

# First Shot/First Hit Circa Z-190

## Barb Junkkarinen

The probability of the Single Bullet Theory, and let's remember it was and remains only a theory, depends on more than "a" bullet's ability to inflict multiple wounds in two men and emerge in relatively good shape. There is more, a lot more, involved in making that theory fly. Experimental support is a stretch, in my opinion. Not that "a" bullet couldn't, perhaps, accomplish the feat, but because there is a convergence of evidence that says President Kennedy and Governor Connally were hit by separate bullets less than two seconds apart. The Warren Commission had a timing problem as regards to their lone gunman. As it states in the Warren Report:

Tests of the assassin's rifle disclosed that at least 2.3 seconds were required between shots. In evaluating the films *in light of these timing guides*.... [emphasis added]. (WCR)

Not only was the SBT not probable with less than two seconds between shots, it was not possible. If JFK and Connally took separate bullets less than two seconds apart, the SBT falls on its not-quite pristine little fanny.

In April of 1964, the Warren Commission held two day long conferences to examine the Zapruder film. The purpose of these conferences was "to determine which frames in the Zapruder film portray the instants at which the first and second bullets struck." Assorted FBI and Secret Service agents, Warren Commission personnel, physicians, and the Connallys took part. Also participating were Dr. Light, Deputy Chief of the Biophysics Division at Edgewood Arsenal and Chief of the Wound Assessment Branch of the Biophysics Division, Dr. Olivier, Chief of the Wound Ballistics Branch of the Biophysics Branch at Edgewood Arsenal, and Dr. Dolce, Consultant to the Biophysics Division at Edgewood Arsenal.<sup>1</sup>

The conclusion was that JFK took bullet number one, JBC took bullet number two, and then JFK took bullet number three in the head. They determined that President Kennedy had already been hit when he emerged from behind the Stemmons sign. They weren't certain when Connally had been hit, but believed Z230 was consistent with what they saw on the film and with medical testimony.<sup>2</sup>

Melvin Eisenberg reported on each conference in memos written "FOR THE RECORD." Norman Redlich wrote a summary memo to J. Lee Rankin a few days later. In that summary memo, he stated that the conclusion they expected to report was three bullets/three hits. But by that point in time they had learned of the timing constraints of the rifle. Redlich pointed out that at least 40 frames would be required between shots. Redlich noted, "It is apparent, therefore, that if Governor Connally was hit even as late as frame

240, the President would have to have been hit no later than frame 190 and probably even earlier." Redlich goes on to say that, "We have not yet examined the assassination scene to determine whether the assassin in fact could have shot the President prior to 190".<sup>3</sup> The wounding of bystander James Tague was unknown to them at this point. Their 3 bullets /3 hits conclusion was based on their study of the films and slides. The best question here, perhaps, is what insights or evidence later led them to change their conclusion? Perhaps Redlich answers that question for us in his summary memo when he says, "Our intention is not to establish the point with complete accuracy, but merely to substantiate the hypothesis which underlies the conclusion that Oswald was the sole assassin."<sup>4</sup> (Note: See copy of memo following this article.)

"Underlies the conclusion," indeed. It is so helpful when you start a project already knowing the answer. The SBT was borne of necessity, not of evidence. It was a way around the timing constraints of the rifle and the wounding of James Tague.

April 1964 was not the first time someone had decided that there had been three bullets/three hits. In an 11/29/63 FBI report, it states:

SA Howlett advised that it had been ascertained from the movies that President KENNEDY was struck with the first and third shots fired by the assassin, while Gov. CONNALLY was struck with the second shot. (CD5)

When did this earlier evaluation of the films take place...and who was there? So, on at least three different occasions, the determination was that Kennedy and Connally took separate hits. But, as it turned out after further study and re-creations in Dealey Plaza, that was at odds with the bottom-line conclusion.

I believe their initial assessments were correct and that Kennedy and Connally were hit by separate bullets. There is quite a convergence of observable motions, testimonies, films and photos, on a first shot/first hit to JFK in the Z190 time frame.

Let's start with the assertion that there was an early miss circa Z160. Connally turns toward his right in the early 160s, but not sharply. He does not look distressed at that point, nor does he appear to be trying to twist further around in an effort to see the President. He appears to

"The Warren Commission had a timing problem as regards to their lone gunman."

be looking at the people lining the north side of Elm St. who can be seen waving, clapping and reaching out for the President in photos taken from the opposite side of the street. Kennedy is also looking at these people and is smiling at them. When Connally emerges from behind the Stemmons sign, he is turning back to his left from a position which shows him turned farther to his right than before going behind the sign.

He is visible for quite a ways once behind the sign too. Watch him. It is possible that the turn he was referring to all these years happened while the limo was behind the sign. That would fit with the actions and testimonies of both him and others. Connally's casual, half-baked turn to the right in the 160s, especially in context of what others along the route were doing at that same point in time, is not evidence of an early shot. Young Rosemary Willis does not bolster that contention either. She can be seen looking to her right the entire time she is jogging along beside the limo. She was running out of sidewalk, the limo was passing her by. She doesn't plant her feet and come to a complete halt until Z195. She looks back at that time, but not up and across the street at the TSBD. It appears she is looking at the next car coming up in the motorcade. It was a parade...and she was a kid!

So, what supports a first shot/first hit of the President in the Z190 time frame? There are many things. Let's start with two. First, the actions of Kennedy himself, and second, the actions of Jackie.

First of all, let me say that Dr. Doug DeSalles spent a great deal of time a few years ago watching the Z film on laser disk. He compiled witness and photo data, and did a detailed analysis of motorcade car placement at the time the occupants recall hearing a first shot. Doug is exacting and did fine work. Many of his findings confirmed or clarified things I had believed; in addition he came up with much more. I continue to urge him to publish his findings. My personal take on a shot circa Z190 is a conglomeration of findings pointed out by Doug DeSalles, observations and evidence I stumbled across on my own, and evidence and other support pointed out by others.

On to JFK and his actions.

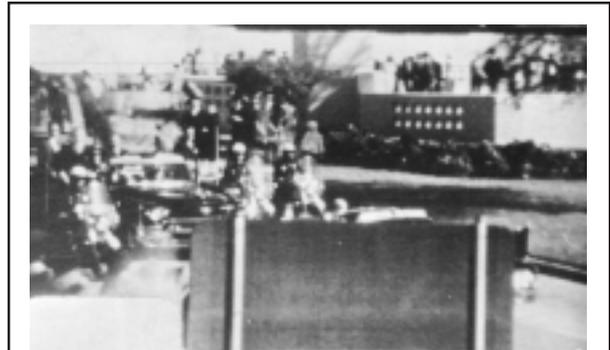
President Kennedy is cruising along in the limo smiling and waving at people on both sides of Elm St. In Z188 he is grinning broadly to the people lined up just east of the Stemmons sign. Some have noted a "cheek puff" of JFK at Z188. That "puff" is clearly a big grin as noted on the first generation slides at the National Archives. Doug DeSalles and I noticed it when viewing the slides in 1995, Bill Hamley and I saw it while at the Archives last Fall. Shortly after Z190, things begin to change.

It is about Z193 that Kennedy first shows signs of reaction. His arm and hand motion stops and freezes awkwardly. At 199, Kennedy's elbow bumps up off the side of the limo almost imperceptibly and then back down (the chrome strip appears then disappears again). Just before he disappears behind the sign, his upraised hand comes down quickly and angles across his face, and his head jerks suddenly to his left. This happens in frames Z202-205. In Z205-207, JFK has all but disappeared behind the sign. His arm/elbow has taken on an odd posture, and his hand is still angled awkwardly across his face. The white of his cuff is visible. A mere one second later, JFK emerges from behind the sign and has clearly already made additional reactive movements.

At the Archives last Fall, Bill Hamley pointed out to me that in Z225, when some of Kennedy's right arm/hand is first visible, Kennedy's elbow is up off the side of the car. While studying that, we realized that his right arm position does not change from Z224 to Z225 .... watch his hand!...therefore his elbow must have been off the limo at Z224 as well. We also noticed that Kennedy's left hand is already clenched at mid-chest level in Z224 as is his right hand. In Z225, both hands are in clenched position at mid-chest, one hand, the right one, above and further over than his left.

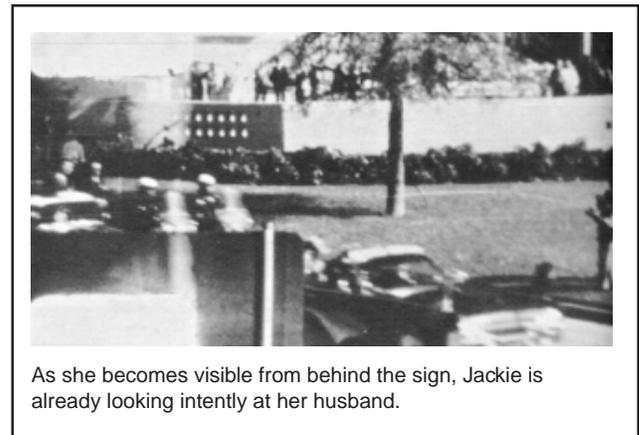
Kennedy, mouth open, clearly looks distressed in Z225. In Z226, that right hand has continued up to just below his chin. His elbows are already somewhat splayed in Z225-226. Over the next few frames, JFK raises that stance to chin level and achieves the full elbow splayed position.

The HSCA, of course, pinpointed Z190 as the time JFK was first hit and noted reactive movements by Kennedy before he disappears behind the Stemmons sign. From the "Findings" of the HSCA photographic evidence:



Kennedy's hand is angled awkwardly across his face; Jackie has already turned and is looking at him.

By Zapruder frame 207, when President Kennedy is seen going behind a sign that obstructed Zapruder's view, he appears to be reacting to a severe external stimulus. This reaction is first indicated in the vicinity of frame 200 of the Zapruder film. The President's right hand freezes in the midst of a waving motion, followed by a rapid leftward movement of his head. There is, therefore, photographic evidence of a shot striking the President by this time.(HSCA Report and Vol. 6:17)



As she becomes visible from behind the sign, Jackie is already looking intently at her husband.

In the mean time, what is Jackie doing?

Jackie is looking more or less straight ahead in the mid- to late Z180s. Then, she does look slightly to her right, but neither she nor anyone else looks alarmed and she continues her casual crowd watching. But by Z200, Jackie is striking that distinctive looking-at-John pose with her head slightly cocked. She maintains that position until well after they emerge from behind the sign. This is important.

In her testimony to the Warren Commission, Jackie said that she turned her head in response to hearing "terrible noises" and that, at the time, her husband just had a "quizzical look" on his

face, as if he “had a slight headache”. (5H179) That description would hardly fit what we see when JFK comes out from behind the sign, but does dovetail nicely with his hand freezing and his head jerking to the left just before being obscured.

Bennett Sherman, an HSCA photo panel expert, wrote:

From about frame 200, until all of the principal figures are hidden, Kennedy appears to be stiff or completely unmoving; Connally likewise appears stiff, and Mrs. Kennedy begins to turn her head to her right rather quickly, completing a 90 degree turn within four or five frames. This is much more rapid than any turning of her head within the previous 20 or 30 frames. A head turn of approximately 90 degrees in 5/18th of a second, which is the period during which Mrs. Kennedy’s head moves, is an unusually rapid rotation and not in keeping with casual looking at the crowds.<sup>5</sup>

Jackie has struck this pose completely by 207 and we can see that she maintains this pose while they are behind the sign....watch her hat! The top of her hat can be seen nearly the entire time they are behind the sign. It disappears for only two frames, Z218-219. We are all familiar with the concern and attention she is showing her husband at 224-225. Supposedly, JFK has just been hit. But Jackie is staring at her husband, in that distinctive pose of hers, when she first becomes visible from behind the sign at Z220-221. Jackie is one whose testimony has been interpreted six ways from Sunday, and as if everything she said occurred all at once and necessarily in the exact order she told it. Personally, I think that’s asking a bit much of Jackie given the circumstances. But look at her actions! Jackie did exactly what she said she did...and we see it happening in this Z film sequence.

The actions of Jack and Jackie are just the beginning.

Agents riding in the Secret Service follow up car are completely visible in the sprocket image area of the Z film until a few frames after Z200. They are looking straight ahead for the most part, SSA George Hickey, in the left rear seat, is looking to his left at the people on the south side of Elm Street. None of them are reacting to anything until after Z190. Hickey stated that when he heard what he thought sounded like a loud firecracker coming from the right rear, he turned to look in that direction.(18H761-763) On the Z film, Hickey begins this turn to his right at Z195.

Phil Willis was standing on the south side of Elm, directly across from the TSBD. After the limo turned onto Elm, he took a photo. Jackie and Nellie are looking to their left, toward Willis. Willis can be seen taking this picture from off the curb in the Z film, and then stepping back up onto the curb. He is back on the curb at Z161. Less than three seconds later, Willis took his next picture. As we can see on the Z film, he has just gotten his camera back up to his face in Z184. This is important. Willis says that he snapped a picture reflexively when he heard the first shot (Willis also testified that “when the first shot was fired, her head [Jackie’s] seemed to just snap in that direction.”). (7H492-497) That reflexive picture corresponds to Z202. His camera is first up to his face in Z184, his picture corresponds to Z202. What Willis heard as the first shot fell between those frames. Allowing for sound and startle

reaction time, that photo is in keeping with a shot in a Z190-195 time frame. First a shot, then a reflexive click of the shutter.

That goes well with Hugh Betzner who said that he heard a shot only after he had snapped his last photo. Betzner was also on

the south side of Elm St, standing some 15-20 feet east of Willis. Betzner wanted to get one more picture of the limo even though it had essentially passed him. In Betzner’s photo, SSA Hickey,

in the follow up car, can clearly be seen looking to his left. The line of “pre-sign” people on the other side of the street can be seen waving and reaching out toward the limo. Betzner took his picture and had started to wind his camera when he heard the first shot (19H467). His photo corresponds to Z186.

Willis and Betzner bracket the first shot ... after Z186, but before Z202. Really before, or at, Z195 to give Willis time to hear the shot and reflexively snap his photo. This coincides rather nicely with Zapruder’s first major tracking error. Zapruder heard two shots.(7H570) Zapruder had two major tracking errors. One was at the head shot, the other commenced at Z190.

Dr. William Hartmann, a member of the HSCA photographic panel, conducted his own jiggle analysis study of the Z film. From his testimony to the HSCA:

CORNWELL: And would it be accurate to state that the second largest area of blur or jiggle, apart from the one that occurred shortly after the head shot, would be in the earlier portion of the film?

HARTMANN: That is correct.

CORNWELL: What frame is that associated with?

HARTMANN: About frames 190 to 200 there is a strong blur reaction initiated. So having concluded that this is in fact, that the blur sequence around 313 to 319 is in fact a response to the gunshots, I would think that the logical inference would be that the blur sequence, the blur episode running typically from 190 to 200 is also a response to a possible gunshot. And we know that the President emerged from behind the sign somewhat later, some frames later, showing in fact a reaction to such a wound. So this could very well be the blur or startle reaction to the gunshot that caused the back wound to the President. (HSCA, Vol. 2:15)

Charles Bronson was taking film and photos (slides) from an abutment on the southwest corner of Main and Houston. After losing sight of the limo when it turned onto Elm St., he was waiting for it to emerge from behind a concrete structure on Elm to take another picture. In 1995, Bronson told author Richard Trask, “I was waiting till the limo got into full view at about right angles, but the shot rang out just before. I wasn’t quite ready, but I had my finger on, and I had enough pressure on it so when the shot rang out....I instinctively jumped and snapped it at the same time, and that’s the reason you will notice that the picture is a little blurred.” (Trask, *Pictures of the Pain*, p283)

Just which Z frame Bronson’s slide coincides with is still a

point of debate. Doug DeSalles calculated that the limo would have first been in Bronson's full view at Z219. Bronson reacted to a sound before 224, but well after 160, and within frames of the Willis and Betzner photos. I believe they were reacting to the same sound. The observations and photos of Willis, Betzner and Bronson triangulate the timing of the first shot into a circa Z190 time frame and corroborate what we see President Kennedy, Jackie, and Hickey doing during the relevant frames following Z190 as well.

Several witnesses support the first shot/first hit circa Z190 thesis by their placement of the limo, relative to their position, and/or by their observations of what actions/reactions they saw occur in the limo, at the time they first heard a shot.

John Chism was standing on the north side of Elm St. toward the east-end of the Stemmons sign. This would be "pre-sign" from a limo occupant perspective. He stated: "...just as he got just about in front of me, he turned to wave at the crowd on this side of the street...at this point I heard what sounded like one shot."(19H471)

Mrs. Chism, standing next to her husband, said she heard the first shot as the President was "coming through." (19H472)

Standing right next to the Chisms was Karen Westbrook. She said that, "The car he was in was almost directly in front of where I was standing when I heard the first explosion." (22H679,CE1381)

Karen Hicks was standing just about right in front of the Chisms. She said the car was directly in front of where she was standing when the first shot rang out. (22H650,CE1381)

Gloria Calverly was also standing along this stretch of Elm St., a few feet east of the Chisms. She stated that, "The car...was almost directly in front of where I was standing when I heard the first shot." (22H638,CE1381)

These people all put the first shot they heard just before or just at the east-end of the Stemmons sign.

Bonnie Ray Williams, one of the TSBD workers watching from the fifth floor, one floor below and one window west of the "sniper's nest", corroborates Chism in noting a hand motion followed by a shot. Williams, who had seen the President brush his hair back as the limo was at the Main and Houston intersection, told the WC: "...it seemed to me he had a habit of pushing his hair back...And then the thing happened then was a loud shot [sic]." (3H174) From William's vantage point, JFK bringing his arm and hand up to wave to the folks on his right (arm/hand come up in frames Z176-179 and the wave commences in the ensuing frames) could have looked like he was brushing his hair back. What Williams notes is a hand motion followed by a shot. The only hand motion Kennedy makes to the people on the right side of the limo is that wave. Recall that Chism said he heard the shot at the point Kennedy waved.

With the exception of Williams, all of these witnesses had a front row view of the motorcade. We know where they were standing, and they tell us where the limo was when they heard the

first shot ring out: almost right in front of them. Independently, they tell us that a first shot occurred just as the limo was reaching the Stemmons sign.

There are the actions of President Kennedy, Jackie Kennedy, Gov. Connally and SSA Hickey. There are the photos and observations of Willis, Betzner and Bronson. There are the statements of witnesses who were standing in a "pre-sign" position and heard the first shot as the limo approached their position. Considered collectively, an impressive convergence of a first shot/first hit on President Kennedy circa Z190 emerges.

#### ENDNOTES

1 Melvin Eisenberg memos written April, 22, 1964; one memo on the conference held April 14, 1964, one memo on the conference held April 21, 1964.

2 Memorandum of Norman Redlich to J.Lee Rankin, April 27, 1964.

3 *ibid.*

4 *ibid.*

5 I do not have the document that contains this statement in hand; a search of the HSCA volumes did not turn it up and I have been told that it is in a document released in recent years. A search of the NARA database shows several memos written by Sherman. I am attempting to determine which document contains this information. If anyone has this document or details about where it can be found, I would appreciate being contacted. My e-mail address is barb\_j@ix.netcom.com.

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RELEASED PER P.L. 108-588 (JFK ACT)  
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April 27, 1964

## MEMORANDUM

TO: J. Lee Rankin  
 FROM: Norman Redlich

The purpose of this memorandum is to explain the reasons why certain members of the staff feel that it is important to take certain on-site photographs in connection with the location of the approximate points at which the three bullets struck the occupants of the Presidential limousine.

Our report presumably will state that the President was hit by the first bullet, Governor Connally by the second, and the President by the third and fatal bullet. The report will also conclude that the bullets were fired by one person located in the sixth floor southeast corner window of the TSHD building.

As our investigation now stands, however, we have not shown that these events could possibly have occurred in the manner suggested above. All we have is a reasonable hypothesis which appears to be supported by the medical testimony but which has not been checked out against the physical facts at the scene of the assassination.

Our examination of the Zapruder films shows that the fatal third shot struck the President at a point which we can locate with reasonable accuracy on the ground. We can do this because we know the exact frame (no. 313) in the film at which the third shot hit the President and we know the location of the photographer. By lining up fixed objects in the movie frame where this shot occurs we feel that we have determined the approximate location of this shot. This can be verified by a photo of the same spot from the point where Zapruder was standing.

We have the testimony of Governor and Mrs. Connally that the Governor was hit with the second bullet at a point which we probably cannot fix with precision. We feel we have established, however, with the help of medical testimony, that the shot which hit the Governor did not come after frame 240 on the Zapruder film. The Governor feels that it came around 230 which is certainly consistent with our observations of the film and with the doctor's testimony. Since the President was shot at frame 313, this would leave a time of at least 4 seconds between the two shots, certainly ample for even an inexperienced marksman.

Redlich memo to Rankin, page 1.

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2

Prior to our last viewing of the film with Governor Connally we had assumed that the President was hit while he was concealed behind the sign which occurs between frames 225 to 225. We have expert testimony to the effect that a skilled marksman would require a minimum time of 2 1/2 seconds between shots with this rifle. Since the camera operates at 18 1/3 frames per second, there would have to be a minimum of 40 frames between shots. It is apparent therefore, that if Governor Connally was hit even as late as frame 240, the President would have to have been hit no later than frame 190 and probably even earlier.

We have not yet examined the assassination scene to determine whether the assassin in fact could have shot the President prior to frame 190. We could locate the position on the ground which corresponds to this frame and it would then be our intent to establish by photography that the assassin could have fired the first shot at the President prior to this point. Our intention is not to establish the point with complete accuracy, but merely to substantiate the hypothesis which underlies the conclusion that Oswald was the sole assassin.

I had always assumed that our final report would be accompanied by a surveyor's diagram which would indicate the approximate location of the three shots. We certainly cannot prepare such a diagram without establishing that we are describing an occurrence which is physically possible. Our failure to do this will, in my opinion, place this Report in jeopardy since it is a certainty that others will examine the Zapruder film and raise the same questions which have been raised by our examination of the film. If we do not attempt to answer these questions with observable facts, others may answer them with facts which challenge our most basic assumptions, or with fanciful theories based on our unwillingness to test our assumptions by the investigatory methods available to us.

I should add that the facts which we now have in our possession, submitted to us in separate reports from the FBI and Secret Service, are totally incorrect and, if left uncorrected, will present a completely misleading picture.

It may well be that this project should be undertaken by the FBI and Secret Service with our assistance instead of being done as a staff project. The important thing is that the project be undertaken expeditiously.

Redlich memo to Rankin, page 2.