- 15. Ibid., p. 754.
- 16. Ibid., p. 760.
- 17. Interview with Jim Moore, March 9, 1992.
- David Lui, "The Little Girl Must Have Heard," The Dallas Times Herald, June 3, 1979, H-3.
- 19. Rosemary Willis interview with Marcia Smith-Durk, 1979.
- 20. Testimony of John B. Connally, WC Vol. IV, pp. 132-33.
- 21. HSCA Vol. VI, p. 29.
- Luis Alvarez, "A Physicist Examines the Kennedy Assassination Film," American Journal of Physics, Vol. 44, No. 9, September 1976, pp. 815-19.
- "The Warren Report," CBS News, Part I, June 25, 1967, pp. 17–18.
- 24. Ibid., p. 29.
- 25. Ibid., p. 28.
- 26. Testimony of Dr. Vincent Guinn, HSCA Vol. I, pp. 504, 555–56.
- 27. Testimony of Robert Frazier, WC Vol. V, pp. 172-73.
- 28. Interview with Robert Kraus, March 29, 1992.
- 29. Testimony of Virgie Rachley, WC Vol. VII, p. 509.
- 30. Ibid., p. 513.
- Interview with James Tague, January 19, 1992.
- 32. Ibid., January 20, 1992.
- 33. Ibid., January 19, 1992.
- 34. Warren Commission memorandum, Arlen Specter to Lee Rankin, June 11, 1964; WC Vol. XXI, p. 472.
- 35. WR, p. 117.
- 36. Testimony of Robert Frazier, WC Vol. III, pp. 432, 435.
- 37. Testimony of Lyndal Shaneyfelt, WC Vol. XV, p. 700.
- 38. Interview with Art Pence, February 21, 1992.
- 39. WR, p. 105.
- 40. HSCA Rpt., p. 46.
- 41. HSCA Vol. VI, p. 43.
- 42. Testimony of Governor John Connally, WC Vol. IV, p. 135.
- 43. Ibid., p. 133.
- Interview with Dr. Michael Baden, January 21, 1992; interview with Dr. Michael West, November 7, 1992.
- Testimony of Dr. Malcolm Perry, WC Vol. III, p. 389; Lattimer, Kennedy and Lincoln, pp. 241–43;
- 46. Interview with Dr. Michael West, November 7, 1992.
- 47. Interview with Dr. John Lattimer, May 25, 1993.
- 48. Lattimer, op. cit., pp. 243-44; interview with Dr. Lattimer, February 6, 1992.
- 49. Interview with Dr. John Lattimer, February 6, 1992.
- Interview with Dr. Michael West, November 7, 1992; interview with Dr. Robert Piziali, November 9, 1992.

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dent I heard another fire-cracker noise and saw the shot hit the President about four inches down from the right shoulder" [it was actually higher]. Bennett said the third shot "hit the right rear high of the President's head." When he made his notes, it was not known that the President had been hit by a bullet in the rear neck/shoulder.

However, the Commission did not rely on these witnesses in resolving the issue of whether the first shot missed. Since there was also testimony from several witnesses who thought the second shot missed, the Commission refused to decide between them.

New Zapruder enhancements, however, confirm the ear-witness testimony that an early shot missed the President and the Governor. Beginning at frame 160, a young girl in a red skirt and white top who was running along the left side of the President's car, down Elm Street, began turning to her right. By frame 187, less than 1.5 seconds later, the enhancement clearly shows she had stopped, twisted completely away from the motorcade, and was staring back at the School Book Depository. That girl was ten-year-old Rosemary Willis. Some believe the girl's reaction was because her father, Phil Willis, standing only ten feet away, told her to stop and come back toward him. 17* However, when Rosemary Willis was asked why she had stopped running with the President's car, she said, "I stopped when I heard the shot." 18 The Zapruder film is the visual confirmation that provides the timing. "In that first split second, I thought it was a firecracker. But within maybe one tenth of a second, I knew it was a gunshot. . . . I think I probably turned to look toward the noise, toward the Book Depository."19

Just after Rosemary Willis slowed and started turning toward the Depository, the enhanced film shows that President Ken-

*Phil Willis was responsible for some of the clearest photographs of the presidential car near the time of the shots. He believes he had called out to his daughter and that is why she turned and stopped. However, the enhanced Zapruder film shows he was still taking photos of the motorcade, with his camera in front of his face, when Rosemary slowed and turned. He had not even looked at her by the time she was staring toward the Depository.

When the work

nedy, who was waving as the car had turned the corner, suddenly stopped waving. He looked to his right toward the crowd, and then back to his left to Jacqueline, as if to be reassured that everything was all right. As the President began waving again, Mrs. Kennedy's head abruptly twisted from her left to right, the general direction of the School Book Depository.

In addition to the reactions of the Willis girl, the President, and Mrs. Kennedy, Governor Connally's recollection and actions confirm a shot was fired before frame 166. The Governor has always been consistent in his testimony, and because he is a surviving participant, his perceptions must be given considerable weight. "We had just made the turn, well, when I heard what I thought was a shot," he told the Warren Commission. "I heard this noise which I immediately took to be a rifle shot. I instinctively turned to my right because the sound appeared to come from over my right shoulder . . ."²⁰

What does the Zapruder film show? The film reveals that the Governor's head turned from mid-left to far right in less than half a second, beginning at frame 162, when the Willis girl started turning around and the President stopped waving.²¹

The film also provides additional evidence of the moment of the first shot, but in an unusual way. Dubbed the "jiggle analysis," it was first postulated by Luis Alvarez, the Nobel Prize-winning physicist. 22 He checked the film for evidence that when a shot was fired, the sharp noise made Zapruder jerk the camera, blurring the next frame or two. CBS, in research for a 1967 documentary, tested the theory. Two volunteers were told to hold a movie camera as steady as possible. Despite advance knowledge that shots would be fired, an advantage Zapruder did not have, the men were unable to hold the camera still. Motion was always detectable on the film during the rifle fire.23 The presence of a jiggle or blur in the film, of course, could be caused by many other factors. However, while sudden movement of Zapruder's camera may not prove a shot was fired, its absence is good evidence there was no shot. Therefore, the question is whether Zapruder had the jerky reaction for an early, missed shot. The House Select Committee determined there were four such noticeable movements, any of which could be evidence of a shot. The first significant blur was at

"My

frames 158-160, just avoid losing his targe ment by Zapruder ca head shot. 25*

An enhanced vers ear- and eyewitness fired the first shot turned the corner on view. Since the last translates to 8.0 to between frames 160mediocre shooter to

After the assassin on the front floorboa on the Parkland str whole bullet and the lets. 26 No part of a possible that Lee (Kennedy's neck and occupants of the ca What happened to t

The Warren Com though it was close expert Robert Fraz have gone. "I have

^{*}The other two movtween 220–228. As is d is caused by the secon-

^{**}The failure of the reactions to an early s reprinted still frames 171, under the assum

on the car indicating on the inside of the wi top of the windshield struck directly by a r trated the glass or the that came from the P.

PESTIMONY OF LINDA KAY WILLIS

The testimony of Linda Kay Willis was taken at 3:15 p.m., on July 22, 1984, in the office of the U.S. attorney, 301 Post Office Building, Bryan and Ervay Streets, Dallas, Tex., by Mr. Wesley J. Liebeler, assistant counsel of the President's Mr. LIEBELER. Would you rise and raise your right hand and I will swear you as a witness. Do you solemnly swear that the testimony you are about to give will be the truth, the whole truth, and nothing but the truth, so help you God? Miss WILLIS. I do.

were with him in the vicinity of the School Book Depository Building at the time Mr. Liebeles. As I told your father, I am an attorney for the President's Commission on the Assassination of President Kennedy, and he has told me that you of the assassination, and I wanted to ask you two or three questions about that, First of all, would you state your name for the reporter, please?

Miss WILLIS. Linda Kay Willis.

Miss Willis. I will be 15, July 29. Mr. LIEBELEE. How old are you?

Mr. LEBELER. Your father has told us that you were out in front of the School Book Depository Building along with your sister on the day of the assassination, and your mother and father were also there, is that correct?

Mr. LIEBELER. Did you hear any shots, or what you later learned to be shots, Miss WILLIS. Yes, sir.

as the motorcade came past you there?

President turned from waying to the people, and he grabbed his throat, and he kind of slumped forward, and then I'couldn't tell where the second shot went. Miss Wills. Yes; I heard one. Then there was a little bit of time, and then there were two real fast bullets together. When the first one hit, well, the

Mr. LIEBELER. Now, you were standing right along the curb on Elm Street, is that right, when the motorcade came by across the street from the School

Book Depository Building? Miss WILLIS. Yes, sir.

Mr. LIEBELLER. Did you follow the motorcade down Elm Street at all, or did you stand on the corner up toward Houston Street and watch from there?

Miss Wills. I was right across from the sign that points to where Stemmons Expressway is. I was directly across when the first shot hit him.

Mr. Liebelle. Directly across from the sign that says, "Stemmons Freeway"? Miss Wills. I was right in line with the sign and the car, and I wasn't very far away from him, but I couldn't tell from where the shot came.

Mr. LIEBELER. Did you just stay right there, or did you go on down Elm

Miss Wills. I stayed there. I was on the corner across from the courthouse when the motorcade first came down Main Street, and when it turned the corner on Houston, well, I followed along the street with the car, and then he turned the corner on Elm and I stood there where the Stemmons sign is.

Mr. LIEBELER. Did you see the President get hit in the head?

Miss WILLIS, Yes.

Mr. Liebener. You actually saw the President get hit that way?

Miss WILLS, Yes.

Mr. LIEBELER, How far away would you say that you were when you saw

Miss Wills. Oh, about twice as far as I am from here to this door. Maybe not quite that far.

Mr. LIEBELER. About 25 feet or so?

Miss WILLIS, About that,

Mr. LIEBELEE. Now when you saw the President get hit in the head, did you hear any more shots after that?

Miss WILLS. Yes; the first one, I heard the first shot come and then he slumped forward, and then I couldn't tell where the second shot went, and then the third one, and that was the last one that hit him in the head. Mr. Liebenes. You only heard three shots altogether?

Mr. LIEBELER. So you don't think there were any more shots after he got hit Miss WILLIS. Yes; that was it.

Miss WILLS. No. Mr. Liereler. Did you recognize the noises that you heard as shots right in the head?

away?

fireworks, because everybody is glad the President is in town. Then I realized Miss Wills. No; when the first shot rang out, I thought, well, it's probably it was too loud and too close to be fireworks, and then when I saw, when realized that the President was falling over, I knew he had been hit. But didn't know how badly.

shots after the President got hit in the head, and if you didn't hear any more shots, that is really all I wanted to ask you about. Thank you very much. Mr. Liebeler. Okay, I just wanted to ask you about whether you heard any Miss WILLIS, All right.

TESTIMONY OF HELEN MARKHAM

The testimony of Helen Markham was taken at 10 a.m., on July 23, 1964, in the office of the U.S. attorney, 301 Post Office Building, Bryan and Erway Streets, Dallas. Tex., by Mr. Wesley J. Liebeler, assistant counsel of the President's

Mr. Liebeler. Will you stand and take the oath, please? Do you solemnly swear the testimony you are about to give will be the truth, the whole truth, and nothing but the truth, so help you God?

Mrs. Markham. I do.

Executive Order No. 11130, dated November 29, 1963, and joint resolution of Congress No. 137. I think you are somewhat familiar with the proceedings of the Commission because you have already testified before the Commission in Mr. LIERELER. My name is Wesley J. Liebeler [spelling] L-i-e-b-e-l-e-r. I am an attorney on the staff of the President's Commission investigating the assassination of President Kennedy. I have been authorized to take your testimony for the Commission pursuant to authority granted it by the President in Washington; is that right?

Mrs. Markham. Yes; but you know, I don't know nothing about the Kennedys-President Kennedy.

Mr. Liebeler. I understand you were there when Oswald shot Officer Tippit? Mrs. MARKHAM. Yes; that's right.

Mr. Liebeles. Since you are familiar with the Commission's procedure, I'll lust go right into your testimony. I wanted to ask you some questions about some of the things you told the Commission when you appeared before it on March 26, 1964, when Mr. Ball took your testimony before the Commission.

Yes. Мгв. Маккнам.

Mr. Liebeler. Do you remember at that time that Mr. Ball asked you the question, "Did you ever talk to a New York lawyer who said he was from New York?" And that you answered, "No. sir." Mr. Ball then asked you, "Did you ever talk to a lawyer who was investigating the case on behalf of the deceased man, Lee Oswald?" Your answer was, "No, sir." Mr. Ball asked, "Did you ever talk to a man who said he was representing the mother of Lee Oswald?" And you answered, "No, sir." And then Mr. Ball asked you, "You don't remember ever talking to a man named Mark Lane?" And then you answered, No, sir." Mrs. Markham. Right.

Mr. Liebele. Do you remember giving that testimony at that time? Mrs. MARKHAM. Yes, sir.

Mr. Liebelen. Have you ever talked to Mark Lang!.
Mrs. Markham, "Wood Phaven talked to Mark Lane on the telephone?
Mr. Liebeler. Have you be talk to Mark Lane on the telephone?