



OFFICE OF THE MEDICAL EXAMINER
701 W. Jefferson St.
Phoenix, AZ 85007

MEDICAL EXAMINER REPORT

DECEDENT: Anthony Michael Rose

CASE: 13-04438

DATE OF EXAMINATION: 07/02/2013

TIME: 09:46 Hours

PATHOLOGICAL DIAGNOSES

- I. Smoke inhalation.
 - A. Thick soot deposition in oral cavity, nostrils, larynx, and trachea.
 - B. Cardiac blood: Carboxyhemoglobin of 19% saturation.

- II. Thermal changes of upper and lower airways.

- III. Thermal burns.

- IV. Level I toxicology testing (see separate Toxicology Report).
 - A. Iliac blood: Positive for ethyl alcohol of 0.02 g%.
 - B. Vitreous humor: Negative for ethanol, methanol, isopropanol and acetone.
 - C. Brain: Positive for benzene, toluene and xylene by GC/MS.
 - D. Lung: Positive for toluene by GC/MS.

- V. Decompositional changes.

CAUSE OF DEATH: Fire-related injuries
MANNER: Accident

9/23/2013

Date Signed

Kathleen M. Enstice MD

KATHLEEN M. ENSTICE, M.D.
MEDICAL EXAMINER

ANTHONY MICHAEL ROSE

13-04438

On July 1, 2013, Yavapai County officials requested assistance from the Maricopa County Office of the Medical Examiner with the medicolegal death investigations of 19 firefighters who died in the Yarnell Hill wildfire on June 30, 2013. Under the Maricopa County Manager's authority and direction, the Maricopa County Office of the Medical Examiner examined the firefighters' remains for the purpose of forensic identification and postmortem evaluation. The Maricopa County Office of the Medical Examiner also agreed to provide consultative services to investigating authorities and the Yavapai County Medical Examiner. The Yavapai County Medical Examiner agreed it will certify the firefighters' death certificates. The following Maricopa County Office of the Medical Examiner case numbers were designated for this incident: 13-04425, 13-04426, 13-04427, 13-04428, 13-04429, 13-04430, 13-04431, 13-04432, 13-04433, 13-04434, 13-04435, 13-04436, 13-04437, 13-04438, 13-04439, 13-04440, 13-04441, 13-04442, and 13-04443.

IDENTIFICATION

The decedent is received in a zippered orange bag (#13) sealed by red lock #025598. A red OME ID band is on the left ankle, labeled with "U.M.; 13-4438".

EVIDENCE OF MEDICAL INTERVENTION

None.

CLOTHING AND PERSONAL EFFECTS

The decedent is clad in two laced dark brown boots (labeled with "Manufacturer #720127/Model #400V10 or #400VIO/Size 4D/Date of Manufacture: 10/12/12; /Brand: Vibram), two gray socks labeled with "RED HEAD", the waistband of a pair of Hanes underpants (Size: Small), a black glove on the right hand, a black belt around the waist with a white metal buckle, the waistband of a pair of pants labeled with "28-32 SHORT", The decedent is also clad in a left long tan-yellow sleeve attached to a portion of a collar along the posterior neck, and buttons along the front; part of a black short sleeved tee shirt, with a partial imprint of "R-3 Prescott Fire Interagency Hot Shots" in red and yellow on the back of the shirt; and a separate pants pocket containing an iPod-like cell phone that does not work.

CONDITION OF BODY

The unembalmed body is cold following refrigeration. Neither rigor mortis nor lividity can be assessed due to thermal-related contractures of the joints and tightening of the skin in association with diffuse thermal burns. The area covered by both pair of boots is free of burns, and has marbling of the intact skin and intact toenails.

EVIDENCE OF INJURY

None.

GENERAL EXTERNAL EXAMINATION

The unclad body is of a 65 ½ inch, 145 pound adult male appearing compatible with the reported age of 23 years. No scalp hair or facial hair remains in association with fire effects. The eyes have indeterminant irides. The cherry red conjunctivae have no congestion, petechiae, icterus or edema. The nasal bridge and septum are intact. The external auditory canals are unremarkable. The lips and oral mucosa have no lesions. The maxilla and mandible have native dentition in good repair. The symmetric neck has no injuries or palpable masses. The well-developed chest is symmetric. The abdomen is flat and firm. The well-developed back is symmetric. The external genitalia are of a normally developed adult male with bilaterally descended testes. The anus is atraumatic. The paired extremities have no clubbing, cyanosis or edema. The intact fingernails and toenails are short. No needle punctures, needle track marks or hesitation marks are identified. The soles of the feet are unremarkable.

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IDENTIFYING MARKS, TATTOOS, SCARS

A horizontal 16 x 2 ½ inch green tattoo of "WILDLAND" extends across the upper back.

INTERNAL EXAMINATION

The body is opened by a standard Y-shaped thoracoabdominal incision. All body organs are in their normal anatomic positions. The internal organs have mild to moderate thermal changes and minimal decompositional changes, with minimal surrounding yellow adipose tissue. The subcutaneous fat layer is 1.1 cm thick at mid-abdominal level. The serosal surfaces are intact. No adhesions, blood or excess fluid are in the body cavities.

HEAD/NERVOUS SYSTEM

The intact reflected scalp, galea and temporalis muscles have no injury. The calvarium and skull base are of normal thickness, with no fractures. The intact dura mater has no epidural or subdural hemorrhages. The blood in the dural sinuses is not clotted. The leptomeninges are thin and transparent. The symmetric 1370 gram brain has a normal gyral configuration, faint cherry red-pink discoloration and moderate to marked swelling, with no subarachnoid hemorrhage or exudate. The faint pink cerebral cortex has no contusions. The faint pink cerebral white matter is uniform. The faint pink-tan caudate nuclei, thalami and basal ganglia are symmetric. The symmetric brainstem and cerebellum are unremarkable. The substantia nigra is normally pigmented. The normally formed blood vessels at the brain base have no atherosclerosis, aneurysm and thrombi. The paired cranial nerves and mammillary bodies are normally distributed. The slit-like ventricles have no hemorrhage. The upper cervical spinal cord is unremarkable. The atlanto-occipital articulation is intact.

NECK

The intact cervical spine, strap muscles, blood vessels, prevertebral tissues, hyoid bone and laryngeal and tracheal cartilages have no hemorrhages. The epiglottis, periepiglottic region, and epiglottic opening have black soot deposition and prominent sloughing of the mucosa in association with cherry red-maroon discoloration. Thick black soot extends into the larynx and upper trachea, with associated maroon-cherry-red discoloration and sloughing of the mucosa that extends along the length of the trachea and also the laryngeal mucosa. The patent upper airway has no obstruction or aspiration. The tongue has no masses or hemorrhage.

CARDIOVASCULAR SYSTEM

The 320 gram heart has smooth, intact epicardial surfaces. The patent coronary ostia have normal takeoff angles. The coronary arteries arise normally and follow a codominant distribution, with no thrombi or atherosclerosis. The moderately firm cherry red-brown myocardium has no fibrosis. The atrial and ventricular septa are intact. At 1 cm below the valve annuli, ventricular thicknesses are: left ventricle 1.4 cm, interventricular septum 1.4 cm and right ventricle 0.5 cm. The cardiac chambers are not dilated. The endocardial surfaces have no hemorrhage or fibrosis. The normally formed cardiac valves have thin, pliable leaflets. The valve circumferences are appropriate to the caliber of the cardiac chambers. The valve cusps and surfaces have no fusion or vegetations. The aorta and its branches arise normally, are of normal caliber and follow the usual course. Elasticity is normal. The smooth intimal surfaces have cherry red discoloration, with no aneurysm formation or dissection. The heart and major blood vessels contain viscous cherry red-maroon blood.

RESPIRATORY SYSTEM

The pleural surfaces of the normally formed 780 gram right and 690 gram left lungs have no obvious anthracotic pigmentation. The well-expanded cherry red-maroon parenchyma exudes abundant blood and mild frothy edema fluid, with no masses, consolidation, scars or cavitations. The patent bronchi are of normal caliber and contain cherry red frothy edema fluid, but no

obvious soot deposition. The normally developed, patent pulmonary arteries have no thromboemboli.

DIGESTIVE/HEPATOBIILIARY SYSTEM

The unobstructed oropharynx contains black soot. The proximal aspect of the normally formed esophagus has thermal changes and associated sloughing of the mucosa, with the mid to distal aspect having smooth intact mucosa. The gastroesophageal junction is unremarkable. The stomach has intact tan mucosa, with no hemorrhage, ulcers or masses. The gastric lumen contains 5 ml of thick red-brown liquid. The small and large intestines and the appendix are unremarkable. The large intestines contain brown stool. The lobular cherry red-tan pancreas has early decompositional changes, with no fat necrosis, hemorrhage, cysts or fibrosis. The patent pancreatic ducts are of normal caliber. The normally formed 1240 gram liver has an intact smooth capsule covering moderately firm cherry red, dark brown-maroon parenchyma with no masses, fibrosis or fatty change. The patent intrahepatic and extrahepatic ducts are of normal caliber. The gallbladder contains viscid bile and has smooth velvety mucosa.

GENITOURINARY SYSTEM

The normally formed 120 gram right and 120 gram left kidneys have capsules that strip with ease from the smooth cherry red-maroon cortical surfaces. The cortices are sharply delineated from the medullary pyramids. The patent renal calyces, pelves, ureters and renal vessels are of normal caliber. The urinary bladder contains 10 ml of yellow urine and has smooth mucosa with faint pink discoloration. The trigone is patent. The prostate gland is not enlarged. The tan testicular parenchyma has thermal changes.

HEMATOPOIETIC SYSTEM

The normally formed 210 gram spleen has an intact smooth gray capsule covering soft cherry red-maroon parenchyma. The lymph nodes have their normal appearance and distribution.

ENDOCRINE SYSTEM

The symmetrical thyroid gland has uniform cherry red-brown parenchyma. The normally formed adrenal glands and pituitary gland have no masses or hemorrhage.

MUSCULOSKELETAL SYSTEM

The supporting musculature and soft tissues have cherry red discoloration and mild to moderate thermal changes. The axial and appendicular skeletal regions have no fractures, degenerative changes or atraumatic lesions.

EVIDENCE

The following items of evidence are collected, inventoried and released to Joshua Nelson #5222 (Yavapai County Sheriff's Office):

- one black cell phone
- one pair underwear
- two lace boots
- two gray socks
- one piece of yellow long-sleeved button front shirt (burned)
- one pair of pants (burned)
- one belt with a white metal buckle
- one black short-sleeved tee shirt (burned)
- right black glove (burned)
- miscellaneous fabric pieces

One blood stain/filter card is collected and retained.

Cardiac blood, purple top tube, is collected and retained.

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Nasal swabs are collected and retained.

RADIOGRAPHS

Postmortem full body x-rays (total of 13) reveal abundant radiopaque foreign material.

SPECIAL STUDIES

Vitreous humor, red top tube, is collected and submitted for electrolyte analysis, with the following results:

Glucose	2 mg/dL
Urea nitrogen	27 mg/dL
Creatinine	1.2 mg/dL
Chloride	134 mmol/L
Potassium	36.0 mmol/L
Sodium	141 mmol/L

Cardiac blood, red top tube, is collected and submitted for carboxyhemoglobin analysis, with the following result:

Carboxyhemoglobin	19% saturation
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TOXICOLOGY SPECIMENS

Iliac blood, 2 oz container, is collected and submitted for level I toxicologic analysis.

Vitreous humor, red top tube, is collected and submitted for volatile analysis.

Brain, red top tube, is collected and submitted for volatiles testing.

Lung, red top tube, is collected and submitted for volatiles testing.

Urine, 2 oz container, is collected and held.

Cardiac blood, 2 oz container, is collected and held.

Bile, gray top tube, is collected and held.

Subcutaneous tissue, brain, spleen, liver, kidney, and psoas muscle; 2 oz containers each, are collected and held.

Known leg hair is collected and held.

FINAL SUMMARY

Based on the investigative history as available to me, and my above noted autopsy findings, it is my opinion that Anthony Rose, a 23 year old male, died of fire-related injuries.

The ethyl alcohol detected in iliac blood was most likely due to decompositional changes. The presence of benzene, toluene and xylene was likely due to burning of NOMEX fibers and ethanol.

The manner of death is accident.

KME/gz

D 7/2/13

T 7/3/13

The Maricopa County Medical Examiner's Office is required by statute (A.R.S. § 11-594(A)(2) and (4)) to certify the cause and manner of death following completion of the death investigation of each case over which it assumes jurisdiction, and to promptly execute a death certificate, on a form provided by the state registrar of vital statistics, indicating cause and manner of death. The form provided by the state registrar of vital statistics includes five manners of death: homicide, suicide, accident, natural, and undetermined. The determination of manner of death is a forensic determination by the pathologist predicated upon the totality of all then-known forensic evidence and other circumstances surrounding the cause of death; it is not a legal determination of criminal or civil responsibility of any person(s) for the death.

MARICOPA COUNTY OFFICE OF THE MEDICAL EXAMINER
REPORT OF TOXICOLOGICAL EXAMINATION

Case Number: 13-04438
Decedent: ANTHONY MICHAEL ROSE
Date Submitted: 07/02/2013
Report Date: 08/02/2013

Specimens Collected: VITREOUS, URINE, NASAL SWAB, BLOT/FILTER PAPER,
ILIAC BLOOD, CARDIAC BLOOD, BILE, LIVER, PSOAS
MUSCLE, SPLEEN, KIDNEY, SUBCUTANEOUS TISSUE, LUNG,
BRAIN, GASTRIC, KNOWN LEG HAIR

Medical Examiner: KATHLEEN M. ENSTICE, MD

RESULTS*:

Vitreous: None detected for ethanol, methanol, isopropanol and acetone

Iliac Blood: Positive for
Ethyl alcohol 0.02 g%
None detected for methanol, isopropanol, acetone, amphetamine,
methamphetamine, phencyclidine, cocaine, benzoylecgonine,
methadone, morphine, codeine, benzodiazepines, barbiturates,
antihistamines, phenothiazines, tricyclic antidepressants, fentanyl,
oxycodone, and acid neutral drugs


Cardiac blood: Positive for
Carboxyhemoglobin (19% saturation)

Brain: Positive by GC/MS for
Benzene
Toluene
Xylene

Lung: Positive by GC/MS for
Toluene

Urine: None detected for amphetamine, methamphetamine,
phencyclidine, cocaine, methadone, codeine, antihistamines,
phenothiazines, and tricyclic antidepressants

*If results are not listed for any specimen(s), that/those specimen(s) is/are deemed to be on "HOLD"


Norman A. Wade
Laboratory Director

Jurisdictional Agency: YAVAPAI SO
By: svp, Tox.1/2000, DAWN

4/1/13