

EXPERTS ANALYZE AUTOPSY FINDINGS

Sacramento's chief forensic pathologist, Dr. Mark A. Super, concluded that Amariana Crenshaw died almost instantly, as evidenced by the "blast injury" he identified on her chest and the fact that she breathed no carbon monoxide. But he cautioned that he couldn't be certain she was breathing at all when one or two Molotov cocktails ignited. That ambiguity led **The Bee** to reach out to six renowned forensic experts seeking their opinions. Below are details of the autopsy, the questions it raises and some of the experts' observations.

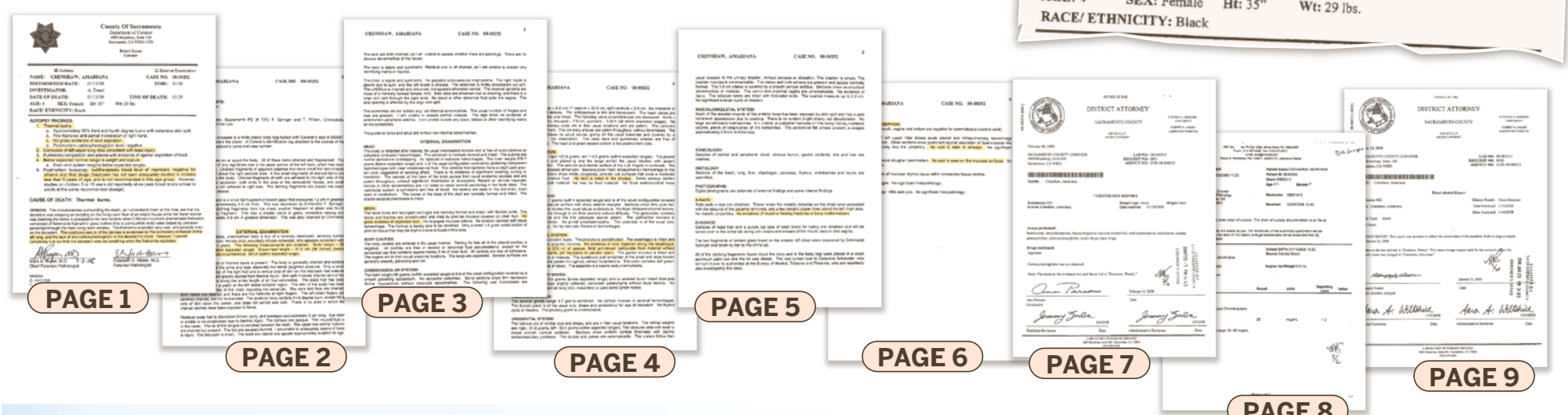
County Of Sacramento
Department of Coroner
4800 Broadway, Suite 100
Sacramento, CA 95820-1530

Robert Lyons
Coroner

Autopsy External Examination

NAME: CRENSHAW, AMARIANA
POSTMORTEM DATE: 01/11/08
INVESTIGATOR: A. Deuel
DATE OF DEATH: 01/11/08
AGE: 4 SEX: Female Ht: 35" Wt: 29 lbs.
RACE/ETHNICITY: Black

CASE NO. 08-00252
TIME: 13:30
TIME OF DEATH: 03:29



CAUSE OF DEATH: Thermal burns.

FROM PAGE 1

person(s) through the front living room window. The explosive nature of the devices is evidenced by the pulmonary contusion of the left lung, and the lack of any carboxyhemoglobin in the decedent's blood. However, I cannot completely rule out that the decedent was not breathing when the firebombs exploded.

Mark A. Super, M.D.
Mark A. Super, M.D. 3-2-08
Chief Forensic Pathologist

Elizabeth A. Albers, M.D.
Elizabeth A. Albers, M.D.
Forensic Pathologist

EXPERTS' OBSERVATIONS



"The explosive nature of the devices is evidenced by the pulmonary contusion of the left lung, and the lack of any carboxyhemoglobin in the decedent's blood. However, I cannot completely rule out that the decedent was not breathing when the firebombs exploded."

— Dr. Mark A. Super

- Chief forensic pathologist, Sacramento County Coroner's Office
- Board of directors, National Association of Medical Examiners
- Former vice president/treasurer, Forensic Medical Group Inc., Fairfield
- Former deputy medical examiner, San Diego County
- Command forensic pathologist, Naval Hospital San Diego

Super joined the Sacramento County Coroner's Office in January 2002 as chief forensic pathologist. He has more than 20 years of experience in forensic pathology and has qualified numerous times as an expert witness in forensic pathology in California courts and elsewhere.

LACK OF SOOT, CARBON MONOXIDE

Super found that Amariana did not have soot in her airways or carbon monoxide in her blood. Some experts say that indicates she was not breathing when the Molotov cocktails ignited. Carboxyhemoglobin is formed in the body in carbon monoxide poisoning, with fire often a source. Lack of significant inflammation in the trachea and larynx also indicates Amariana did not breathe flames or hot gases, several noted.

c. No gross evidence of soot aspiration. **FROM PAGE 1**
d. Postmortem carboxyhemoglobin level: negative.

NECK:
larynx and trachea are unobstructed and lined by pink-tan mucosa covered by clear fluid. No gross evidence of aspirated soot. No laryngeal mucosal edema. No anterior cervical soft tissue

RESPIRATORY SYSTEM:
No soot is noted in the airways. **FROM PAGE 4**

GASTROINTESTINAL SYSTEM:
lined by unremarkable gray-tan mucosa. No evidence of soot ingestion along the esophagus. The stomach contains 225 ml of opaque, thick pink-brown particulate food material without

MICROSCOPIC DESCRIPTION:
Lung:
No soot is seen in airways. **FROM PAGE 6**

Trachea, larynx:
No soot is seen on the mucosal surfaces. No significant inflammation. **FROM PAGE 6**



"The autopsy was not bad, but the conclusions are quite incorrect. There is no question in my mind that this child was already dead."

— Dr. Cyril H. Wecht

- Forensic pathologist, attorney and medical-legal consultant
- Clinical professor, University of Pittsburgh Schools of Medicine, Dental Medicine, and Graduate School of Public Health
- Adjunct professor, Duquesne University School of Law
- Former president, American College of Legal Medicine, American Academy of Forensic Sciences

Wecht has provided expertise in such high-profile cases as Mary Jo Kopechne, Sunny von Bulow, Jean Harris, Dr. Jeffrey MacDonald, the Waco, Texas, Branch Davidian fire, Vincent Foster, Laci Peterson and Anna Nicole Smith. He was among the medical experts who testified before the House Select Committee on Assassinations in 1978 regarding President John F. Kennedy.

EXPERTS DOUBT EXPLOSIVE POWER OF INCENDIARY

Several forensic experts believe it is highly unlikely a Molotov cocktail would have enough explosive force to immediately kill its victim. The crude incendiary device, basically a bottle filled with flammable liquid – plus a wick or ignition device – is intended to disperse the liquid and quickly set off a fire.

FROM PAGE 1
Contusion of left upper lung lobe consistent with blast injury.



"Case is a homicide. The child was dead before the fire."

— Dr. Vincent J.M. DiMaio

- Consultant, forensic medicine and pathology
- Editor in chief, American Journal of Forensic Medicine and Pathology
- Former chief medical examiner, Bexar County, San Antonio
- Former professor, Department of Pathology, University of Texas Health Science Center at San Antonio
- Co-author, "Forensic Pathology" (second edition, CRC Press, 2001); "Handbook of Forensic Pathology" (second edition, CRC Press, 2006)
- Outstanding service award, National Association of Medical Examiners, 1999

DiMaio was a member of a team that examined and identified the remains of Lee Harvey Oswald in 1981. More recently, he testified for the defense in the Los Angeles murder trial of record producer Phil Spector.

QUESTIONS ABOUT GIRL'S WEIGHT AT AGE 4 1/2

The coroner believes Amariana's height and weight were not significantly affected by the fire. If true, she gained only 1 pound between her 20-month checkup and her death at age 4 1/2. She spent most of that time in foster care, in a home cited twice for having a locked refrigerator.

EXTERNAL EXAMINATION **FROM PAGE 2**
Below expected normal range in weight and stature.
the reported age of 4 years. The following measurements are obtained: Body weight – 29 pounds (13.2 kg) (below expected range). Crown-heel length – 91.5 cm (36 inches) (below expected range). Head circumference: 49 cm (within expected range).

PRESENCE OF ADULT DRUG NOTED

One forensic pathologist with expertise in children's cases was concerned about the naproxen found in Amariana's system. Naproxen (as in over-the-counter Aleve or prescription medications) is generally used in adults to treat pain or inflammation.

FROM PAGE 1
Postmortem toxicology: subtherapeutic blood level of naproxen; negative for ethanol and illicit drugs (Naproxen has not been adequately studied in children less than 5 years of age, and is not recommended in this age group. However,



"(The autopsy findings) are perfectly consistent with the history. You're not going to be able to solve this with the autopsy."

— Dr. Karen Griest

- Director, Center for Medicolegal Research and Consultation
- Editor, the Pediatric Trauma and Forensic Newsletter
- Author and editor, "Pediatric Homicide: Medical Investigation" (CRC Press, 2009)
- Member, American Academy of Forensic Sciences; the National Association of Medical Examiners; the Children's Division of the American Humane Association; the American Professional Society on the Abuse of Children; the American College of Forensic Examiners

Griest, formerly with the New Mexico Office of the Medical Examiner, has consulted on hundreds of child injury and death cases. She has taught forensic medical investigation to police officers, pediatricians, attorneys and other forensic investigators.

QUESTIONS ABOUT WHEN SHE LAST ATE

Amariana died with a full stomach, causing experts to estimate she ate her last meal 1-2 hours before death. If she died in the fire, that would mean she was fed sometime after 1 a.m. in the vacant rental property where the foster mother said she was sleeping when the fire broke out.

GASTROINTESTINAL SYSTEM: **FROM PAGE 4**
The stomach contains 225 ml of opaque, thick pink-brown particulate food material without identifiable food fragments, pill fragments or peculiar scent. The gastric mucosa is intact and

NO BROKEN BONES OR SEXUAL ABUSE DETECTED

The forensic pathologist found no evidence of broken bones in various stages of healing. In children's deaths, past injuries may be a sign of ongoing physical abuse. The pathologist also found no indication of sexual assault.

X-RAYS: **FROM PAGE 5**
No evidence of recent or healing fractures or bony malformations.



"No Molotov cocktail I have ever built or tested has enough concussive force to inflict those kind of injuries ... At this point, it seems most likely she was not breathing at the time."

— John DeHaan, Ph.D.

- President, Fire-Ex Forensics, Vallejo
- Author, five editions of "Kirk's Fire Investigation" since 1982
- Co-author, "Forensic Fire Scene Reconstruction," 2004
- Member, U.S. National Technical Working Group on Fires and Explosions
- Member, California Conference of Arson Investigators
- Past president, California Association of Criminalists

DeHaan has more than 35 years' experience in fire- and explosion-related forensic science. He has consulted on both criminal and civil cases around the world, and teaches classes on forensic investigation, laboratory analysis and evidence interpretation.



"The cause of death is due to blast injuries, and the thermal injuries came afterward. ... Blast injuries can kill from the force of the blast and there should be no surprise that carbon monoxide levels would be low."

— Dr. Joye M. Carter

- Chief forensic pathologist, Marion County, Ind., coroner
- Member, American Academy of Forensic Science, National Association of Medical Examiners
- Former chief medical examiner, Washington, D.C., and Houston
- Former independent forensic consultant, J & M Consulting
- Major, U.S. Air Force

Carter was the first African American appointed to be a chief medical examiner, in 1992 in Washington, D.C. She has written two books and devotes her time to injury prevention programs. She describes herself as a "Christian physician."



"(T)his is a bit of a puzzler... However, there are circumstances in which flash fires can cause death without elevated CO or soot. It's hard to second-guess because the extent of the fire is not clear. It is unusual, but not unheard of, for someone to die of thermal burns alone at a scene, although there is often some period of survival before death. One does have to wonder if the child was somehow incapacitated."

— Dr. Randy L. Hanzlick

- Chief medical examiner, Fulton County, Ga.
- Professor of forensic pathology, Department of Pathology, Emory School of Medicine
- Director, forensic pathology training, Emory School of Medicine
- Distinguished fellow award, American Academy of Forensic Science, 2009
- Lifetime service award, National Association of Medical Examiners, 2007

Hanzlick's major interests include the development of professional guidelines and improvement in death investigation practices, death certification and mortality data. He also is interested in the role of the medical examiner in public health surveillance and epidemiological research. He has been published extensively.