

James Tague are similar examples of witnesses confused by the acoustics in Dealey.*

Those who study the plaza are not surprised by its unusual echo characteristics.⁷¹ A number of witnesses reported "reverberation" or sounds that "bounced off the buildings."⁷² Others said that sounds were "reflected by the underpass and therefore came back," or that the concrete underpass caused a "concussion" of noises.⁷³ The worst confluence of echoes affected those witnesses close to the grassy knoll. Abraham Zapruder, the Dallas dressmaker who took the home movie of the assassination, stood atop a concrete divider wall on top of the knoll. "There was too much reverberation," he said. "There was an echo which gave me a sound all over."⁷⁴ Lee Bowers was in the second story of a railroad signal tower, 130 feet behind the grassy knoll. He could not tell whether the shots came from the Triple Underpass or the Book Depository. He had worked in that area for more than ten years and knew that echo patterns made it impossible to pinpoint the direction of sounds.⁷⁵ Roy Truly, Oswald's supervisor, was standing across the street from the Depository, but said the echo confused him so he believed the gunfire originated from the grassy knoll.⁷⁶

Yet if the overwhelming ear-witness testimony is that only three shots were fired, why did the House Select Committee conclude in 1979 there was a 95 percent certainty that a fourth shot was fired from the grassy knoll, and therefore there was a conspiracy involving a second gunman?

The committee agreed there were three shots from the rear (the Depository), and that two of those struck President Kennedy and Governor Connally.** It based its conclusion that there was a

*Despite his errors, Thompson is at least one of the more reasonable critics in his interpretation of the numbers. The author was present at a March 3, 1992, discussion in Texas when researcher Joe West said 76 percent of 290 witnesses at Dealey had selected the grassy knoll as the location for the shots. No one present, in a room of fifty other researchers, challenged his "fact." Jim Marrs, in *Crossfire*, writes, "One fact seems inescapable—most of the witnesses in the crowd believed shots came from the Grassy Knoll" (Marrs, p. 39).

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542 • Notes

57. Testimony of Robert Edwards, WC Vol. VI, pp. 201-2.
58. Testimony of Ronald Fischer, WC Vol. VI, p. 194.
59. Interview with Ronald Fischer, January 19, 1992.
60. Testimony of Ronald Fischer, WC Vol. VI, p. 194; testimony of Robert Edwards, WC Vol. VI, pp. 203-4.
61. CD 1245.
62. Testimony of Jacqueline Kennedy, WC Vol. V, p. 179.
63. Testimony of Bobby Hargis, WC Vol. VI, pp. 294-95.
64. Interview with Danny Arce, March 9, 1992.
65. Author's review of Warren Commission volumes and statements from Dealey Plaza witnesses by FBI, sheriff's office, and Dallas police.
66. HSCA Rpt. p. 87.
67. *Ibid.*, p. 90.
68. Josiah Thompson, *Six Seconds in Dallas*, (New York: Berkley, 1976), p. 26.
69. Testimony of James Underwood, WC Vol. VI, p. 169.
70. Testimony of Bobby Hargis, WC Vol. VI, p. 294.
71. Moore, *Conspiracy of One*, p. 33.
72. Testimony of Tom Dillard, WC Vol. VI, p. 165; testimony of James Underwood, WC Vol. VI, p. 169; testimony of Ronald Fischer, WC Vol. VI, p. 195; testimony of Joe Murphy, WC Vol. VI, p. 259; testimony of D. V. Harkness, WC Vol. VI, p. 309.
73. Testimony of James Crawford, WC Vol. VI, p. 174; testimony of S. M. Holland, WC Vol. VI, p. 243.
74. Testimony of Abraham Zapruder, WC Vol. VII, p. 572.
75. Testimony of Lee Bowers, WC Vol. VI, p. 287.
76. Testimony of Roy Truly, WC Vol. III, p. 283.
77. "Analysis of Recorded Sounds Relating to the Assassination of President John F. Kennedy," Bolt, Beranek and Newman Inc., in "A Study of the Acoustics Evidence Related to the Assassination of President John F. Kennedy," appendix to the hearing before the Select Committee on Assassinations, Vol. VIII, sec. 4.1.
78. HSCA Rpt., p. 68.
79. *Ibid.*, p. 72.
80. Testimony of H. B. McClain, HSCA Vol. V, p. 637.
81. Interview with H. B. McClain, March 3, 1992.
82. *Ibid.*
83. Report of the Committee on Ballistics Acoustics, Commission on Physical Sciences, Mathematics, and Resources; National Research Council; National Academy Press, Washington, D.C., 1982, p. 7.
84. HSCA Rpt., pp. 75-76.
85. Interview with H. B. McClain, March 3, 1992.
86. James C. Bowles, "The Kennedy Assassination Tapes: A Rebuttal to the Acoustical Evidence Theory," unpublished, pp. 50-51.
87. *Ibid.*
88. "Who Shot Pre
89. Letter to the a
90. Report of the C
ical Sciences, M
cil; National A
91. *Ibid.*, pp. 34, 38
92. Testimony of F
93. Interview with
94. Testimony of E
95. Interview with
Vol. III, pp. 19
96. Interview with
WC Vol. III, p.
97. Testimony of R
Couch, WC Vol
98. Interview with
99. *Ibid.*
100. Testimony of M
101. Testimony of F
102. *Ibid.*, p. 160.
103. Testimony of M
104. Testimony of J
105. *Ibid.*, p. 174.
106. Testimony of M
107. Testimony of J
108. *Ibid.*, p. 200.
109. Interview with
110. *Ibid.*
111. Testimony of A
112. Photo of the Bc
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113. Howard Bren
tory: *The Kenn*
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Vol. III, p. 143
114. Brennan and C
115. *Ibid.*, p. 13; te
116. Brennan and C
117. *Ibid.*, pp. 14-1
118. Testimony of I
119. Transcript of I
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120. Brennan and C

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Mr. ZAPRUDER. That must be it because there's another couple back there—I took some from there and I was shooting some of the pictures to start my roll from the beginning. I didn't want to have a blank and I shot some, in fact, they have it—the Federal Bureau of Investigation have those pictures.

Mr. LIEBELER. As you stood there on this abutment with your camera, the motorcade came down Houston Street and turned left on Elm Street, did it not?

Mr. ZAPRUDER. That's right.

Mr. LIEBELER. And it proceeded then down Elm Street toward the triple underpass; is that correct?

Mr. ZAPRUDER. That's correct. I started shooting—when the motorcade started coming in, I believe I started and wanted to get it coming in from Houston Street.

Mr. LIEBELER. Tell us what happened as you took these pictures.

Mr. ZAPRUDER. Well, as the car came in line almost—I believe it was almost in line—I was standing up here and I was shooting through a telephoto lens, which is a zoom lens and as it reached about—I imagine it was around here—I heard the first shot and I saw the President lean over and grab himself like this (holding his left chest area).

Mr. LIEBELER. Grab himself on the front of his chest?

Mr. ZAPRUDER. Right—something like that. In other words, he was sitting like this and waving and then after the shot he just went like that.

Mr. LIEBELER. He was sitting upright in the car and you heard the shot and you saw the President slump over?

Mr. ZAPRUDER. Leaning—leaning toward the side of Jacqueline. For a moment I thought it was, you know, like you say, "Oh, he got me," when you hear a shot—you've heard these expressions and then I saw—I don't believe the President is going to make jokes like this, but before I had a chance to organize my mind, I heard a second shot and then I saw his head opened up and the blood and everything came out and I started—I can hardly talk about it [the witness crying].

Mr. LIEBELER. That's all right, Mr. Zapruder, would you like a drink of water? Why don't you step out and have a drink of water?

Mr. ZAPRUDER. I'm sorry—I'm ashamed of myself really, but I couldn't help it.

Mr. LIEBELER. Nobody should ever be ashamed of feeling that way, Mr. Zapruder. I feel the same way myself. It was a terrible thing.

Let me go back now for just a moment and ask you how many shots you heard altogether.

Mr. ZAPRUDER. I thought I heard two, it could be three, because to my estimation I thought he was hit on the second—I really don't know. The whole thing that has been transpiring—it was very upsetting and as you see—I got a little better all the time and this came up again and it to me looked like the second shot, but I don't know. I never even heard a third shot.

Mr. LIEBELER. You didn't hear any shot after you saw him hit?

Mr. ZAPRUDER. I heard the second—after the first shot—I saw him leaning over and after the second shot—it's possible after what I saw, you know, then I started yelling, "They killed him, they killed him," and I just felt that somebody had ganged up on him and I was still shooting the pictures until he got under the underpass—I don't even know how I did it. And then, I didn't even remember how I got down from that abutment there, but there I was, I guess, and I was walking toward—back toward my office and screaming, "They killed him, they killed him," and the people that I met on the way didn't even know what happened and they kept yelling, "What happened, what happened, what happened?" It seemed that they had heard a shot but they didn't know exactly what had happened as the car sped away, and I kept on just yelling, "They killed him, they killed him, they killed him," and finally got to my office and my secretary—I told her to call the police or the Secret Service—I don't know what she was doing, and that's about all. I was very much upset. Naturally, I couldn't imagine such a thing being done. I just went to my desk and stopped there until the police came and then we were required to get a place to develop the films. I knew I had something, I figured it might be of some help—I didn't know what.

As to what happened—I remember the police were running behind me. There

were police running right behind me. Of course, they didn't realize yet, I guess, where the shot came from—that it came from that height.

Mr. LIEBELER. As you were standing on this abutment facing Elm street, you say the police ran over behind the concrete structure behind you and down the railroad track behind that, is that right?

Mr. ZAPRUDER. After the shots?

Mr. LIEBELER. Yes.

Mr. ZAPRUDER. Yes—after the shots—yes, some of them were motorcycle cops—I guess they left their motorcycles running and they were running right behind me, of course, in the line of the shooting. I guess they thought it came from right behind me.

Mr. LIEBELER. Did you have any impression as to the direction from which these shots came?

Mr. ZAPRUDER. No, I also thought it came from back of me. Of course, you can't tell when something is in line—it could come from anywhere, but being I was here and he was hit on this line and he was hit right in the head—I saw it right around here, so it looked like it came from here and it could come from there.

Mr. LIEBELER. All right, as you stood here on the abutment and looked down into Elm Street, you saw the President hit on the right side of the head and you thought perhaps the shots had come from behind you?

Mr. ZAPRUDER. Well, yes.

Mr. LIEBELER. From the direction behind you?

Mr. ZAPRUDER. Yes, actually—I couldn't say what I thought at the moment, where they came from—after the impact of the tragedy was really what I saw and I started and I said—yelling, "They've killed him"—I assumed that they came from there, because as the police started running back of me, it looked like it came from the back of me.

Mr. LIEBELER. But you didn't form any opinion at that time as to what direction the shots did come from actually?

Mr. ZAPRUDER. No.

Mr. LIEBELER. And you indicated that they could have come also from behind or from any other direction except perhaps from the left, because they could have been from behind or even from the front.

Mr. ZAPRUDER. Well, it could have been—in other words if you have a point—you could hit a point from any place, as far as that's concerned. I have no way of determining what direction the bullet was going.

Mr. LIEBELER. Did you form any opinion about the direction from which the shots came by the sound, or were you just upset by the thing you had seen?

Mr. ZAPRUDER. No, there was too much reverberation. There was an echo which gave me a sound all over. In other words that square is kind of—it had a sound all over.

Mr. LIEBELER. And with the buildings around there, too?

Mr. ZAPRUDER. Yes, the reverberation was such that a sound—as it would vibrate—it didn't vibrate so much but as to whether it was a backfire—in other words, I didn't from the first sound, from him leaning over—I couldn't think it was a shot, but of course, the second—I think it was the second shot. I don't know whether they proved anything—they claim he was hit—that the first bullet went through him and hit Connally or something like that—I don't know how that is.

Mr. LIEBELER. Well, there are many different theories about that. One thing I would like you to do now—we have a series—a little book here that is Commission Exhibit No. 885 and it consists of a number of frames from motion pictures and I want to show you certain numbers of them which are important to our work and ask you if those look like they were taken from your film and if in fact you could recognize it as you look through this book that these are individual frame-by-frame pictures of the pictures that you took.

Mr. ZAPRUDER. Yes, they are frame by frame and they weren't very clear, for the simple reason that on the telephoto lens it's good to take stills—when you move—did you ever have binoculars and every time you move everything is exaggerated in the move—that's one reason why they are kind of blurred—the movement. Now, you want me to identify whether these are my pictures?

Mr. LIEBELER. Yes, sir. No. 185 on the back of if you can and tell us be the pictures or copies camera?

Mr. ZAPRUDER. Well, I the film I had—these are

Mr. LIEBELER. Well, the Mr. ZAPRUDER. Well, I Street. Is that it? It's opposite side of me, is it structure—I have been where did they get this the pictures where did it

Mr. LIEBELER. This is it?

Mr. ZAPRUDER. They h Mr. LIEBELER. Yes, I t No. 1, you will see that a different kind from the

Mr. ZAPRUDER. That's that's what I thought it v

Mr. LIEBELER. You th pictures in Commission F

Mr. ZAPRUDER. Now I and all that.

Mr. LIEBELER. Yes—I stand what we are tall work shown in the bac Exhibit No. 885, with t the background of Hudse

Mr. ZAPRUDER. Yes, th Mr. LIEBELER. Now, s

been numbered 185 and that we are looking at no

Mr. ZAPRUDER. Yes, there.

Mr. LIEBELER. Yes; an Mr. ZAPRUDER. Yes; I

fired, was it? You can't

Mr. LIEBELER. (no resp

Mr. ZAPRUDER. I bell course, on the film they enlarge it in color or in

an enlarger here for you

Mr. LIEBELER. In any sir?

Mr. ZAPRUDER. Yes. Mr. LIEBELER. And 18

Mr. ZAPRUDER. Yes. Mr. LIEBELER. Now, I

picture 207 and turn to come in the picture—

Mr. ZAPRUDER. Yes; told them I was going to

Mr. LIEBELER. But the Mr. ZAPRUDER. Yes; happened—I think th

Mr. LIEBELER. Do you do you remember that

and the motorcade its sign comes in the view?