DEPARTMENT OF DEFENSE
ARMED FORCES MEDICAL EXAMINER SYSTEM
115 PURPLE HEART DRIVE
DOVER AFB, DE 19902-5051

October 31, 2014

MCMR-MEZ-ZA

VIA SAFE ACCESS

St. Louis County Justice Center
Attn: Ms. Kathi Alizadeh
100 South Central Avenue
Clayton, MO 63105

Dear Ms. Alizadeh:

As requested, attached are a complete copy of the Autopsy Examination Report and autopsy photographs of Michael Brown.

I understand the report and photographs will be used as part of an investigation. If you have any questions regarding the report provided, please do not hesitate to call me at You may also contact our office via email at the following address:

As this is a copy of the report, there is no need to return it to our office. However, if the next-of-kin desires a copy of this report please have them contact the Armed Forces Medical Examiner System directly. Work products generated by the Armed Forces Medical Examiner System may only be released through our office. If you need any further assistance, please do not hesitate to contact me.

Sincerely,

COL, MC, USA
Armed Forces Medical Examiner

DEPARTMENT OF DEFENSE
ARMED FORCES MEDICAL EXAMINER SYSTEM
OFFICE OF THE ARMED FORCES MEDICAL EXAMINER
115 PURPLE HEART DRIVE
DOVER AFB, DE 19902-5051

AUTOPSY REPORT

Autopsy Number: ME14-0240
Name: Brown, Michael
Grade: Civilian
Date of Birth: 20 MAY 1996
Date of Death: 9 AUG 2014
Place of Death: Ferguson, MO
Date/Time of Autopsy: 18 AUG 2014 at 1000 hours
Place of Autopsy: Office of the Medical Examiner, St. Louis County, MO
Date Report Signed: 28 AUG 2014

Circumstances of Death: This 18-year-old male died on 9 AUG 2014 in Ferguson, MO after reportedly suffering multiple gunshot wounds. Autopsies were performed by the St. Louis County Office of the Medical Examiner and a private consultant. A third autopsy was performed by the Armed Forces Medical Examiner System (AFMES) at the request of the United States Department of Justice on 18 AUG 2014.

Authorization for Autopsy: Armed Forces Medical Examiner, IAW 10 USC 1471.

Identification: Positive identification by labelled bands around the ankles and right wrist. A tissue sample is retained if the need should arise for DNA analysis.

CAUSE OF DEATH: Multiple Gunshot Wounds

MANNER OF DEATH: Homicide

EXTERNAL EXAMINATION

The body is unclad wrapped in multiple blankets. Bracelets with the name of the decedent are around the ankles and right wrist. The body is that of a well-developed, well-nourished male and appears compatible with the reported age. Injuries are described in the section "Evidence of Injury" and medical therapy is described in the section "Medical Intervention." The body is approximately 77-inches in length and weighs 289 pounds (as recorded prior to embalming). Lividity is fixed on the posterior surface of the body except in the areas exposed to pressure (partially obscured by dark skin tone). Rigor mortis has resolved in the extremities. Early decomposition changes consist of skin slippage on the buttocks.

The body has been previously autopsied and embalmed. A sutured "Y" incision of the anterior torso extends from the shoulders to the pubic area. A sutured incision extends from behind one ear to the other over the vertex of the scalp. The skin has an expected post-embalming appearance and texture. A thin waxy substance covers the face. Cloth material has been placed in both orbits beneath the eyelids. A small amount of embalming powder is in the oral cavity.

The scalp hair is short and black, and facial hair consists of a black goatee on the chin. The right eye is not present for evaluation (see "Evidence of Injury"). The left iris appears brown, the cornea is white, and the globe is partially deflated. The bulbar and palpebral conjunctivae have no petechiae. The teeth are natural and in good repair. The frenulae are intact. The torso is remarkable for the injuries described below. A 3 x 2-inch irregular full-thickness skin defect is present on the right side of the back (an artifact from prior autopsy, see "Evidence of Injury"). The abdomen shows abundant striae. The genitalia are those of an adult male, and are unremarkable. The anus is non-traumatic. The extremities are symmetric. The fingernails of both hands are clipped short. Small scars are on both knees. Tattoos are present on the upper right arm, and both forearms (photographed for documentation).

CLOTHING AND PERSONAL EFFECTS

The body is unclad. No clothing or personal effects accompany the body.

MEDICAL INTERVENTION

There is no evidence of acute medical intervention.

RADIOGRAPHS

A complete set of post-mortem radiographs is performed by the St. Louis County Office of the Medical Examiner on 10 AUG 2014. The images are reviewed prior to the autopsy examination performed by AFMES, and the results are incorporated into the section "Evidence of Injury."

EVIDENCE OF INJURY[1]

Gunshot wound to the top of the head

Near the apex of the head, centered approximately 4-inches back from the top of the forehead and ½-inch right of the midline, is an entrance gunshot wound measuring ¼-inch. An eccentric abrasion at the margin of the perforation is most apparent at the posterior edge of the wound. The scalp hair surrounding the entrance wound had been shaven during a prior autopsy. Scattered abrasions adjacent to the gunshot wound are likely an artifact from shaving. No soot, stippling, or unburned gunpowder particles are visible on the skin surrounding the entrance wound. The bullet injures skin, soft tissue, calvarium (perforating fracture of the right parietal bone with inward beveling, radiating linear fractures), dura mater, brain (per prior autopsy report, right parietal and temporal lobes), and the base of the skull (extensive fracturing of the lateral portions of the right anterior and middle cranial fossae). Recovered during prior autopsy from the soft tissues adjacent to the fractured right basilar skull is a deformed projectile. The trajectory of the bullet is downward, forward, and to the right. Per prior autopsy report, associated injuries include hemorrhage along the wound path, subdural and subarachnoid hemorrhages, and intraparenchymal hemorrhages of the brain.

Gunshot wound to the right forehead

On the right side of the forehead, centered 4-inches below the top of the head and 1-inch right of the anterior midline, is a 3/8-inch entrance gunshot wound. An eccentric abrasion along the margin of the perforation is most apparent from the 12 to 3 o'clock aspect (1/8-inch in maximum thickness). No soot, stippling, or unburned gunpowder particles are visible on the skin surrounding the entrance wound. On the right side of the lower face near the mandible, centered 9-inches below the top of the head and 5-inches right of the anterior midline, is a ¾ x ¼-inch exit gunshot wound. The bullet injures skin, soft tissue, the right eye (completely ruptured globe), and fractures multiple craniofacial bones. Radiographs demonstrate small projectile fragments along the path of the gunshot wound through the head, electively not retrieved. The trajectory of the bullet is downward, backward, and to the right. Associated injuries include hemorrhage along the wound path, and two skin lacerations (the first measuring 1 x ¼-inch involving the right eyebrow, and the second measuring ½ x ¼-inch on the right upper eyelid).

Gunshot wound to the upper right chest

On the upper right chest, centered 12-inches below the top of the head and 3-inches right of the anterior midline, is a ½ x ¼-inch entrance gunshot wound. Minimal abrasion is present along the margin of the perforation. No soot, stippling, or unburned gunpowder particles are visible on the skin surrounding the entrance wound. The bullet injures skin, soft tissue, fractures the right clavicle, and injures the right lung (per prior autopsy report, perforates the upper lobe creating a 2 cm defect). Recovered during prior autopsy from the soft tissues near the 3rd intercostal space of the right posterior chest wall is a deformed projectile (associated with previously described autopsy artifact). The

[1] Projectile trajectories are given relative to the standard anatomic position (standing, arms at sides, palms forward). The order of the following injuries is for descriptive purposes only, and does not reflect order of infliction.

trajectory of the bullet is downward and backward. Per prior autopsy report, associated injuries include hemorrhage along the wound path, and right hemothorax (400 mL).

Gunshot wound to the lateral right chest

On the lateral right chest, centered 18-inches below the top of the head and 7 ½-inches right of the anterior midline, is a ¾ x ½-inch entrance gunshot wound. Minimal abrasion is present along the margin of the perforation (1/16-inch most apparent from the 12 to 3 o'clock aspect). No soot, stippling, or unburned gunpowder particles are visible on the skin surrounding the entrance wound. The bullet injures skin, soft tissue, and the lateral aspect of the 8th right rib. Recovered during prior autopsy from the soft tissues of the lateral right back is a deformed projectile. The trajectory of the bullet is downward, backward, and slightly to the right. Per prior autopsy report, associated injuries include hemorrhage along the wound path, 0.5 cm laceration of the lower lobe of the right lung (resulting from the fracture of the 8th right rib), and right hemothorax.

Gunshot wound to the upper right arm

On the anterior surface of the upper right arm, centered 17-inches below the top of the head, 12-inches right of the anterior midline of the torso, and 27 ½-inches above the tip of the right index finger, is a ¼-inch entrance gunshot wound. Minimal abrasion is present along the margin of the perforation. No soot, stippling, or unburned gunpowder particles are visible on the skin surrounding the entrance wound. On the posterior surface of the upper right arm, centered 14-inches below the top of the head and 12-inches right of the posterior midline of the torso, is a 1 x 1/8-inch exit gunshot wound. The bullet injures skin and soft tissue. No bullet or bullet fragments are recovered. The trajectory of the bullet is backward, slightly upward, and to the left.

Gunshot wound to the right forearm

On the posterior surface of the right forearm, centered 14-inches above the tip of the right index finger and 2 ½-inches left of the posterior midline of the right forearm, is a ¼-inch entrance gunshot wound. Minimal abrasion is present along the margin of the perforation (1/16-inch most apparent from the 12 to 6 o'clock aspect). No soot, stippling, or unburned gunpowder particles are visible on the skin surrounding the entrance wound. On the anterior surface of the right forearm, centered 14-inches above the tip of the right index finger and 1 ½-inches left of the anterior midline of the left forearm, is a 1 x ½-inch exit gunshot wound. The bullet injures skin, soft tissue, and fractures the right ulna. Radiographs demonstrate small bullet fragments in the right forearm that are electively not retrieved. The trajectory of the bullet is forward, and to the left.

Graze gunshot wound to the right arm

On the anterior surface of the upper right arm near the elbow, centered 21-inches above the tip of the right index finger and 1-inch left of the anterior midline of the right arm, is a 1 ½ x 1-inch graze gunshot wound. Abrasion is present along the margin of the wound, reaching a maximum thickness of 3/16-inch at the medial aspect. No soot, stippling, or unburned gunpowder particles are visible on the skin surrounding the gunshot wound. The bullet injures skin and superficial soft tissue. No bullet or bullet fragments are recovered. The trajectory of the bullet is indeterminate.

Tangential gunshot wound to the right hand

On the anterior surface of the right hand near the base of the thumb, centered 5-inches above the tip of the right index finger and 2-inches right of the anterior midline of the right hand, is a 1 ½ x ¾-inch tangential gunshot wound. No significant abrasions are noted at the margin of the wound. The wound is gaping, exposing underlying injured soft tissue. There are multiple skin tears at the periphery of the gunshot wound, creating skin tags that are largely oriented toward the tip of the right thumb. After review of prior autopsy imagery and histologic samples from the inferior aspect of the wound, there is the likelihood of soot deposition near the inferior aspect. Stippling is not visible surrounding the gunshot wound. No bullet or bullet fragments are recovered. The trajectory of the bullet is upward and slightly to the left (away from the tip of the thumb).

Other injuries

There are multiple abrasions on the right side of the face. Above the right eyebrow is a 3 x 1-inch abrasion. Discontinuous abrasions span an area of 3 x 1-inches below the right eye. Faint abrasions are on the right cheek. Several abrasions are clustered on the upper right chest. An abrasion is in the right hip area. There are small faint abrasions on both hands – posterior surface of the left hand near the wrist, over the posterior aspect of the proximal interphalangeal joints (PIP) on the 3rd and 4th digits of the left hand, the left thumb, over the posterior aspect of the PIP joint on the 3rd digit of the right hand, over the posterior aspect of the distal interphalangeal joints of the 3rd and 4th digits on the right hand, and on the anterior surface of the right hand near the base of the right index finger. Scattered dried circular abrasions, 1/16-inch, are on the anterior chest and abdomen.

On the anterior surface of the left forearm, centered 14-inches above the tip of the left index finger and 1-inch right of the anterior midline of the left forearm, is a 1-inch superficial incised wound. The width of the wound is approximately 1/16-inch at the superior aspect, and gapes to 1/8-inch at the inferior aspect. The edges of the wound are contused without apparent abrasion. No tissue bridging is visible in the depth of the wound. Inferior and medial to this incised wound along the same relative trajectory, separated by 3/4-inch of undamaged skin, is a ½-inch superficial cut with minimal thickness and depth.

INTERNAL EXAMINATION[2]

BODY CAVITIES:

See "Evidence of Injury." The body has been previously autopsied and the anterior chest plate removed. The thoroughly dissected and fixed organs are contained in a bag within the abdominal cavity. Oily fluid and embalming powder line the chest and abdominal cavities. A section of the thoracic spine has been removed during prior autopsy. All organs demonstrate a post-embalming (fixed) color and texture.

HEAD (CENTRAL NERVOUS SYSTEM) and NECK:

See "Evidence of Injury." The injured and dissected brain has a fixed weight of 600 grams (1350 grams per prior autopsy report). The architecture is highly disrupted due to prior examinations. No non-traumatic lesions are identified.

[2] Injuries are described in the "Evidence of Injury" and are not repeated in the "Internal Examination"

The anterior strap muscles of neck are homogenous and red-brown without hemorrhage. The hyoid bone and larynx are not present for evaluation (unremarkable but for patchy hemorrhages per prior autopsy report).

RESPIRATORY SYSTEM:

See "Evidence of Injury." The large airways have been previously separated from the lungs and opened. No abnormal secretions or foreign materials remain (per prior autopsy report, the large airways contained patchy areas of blood). The lungs have been thoroughly sectioned previously and have a fixed weight of 550 grams (combined weight of 600 grams per prior autopsy report). No non-traumatic lesions are identified.

CARDIOVASCULAR SYSTEM:

The heart is disrupted from prior dissection and has a fixed weight of 300 grams (400 grams per prior autopsy report). Evaluation of the coronary arteries is limited, but no major obstructive lesions are identified. The exposed cut surfaces of the myocardium are unremarkable. The ventricular walls are not hypertrophied.

HEPATOBILIARY SYSTEM:

The previously dissected liver has a fixed weight of 1000 grams (1250 grams per prior autopsy report). The parenchyma is tan-brown with the usual lobular architecture. No mass lesions are identified. The gallbladder is not present for evaluation (unremarkable with no stones, per prior autopsy report).

GENITOURINARY SYSTEM:

The previously dissected kidneys have a combined fixed weight of 250 grams (300 grams per prior autopsy report). The external surfaces are smooth, and the cut surfaces demonstrate no focal lesions. The bladder has been previously incised and has no residual contents (contained 40 mL of yellow urine, per prior autopsy report). The prostate gland is not identified. The testicles are unremarkable on external examination.

GASTROINTESTINAL SYSTEM:

The tongue is unremarkable. The esophagus, stomach, pancreas, small intestine, and large intestine have been previously dissected, and are unremarkable (per prior autopsy report, the stomach held scant contents). The base of the appendix is identified (the majority was removed during prior autopsy and preserved in formalin).

LYMPHORETICULAR SYSTEM:

The previously dissected spleen has a fixed weight of 50 grams (150 grams per prior autopsy report). The capsule and cut surfaces are unremarkable.

ENDOCRINE SYSTEM:

The pituitary gland is not identified (unremarkable per prior autopsy report). The thyroid and adrenal glands are not present for evaluation (unremarkable per prior autopsy report).

MUSCULOSKELETAL SYSTEM:

See "Evidence of Injury." No non-traumatic abnormalities of muscle or bone are identified.

MICROSCOPIC EXAMINATION

Sections of skin from the inferior margin of the tangential gunshot wound to the right hand (sampled during the first autopsy) are reviewed (digital microscopic photographs and slides from 2014-5143 H&E). The sections are of full-thickness acral skin to the depth of the subcutaneous tissues. There is separation between the superficial keratinized layers with the remainder of the epidermis, with intervening blood. Hemorrhage is present within the deep dermis and subcutis. The dermis adjacent to the bullet path shows homogenization of the dermal collagen, consistent with thermal change. Most apparent on the injured edge of skin, extending from the superficial to deepest level of the sample, are numerous deposits of dark particulate foreign debris (some of which is polarizable). Similar debris is present on the surface of uninjured acral epidermis. These deposits are consistent with gunpowder soot.

ADDITIONAL REMARKS

1. Documentary photographs are taken by MCCS (AFMES photographer).
2. A Special Agent with the FBI is present during the autopsy.
3. A complete list of individuals in attendance is on file.
4. Blood, urine, vitreous fluid, liver, and brain samples are obtained from those preserved by the St. Louis County Office of the Medical Examiner during the first autopsy. These samples are used for toxicology testing by the AFMES. A sample of tongue is retained for DNA analysis.
5. An autopsy report and corresponding photography for case 2014-5143 by the St. Louis County Office of the Medical Examiner are reviewed after the completion of an independent autopsy by the AFMES. These materials are retained in the case file.
6. No additional evidence is collected during the autopsy by the AFMES.

FINAL AUTOPSY DIAGNOSES[3]

I. Gunshot wound to the top of the head
- A. Entrance: near apex
- B. Injury to: skin, soft tissue, skull, dura mater, and brain
- C. Evidence recovered: projectile from right basilar skull
- D. Trajectory: downward, forward, and to the right
- E. Associated findings: hemorrhage along the wound path, subarachnoid hemorrhage, posterior scalp hemorrhage, subdural and subarachnoid hemorrhages, and intraparenchymal hemorrhages of the brain

II. Gunshot wound to the right forehead
- A. Entrance: above the right eye
- B. Exit: right side of the lower face
- C. Injury to: skin, soft tissue, right eye, and multiple craniofacial bones
- D. No evidence recovered
- E. Trajectory: downward, backward, and to the right

III. Gunshot wound to the upper right chest
- A. Entrance: upper right chest
- B. Injury to: skin, soft tissue, right clavicle, and the right lung
- C. Evidence recovered: projectile from the right posterior chest wall
- D. Trajectory: downward and backward
- E. Associated findings: hemorrhage along the wound path and right hemothorax

IV. Gunshot wound to the lateral right chest
- A. Entrance: lateral right chest
- B. Injury to: skin, soft tissue, and the 8th right rib
- C. Evidence recovered: projectile from the soft tissues of the lateral right back
- D. Trajectory: downward, backward, and slightly to the right
- E. Associated findings: hemorrhage along the wound path, injury to the right lung, and right hemothorax

V. Gunshot wound to the upper right arm
- A. Entrance: anterior surface of upper right arm
- B. Exit: posterior surface of the upper right arm
- C. Injury to: skin and soft tissue
- D. No evidence recovered
- E. Trajectory: backward, slightly upward, and to the left

VI. Gunshot wound to the right forearm
- A. Entrance: posterior surface of the right forearm

[3] Projectiles listed in "evidence recovered" refer to those obtained by the St. Louis County Office of the Medical Examiner on 10 AUG 2014; no additional evidence is recovered by the AFMES on 18 AUG 2014

B. Exit: anterior surface of the right forearm
C. Injury to: skin, soft tissue, and right ulna
D. No evidence recovered
E. Trajectory: forward and to the left

VII. Graze gunshot wound to the right arm with indeterminate trajectory; injury to skin and superficial soft tissue

VIII. Tangential gunshot wound to the right hand
A. Evidence of close range discharge of a firearm
B. Injury to: skin and soft tissue
C. Trajectory: upward and slightly to the left

IX. Other injuries
A. Multiple abrasions on the face, hands, and torso
B. Superficial incised wound of the left forearm

X. Toxicology (AFMES #143849)
A. VOLATILES: The following volatiles are detected: acetaldehyde (trace concentration in the cavity blood), ethanol (23 mg/dL; 0.023% in the cavity blood, none found in the urine or vitreous fluid), and acetone (8 mg/dL in the urine, none found in the vitreous fluid).
B. DRUGS: 11-nor-delta-9-tetrahydrocannabinol-9-carboxylic acid detected in the urine and cavity blood (0.12 mg/L). Delta-9-tetrahydrocannabinol detected in the cavity blood (0.011 mg/L). No other screened drugs of abuse/medications detected in the urine.

OPINION

This 18-year-old male died from multiple gunshot wounds. There are severe injuries of the skull, brain, and right chest. The gunshot wounds of the right chest may represent re-entry wounds from the exiting gunshot wounds to the right arm and/or right forehead. Gross and microscopic examinations of the tangential gunshot wound to the right hand reveal with strong likelihood the presence of soot (an indication of close range discharge of a firearm). There is no evidence of close range discharge of a firearm elsewhere. The postmortem toxicology screen is positive for cannabinoids. The manner of death is homicide.

Major, USAF, MC
Deputy Medical Examiner

Captain, MC, USN
Deputy Medical Examiner