: That's good . . .
Unidentified Male: Real quickly you can order the fire yes.
Unidentified Male: Yeah.

At 7:20 a.m., the intercepts recorded the following conversation among the Davidians:

Unidentified Male: You've got to put the fuel in there too.
Unidentified Male: Is it dry?
Unidentified Male: Hey let's put loads of fuel in there.
Unidentified Male: Fuel.

At 7:21 a.m., the intercepts recorded the following conversation among the Davidians:

Unidentified Male: Is there a way to spread fuel there?

Unidentified Male: OK . . . what we do You don't know.

Unidentified Male: I know that won't spread . . . get some more.

Unidentified Male: So we only light it first when they come in with the tank right . . . right as they're coming in?

Unidentified Male: Right.

Unidentified Male: That's secure We should get more hay in here.

Unidentified Male: I know.

At 7:23 a.m., the intercepts recorded the following conversation among the Davidians:

Unidentified Male: You have to spread it all so get started OK?

Unidentified Male: Yeah . . . got some cans there.

Unidentified Male: Right here . . . two cans here . . . and that's . . . and the rest can take em . . .

At 11:27 a.m., the intercepts recorded the following conversation among the Davidians:

Unidentified Male: There isn't any reason to go out there.

Unidentified Male: No.

[Vehicle noise]

Unidentified Male: Do you think I could light this soon?

Unidentified Male: They're bringing it right to the middle of the . . .

Unidentified Male: Whoa . . . whoa.

At 11:42 a.m., the intercepts recorded the following conversation among the Davidians:

Unidentified Male: We're near the point where we oughta be . . .

Unidentified Male: We've no . . . we're not to blame for that We're not to blame.

Unidentified Male: Looks to me that you gotta . . .

Unidentified Male: You'll have to deal with that.

Unidentified Male: Go and get the kids.

Unidentified Male: They'll go for the barn.

Unidentified Male: I want a fire on the front . . . you two can go . . .

Then, at 11:54 a.m., an unidentified male stated: "Keep that fire going . . . keep it." This was the last statement intercepted before the listening device ceased operating.

4.4 Eye Witness Statements

In addition to admissions of the Branch Davidians, several FBI agents saw Davidians acting as if they were starting a fire. For example, FBI Agent John Morrison testified that he observed an individual starting a fire in the front door foyer area. FBI Agent Charles Riley also observed a person making motions consistent with the spreading of accelerants in the chapel area just prior to the start of fire.

A second FBI Agent also observed an individual in the southeast corner bending over and observed smoke coming from a window of the southeast corner almost immediately thereafter.

4.5 Conclusions

I conclude with absolute certainty that the fires were intentionally set by the Branch Davidians at three separate locations inside the complex. The Davidians started the three fires at nearly the same time using accelerants to speed the spread of the fire. There is no evidence to suggest that the U.S. Government started these fires.

I have reviewed the Office of Special Counsel interim report and its discussion regarding pyrotechnic rounds being fired at the construction pit at approximately 8:00 a.m. on April 19, 1993. I agree that these military M 651 rounds did not start or contribute to the fire that destroyed the complex on April 19, 1993.

5. Fighting the Branch Davidian Complex Fire

5.1 Summary

Firefighters could not have controlled or stopped the spread of the fires had they responded on the first visual evidence of fire at approximately 12:09 p.m. My conclusions are based on more than twenty-nine years of experience in fire investigation, the response time from Waco to Mt. Carmel, set up, water application, wind velocity, the flammable liquids, type of materials burning, the three separate fires burning simultaneously and speed with which fire spread. By the time firefighters would have responded, the fires would have progressed beyond the point of no return.

5.2 Multiple Fires and Amount of Time to Escape

Nine Davidians escaped the fire on April 19, 1993. They are as follows:

Misty Ferguson
Marjorie Thomas
Ruth Riddle

All three of these women escaped from second floor windows, an area that had been widened by a CEV on the White side of the complex.

Renos Avraam

Avraam escaped through a window on the White side of the complex, and then jumped to the ground on the White side of complex.

Graeme Craddock

Craddock escaped through a first floor window of the chapel on the Green side of complex.

Clive Doyle
David Thibodeau
Derek Lovelock
Jamie Castillo

All four of these men escaped through an opening made by a CEV in the chapel close to the stage on the Red side of the complex.

See Appendix N, "Photograph Davidians' Escape Routes."

If firefighters were not in danger due to Davidian gunfire and had responded immediately on first visual evidence of fire, they may have given Davidians additional time for escape from the first and second floor living quarters and the chapel. They probably would not have been of assistance to the people in the concrete bunker and dining area, considering the fire set by the Davidians in the cafeteria along side of the concrete bunker. The people in the concrete bunker probably had little or no chance to escape after the fires were set.

5.3 Conclusions

The damage caused by the CEVs increased the amount of time the Davidians had to escape the building by creating larger and more pronounced escape routes. These escape routes were much larger than the complex's own windows and doorways and took longer to be obscured by the fire. Thus, although the damage caused by the CEVs may have added to the intensity of the burning at some locations, this same damage increased the available time for escape. In fact, seven of the nine people who did escape used some part of the openings made by the CEVs.

The fires set by the Davidians on different ends of the building may well have trapped many of the occupants, regardless of the openings.

6. Branch Davidians' Critique of the Government's 1993 Fire Investigation

6.1 Summary

All the investigative materials and expert opinions submitted by the plaintiffs investigators, Patrick Kennedy and Richard L. Sherrow, were thoroughly reviewed and

considered along with all other expert opinions and evidence before arriving at any final conclusions.

6.2 Conclusions

The plaintiffs' fire investigation does not accurately and completely define the cause of the fires and point(s) of origin. Three (3) independent and intentionally set fires have been well established. These fires are clearly supported by the following:

- Witness statements
- Photographs-ground level and aerial
- FLIR tapes and analysis of these tapes by Vector Data Systems (U.K.)
- Title III Intercept tapes (enhanced version by experts for Office of Special Counsel
- Physical evidence and laboratory analysis
- A torch and four fuel cans found in the cafeteria at the point of fire origin and witness statement of Davidian Marjorie Thomas who first saw fire at this location.
- Two punctured one-gallon fuel cans and positive laboratory analysis for gasoline in debris in front of entrance to kitchen/cafeteria and left front of concrete bunker.
- Punctured fuel can located adjacent to the southeast corner fire and two other fuel cans at the point of origin. Laboratory analysis confirming flammable petroleum on a cloth at this location.
- Witness statement of Davidian Graeme Craddock supports the fire being started in the chapel. Six (6) punctured fuel cans were located in the chapel. Laboratory analysis supports that flammable liquids were spread in the chapel area with six separate positive findings of flammable liquids.

Davidian experts maintain that the government started the fire by knocking over a lantern in the southeast corner. The evidence clearly shows that a fire actually occurred in the kitchen/cafeteria area earlier than in the southeast corner. This has been documented with ground and aerial photographs, physical evidence, witness statements and experts for the Office of Special Counsel. A lantern part was recovered 11'3" from the Red wall and 18' from the White wall of the Red/White corner. Had a complete lantern been located in this corner of the complex its base would have survived the fire and remained amidst the debris.

Davidian experts also challenge the use of the FLIR tapes to support the finding of three separate and unconnected fires. It is noteworthy to mention that these same experts have attempted to make extensive use of the FLIR tape to illustrate other points about the Government's actions. The FLIR tapes have been corroborated with photographs videotapes physical evidence, witnesses and experts for the Office of Special Counsel. I find them to be a reliable tool for determining the events of April 19,1993. Thermal imaging is widely used by the fire service. See, for example, "Applications of Thermal Imaging" by S. G. Burney, T. L. Williams and C. H. Jones.

Finally Davidian experts question whether proper investigation procedures were followed (e.g. National Fire Protection Association standards). These standards are an excellent guide for

investigators and raise some valid points on procedures. They are, however, only a guide and are not mandatory unless adopted by a local, state or federal agency. The National Fire Protection Association is a non-profit organization and has no regulatory authority.

7. Final Conclusions

- (1) Did agents of the United States start or contribute to the spread of the fire that killed members of the Branch Davidian group on April 19, 1993?

No. Agents of the United States did not start the fire that killed members of the Branch Davidian group. The only contribution to the spread of the fire was openings made by CEVs that supplied additional ventilation which may have intensified the fire at certain locations. These openings also provided larger escape routes for the Branch Davidians. Three separate and distinct fires were started inside the Branch Davidian complex by the Davidians. No evidence was discovered that would support a single fire theory being responsible for all fires. These fires were of the Davidians own design and they further coordinated the execution and timing of initiation.

- (2) Did the United States Government's independent fire investigation accurately and completely define the cause of the fire and its point(s) of origin?

Yes. The United States Government's independent fire investigation accurately defined the intentional cause of the fire and its point(s) of origin.

- (3) Can additional information be developed concerning the cause and/or point(s) of origin of the fire?

Yes. Additional information can be and was developed by the Office of Special Counsel.

- (4) Could firefighters have controlled or stopped the spread of the fire?

No. The firefighters could not have controlled or stopped the spread of the fire if firefighters had responded on the first visible sign of the fire.

Walter Wetherington
September 12, 2000