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PROVOCATIVE IMAGES

by Millicent Cranor

Reading the neck. The most revealing image is a diagram of the cross-section of Kennedy's neck. See what happens when you connect these wounds: (1) an opening in the *middle* of the neck, (2) a tear in the *right* wall of the trachea, (3) a bruise on top of the *right* lung. The line formed by connecting these wounds points to the *left* side of Elm Street, assuming the throat wound was an entrance. This is a valid assumption. Neuologists have privately told me they doubt the bullet that struck Kennedy in the back went out the throat; a supersonic bullet could not enter so close to the spine without causing spinal shock and immediate arreflexia, meaning the victim goes limp. Kennedy did not. Case open. What happened on the left side of the street, opposite the famous grassy knoll?

Reading between the frames. The most intriguing images concern what might have been excised from the Zapruder film: (1) Occasionally, I come upon a copy of the Z film that harbors a fugitive frame *between* Z-312 and Z-313 that differs measurably from both; I believe these frames were accidentally left behind during a more extensive edit. I have isolated three. (2) On the Nix film, seven frames before the official head shot, appears an image that resembles -- in size, shape, and location -- the bone flap near the right ear, as seen in autopsy photos. A long white line accompanies this image when it first appears. In subsequent frames, the image continues to show, and appears to move slightly. (3) On the Muchmore film, six frames before the official head shot, white lines radiate from the head. The white lines that show up early on the Nix and Muchmore films are oriented exactly as those that appear in Zapruder 313.

Reading the wind. The least understood images are the above-mentioned white lines. From fluid dynamics, a branch of physics: These lines consist of a series of disconnected little puffs, a characteristic of gas, not liquid. Instead of spatter leaving the head, they may be "condensation lines" or the "supersonic flow" in the wake of a bullet. In front of the bullet, air is compressed and hot; behind, it is almost a vacuum, which leads to turbulence, intense cooling, and condensation of moisture in the path. If the humidity is right, the condensation can be visible *for a few milliseconds*. Then it dissipates -- but not before telling a tale.

Reading the skull. The most baffling images are the fragments anterior to the "entrance" wound in the skull x-rays, for they don't resemble, in size or shape, the smaller of the three late-arriving bone fragments. This smaller fragment, which contains half a hole, is supposed to complete a half-hole in the back of the head, according to the HSCA Hearings. But autopsist James Humes never mentioned this during the W.C. Hearings and he stated explicitly that only the *exit* wound was completed by a bone fragment. Humes also never referred directly to the hole in the bone: "...this wound in the right posterior region was in a portion of scalp which had remained intact... So, we could see that it was... 15 by 6 millimeters." He could not see this from the wound, or from the wound put together with the fragment? What, then, did he see? If the hole in the fragment does not belong with that entrance, where does it belong?

This very elongated wound had to have been created by a tangential strike. Yet, autopsist Pierre Finck claimed the entrance was *inward*-beveled -- damage that does not fit the known pattern of a tangential strike: With the skull sideways to the bullet path, the bullet creates an oblong wound -- but first it tunnels under the scalp, scraping a trough on the surface of the skull. This is called "guttering," and the result is *outward*-beveling -- *but only on the side of the bullet's approach*. Did Finck not know the wound could be outward beveled (partly), and still be an entrance?

If the hole in the *fragment* was also outwardly beveled, this would mean the small hole in the back of the head was an exit. Yes, small holes can be exits. When an empty skull is shot, both entrance and exit wounds are small. (It is cavitation that creates large exit wounds; the brain explodes, thrusting open the skull, usually along suture lines.) Did a bullet enter Kennedy's already-opened head, and go out the back? A photo of the exposed skull would reveal (1) size, (2) location, and (3) beveling. Why is there no such photo? Why do we have, instead, Finck's diagram of beveling that goes more with a straight perpendicular hit? It should be noted that, because of Kennedy's bent-forward posture, the earlier, lower site claimed for the entrance wound ("slightly above the EOP") is almost perpendicular to the bullet's path. The higher location (the cowlick) is almost parallel to it. An elongated wound fits with the higher location, but not with Finck's diagram of inward-beveling. Where was it, and was it an entrance or an exit? Was there another entrance?