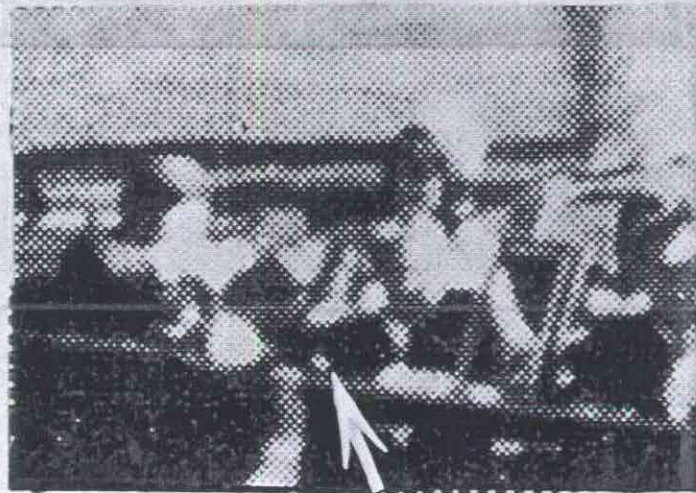
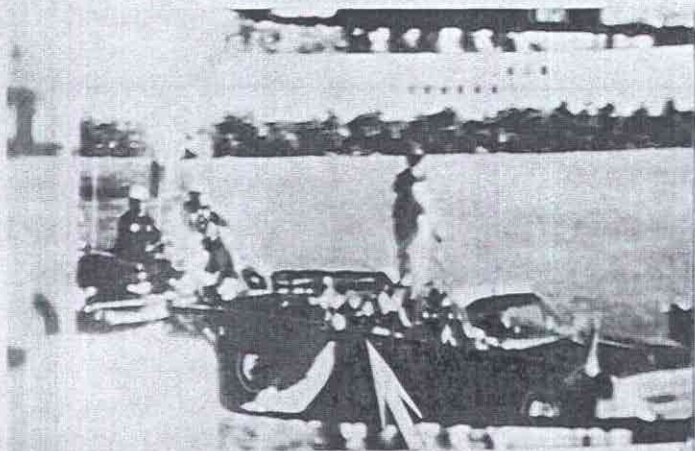


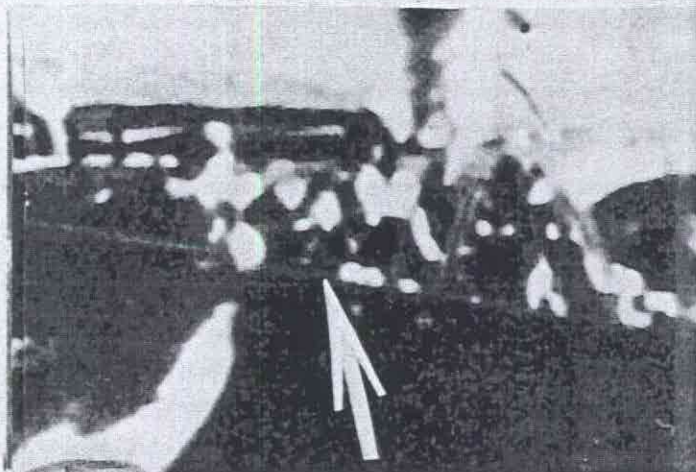
# 1. Life, 11/29/63 eighth picture (Zapruder fr. 237 Vol. XVIII)



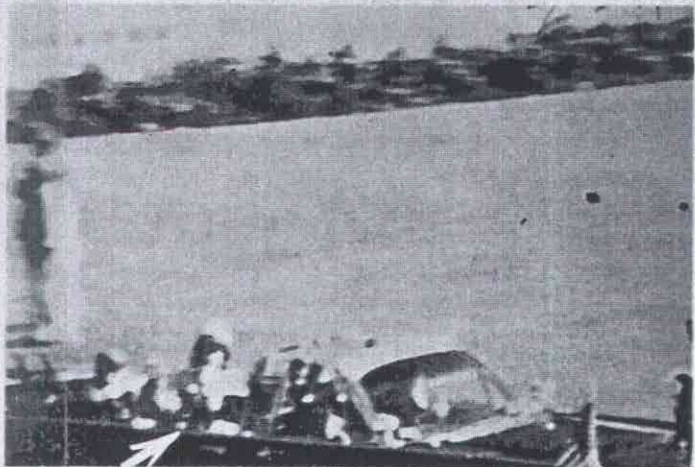
237 # 1a. from # 1.



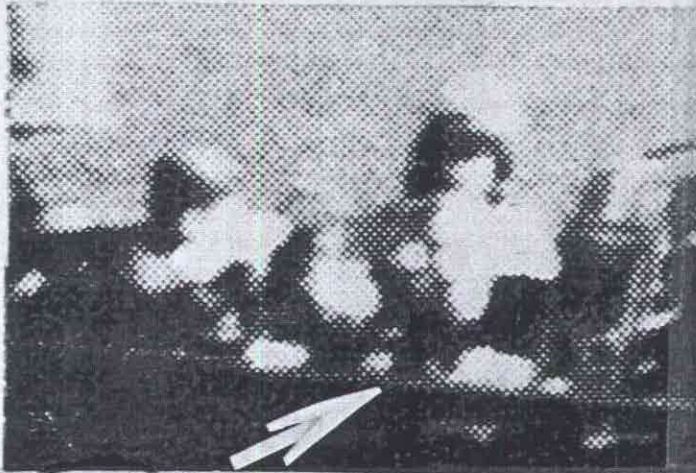
# 2. Zapruder fr. 238 Vol. XVIII



238 # 2a. from # 2.



# 3. Life, 11/29/63 ninth picture (Zapruder fr. 244 Vol. XVIII)



244 # 3a. from # 3.

JC-

Connally, fr. 225-258fr. 225-232:

Seated upright, chest toward front of car. In 225, face to camera, he is turning head leftward; reaching forward-facing position by 228. Little change through color fr. 232, except that by then he has raised his hand (apparently his right) to the hold bar<sup>\*\*</sup>, preparing to again turn to his right.

fr. 233-244, Body Turn:

He begins turning body to right in 233, more obviously so by 234; chest squarely to camera by 236; slightly beyond it by 237.\*

In 233-237, the downward line of his right shoulder from neck to shoulder-tip presents to the camera a progressively more horizontal appearance as he turns his body to his right.

From 236-238, the tip of his left shoulder appears to drop slightly from horizontal.

To this point the observed changes in shoulder angles appear normal, considering the right turn of the body.

If his right shoulder continued to turn normally in fr 238, the tip should have appeared to continue to rise, as in 235-237. Instead, in 238 it angles sharply downward compared to the preceding frames. Also, his turn is interrupted at 238. While his body turns approx. 45°-50° from forward to right during 233-237, it stops momentarily at 238, progressing no further through 244. (45°-50° arc in 4/18 sec.; no further progress during following 7/18 sec.).

\* See photo-panel JC=1 for clearer illustration of 237, 238, and 244.

\*\* - In Oct '66, eight mos. after completion of these notes, I agreed he is holding hat, not hold-bar. RM

Fr. 236-244, Face Turn:

The body turn precedes the turn of his head. In 236, where his chest is to the camera, his face is still forward. By 237, his face is still only slightly to the right of center; by 238, perhaps 45° to the right; by 241, squarely to the right side of the car. The turn of his head, from primarily forward-facing in 237 to fully right-side facing in 241, can be described as a snap, requiring only 4/18 sec.

But at 241, his head stops, and he remains facing perpendicularly to right side of car for at least 4/18 second through 244.

At the same time, his mouth has opened (this begins to appear in 241 or 242, and is quite clear at 244). (see ~~5C-1~~ 5C-1)

Fr. 245-258:

He resumes his turn to the right, with right shoulder sagging. By color fr. 258 he is facing to the ~~left~~<sup>right</sup> rear of the car. His mouth is open, and his face appears contorted. His right elbow is down, out of view; his right forearm angles up across his chest; his right hand dangling limply from the wrist (the dark area across his right hand is apparently a shadow cast by the chrome band connecting the tops of the wind-wings at the sides of the front seat-back -- color panels 3 and 4, Life, 10/2/64).

Summary and Conclusion

After turning his head from right to forward, he starts to turn to the right again. Body first, face following, he gets part way around, and at 238 his turn is suddenly halted, right shoulder sharply depressed. He then snaps his head around to the right, stops in mid-turn, and his mouth pops open. He continues his turn; and, in color fr. 258, his right shoulder still sagging, his right hand hanging limp, his face is a picture of distress.

It seems a near certainty that the observed interruption of the turn at 238, accompanied by the head and shoulder movements noted, in the circumstances could only have been caused by a bullet striking in the rear of the right shoulder -- probably an almost perpendicular shot -- which drove the shoulder forward (towards the camera) and down.

Since a Connally hit at 238 follows by little more than 1/2 second the JFK reaction at 227-230<sup>\*</sup>, and since the Mannlicher-Carcano requires 2.3 seconds or 42 frames between shots, that weapon is ruled out as the source of both shots.<sup>\*\*</sup>

R.M. Feb '66

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\* JFK hands move up slightly; elbows flung sharply up and forward; shoulders hunch up. Compared with color fr. 226, change becomes apparent by 227; dramatically so by 228. Upward movement of hands, elbows, and shoulders reach highest point by color fr. 232.

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\* \* This would be true even if one assumes the JFK reaction at 227-230 resulted from a hit at 210, the earliest frame in the 210-225 range accepted by the Commission (Report, 115) -- which would indicate a 28-frame interval to 238. (prior to 210, JFK obscured from TSBD window for forty-four frames by oak tree; Rep. (3))