

GLOSSARY

- Abrasion collar:* The dark circle around the margins of a bullet perforation of entrance, caused by the rubbing of a bullet against the skin as it stretches and penetrates it at the moment of impact.
- Acromion process:* The lateral end of the spine of the scapula (shoulder blade) which forms the top, outside, back portion of the shoulder.
- Anatomic position:* The position of the body at attention, with the face forward, the arms at the side, and the palms of the hand facing forward.
- Anterior-posterior:* Refers to X-rays taken with the beam proceeding from the front of the body (anterior) to the back (posterior), with the back part of the body against the X-ray plate (posterior-anterior view of the chest indicates that the chest is against the X-ray plate and the beam enters from the back).
- Apical or supraclavicular portion of the pleural cavity:* The uppermost part of the pleural cavity (lung cavity) adjacent to the neck and above the collarbone.
- Arachnoid:* A thin, transparent, delicate membrane that covers the brain.
- Arilla:* The armpit.
- Basilar aspect:* The underside of the brain.
- Beveling:* Beveling in bone resembles the beveling observed when a BB or small caliber missile strikes a plate glass window. (See fig. 16, depicting beveling.) Pathologists use this information to characterize the direction of travel of a missile through bony surfaces, since the margins of the defect on the bony surface where the bullet enters the bone are sharply outlined and may approximate the dimensions of the missile itself, while the margins where the bullet exits from the opposite bony surface are large, more irregular, and cratered. Missile fragments or bullets exiting from the skull produce a similar pattern in reverse direction, that is, the point where the bullet first strikes the skull on the inside of the exit point is smaller and the beveling extends to a larger, more irregular defect on the outer surface of the bone.
- Calvarium:* The top of the skull; the skullcap.
- Cecum:* The beginning of the large intestine or colon.
- Cerebellum:* The part of the brain immediately behind and below the cerebrum and situated in the lower back part of the skull.
- Cervical:* Refers to the area of the neck.
- Comminuted fracture:* A fracture in which the bone is broken into a number of fragments.
- Computer-assisted image enhancement:* * A procedure in which graphic images are recorded on a television camera and then, with the assistance of an operator or by preprogramed instructions to the computer, color or light variations which are barely perceptible or are even imperceptible to the human eye are magnified so that they are more easily seen. The procedure assigns numbers indicating the level of intensity of the three primary colors in many tiny spots comprising the televised image. These numbers are stored systematically on the computer, thus "digitizing" the image. The programmer uses various mathematical manipulations of these numbers to render the enhancement.
- Contusion:* Bruise (results from trauma and bleeding from injured small blood vessels).

*Computer-assisted image enhancement of X-rays—a process somewhat different from that of photographic enhancement. In this technique, the initial steps of image digitalization are similar, but the mathematical programming serves to reduce the fuzzy, ill-defined shadows on the X-ray to rather concise lines, simulating line drawings prepared from X-rays.

- Coronal sectioning:** A technique for sectioning the brain, similar to slicing a loaf of bread. The brain is cut parallel to the coronal suture line of the skull, which extends from the front of one ear to the front of the other ear.
- Coronal suture:** See "suture lines."
- Corpus Callosum:** The part of the brain that connects the cerebral hemispheres.
- Cortex:** The outer part of an organ such as the brain or adrenal glands.
- Decerebrate rigidity:** Rigidity of the body or a part of the body which is caused by a muscle spasm of the entire body below the neck resulting from interference in the transmission of stimuli from the higher centers of the brain which maintain balance and muscle tone to the spinal cord.
- Definition:** In optics, the power of a lens to give a distinct image.
- Dermis:** The innermost layers of the skin.
- Dorsal aspect:** Refers to the posterior or back surface of the body or a part of the body as opposed to the ventral aspect, or anterior or front surface.
- Ecchymosis:** Hemorrhage or bleeding into tissues; often referred to as black and blue marks.
- Energy dispersive X-ray examination:** A technique which measures the radiation characteristic of different (chemical) elements when excited by an X-ray source. It allows one element to be distinguished from another, such as lead, copper, or zinc.
- Epidermis:** The thin, outermost layer of the skin.
- Epithelium:** A purely cellular layer covering the surface of the skin.
- Ethmoid:** Resembling a sieve.
- External occipital protuberance:** The prominence in the middle of the back of the skull.
- Falx cerebri:** A thin, fibrous membrane that extends between the cerebral hemispheres.
- Fascia:** A fibrous, connective tissue membrane.
- Forensic odontologist:** One who applies the technique of dentistry for medical-legal purposes to assist in identification of individuals by dental comparisons and examination of bite mark evidence.
- Frangible bullet:** A bullet composed of metal fragments designed to splinter on impact; often used in shooting galleries to prevent the ricocheting of bullets.
- Frankfort plane:** A standard reference point. It is a horizontal plane of the head which passes through the most inferior portion of the left orbit and the superior margin of the left external auditory foramen (ear canal).
- Fronto-parietal:** Refers to the front and upper aspects of the head and skull.
- Fronto-temporal:** Refers to the front and side aspects of the head and skull.
- Galea:** A thick, fibrous membrane between the scalp and the skull bones.
- Gross description:** Description of the body or body organs made with the naked eye and without the aid of a microscope.
- Gyri:** The rounded elevation of the outside of the cerebral hemisphere of the brain; the depressions are called sulci.
- Hemithorax:** One-half of the chest.
- Hemorrhage:** Bleeding.
- In-life:** Taken while the person was living.
- Interstitial emphysema:** Abnormal accumulation of air within tissues.
- Latissimus dorsi muscle:** The broadest muscle of the back.
- Lobe:** A rounded, projecting part.
- Mastoid process:** The lowest projection of temporal bone immediately behind the ear.
- Medial femoral condyle:** In the middle of the rounded articular surface at the extremity of the bone.
- Mediastinum:** The middle part or aspect of the chest.
- "Missile dust":** Refers to the X-ray appearance of tiny metal fragments deposited in the tissues along the course of a missile track.
- Necrosis:** The death of tissues.
- Obelion:** A point on the sagittal suture between the parietal foramina (small holes located approximately 0.5 to 1 centimeter lateral to the sagittal suture) approximately 5 centimeters above its posterior margin where it terminates in the lambdoidal suture, the semicircular suture extending around the occipital or back portion of the head and separating the parietal bones from the occipital bone.

- Occipital protuberance:** See external occipital protuberance.
- Occipital region:** The back part of the head.
- Occipital-parietal:** The upper, back part of the head and skull.
- Orbit:** The body socket which contains the eye.
- Paraffin blocks:** Wax blocks containing small pieces of tissue used in the preparation of slides for microscopic examination. It enables the cutting of the very thin sections necessary for microscopic study.
- Parietal:** Upper part of the skull or head.
- Periosteum:** Thin, fibrous membrane covering the bone.
- Photographic enhancement:** A process for improving the quality of an image for example, with a computer by converting picture elements into digital numbers that are systematically modified and converted back into picture elements.
- Pleural cavity:** The space in the chest containing the lungs.
- Pleural fluid:** Fluid present in the pleural cavity.
- Pneumothorax:** Air or gas in the pleural cavity.
- Positive pressure insufflation:** The Propulsion of air through a tube into the trachea and the lungs by a mechanical device during emergency treatment.
- Pulmonary contusion:** Contusion or bruising of the lung.
- Pulmonary parenchyma:** The substance of the lungs.
- Radiolucency:** Appearing as an empty space on an X-ray.
- Reverse jet effect:** The movement of an object in a direction opposite of the release of energy.
- Rifling:** Refers to the grooves in the barrel of a gun or rifle designed to impart rotation to a missile and make flight more accurate.
- Rocntgenogram:** X-ray.
- Sagittal plane:** The plane through or parallel to the sagittal suture line of the skull which is at the top of the head between the parietal bone and extends from front to back in an anterior-posterior direction.
- Sagittal suture:** See suture.
- Scanning electron microscopy:** A technique in which a beam of focused electrons moves across an object. The secondary electrons produced by the object and the electrons scattered by the object are collected to form a three-dimensional image in a cathode-ray tube.
- Scapula:** Shoulder blades.
- Secondary missiles:** Objects which have become missiles as a consequence of being struck by the primary missile, which is usually a bullet. These missiles may include fragments of bone.
- Sella turcica:** Literally, "turkish saddle"; the depression in the sphenoid bone of the skull that contains the pituitary glands.
- Serratus anterior muscle:** A thin muscle between the ribs and scapula and the upper portion and sides of the chest.
- Soft-nosed bullet:** A bullet with a lead or unjacketed nose.
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- Soft X-ray examination:** A technique which employs X-rays at low levels to reveal materials not seen by normal X-ray techniques.
- Spectrographic analysis:** Technique in which a spectrograph is used to subject charged and accelerated ions to a magnetic field to detect differing molecular structures. This allows identification of various substances.
- Sphenoid sinus:** The air spaces in the sphenoid bone of the skull; they serve as accessory air spaces for the nose.
- Stephanion:** The junction of the coronal suture at its lateral extremity with the temporal line (the upper margin of the temporalis muscle insertion).
- Stereoscopic visualization:** Technique which involves the use of a stereoscope, an optical instrument with two eyeglasses, to assist the observer in combining the images of two pictures taken from points of view a small distance apart and thus to get the effect of solidity or depth.
- Subarachnoid:** Underneath the arachnoid membrane.
- Sulci:** See gyri.
- Supraclavicular:** The area above the collar bone (clavicular) at the root of the neck.
- Suprasternal notch:** The V-shaped indentation at the upper border of the sternum or breast bone at the base of the neck, in the midline.

Suture lines: The junctures in the skull between the various flat bones where growth occurs until the individual reaches maturity, when they close or fuse, thereby making the skull virtually one large bone. Even after closure, there are slightly indented residual lines, usually arranged in a somewhat zigzag pattern. Each of these suture lines has been named.

Sylvian fissure: The deepest and most prominent lateral cerebral fissure of the brain.

Temporo-parietal: Refers to the side and upper aspects of the head and skull.

Thoracolumbar: Refers to the chest and lower part of the vertebral column.

Thorax: Chest.

Tragus: The cartilaginous protusion in the front part of outer ear.

Transparency: An image (usually positive) intended to be observed by light that passes through the image and base, as on a viewer or by projection.

Tumbling: The rotation of a bullet over its longitudinal axis; sometimes resulting in the bullet "tumbling" end over end.

Turcica: See sella turcica.

Vascular foramina: Opening in bone through which blood vessels travel.

Vastus medialis: A prominent muscle in the front of the upper leg.

Ventricles: In reference to the brain, the normal cavities within the brain containing cerebro-spinal fluid.

Vertex: The crown or topmost part of the head.

Visceral pleura: A thin semitransparent membrane covering the outer surface of the lung and separated from the "parietal pleura" which lines the inside of the chest cavity, where the lung is suspended only by its attachment or hilum in the midportion of its medial surface.

Volar: Refers to the palm of the hand or the sole of the foot.

X-ray back scatter: A technique used to determine the presence of metal in tissue.

Yaw: The deviation of a bullet from its longitudinal axis during its line of flight, resulting from the spin imparted to the bullet by rifling and imperfection in the bullet due to construction or deformation in the bore or other imperfections in the gun, and also caused by resistance of air or tissues.

ADDENDA TO THE REPORT OF THE FORENSIC PATHOLOGY PANEL

ADDENDUM A

LIST OF THE DOCUMENTARY MATERIALS PROVIDED TO THE FORENSIC PATHOLOGY PANEL BY THE HOUSE SELECT COMMITTEE ON ASSASSINATIONS (PACKETS I AND II)

PACKET I

Autopsy protocol (Nov. 22, 1963).

Supplementary autopsy report (Dec. 6, 1963).

C.E. 397 (Humes' notes of Nov. 23, 1963 call to Dr. Perry and Humes' handwritten draft of autopsy report).

Autopsy descriptive sheet (Nov. 22, 1963).

W.C. autopsy diagrams (C.E. 385, 386, 400).

JFK documents: Death certificate (Nov. 22, 1963); authorization for post mortem examination (Nov. 22, 1963); and report of inquest (Dec. 6, 1963).

Secret Service reports on bullet trajectories: Dec. 12, 1963 by Elmer Moore; Feb. 14, 1964 by Roger C. Warner; and Jan. 28, 1964 by Roger C. Warner.

Connally medical records: admitting summary (Nov. 22, 1963); admitting note (Nov. 22, 1963); Parkland Hospital operative record (Nov. 22, 1963) (from C.E. 392); Secret Service report on Connally's wounds (Feb. 14, 1964, by Roger C. Warner); and body diagram (Commission No. 326) Nos. 1, 2, 3, 4, 5, 6.

Narrative summary—Anesthesia care for Governor John Connally (Nov. 23, 1963). Dr. Giesecke to C. J. Price).

Reports of diagnostic X-ray consultation by Dr. J. Reynolds—November 22, 24, 25, 26, 27 and 29, December 2 and 4, 1963; supplementary report (Nov. 29, 1963)

Surgical pathology report (Nov. 30, 1963—by Dr. Stembridge).