

[Special Report]

# The Case For Three Assassins



**N**O less than three gunmen fired on the Presidential motorcade in Dallas on November 22, 1963...

This conclusion has been reached following a 10-month investigation into the assassination of President Kennedy. It is documented in the following pages.

Defenders of the Warren Commission have continually challenged its critics to come up with a more conclusive theory; we believe that the essay which follows answers that challenge.

by David Welsh and David Lifton

## Preface:

THE PIVOTAL theory of the Warren Commission is that the assassination of President Kennedy was the work of one man, Lee Harvey Oswald, firing from the Texas School Book Depository. The Warren Report states: 1) "... all the shots which caused the President's and Governor Connally's wounds were fired from the sixth floor window..." [WR 19]; and 2) "... Oswald acted alone." [WR 22]

The first statement precludes the possibility that shots were fired from any location other than behind and above the motorcade. The second precludes the possibility that more than one man was firing at the motorcade from the rear.

There is, however, a considerable body of evidence which shows that neither statement is correct. The Warren Commission, charged with ascertaining and making public all the facts of the assassination, and having much of the disturbing evidence at its disposal, dismissed this evidence with scarcely more than a cursory examination.

This evidence falls into two main categories:

Evidence that two or more gunmen were firing from the rear. [Part One]

Evidence that one or more gunmen were firing from the front. [Part Two]

The facts are here. The reader may judge for himself.

NOTE: In the citations which accompany this essay, references by Roman and Arabic numerals, (e.g., III, 404), are to *Hearings Before the President's Commission on the Assassination of President Kennedy* (Washington, 1964), the 26 volumes of hearings, testimony and exhibits published by the Warren Commission; reference is to volume number and page number. "WR" refers to the Commission's single volume summation: *Report of the President's Commission on the Assassination of President Kennedy* (Washington, D.C., 1964), commonly referred to as the Warren Report. *Inquest* refers to Edward Jay Epstein's book of that name (New York: The Viking Press, 1966). The paperback edition is published by Bantam Books, Inc.; references are to the Viking edition except as otherwise noted. The frequently used phrase "The Report" also refers to the one volume Warren Report.

## Part One:

### The Shots From The Rear

[Where it is shown that two or more gunmen were firing from the rear]

#### [1. THE 42-FRAME CONSTRAINT]

According to the Warren Commission, about five seconds before the fatal shot struck his head, President Kennedy was struck in the back of the neck by a bullet from the rear. Almost simultaneously, Governor John Connally of Texas was also hit by a bullet, fired from the rear. The Warren Commission was thus faced with a choice: either two men had fired almost simultaneously, one hitting the President and one hitting the governor; or else one bullet had wounded both men.

The Report concluded that one bullet "most probably" went through both men.<sup>1</sup> An overwhelming body of primary evidence shows that it did not.

This predicament would not have been so clearly delineated for the Commission but for two unavoidable facts: a bystander

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### Recapitulation

named Abraham Zapruder had filmed the Presidential car in color during the assassination sequence; and the weapon alleged to be the only one used in the assassination was a bolt action rifle. The rifle was tested by FBI firearms expert Robert A. Frazier, "to determine how fast the weapon could be fired primarily, with secondary purpose accuracy."<sup>2</sup> The Report states: "Three FBI firearms experts tested the rifle . . . The purpose of this experiment was not to test the rifle under conditions which prevailed at the time of the assassination but to determine the maximum speed at which it could be fired."<sup>3</sup> And the Report records the result of those tests: "Tests of the assassin's rifle disclosed that at least 2.3 seconds were required between shots."<sup>4</sup>

Two and three-tenths seconds—the shortest possible interval between two shots from the bolt action Mannlicher-Carcano rifle—corresponds to 42 frames of the Zapruder film. FBI photographic expert Lyndal Shaneyfelt testified: ". . . The Zapruder motion picture camera operates at an average speed of 18.3 frames per second. . . . The minimum time for firing the rifle in successive shots is approximately two and a quarter seconds. . . . This gives us this figure of 41 to 42 frames . . . to

establish two points in the film where two successive . . . shots could have been fired.<sup>5</sup>

In other words, the FBI's firearms expert, shooting without trying to hit a moving target, required the time equivalent of 42 frames of Zapruder's film to squeeze off two rounds from the bolt action rifle.

This 42-frame minimum firing time is an important constraint on any "lone-assassin" theory that posits the Italian Carcano rifle as the murder weapon. If two hits were scored closer together than 42 frames apart on the film, there had to be more than one gunman—unless, as the Commission hesitantly concluded, the two hits were scored by the same bullet. For Kennedy and Connally, the Report acknowledges, were hit no more than 33 frames apart on the film.

When the one-bullet-two-victim concept was advanced, some Commissioners and staff members were doubtful. Counsel Melvin Eisenberg said that the lawyers were at first "incredulous of this hypothesis," but gradually became persuaded that this was the "only reasonable way to explain the fact that both men had been hit within a second or two of each other."<sup>6</sup> Senator Richard Russell "reportedly said that he would not sign a Report which concluded that both men were hit by the same bullet."<sup>7</sup> Representative Hale Boggs mentioned that he had "strong doubts about it."<sup>8</sup> Epstein reports that Commissioners John McCloy, Rep. Gerald Ford and Allen Dulles favored a conclusion that both men were hit by the same bullet; Commissioners Russell, Senator John Cooper and Boggs favored a conclusion that they were hit by separate bullets.<sup>9</sup>

The absence of evidence and the doubts of at least three of its members forced the Commission to a compromise conclusion that one bullet "most probably" went through both men. Partly because Governor Connally continues to insist that it did not happen that way, this careful use of "probably" is still being stressed by some Commission members.<sup>10</sup>

But if it is only "probably" true that one bullet hit both men, then it is only "probably" true that there was only one assassin. The "lone assassin" conclusion is only as strong as the proposition that the same bullet hit both men. If Connally and Kennedy were hit by separate bullets, then the Zapruder film proves that both bullets cannot have come from "Oswald's rifle."

Norman Redlich, special assistant to General Counsel J. Lee Rankin, said in an interview: "To say that they were hit by separate bullets is synonymous with saying that there were two assassins."<sup>11</sup>

## [2. THE BULLET IN THE BACK]

According to the Warren Commission, three shots were fired—a conclusion primarily based on the discovery of three spent shells at "Oswald's window." One shot hit President Kennedy (in the back of the neck or in the back), then passed through him and hit Governor Connally in the back. One missed. The third hit President Kennedy in the head and was responsible for the fatal wound.

Certainly Governor Connally was hit, and certainly President Kennedy was hit at least twice. Certainly, also—as the Commission itself concedes—Kennedy and Connally both must have been wounded in less time than it could have taken to fire the bolt action rifle twice. For there to have been only one assassin, one bullet must have passed through the two men.

But medical findings on the location and nature of the

wounds contain major contradictions. The Commission decided, based on the autopsy findings, that a bullet "... entered the base of the back of his [Kennedy's] neck ... traveled downward and exited from the front of the neck, causing a nick in the left lower portion of the knot in the President's necktie."<sup>12</sup>

Let us examine the evidence.

### a] Evidence that the bullet failed to exit

An autopsy was performed on the President's body at Bethesda Naval Hospital on the night of November 22, just after the body was returned to Washington. In addition to several doctors, observers were present from both the FBI and the Secret Service.

News accounts of the autopsy vary considerably from the version which appeared in the official autopsy report.<sup>13</sup> Three weeks after it was performed, the Washington Post and the New York Times ran stories quoting sources familiar with the autopsy. Certainly not every journalist or publication is completely accurate when a nation is clamoring for every scrap of available news, but the integrity of these two newspapers, and the reliability of any source that either publication is likely to trust in so important a story, is well known.

The autopsy findings, the Post reported, disclosed that the bullet "was found deep in his shoulder," adding that it "hit the President in the back shoulder five to seven inches below the collar line."<sup>14</sup> The Times said, "The first bullet made what was described as a small, neat wound in the back and penetrated two or three inches."<sup>15</sup> Some weeks later, the Times reported that the first bullet "hit the President in the back of his right shoulder, several inches below the collar line. That bullet lodged in his shoulder."<sup>16</sup>

Early in March 1964, Commission Counsel Arlen Specter conferred with the three autopsy doctors about the problem of the almost simultaneous wounding of Kennedy and Connally. At that time the chief autopsist, Dr. James J. Humes, noted that it was "medically possible" for one bullet to have hit both men, with Governor Connally having a delayed reaction.<sup>17</sup> A few days later, on March 16, the Commission heard the first testimony concerning the autopsy, and admitted the autopsy report into evidence.<sup>18</sup> Dr. Humes testified that he had revised his draft of the report, and burned the original.<sup>19</sup> The Commission did not question Dr. Humes about his reasons for this extraordinary action. The revised autopsy report made this finding about the bullet that entered the President's back: "The missile contused the strap muscles of the right side of the neck, damaged the trachea and made its exit through the anterior surface of the neck."<sup>20</sup>

By the time this report was admitted into evidence, however, the Commission and its staff already had in their possession two authoritative documents which directly contradicted Dr. Humes' basic finding: the FBI Summary Report and the FBI Supplemental Report. Both reports conclude that the bullet that entered the President's back did not go through the body.<sup>21</sup>

J. Edgar Hoover, ordered by President Johnson immediately after the assassination to conduct an investigation and to prepare a report, submitted the first four volumes of the FBI report on December 9, 1963. These are known as the FBI Summary Report. A fifth volume, called the Supplemental Report, was sent to the Commission on January 13, 1964. Unaccountably, these FBI reports were not made public with the 26 volumes of hearings and exhibits.

"Medical examination of the President's body," said the Summary Report, "revealed that one of the bullets had entered just below his shoulder to the right of the spinal column at an angle of 45 to 60 degrees downward, *that there was no point of exit*, and that the bullet was not in the body."<sup>22</sup>

It is not clear, incidentally, why the Washington Post and the New York Times were so certain that the bullet was found in the body, while the FBI report says it was not. Dr. Humes at first suggested the bullet might have fallen back out through the entrance hole while doctors at Parkland Hospital in Dallas were administering heart massage, although he later rejected this hypothesis. The important point here is not what happened to the bullet; it is that according to the FBI—as well as the government sources used by the two newspapers—the bullet did not go all the way through Kennedy's body.

The FBI Supplemental Report, issued three weeks after the Summary Report, stated: "Medical examination of the President's body had revealed that the bullet which entered his back had penetrated to a distance of less than a finger length."<sup>23</sup>

The bullet hole in the President's back was not discovered at Parkland Hospital; the Parkland doctors testified that they were so preoccupied with trying to revive Mr. Kennedy that they did not turn him over. Secret Service agent Roy Kellerman, who was present during the Bethesda autopsy, testified: "While the President is in the morgue, he is lying flat. . . . Nobody was aware until they lifted him up that there was a hole in his shoulder. That was the first concrete evidence that they knew that the man was hit in the back . . ."<sup>24</sup>

Also present as observers during the entire autopsy, and until the body was removed by employees of a funeral home, were FBI agents James Sibert and Francis X. O'Neill Jr.<sup>25</sup> It was their report that appears to have formed the basis for the FBI's information on the autopsy.

Were the official autopsy findings—that the bullet passed through the President's body—known to the FBI when it prepared its Summary Report on December 9 and concluded that the back bullet did *not* exit from the body? One would have thought so, since at the time that the autopsy report was allegedly written, on November 24, the FBI was the only agency charged with ascertaining all the facts of the assassination.<sup>26</sup>

But according to a recent statement by J. Edgar Hoover published in the New York Times: "The FBI and the Warren Commission each received a copy of the official autopsy report on December 23, 1963, from Secret Service, following a specific request for this document."<sup>27</sup> Thus, whatever autopsy information the FBI may have had when it drafted its first report, the Bureau certainly had the official autopsy report in hand at the time the January 13th Supplemental Report was written. But that FBI report *still* contradicted the Commission's version of the autopsy.

This major contradiction was first revealed in mid-May in Epstein's book, *Inquest*. On May 29, 1966, an FBI spokesman told the Washington Post that its report was "based on the medical evidence at that time."<sup>28</sup> The next day, however, the Los Angeles Times quoted a statement by an FBI spokesman "that the FBI report was wrong when it said, 'there was no point of exit.'"<sup>29</sup> This rare "confession of error" by the FBI, which came only after Epstein's book had begun to receive public notice, said that the two FBI observers at the autopsy were out of the room when the doctors "traced" the bullet's path.

There were two things wrong with this belated FBI apology. First of all, there was no one clear moment when the doctors suddenly found a path—by the doctors' own testimony, as will be shown below. Secondly, the statement that both FBI observers were out of the room clashes with the testimony to the Commission.

Secret Service agent William Greer testified that at least one of the two FBI men remained in the room during the entire autopsy: "... those two agents were in the autopsy room, with Mr. Kellerman and I, all night. Mr. Sibert and O'Neill were both in the autopsy room with us during that time . . . Either Mr. Kellerman or I, we never left the room, one or the other. We went and got some coffee and came right back . . . The FBI did the same thing. One of them left; the other stayed."<sup>30</sup>

Even if they had gone, they could not have been away from the room when the doctors found the path of the bullet—because the doctors never found any such path. "There were three gentlemen who were performing the autopsy," testified Secret Service agent Kellerman. "A Colonel Finck—during the examination of the President, from the hole that was in his shoulder, and with a probe, and we were standing right alongside of him, he is probing inside the shoulder with his instrument and I said, 'Colonel, where did it go?' He said, 'There are no lanes for an outlet of this entry in this man's shoulder.'"<sup>31</sup>

The other agent, Greer, was questioned by Commission Counsel Arlen Specter:

SPECTER: *Was anything said about any channel being present in the body for the bullet to have gone through the back?*

GREER: *No, sir. I hadn't heard anything like that, any trace of it going on through.*<sup>32</sup>

What happened—as we will see later—is that Dr. Humes deduced a path for the bullet. But no one ever found a continuous track, as Humes himself testified: "Attempts to probe in the vicinity of this wound were unsuccessful without fear of making a false passage. . . . We were unable . . . to take probes and have them satisfactorily fall through any definite path..."<sup>33</sup>

Not only is the May 29, 1966 "admission of error" by the FBI spokesman not supported by the evidence; it is not even supported, today, by J. Edgar Hoover, who defends the accuracy of what his agents reported about the doctor's findings at the autopsy—while conceding that these were not the doctors' final conclusions.<sup>34</sup>

How did this pivotal contradiction arise, raising serious doubts, as it does, about the Commission's one-assassin theory? And how did it remain unreconciled for three years after the crime?

One explanation, advanced last fall by Commission Counsel Arlen Specter, is that Dr. Humes "formulated a different conclusion" on the day following the autopsy—a conclusion that differed from the statements he had made the night before in the presence of agents Sibert and O'Neill.<sup>35</sup> Specter suggests that Dr. Humes altered his finding upon learning for the first time, on Saturday morning, that the tracheotomy performed by Dr. Perry in Dallas had obliterated a bullet wound in the front of the President's throat (Dr. Humes himself conceded that he did not know of the existence of a bullet hole in the throat at the time of the autopsy<sup>36</sup>).

According to this explanation, the autopsy doctors at Bethesda—unaware of a bullet wound in the front of the throat—found a wound in the back which could only be probed to finger length. Having been informed that a bullet had been

found on a stretcher at Parkland Hospital in Dallas, they concluded that the bullet must have worked its way out of the President's back.

But the next morning, when the body was no longer available for examination, Dr. Humes was led to change his preliminary opinion. "That was when he found that there had been a bullet hole on the front of the neck. . .," Specter writes.<sup>37</sup>

Specter's explanation is consistent with the report of FBI agents Sibert and O'Neill, with the FBI Summary and Supplemental reports and with the testimony of Secret Service agents Kellerman and Greer.

But this, Arlen Specter's latest version, written to answer critics of the Commission, *directly contradicts* the conclusions of a section of the Warren Report that he himself drafted. This section refers to "speculation that the bullet might have penetrated a short distance into the back of the neck and then dropped out onto the stretcher. . . ." It concludes: "Further exploration *during the autopsy* disproved that theory. . . . Commander Humes . . . talked by telephone with Dr. Perry early on the morning of November 23, and learned that his assumption was correct. . . . This *confirmed* the Bethesda surgeons' conclusion that the bullet had exited from the front part of the neck."<sup>38</sup>

It strains credulity, in the face of all the evidence to the contrary, to believe that Dr. Humes decided *during the autopsy* that the back bullet had exited at the throat—before he knew that the frontal throat puncture even existed.

Incredulity begins to shade into suspicion when Dr. Humes informs us that he burned his original draft of the autopsy report. He said: "In privacy of my own home early in the morning of Sunday, November 24th, I made a draft of this report which I later revised, and of which this represents the revision. That draft I personally burned in the fireplace of my recreation room."<sup>39</sup> Yet the Commission accepted Humes' version, rather than face the possibility that the throat-exit finding—central to its theory that one bullet went through two men—was deduced by the autopsy surgeon in the *absence* of the cadaver.

ONE THING IS CERTAIN: If the back bullet failed to exit—as the overwhelming body of evidence indicates—it could not have been the same bullet that struck Governor Connally. And if this is so, then at least two persons fired at the motorcade from behind.

b) *Evidence that the bullet left no path through the body*

We know that President Kennedy had at least three wounds: the fatal head wound, a wound in the front of the throat, and a wound in the back. The Warren Report concludes that the back wound and the throat wound were caused by the entry and exit of a single bullet.

The Bethesda autopsy doctors never saw the throat wound in its original state, because it had been enlarged by a tracheotomy performed at Parkland Hospital in Dallas in an effort to save the President.<sup>40</sup> And Dr. Humes testified, as we have just noted, that he could find no continuous track between the back wound and the throat wound.

But Dr. Humes nevertheless deduced that the missile entering the President from the rear traveled steadily downward, without deflection, and exited at the front of the throat.<sup>41</sup> The autopsy report concluded that the bullets were "fired from a

point somewhat behind and above the level of the deceased"—a finding that became the basis for a major conclusion of the Warren Report: *The nature of the bullet wounds suffered by President Kennedy . . . and the location of the car at the time of the shots establish that the bullets were fired from above and behind. . . .*<sup>42</sup>

The entire line of reasoning establishing the source of the shots thus depends on Dr. Humes' deduction of the existence of a track from back to front. The Report describes how the doctors arrived at this conclusion: *By projecting from a point of entry on the rear of the neck and proceeding at a slight downward angle through the bruised interior portions, the doctors concluded that the bullet exited from the front portion of the President's neck that had been cut away by the tracheotomy.*<sup>43</sup>

Commissioner McCloy questioned Humes about his findings:

McCLOY: *I am not clear what induced you to come to the conclusion if you couldn't find the actual exit wound by reason of the tracheotomy.*

HUMES: *The report which we have submitted, sir, represents our thinking within the 24-48 hours of the death of the President, all facts taken into account of the situation. The wound in the anterior portion of the lower neck is physically lower than the point of entrance posteriorly, sir.*<sup>44</sup>

From the other testimony and evidence reviewed so far, there are indications that the "point of entrance posteriorly" may have crept upward several inches in order to support Dr. Humes' conclusion; the following section of this article deals with this in greater detail.

The autopsy examination did disclose a bruise on the right lung and other internal wounds,<sup>45</sup> which Humes concluded were caused by the bullet passing through. He testified that he "was able to ascertain with absolute certainty that the bullet had passed by the apical portion of the right lung."<sup>46</sup>

But if Dr. Humes was this certain that the bullet had passed through the strap muscles to reach the right lung, then why—during the latter stages of the autopsy—did he continue to explore the possibility that the bullet had failed to exit and dropped back out the entrance wound?<sup>47</sup> Humes resolved this apparent dilemma in favor of the bullet passing through—despite his failure to find a track.

Aware of the crucial importance of this point, Epstein consulted an independent expert—Dr. Milton Helpert, chief medical examiner of New York City and an acknowledged authority on forensic pathology—who told him: "There is no such thing as a rifle bullet's passing through a neck without leaving a path." Epstein added, "It is a *sine qua non* law of forensic pathology that if a bullet passes through a body it must leave a discernible path." Helpert estimated that a 6.5-mm. bullet traversing a human neck would leave a track a quarter of an inch in diameter.<sup>48</sup> (Later Helpert qualified this by saying, "Nobody said it was always easy to find a path."<sup>49</sup>)

In order for a bullet from the Carcano rifle to have traveled through the President's body and hit Governor Connally, it would have to have traveled a continuous path through the President. *There was no evidence of such a continuous path, by the testimony of everyone who was present at the autopsy, including the pathologist.* It is one more indication that there was no "superbullet" coursing through Kennedy and into Connally—that at least two persons were firing from behind the motorcade. But there is more.

Dr. Humes' deduction of a path he couldn't find is based, as we have noted, on the presence of an "entrance" wound higher in the rear than the "exit" wound in the front of the throat—a wound the Report places at about the location of the President's necktie knot. From this wound in the back of the neck, the Commission not only accepts the doctor's deduction about the path, it also deduces for itself the angle of the shot and thus its source—the sixth floor of the Depository.

c) *Location of the back wound*

To illustrate his theory that the bullet entered from the rear and exited at the throat, Dr. Humes, when he testified before the Warren Commission, brought with him an artist's drawing made, shortly before the hearing in March 1964, from his verbal description of the wound.<sup>50</sup> The drawing is a profile view of President Kennedy, with an arrow going through his neck from back to front at an angle of about 15 degrees downward. "In" is written at the tail end, "out" at the front end.

The artist, who was not present at the autopsy, had no medical photographs from which to work,<sup>51</sup> and the official photographs and X-rays taken at the autopsy were not introduced in evidence before the Commission.

The drawing shows the back wound as clearly above the wound in the throat. But there is a considerable body of evidence to show that the back wound was below the entry point in the artist's drawing, and that the point of entry was below the alleged point of exit. If this is so, then Dr. Humes' autopsy report and much of his testimony is in error.

Secret Service agent Glenn Bennett, riding in the right rear seat of the follow-up car behind the President when the shots were fired, stated: "I looked at the back of the President. I heard another firecracker noise and saw that shot hit the President about four inches down from the right shoulder."<sup>52</sup>

The Commission accorded "substantial weight" to Bennett's observation, adding: *His notes indicate that he recorded what he saw and heard at 5:30 p.m. November 22, 1963, on the airplane en route back to Washington, prior to the autopsy, when it was not yet known that the President had been hit in the back.*<sup>53</sup>

Secret Service agent Roy Kellerman, present at the autopsy, described the wound as "the hole that was in his shoulder."<sup>54</sup> Clint Hill, another Secret Service agent, who saw the body in the morgue before it was placed in the casket, was questioned by Rep. Hale Boggs, a member of the Commission:

BOGGS: *Did you see any other wound other than the head wound?*

HILL: *Yes, sir; I saw an opening in the back, about six inches below the neckline to the right-hand side of the spinal column.*<sup>55</sup>

Hill was not assigned to observe the autopsy. Agent Kellerman, however, testified that he decided to "get Mr. Hill down and view this man [the President] for all the damage that was done. . . . I went . . . and brought him down and he inspected the incisions." Commission Counsel Specter asked Kellerman why he had brought in Hill to view the wounds, and Kellerman replied: "More witnesses, Mr. Specter; I think more to view the unfortunate happenings it would be a little better."<sup>56</sup>

Secret Service agent William Greer, also present at the autopsy, testified: "When the doctors were performing the autopsy, they saw this hole in the right shoulder. . . ." Specter questioned him:

SPECTER: *Approximately where in the President's back was the bullet hole?*

GREER: *It was . . . back here, just in the soft part of that shoulder.*

SPECTER: *Indicating the upper right shoulder area?*

GREER: *Upper right, yes.*<sup>57</sup>

In contrast to the testimony of agents Bennett, Kellerman, Greer and Hill—who each place the wound in the shoulder—Commander Humes, echoed by the Warren Report, consistently locates the wound "in the low posterior neck of the President."<sup>58</sup>

The two descriptions are not consistent. That of the four agents, however, is totally consistent with the FBI reports, which describe the wound's location in these terms:

a. *One of the bullets had entered just below his shoulder to the right of the spinal column . . .*<sup>59</sup>

b. *The bullet which entered his back . . .*<sup>60</sup>

There are two other items of evidence which cast doubt on Humes' conclusion and the validity of the entire autopsy report—the autopsy doctors' own annotated diagrams of the body during the autopsy, and the bullet holes in the President's suit jacket and shirt.

The face sheet of the autopsy report<sup>61</sup> shows two diagrams of the body, front and back view, annotated during the autopsy.<sup>62</sup> On the "front" diagram is a throat wound just below the collar line. The back wound clearly depicted on the "back" diagram is considerably below the collar and consistent with the descriptions given by the four Secret Service agents and the FBI reports. No one asked Dr. Humes to explain this discrepancy about the location of the wound. One possible reason was given last fall by Dr. J. Thornton Boswell, who assisted Humes at the autopsy. Boswell said that *he* had marked the back wound on the pathologists' diagram, and that this location was "a diagram error."<sup>63</sup>

No such explanation, however, can account for the locations of the holes in the President's clothing. Robert A. Frazier, the FBI ballistics expert, testified: *I found on the back of the shirt a hole, 5-3/4 inches below the top of the collar, and as you look at the back of the shirt 1-1/8 inch to the right of the midline of the shirt, which is this hole I am indicating . . . The coat hole is 5-3/8 inches below the top of the collar. The shirt hole is 5-3/4 inches, which could be accounted for by a portion of the collar sticking up above the coat about a half inch.*<sup>64</sup>

Dr. Humes attempted to explain how this evidence was consistent with the artist's drawing by contending that the President's coat and shirt may have climbed up the back of his neck. The President, he said, was a "muscular young man with a very well-developed set of muscles in his thoraco and shoulder girdle. . . . I believe this would have a tendency to push the portions of the coat which show the defects here somewhat higher on the back of the President than on a man of less muscular development." Humes also pointed out that the President apparently had his right hand raised waving to the crowd, indicating his belief that this action would further accentuate the elevation of the coat and shirt with respect to the back of the President.<sup>65</sup>

The Commission presented no evidence to support Humes' supposition. A photograph taken at the time does not show the President's coat climbing up his neck. And it would appear physically impossible for a closed shirt collar to be lifted four to six inches when the President raised his hand. It would have to be lifted by that much to conform with Commission Exhibit 385, the drawing showing the trajectory through the neck.

The evidence about the location of the back wound—the testimony of four Secret Service agents, the pathologists' diagram prepared during the autopsy, and the bullet holes in the President's jacket and shirt—shows that the rear wound was well below the collar, and hence below the frontal throat wound which pierced the knot in the President's necktie.

If, as the Report concludes, the bullet passed through the President on a downward trajectory,<sup>66</sup> it would have exited below the breast line—even if the angle of entry was the approximately 15 degrees indicated by the drawing (the FBI Summary Report said the angle was 45 to 60 degrees).<sup>67</sup>

Even if we assume that the Warren Report was in error when it said that the bullet passed through undeflected,<sup>68</sup> and that, instead, the bullet was deflected upward inside the President's body and, by a series of improbabilities bordering on the impossible, did exit at the throat—even if we make that assumption, the bullet would have been heading upward, on a trajectory incapable of causing Connally's wounds. For a bullet exiting upward from the President's throat suddenly to change its course a second time, in midair, and hit the governor on a downward course, would simply violate immutable physical laws.

Bullets do perform unpredictable gymnastics inside bodies, but not in midair. Still, it can be asked how the Commission—with no definitive evidence of exit or continuous path through the body; with evidence that the bullet entered several inches below the collar on a downward trajectory and no primary evidence to the contrary; and with a finding that the bullet was *not* deflected—could have come to the conclusion that it did: that the bullet exited from the throat.

The statements of the autopsy report and the autopsy doctors—in unresolved conflict with much other evidence—form the sole basis for this critical conclusion by the Warren Commission.

### [3. THE WOUNDING OF CONNALLY]

By now it should be apparent, from the wealth of evidence to the contrary, that the one-bullet-through-two-men theory is a construct. That President Kennedy and Governor Connally were in fact hit by separate bullets is further borne out by Connally's own testimony and that of his wife, as well as by an analysis of the Zapruder film.

Governor Connally testified:

*... we turned on Elm Street. We had just made the turn, well, when I heard what I thought was a shot. 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 ... but I did not catch the President in the corner of my eye, and I was interested because once I heard the shot in my own mind I identified it as a rifle shot, and I immediately—the only thought that crossed my mind was that this is an assassination attempt.*

*So I looked, failing to see him, I was turning to look back over my left shoulder into the back seat, but I never got that far in my turn ... and then I felt like someone had hit me in the back....*

*The thought immediately passed through my mind that there were either two or three people involved or more in this or someone was shooting with an automatic rifle ... Mrs. Connally pulled me over to her lap. I reclined with my head in her lap,*

*conscious all the time, and with my eyes open and then, of course, the third shot sounded, and I heard the shot very clearly. I heard it hit him.*<sup>69</sup>

The Governor was questioned by Commission Counsel Arlen Specter.

SPECTER: *In your view, which bullet caused the injury to your chest, Governor Connally?*

CONNALLY: *The second one.*

SPECTER: *And what is your reason for that conclusion, sir?*

CONNALLY: *Well, in my judgment it just couldn't conceivably have been the first one because I heard the sound of the shot. In the first place, I don't know anything about the velocity of this particular bullet, but any rifle has a velocity that exceeds the speed of sound, and when I heard the sound of that first shot, that bullet had already reached where I was, or it had reached that far, and after I heard that shot, I had time to turn to my right, and start to turn to my left, before I felt anything. It is not conceivable to me that I was hit by the first bullet ...*<sup>69</sup>

In television interviews, in press conferences and in a detailed interview with Life magazine in which he examined the Zapruder film,<sup>70</sup> Governor Connally has stuck to his testimony and to the reasoning behind it. It is true that the governor has also described himself as satisfied with the Warren Commission's reasoning on other points and with its conclusions regarding Oswald as the lone assassin; but as we have seen, if his own testimony is accurate, those conclusions must be in error.

Mrs. Connally's testimony before the Commission corroborated that of her husband: *... I heard a noise, and not being an expert rifleman, I was not aware it was a rifle. I turned over my right shoulder and looked back, and saw the President as he had both hands at his neck. ... Then very soon there was the second shot that hit John [Connally]. As the first shot was hit, and I turned to look at the same time, I recall John saying, "Oh, no, no, no." Then there was a second shot, and it hit John, and as he recoiled to the right, just crumpled like a wounded animal to the right, he said, "My God, they are going to kill us all."*<sup>71</sup>

The Zapruder film further bears out the Connallys' version of what happened. Commissioner Allen Dulles examined the film and immediately noticed that Kennedy was reacting to his hit well before Connally showed any sign of being wounded. He had this exchange with Commissioner John McCloy:

DULLES: *... you would think if Connally had been hit at the same time [as Kennedy, he] would have reacted in the same way, and not reacted much later as these pictures show.*

McCLOY: *That is right.*

DULLES: *Because the wounds would have been inflicted.*

McCLOY: *That is what puzzles me.*

DULLES: *That is what puzzles me.*<sup>72</sup>

The shot that hit Connally shattered ten centimeters of his rib, fractured his right wrist in seven pieces and pierced his left thigh (assuming that Connally was hit only once). The Commission's argument that Connally may have had a "delayed reaction" to the shot is contradicted by the testimony of Dr. Shaw of Parkland Hospital:

McCLOY: *But there could be a delay in any appreciable reaction between the time of the impact of the bullet and the occurrence?*

DR. SHAW: *Yes, but in the case of a wound which strikes a bony substance such as a rib, usually the reaction is quite prompt.*<sup>73</sup>

Despite the governor's testimony, the Zapruder film, and

the wealth of other evidence, the Commission nevertheless contended that Kennedy and Connally were hit by the same bullet.

Aside from a negative conclusion that the bullet did not strike the automobile, the only evidence adduced by the Commission to show that it did strike Connally is a garbled version of Frazier's testimony. He was asked to give his expert opinion on the basis of a set of highly questionable assumptions:

SPECTER: . . . *Mr. Frazier, assuming the factors which I have asked you to accept as true . . . as to the flight of the bullet and the straight line penetration through the President's body . . . do you have an opinion as to what probably happened during the interval between frames 207 and 225 as to whether the bullet which passed through the neck of the President entered the governor's back?*

FRAZIER: *There are a lot of probables in that. First, we have to assume there is absolutely no deflection in the bullet from the time it left the barrel until the time it exited from the governor's body. . . . I feel that physically this would have been possible. . . . However, I myself don't have any technical evidence . . . which would support it as far as my rendering an opinion as an expert. I would certainly say it was possible but I don't say that it probably occurred because I don't have the evidence on which to base a statement like that.*<sup>74</sup>

Frazier elaborated: *"We are dealing with a hypothetical situation here . . . So when you say would it probably have occurred, then you are asking me for an opinion, to base my opinion on a whole series of hypothetical facts which I can't substantiate."*<sup>75</sup>

The Warren Commission used Frazier's testimony in support of the single bullet theory. The Report states: ". . . Frazier testified that it probably struck Governor Connally."<sup>76</sup> Frazier, as we have seen, had said nothing of the kind.

THE NECESSARY CONCLUSION TO THIS EVIDENCE IS THAT KENNEDY AND CONNALLY WERE HIT BY SEPARATE BULLETS. This means they were hit by at least two gunmen firing from the rear—because, as the Commission found, they were both wounded from the rear in less time than necessary to fire the alleged murder weapon twice.

#### [4. SUPERBULLET]

##### a) *The stretcher bullet*

A major piece of evidence, linking the assassination to the bolt-action rifle found on the sixth floor of the Texas School Book Depository, is a bullet that fell from a stretcher in Parkland Hospital shortly after the shooting. Ballistics tests showed that the bullet—Commission Exhibit 399—was fired from that rifle.<sup>77</sup> It became a crucial element in the case against Lee Harvey Oswald.

The Commission contends that bullet 399, as it is called, is the bullet that entered the President from the rear, exited at his throat, entered Connally's back and smashed through his chest, wrist and thigh. Fragments were left in the governor's wrist and thigh; bullet 399 was found virtually undeformed, its jacket intact.

The bullet that later hit the President's head—which according to the Commission's version of the assassination must have been of the same type as bullet 399 and fired seconds later from the same rifle—fragmented into "30 or 40 tiny dustlike particle fragments," according to Dr. Humes.<sup>78</sup> Yet the Commission argues that bullet 399 passed through both men,

shattered more than four inches of the governor's fifth rib, broke his right wrist into pieces, wounded his left thigh and emerged beautifully whole and undeformed.

Dr. Humes testified upon seeing the bullet: ". . . This missile is basically intact; its jacket appears to me to be intact."<sup>79</sup> Dr. Shaw of the Parkland staff declared: ". . . I would have to say that this bullet has lost literally none of its substance."<sup>80</sup>

Bullet 399 was not only unmutilated after the bone-shattering journey it is said to have taken; it also had no recognizable trace of blood or tissue on its surface. Questioned by Commission Counsel Melvin Eisenberg, FBI ballistics expert Frazier testified:

EISENBERG: *Did you prepare the bullet in any way for examination? That is, did you clean it or in any way alter it?*

FRAZIER: *No, sir; it was not necessary. The bullet was clean and it was not necessary to change it in any way.*

EISENBERG: *There was no blood or similar material on the bullet when you received it?*

FRAZIER: *Not any which would interfere with the examination; no sir.*<sup>81</sup>

Thus, no macroscopic amounts of blood or tissue were found on this bullet. Obviously Frazier's testimony leaves open the possibility that microscopic traces existed; we know only that the FBI performed a spectrographic analysis on the bullet,<sup>82</sup> and that spectrographer John F. Gallagher, who testified before the Commission, was never asked about these findings.<sup>83</sup>

Frazier testified that bullet 399 weighed 158.6 grains.<sup>84</sup> He weighed several other 6.5 mm. bullets picked at random, and found that they all weighed from 160 to 161 grains. But Frazier added that even with a bullet weighing 158.6 grains, "there did not necessarily have to be any weight loss to the bullet."<sup>85</sup> The mass missing from the bullet was so miniscule (there are approximately 432 grains to an ounce) that the FBI expert would not offer an opinion that it represented any weight loss at all.

Even if bullet 399 originally weighed 161 grains before its purported journey through the two men, its weight loss as a result of its various collisions would be about 2.4 grains (1/180 of an ounce). Not only did the bullet fragments in Connally's body appear to add up to more than that, but the governor's doctors and government pathologists stated their opinion—based on the presence of these fragments—that bullet 399 *could not have caused all his wounds*. Chief autopsy surgeon Humes, for example, testified:

SPECTER: . . . *Now looking at that bullet, Exhibit 399, Doctor Humes . . . could that missile have made the wound on Governor Connally's right wrist?*

DR. HUMES: *I think that is most unlikely. . . . Going to Exhibit 392, the report from Parkland Hospital [operative record of Dr. Charles Gregory<sup>86</sup>], the following sentence referring to the examination of the wound in the wrist is found: "Small bits of metal were encountered at various levels throughout the wound, and these were, wherever they were identified and could be picked up, picked up and submitted to the pathology department for identification and examination." The reason I believe it most unlikely that this missile could have inflicted either of these wounds [referring also to the President's head wound] is that this missile is basically intact; its jacket appears to me to be intact, and I do not understand how it could possibly have left fragments in either of these locations.*<sup>87</sup>



Not only did Dr. Humes rule out the possibility that bullet 399 caused the governor's wrist wound, but also the possibility that it caused the wound in his thigh. Humes responded to a question on this point by Specter: *I think that extremely unlikely. The reports, again Exhibit 392 from Parkland [operative record of Dr. Tom Shires<sup>88</sup>], tell of an entrance wound on the lower midthigh of the governor, and X-rays taken there are described as showing metallic fragments in the bone, which apparently by this report were not removed and are still present in Governor Connally's thigh. I can't conceive of where they came from this missile.<sup>89</sup>*

In Dr. Humes' view, there was too much metal in either the governor's wrist or his thigh to have been caused by bullet 399. Dr. Pierre Finck, a forensic pathologist who assisted at the autopsy, also testified about bullet 399:

SPECTER: . . . *Could it have been the bullet which inflicted the wound on Governor Connally's right wrist?*

DR. FINCK: *No, for the reason that there are too many fragments described in that wrist.<sup>90</sup>*

Dr. Robert Shaw, who attended the governor at Parkland Hospital, testified about bullet 399: . . . *As far as the wounds of the chest are concerned, I feel that this bullet could have inflicted those wounds. But the examination of the wrist both by X-ray and at the time of surgery showed some fragments of metal that make it difficult to believe that the same missile could have caused these two wounds. There seems to be more than three grains of metal . . . in the wrist. . . . I feel that there would be some difficulty in explaining all of the wounds as being inflicted by bullet Exhibit 399 without causing more in the way of loss of substance to the bullet or deformation of the bullet.<sup>91</sup>*

Another piece of Dr. Shaw's testimony has been stretched beyond recognition by the Commission. Asked whether—regardless of what bullet it was—one bullet did in fact cause all of Governor Connally's wounds, Dr. Shaw replied, "I have no firm opinion."<sup>92</sup> But the Report says: *In their testimony, the three doctors who attended Governor Connally at Parkland Hospital expressed independently their opinion that a single bullet had passed through his chest; tumbled through his wrist . . . punctured his left thigh . . . and had fallen out of the thigh wound.<sup>93</sup>*

The Report's distortion concerning bullet 399, however, was much more serious. Despite the existence of all the metal fragments in Governor Connally's body; despite the undeformed and bloodless state of the bullet; and despite the explicit testimony of three doctors that bullet 399 could not have caused the wrist wound, the Report concluded: *All the evidence indicated that the bullet found on the governor's stretcher could have caused all his wounds.<sup>94</sup>*

There was, of course, evidence adduced in support of this conclusion: the testimony of one physiologist and one veterinarian, employed at the Army's Edgewood Arsenal. They had been instructed to shoot Carcano bullets through goatmeat, horsemeat, goatbone and gelatin blocks, in order to determine whether a bullet from that rifle had the penetrating power to go through two men. They said that it did.

But Commission Counsel Specter's questioning of Dr. Arthur Dziemian,<sup>95</sup> the physiologist, and Dr. Alfred Olivier,<sup>96</sup> the veterinarian, was not confined to the results of their experiments.

Drs. Dziemian and Olivier, instructed only to determine the penetrating power of a bullet fired from a Carcano, were

called upon to testify on what happened to a specific Carcano bullet five months before and thousands of miles away. Not because any suspicion of venality attaches, but simply because of the subtle ways in which ideas are transferred among men in contact, it may be interesting that the man who questioned Dziemian and Olivier about their opinions—Commission Counsel Specter—was also the man who first introduced the superbullet theory to the Commission.

Questions remain. If, as now seems clear, one bullet did *not* go through both men, then where is the bullet (or bullets) that wounded Connally? And if the intact bullet 399 did not cause Connally's wounds, as the evidence shows that it did not, then where did it come from?

b) *Bullet 399—was it a plant?*

There have been many who, on examining the available information about the death of President Kennedy, have insisted on the existence of a conspiracy not only to kill the President but to suppress, distort and even supply evidence. The plethora of conspiracy theories ranges from massive, high-level plots involving foreign governments or high officials of our own government, or both, to simple, after-the-fact efforts by Dallas police to make themselves look good. To every conspiracy theorist, the mysterious appearance of bullet 399 is a godsend; and after the wisps of frantic plotmongering have been blown away, bullet 399 remains—still a mystery.

Upon arrival at Parkland Hospital, the President and the governor were put on stretchers (not the collapsible pole-and-canvas kind, but the kind of wheeled hospital stretcher sometimes called a gurney) and immediately rushed into separate "trauma rooms" on the ground floor. The President was soon pronounced dead; his body was transferred from the stretcher to a coffin. His stretcher was stripped of sheets and put into one of the trauma rooms adjoining the elevator lobby on the ground floor of the hospital.

The governor, however, after undergoing emergency treatment on the ground floor while still on his stretcher, was wheeled into an elevator and taken to the operating suite on the second floor for surgery. He was transferred from the stretcher, and the stretcher was put back on the elevator.

At about one p.m. (the governor had gone upstairs, and the President was just being pronounced clinically dead) senior engineer Darrell Tomlinson found a stretcher on the elevator, at ground floor level. He removed it from the elevator and placed it against the wall. At the time, said Tomlinson, "there was a stretcher about two feet from the wall already there."<sup>97</sup> Tomlinson, who was operating the elevator, left the stretcher-deposit area on the ground floor several times after that.

Some time later, an incident occurred which was to become important. Under questioning by Specter, Tomlinson described what happened:

*Well, sir, I don't recall how long it had been exactly, but an intern or doctor, I didn't know which, came to use the men's room there in the elevator lobby. . . . He pushed the stretcher out from the wall to get in, and then when he came out he just walked off and didn't push the stretcher back up against the wall, so I pushed it out of the way where we would have [a] clear area in front of the elevator. . . . I pushed it back up against the wall . . . I bumped the wall and a spent cartridge or bullet rolled out that apparently had been lodged under the mat.<sup>98</sup>*

Tomlinson had just discovered bullet 399.

As we have repeatedly seen, it is essential to the lone assassin hypothesis that one bullet hit both Kennedy and Connally. And for this to be possible, it is essential that bullet 399, the one the Commission determined did the job, be found on Connally's stretcher. Connally, according to the Commission, was the second victim of that bullet. If the bullet were found on Kennedy's stretcher, it could not have been the one that wounded Connally. The confusion is compounded by the absence of any hard evidence that the stretcher from which the bullet fell had been used by either Kennedy or Connally.

On March 16, 1964, Commission Counsel Specter had not yet gone to Dallas to interview witnesses. In his possession, however, were FBI and Secret Service reports indicating that the bullet had *not* fallen from the stretcher presumed to have been Connally's.<sup>98-A</sup> Yet Specter was able to tell Commissioner Dulles during the hearings: "If I may say at this point, we shall produce later . . . evidence that the stretcher on which the bullet was found was the stretcher of Governor Connally."<sup>99</sup>

How Specter knew what would be shown by the evidence he had not yet gathered is far from clear. But when Specter did go to Dallas Tomlinson reiterated his statement that he thought the bullet had fallen from the stretcher already leaning against the wall, *not* from the one he took off the elevator. "Yes," said Tomlinson, "I believe that was it—yes."<sup>100</sup> Specter pursued his questioning:

SPECTER: Now, Mr. Tomlinson, are you sure that it was stretcher "A" that you took out of the elevator and not stretcher "B"?

TOMLINSON: Well, really, I can't be positive, just to be perfectly honest about it . . .

\* \* \*

SPECTER: You say you can't really take an oath today to be sure whether it was stretcher "A" or stretcher "B" that you took off the elevator?<sup>101</sup>

Specter's questioning did not clear up the confusion, but it did irritate the witness:

TOMLINSON: (interrupting) Here's the deal—I rolled that thing off [the elevator]. . . . Now, I don't know how many people went through . . . I don't know how many people hit them [the stretchers]—I don't know anything about what could have happened to them in between the time I was gone, and I made several trips before I discovered the bullet on the end of it there . . . I'm going to tell you all I can, and I'm not going to tell you something that I can't lay down and sleep at night with either.<sup>102</sup>

One week later, Specter was back in Washington, informing the Commission about his latest findings on bullet 399: "May I say, Mr. Dulles, on that subject, I took several depositions on that subject in the Dallas hospital and I think we have a reasonably conclusive answer on that question; and, in fact, it came from the stretcher of Governor Connally. . . ."<sup>103</sup>

Specter based his argument on Tomlinson's statement that the stretcher from which the bullet fell, had sheets on it. The sheets had been stripped from Kennedy's stretcher, a nurse testified, whereas Connally's sheets had been left on the stretcher.

It is difficult to see how Specter could have reached a positive conclusion from such an inconclusive muddle of evidence. Beyond that—and whatever stretcher the bullet fell from—the question remains why the bullet was not discovered sooner, and how it came to be lodged *under the mat* of the stretcher from which it fell. Left in an unguarded area, to which anyone

had access who might be going to the men's room, the stretcher eventually was jostled and dispensed a clean, undeformed bullet linking a suspected assassin's weapon with the crime.

The question inescapably follows: *Was it a plant?* Or was it on Kennedy's stretcher after all, and was bullet 399 the bullet that traveled a "finger's length" into President Kennedy's back, later to drop back out through the entry wound as the Parkland doctors struggled to save the President's life?

Whatever else is true, bullet 399, contrary to the Commission's finding, was not a superbullet. It did not cause Governor Connally's wounds. It did not travel through the bodies of both men. It did not defy the laws of probability, the laws of physics and the laws of forensic pathology.

What it did do was appear mysteriously in Parkland Hospital.

## [5. TWO OF THE ASSASSINS]

"The thought immediately passed through my mind," Governor Connally testified, "that there were either two or three people involved or more in this or someone was shooting with an automatic rifle."<sup>104</sup>

The governor's initial reaction was absolutely correct.

In organizing the evidence that two or more gunmen were firing from the rear, we proceeded from the Commission's fundamental assumption that the Carcano rifle found on the sixth floor of the Book Depository was fired during the assassination—and that it hit the mark. If this is so, the evidence shows that at least one other weapon *must* have been firing from behind to account for both Kennedy's back wound and the wounds of Governor Connally.

Questions which must be taken seriously have been raised, however, as to whether Lee Harvey Oswald actually fired shots at the motorcade, whether any shots at all were fired from that sixth floor window by anybody, and whether the Carcano rifle, the alleged murder weapon, was used in the assassination. If the Carcano was *not* fired at the motorcade—or if it was fired and the shots missed—then at least *two* gunmen with different rifles, or *one* gunman with an automatic weapon would have to have been firing from the rear to cause the back entry wounds on Kennedy and Connally (inflicted, as the Commission states, within a space of 2.3 seconds).

It is not the intention of the authors to go into this question in the present essay. But it should be noted that if this is so, then Oswald, whom the Commission found to be the owner of the Carcano, was clearly framed. For if the Carcano was *not* fired, what was it doing at the sixth floor window of the Depository with three spent shells? And if the Carcano was fired and missed the mark, then what was a bullet, ballistically traced to that particular rifle, doing on a stretcher at Parkland Hospital within 90 minutes of the assassination? What were two bullet fragments, also traced to the Carcano, doing in the front seat of the President's limousine when they were discovered late in the night of November 22 in Washington, some nine or ten hours after the assassination?<sup>105</sup>

It is possible to speculate endlessly about who might have been firing what from where on November 22. Most of these theories have yet to be proved. One thing is certain. If the Carcano rifle was involved in the assassination, as the Commission found, then only one conclusion is possible: Two or more gunmen were firing from the rear.

## Footnotes to Part I:

- 1—WR III.
- 2—III, 404.
- 3—WR 194.
- 4—WR 97.
- 5—WR 153-4.
- 6—*Inquest*, 117.
- 7—*Inquest*, 149.
- 8—*Inquest*, 150.
- 9—*Inquest*, 150.
- 10—e.g., Rep. Ford, CBS News, Nov. 23, 1966.
- 11—*Inquest*, 43.
- 12—WR 3.
- 13—WR, Appendix IX.
- 14—Washington Post, Dec. 18, 1963.
- 15—New York Times, Dec. 18, 1963.
- 16—Jack Langguth, "12 Unanswered Questions," New York Times, Jan. 26, 1964, p. 58.
- 17—*Inquest*, 115.
- 18—II, 350.
- 19—II, 373.
- 20—WR 543; XVII, 44.
- 21—National Archives; excerpts in *Inquest*.
- 22—FBI Summary Report, 18; *Inquest*, 184; italics added.
- 23—FBI Supplemental Report, 2; *Inquest*, 198.
- 24—II, 103.
- 25—Agents' report of Sibert and O'Neill; Commission Document 7, National Archives; *Inquest* (paperback edition only), 166.
- 26—V, 98.
- 27—New York Times, Nov. 26, 1966.
- 28—Washington Post, May 29, 1966.
- 29—Los Angeles Times, May 30, 1966.
- 30—II, 131.
- 31—II, 93. Lt. Col. Pierre Finck is described by Epstein as "a nationally known expert in forensic pathology and wound ballistics."
- 32—II, 127.
- 33—II, 361.
- 34—New York Times, Nov. 26, 1966.
- 35—U.S. News and World Report, Oct. 10, 1966.
- 36—II, 367.
- 37—U.S. News and World Report, Oct. 10, 1966.
- 38—WR 88-9; italics added.
- 39—II, 373.
- 40—WR 89-90.
- 41—II, 360.
- 42—WR 18.
- 43—WR 88; italics added.
- 44—II, 368; italics added. One wonders what "facts" the doctor was "taking into account" in preparing his revised final version of the autopsy report. Humes' "Clinical Summary" appearing at the beginning of his report includes such non-clinical information as this: "According to available information, the deceased was riding in an open car in a motorcade. . . . Three shots were heard. . . . According to newspaper reports (Washington Post, Nov. 23, 1963) Bob Jackson, a Dallas Times-Herald photographer, said he looked around as he heard the shots and saw a rifle barrel disappearing into a window on an upper floor of the nearby Texas School Book Depository Building." (WR 539) Why Dr. Humes found it necessary to include the statement of one witness—to the exclusion, moreover, of the observations of hundreds of others—in a medical report on the President's autopsy, is one of the innumerable anomalies of this investigation.
- 45—WR 88.
- 46—II, 367.
- 47—II, 367; FBI report of Sibert and O'Neill, reproduced in *Inquest* (paperback edition only), 166.
- 48—*Inquest*, 58.
- 49—The Nation, July 11, 1966.
- 50—Commission Exhibit 385.
- 51—II, 350.
- 52—WR 111.
- 53—WR 111.
- 54—II, 93.
- 55—II, 143; italics added.
- 56—II, 100.
- 57—II, 127.
- 58—II, 361.
- 59—FBI Summary Report, 18; *Inquest*, 48.
- 60—FBI Supplemental Report, 2; *Inquest*, 48.
- 61—Commission Exhibit 397.
- 62—II, 372; interview with Dr. J. Thornton Boswell, New York Times, Nov. 25, 1966.
- 63—New York Times, Nov. 25, 1966.
- 64—V, 60.
- 65—II, 366. Films taken from various angles during the crucial six seconds do not show the President's coat climbing up his neck (the films of Zapruder, Nix, Muchmore, Moorman and Willis).
- 66—WR 88.
- 67—FBI Summary Report, 18; *Inquest*, 48.
- 68—WR 88.
- 69—IV, 132-3; IV, 135-6.
- 70—Life, November 25, 1966.
- 71—IV, 147.
- 72—V, 155.
- 73—IV, 116.
- 74—V, 172; italics added.
- 75—V, 172; italics added.
- 76—WR 105.
- 77—III, 429.
- 78—II, 353.
- 79—II, 375.
- 80—IV, 113.
- 81—III, 428-9.
- 82—Testimony of Robert Frazier, V, 69.
- 83—XV, 746-52.
- 84—III, 430.
- 85—III, 430.
- 86—XVII, 18.
- 87—II, 374-5.
- 88—XVII, 20.
- 89—II, 376.
- 90—II, 382.
- 91—IV, 113-4; italics added.
- 92—IV, 109.
- 93—WR 95.
- 94—WR 95.
- 95—V, 92.
- 96—V, 90.
- 97—VI, 130.
- 98—VI, 130.
- 98A—*Inquest*, 77; Commission Documents 3, 5 and 7 in National Archives.
- 99—II, 368.
- 100—VI, 132.
- 101—VI, 132.
- 102—VI, 132-4.
- 103—III, 389.
- 104—IV, 133.
- 105—II, 90; III, 435; V, 67; XXIV, 411-413.

## Part Two: The Shots From The Front

*[Where it is shown that one or more gunmen  
were firing from the front]*

### [1. THE GRASSY KNOLL]

When the assassination occurred, at least two-thirds of the known witnesses reacted as if the shots were fired from the Grassy Knoll. The first reaction of policemen was to converge on the area; two tried to ride their motorcycles up the incline on the Knoll. Virtually all attention was focused at that spot.

Later, newsmen, police and the general public were told that their attention had been misplaced, that all the shooting had come from another direction. The evidence however—and the testimony of witnesses compiled in this essay—indicates that the first reaction was the correct one. Someone was indeed firing from the Grassy Knoll.

### [2. THE FATAL HEAD SHOT]

#### a) *The Photographic Evidence*

The Zapruder film, now owned and jealously guarded by Life magazine (a copy is in the National Archives), serves as a time standard for the entire assassination sequence. It is the source of hundreds of numbered color photographs, 35-mm. slides each made from an individual motion picture frame.<sup>1</sup> The camera caught the motorcade from the time it turned onto Elm Street (frame 171) until it disappeared into the mouth of what is locally called the Triple Underpass (frame 434).

The FBI, using the film and the carefully checked camera

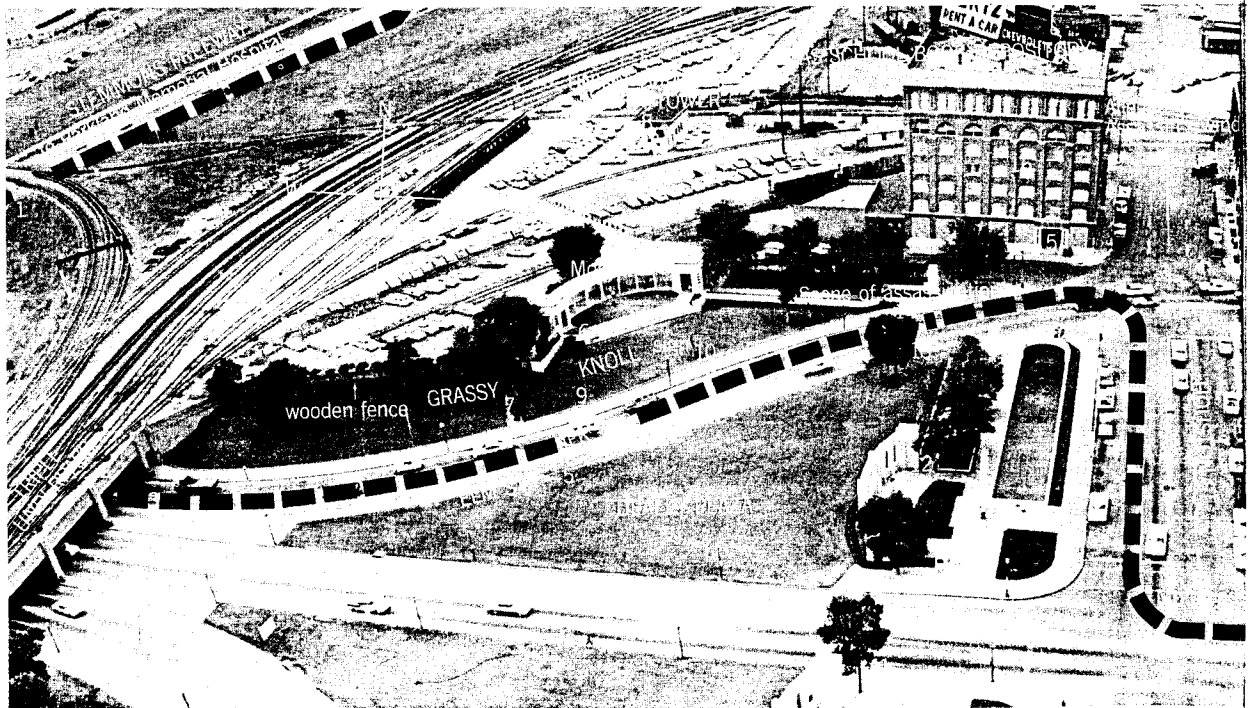
speed, found that the car was moving at a rate of 11.2 miles per hour—about 10.6 inches from one frame to the next. They prepared a map<sup>2</sup> showing the precise position of the Presidential car on Elm Street at each numbered frame of the Zapruder film.

The crucial number is 313. The shot which killed the President, the Commission says, struck his head at Zapruder frame 313.<sup>3</sup> The Commission states that the bullet "... entered the right-rear portion of his head, causing a massive and fatal wound,"<sup>4</sup> and that "... impact was evident from the explosion of the President's brain tissues. . . ."<sup>5</sup>

In the film frame immediately preceding impact, Kennedy—who has already been wounded at least once—is "... slumped to his left, clutching at his throat, with his chin close to his chest and his head tilted forward at an angle."<sup>6</sup> The fatal bullet is in flight as the camera snaps frame 312, winging at about 2000 feet per second (over 1300 miles an hour). Its source, according to the Commission, is the Mannlicher-Carcano rifle of Lee Harvey Oswald, perched in a sixth floor window behind and above the President.

It should be possible to predict what the film would show if it recorded President Kennedy's head being struck from behind by an object going 1300 miles an hour. But the Zapruder film does not show his head snapping forward, as one might logically expect. It shows the opposite reaction. In the frames following the 313 head shot, say analysts of the film, "the sudden explosive violence with which President Kennedy is slammed back against the rear seat is unmistakable."<sup>7</sup>

His head snaps back and to the left—in the space of less than a half second, according to the time standard established by the Zapruder film—before he bounces forward and spins into Mrs. Kennedy's arms.



The violent backward and leftward thrust of Mr. Kennedy's head begins at the instant of impact of the fatal head shot; the two events appear to be simultaneous and to have a relationship of cause and effect. That the backward thrust could have resulted from a bullet fired from behind and above would seem a manifest impossibility. At the very least, the head snap is consistent with a shot being fired from a forward position to the right of the motorcade, from the area of the Grassy Knoll.

But the Commission did not seriously investigate this possibility; nor did the FBI. In fact, the Zapruder film was never used in this manner to determine the source of the fatal shot. Robert Frazier, the chief FBI ballistics expert on the case, who might have gleaned valuable information from the film concerning the direction of fire, testified: "I have not made a very thorough study of the Zapruder film. . . ."<sup>8</sup>

#### b) The head snap

Dr. R. A. J. Riddle, assistant professor of physics at the University of California at Los Angeles and a member of that university's Brain Research Institute, has studied the relevant frames of the Zapruder film and stated to the authors what the film shows to the eye and mind of a trained observer:

*Newton's second law of motion<sup>9</sup> has remained inviolate for three centuries. Not even the advent of relativity and quantum mechanics have disturbed its validity. No physical phenomenon is known that fails to obey it. One of the most immediate consequences is the conservation of momentum; basically, this law says that an object hit by a projectile will be given a motion that has the same direction as that of the projectile. At a shooting gallery, for instance, the ducks fall away from the marksman, not toward him. Thus, if someone is shot, and the shot strikes bone, the general direction of recoil will be away from—not toward—*

*the marksman (this assumes, of course, that there are no mitigating effects).<sup>9-A</sup>*

*Let us now apply this knowledge to the assassination of Kennedy as shown in frames 310-323 of the film taken by Zapruder. The following facts are evident from observation and measurement of individual Zapruder film frames:*

1. *Jacqueline Kennedy does not move relative to the car.*
2. *The general direction of motion of Kennedy is backwards and to his left.<sup>9-B</sup> His head velocity along the line of the car is about two feet per second.*
3. *The initial motion of his head is downward in frames 312-313.<sup>10</sup>*
4. *The effect of the shot is first seen in frame 313.*
5. *After frame 313 there is no forward motion relative to the car.*

*Point one, plus testimony from the hearings,<sup>11</sup> indicates that there is no acceleration of the car which would cause Kennedy to be thrown backwards. On the assumption that a neuromuscular reaction can be ruled out as the cause for this sudden violent backward motion upon impact of the President's head with the bullet, any motion of the body would be governed by the laws of physics, which govern the collision between any two objects.*

THE MOTION OF KENNEDY'S BODY in frames 313-323 is totally inconsistent with the impact of a bullet from above and behind.<sup>12</sup> Thus, the only reasonable conclusion consistent with the laws of physics is that the bullet was fired from a position forward and to the right of the President.

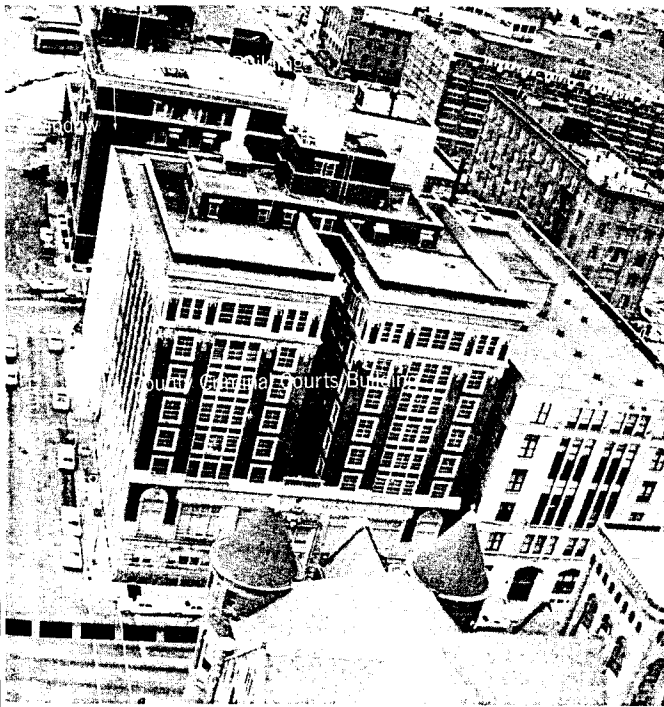
*It is disturbing that this conclusion contradicts the findings of the Warren Commission, but intellectual honesty compels me to offer the above opinion.<sup>13</sup>*

Neither the Warren Commission nor anyone else, however august, can repeal the law of the conservation of momentum.

## Key to Photograph:

1. Earle V. Brown
2. S. M. Holland, Austin Miller, Frank Reilly, James Simmons, Clemon Johnson
3. Forrest Sorrels
4. James Tague
5. Jean Hill and Mary Moorman (still photographer)
6. Abraham Zapruder
7. Emmett Hudson
8. Lee Bowers
9. Mr. and Mrs. William Newman
10. Mr. and Mrs. John Chism
11. Orville Nix (movie photographer)
12. Mary Muchmore (photographer)
13. Philip Willis (still photographer)
14. Mrs. Donald Baker
15. Danny Arce, Billy Lovelady, O. V. Campbell, Wesley Frazier, Mrs. Charles Davis, Roy Truly, William Shelley, Joseph Molina, Otis Williams, Steven Wilson
16. Victoria Adams
17. Howard Brennan (Commission's star witness)
18. Mr. and Mrs. Arnold Rowland
19. Location of many deputy sheriffs

Looking forward and to the right from the President's car at the time of the shooting, was a grassy knoll, topped with some shrubbery, a fence and a concrete arcade, often referred to as "the monument." Behind the shrubbery at the top of the Grassy Knoll are a parking lot and railroad tracks.



We have examined the evidence that there were at least two assassins firing on the motorcade from the rear. It is equally clear that the only argument against the existence of a third assassin, firing from the Grassy Knoll area forward of the motorcade, is to posit a fantastic set of neuromuscular reactions sufficiently strong to overcome even the slightest trace of any effect of the momentum of a bullet traveling 1300 mph.

It is physically possible, however unlikely, for such a neuromuscular reaction to have occurred. But there is other evidence that places this possibility in the realm of pure conjecture.

### [3. MEDICAL EVIDENCE ON THE HEAD WOUNDS]

#### a) *The back of the skull*

According to the doctors at Parkland Hospital, the fatal head shot blew off the *right rear* portion of the President's head. It was a gaping wound, characteristic of *exit*, on the back of his skull, and 11 members of the Parkland staff and two Secret Service agents observed it closely. Each of their observations was consistent with a shot coming from a position forward of the President.

Dr. Ronald Jones of the Parkland staff described "... what appeared to be an *exit* wound in the posterior portion of the skull ..."<sup>14</sup>

Dr. Robert McClelland, also of Parkland, testified:

*As I took the position at the head of the table ... I was in such a position that I could very closely examine the head wound, and I noted that the right posterior portion of the skull had been extremely blasted. It had been shattered, apparently, by the force of the shot. ... This sprung open the bones ... in such a way that you could actually look down into the skull cavity itself and see that probably a third or so, at least, of the brain tissue, posterior cerebral tissue and some of the cerebellar tissue had been blasted out.*<sup>15</sup>

Four other doctors and one registered nurse described the wound in the rear of the President's head as "... a large gaping wound in the skull ... literally the right side of his head had been blown off";<sup>16</sup> "... a large, gaping wound in the right posterior part ...";<sup>17</sup> "... a large avulsive injury of the right occipitoparietal area ...";<sup>18</sup> "... back of ... his head was shattered, with brain substance extruding";<sup>19</sup> and "... one large hole."<sup>20</sup>

Secret Service agent Clinton Hill, who climbed onto the Presidential limousine as it sped away, and rode with it all the way to the hospital, gave the following description:

*The right rear portion of his head was missing. It was lying in the rear seat of the car. His brain was exposed. There was blood and bits of brain all over the entire rear portion of the car. Mrs. Kennedy was completely covered with blood.*<sup>21</sup>

(Aside from its contribution to the medical evidence, Hill's testimony can also be read in the light of the laws of physics. Regardless of neuromuscular reactions, Hill's description of "blood and bits of brain all over the entire rear portion of the car"—and a piece of the skull flying into the rear seat—is hardly compatible with the force of a 1300-mile-an-hour projectile having come from *behind*.)

The autopsy doctors at Bethesda Naval Hospital in Maryland observed not only the large gaping wound, but a "small occipital wound" at the back of the skull.<sup>22</sup> This, they and the Commission concluded, was the entry point of the fatal bullet.<sup>23</sup> Their finding became a central prop for the theory that Oswald fired the fatal shot from the rear with a 6.5 mm. rifle.

The members of the Parkland staff who saw the wound were unanimous: none of them observed such a small wound of entry on the rear of the President's head. Commission Counsel Arlen Specter did his best to elicit testimony from seven Parkland doctors, one nurse, and two Secret Service agents to support the thesis of a rear entry wound. Typical was his questioning of Registered Nurse Diana Bowron:

SPECTER: *How many holes did you see?*

MISS BOWRON: *I just saw one large hole.*

SPECTER: *Did you see a small bullet hole beneath that one large hole?*

MISS BOWRON: *No, sir.*<sup>24</sup>

Leading questions in the same vein were also put to Dr. Jenkins, Dr. Peters, Dr. Giesecke, Dr. Perry, Dr. Clark, Dr. McClelland, Dr. Baxter and Secret Service agent William Greer.<sup>25</sup> Each one answered, "No."

The fact that the Parkland doctors observed no entry wound there does not mean that it did not exist, and it is conceivable that a hit from the rear occurred. But if it did, the Zapruder film shows no obvious head reaction consistent with a head shot from the rear. At the very least, there is a conflict of evidence here between what the Zapruder film shows (corroborated by what the Parkland doctors observed) and the findings of the Bethesda autopsy.

What is clear is that the gaping wound at the rear of Kennedy's skull was a wound of *exit*, and that the bullet which hurled his head sharply back and to the left, blowing the rear portion of his cranium back into the rear seat of the car, was fired from in front of the President.

#### b) *Eyewitness testimony: right side entry, right temporal wound*

The position of the President's car at frame 313, when the fatal shot hit him, was such that the sixth floor window of the Texas School Book Depository was almost directly behind President Kennedy, and only slightly to his right. Kennedy would have had to turn almost completely around, looking over his right shoulder, in order to look directly at the sixth floor window. The Zapruder film, on the other hand, clearly shows the President facing forward at the time of the fatal shot. The middle point of the 200-foot-long Grassy Knoll was just coming abreast of the car on the President's right.

The unanimous verdict of the Parkland staff, therefore—which found the rear head wound to have all the characteristics of an exit wound with no signs of entry—must be seen in the light of testimony that a bullet entered the President's head *from the right side*.

Secret Service agent Samuel Kinney, the driver of the car immediately following the President's, testified, "I saw one shot strike the President in the right side of the head. The President then fell to the seat to the left toward Mrs. Kennedy."<sup>26</sup> George W. Hickey, a Secret Service man seated in the left rear of the follow-up car, said, "I heard what appeared to be two shots and it seemed as if the *right side of his head* was hit ..."<sup>27</sup>

William Eugene Newman was standing at the edge of the curb directly in front of a concrete wall on the Grassy Knoll. As the re-enactment photos clearly show, the car was just coming abreast of the concrete wall at frame 313, the Zapruder film frame that depicts the fatal head shot. Newman swears in his affidavit filed within hours of the shooting: *We were standing at the edge of the curb looking at the car as it was com-*

ing toward us . . . he was directly in front of us and I was looking directly at him when he was hit in the side of the head.<sup>28</sup>

Hurchel Jacks, a Texas highway patrolman and driver of Lyndon Johnson's car in the motorcade, testified that he saw a right frontal wound on Mr. Kennedy's head in Parkland Hospital: ". . . It appeared that the bullet had struck him above the right ear or near the temple."<sup>29</sup> Seth Kantor, of the Scripps-Howard newspapers, a member of the Washington press corps who followed the motorcade to Parkland Hospital, made this apparent reference to the President's head wounds in his notebook: "intered [sic] right temple."<sup>30</sup>

Roy Kellerman, a Secret Service agent who was riding in Kennedy's car and who was present during the Bethesda autopsy, was questioned by Commission counsel on the location of the head wounds. He described an entrance wound on the right side of the President's head, at the hairline in front of the right ear<sup>31</sup>—corroborating the wound location observed by Jacks, as well as the less precise "right side entry" observations of Kinney, Hickey and Newman.

It is doubtful whether these observations can be reconciled with a shot from the sixth floor of the Texas School Book Depository. It is equally doubtful whether they can be reconciled with the findings of the Bethesda autopsy.

#### c) *The autopsy at Bethesda*

The black-and-white and color photographs taken during the autopsy at Bethesda Naval Hospital were turned over, undeveloped, to the Secret Service.<sup>32</sup> The record shows no indication that the Commission saw them during its life.

Artist's drawings—instead of the official medical photographs—were accepted in evidence by the Commission.<sup>33</sup> The drawings were made from a verbal description of the wounds supplied by the autopsy doctors themselves—more than three months after the autopsy.<sup>34</sup>

Humes conceded that the drawings "are in part schematic. The artist had . . . no photographs from which to work, and had to work under . . . verbal description, of what we had observed. . . . If it were necessary to have them absolutely true to scale, I think it would be virtually impossible for him to do this without the photographs."<sup>35</sup>

Vincent Salandria, a Philadelphia attorney and a serious student of the medical evidence, comments: "*The Warren Commission was loaded with attorneys. Each one of them knew that no criminal court in the land would have admitted those drawings as evidence without having first required the production of the autopsy X-rays and black-and-white photographs of the body.*"<sup>36</sup>

Dr. Humes certified on November 24, 1963, that he had "destroyed by burning certain preliminary draft notes relating to Naval Medical School Autopsy Report A63-272 and have officially transmitted all other papers related to this report to higher authority."<sup>37</sup> Later, Dr. Humes testified that he burned the original draft of his autopsy report.<sup>38</sup>

Not one member of the Commission thought to ask why.

The burning of Humes' draft was only one of a series of unusual happenings surrounding the autopsy. The autopsy photographs and X-rays were suppressed. In their stead, the Commission had to rely on belatedly made artist's drawings, valueless as evidence. Jacqueline Kennedy's freely given description of her husband's wounds has been inexplicably deleted from her testimony.<sup>39</sup> And there is evidence of a pos-

sible wound in the forward upper left-hand octant of the President's head, unmentioned by the autopsy doctors and ignored by the Commission.<sup>40 41 42 43 44 45 46</sup>

One would not be so inclined to raise an eyebrow, were it not for the serious questions about the autopsy findings raised here and in Part One.

#### [4. THE WOUND IN THE THROAT]

The Commission's contention that the bullet which entered President's Kennedy's back went on to exit at his throat, as the discussion in Part One demonstrates, is not supported by the evidence.

Left unanswered in that discussion, however, was the question: If the throat wound was not caused by the exit of the back bullet, how *was* it caused?

One theory is that a piece of bone or a metallic fragment pierced the President's throat at the time of the fatal head shot. The head shot, however, was not inflicted until Zapruder frame 313, and the President appeared to be grabbing at his throat at least as early as frame 225,<sup>47</sup> about five seconds before being hit in the head. It is therefore reasonable to assume that the throat wound was not caused by a fragment of bone or metal exiting from the fatal head wound.

The most likely possibility—that the throat wound was caused by a shot fired from the front—is consistent with the statements of Parkland Hospital doctors, the only medical personnel to see the wound. Their statements were reported in press accounts and in testimony before the Commission.

#### a) *"How could the President have been shot in the front from the back?"*

Veteran reporter Tom Wicker talked with doctors on the day of the assassination:

. . . Dr. Malcolm Perry, an attending surgeon, and Dr. Kemp Clark, chief of neurosurgery at Parkland Hospital, gave more details. Mr. Kennedy was hit by a bullet in the throat, just below the Adam's apple, they said. This wound had the appearance of a bullet's entry. . . .<sup>48</sup>

Early news reports are not always accurate, and it is possible that accounts written in the hectic hours immediately after the assassination might contain errors. It was four days after the assassination, however, when another veteran reporter, John Herbers, supported his colleague:

Dallas, Nov. 26 . . . Dr. Kemp Clark, who pronounced Mr. Kennedy dead, said one [bullet] struck him about the necktie knot. "It ranged downward in his chest and did not exit," the surgeon said.<sup>49</sup>

In the same issue of The New York Times that carried Herbers' story another item appeared. It cited "informed sources" explaining the frontal entry wound in terms of Oswald firing on the motorcade while it was still on Houston Street, before it made the better-than-90-degree turn into Elm.<sup>50</sup>

The "informed sources" quoted by the Times four days after the assassination and the autopsy, explained the Parkland doctors' analysis of an entry wound in the throat by concluding that it was inflicted while the motorcade was still on Houston Street. At that time, of course, the Presidential car was *facing* the Texas School Book Depository, where the alleged sole assassin was firing.

But Life magazine, which had bought the original Zapruder film, soon knew better. The film showed that the President's

car had already turned onto Elm and was over 100 feet past the Book Depository (and approaching the Grassy Knoll) when the first wound was inflicted. (Life at first attempted an awkward explanation to support the Oswald-firing-from-the-rear thesis of the Commission,<sup>51</sup> but has now joined with earlier critics in asking for a reopening of the investigation.)

Nine days after the assassination, the St. Louis Post-Dispatch carried a story by renowned reporter Richard Dudman under the headline, "Uncertainties Remain Despite Police View of Kennedy Death." The subhead was, "Position of Wound Is Puzzling—Did Assailant Have an Accomplice?"

Dudman wrote: *The strangest circumstance of the shooting, in this reporter's opinion, is the position of the throat wound, thought to have been caused by the first of two shots that struck Mr. Kennedy. Surgeons who attended him at Parkland Hospital described it as an entrance wound. . . . The question that suggests itself is: How could the President have been shot in the front from the back? Dr. Perry described the bullet hole as an entrance wound. Dr. McClelland told the Post-Dispatch: "It certainly did look like an entrance wound." He explained that a bullet from a low velocity rifle like the one thought to have been used characteristically makes a small entrance wound, sets up shock waves inside the body and tears a big opening when it passes out the other side.*

*Dr. McClelland conceded that it was possible that the throat wound marked the exit of a bullet fired into the back of the President's neck . . . "but we are familiar with wounds," he said. "We see them every day—sometimes several a day. This did appear to be an entrance wound."*<sup>52 53 54 55</sup>

Seventeen days earlier, on December 18, the Post-Dispatch carried the headline, "Secret Service Gets Revision on Kennedy Wound," with the subhead, "After Visit by Agents, Doctors Say Shot Was from the Rear." The story read, in part:

*Two Secret Service agents called last week on Dallas surgeons who attended President Kennedy and obtained a reversal of their original view that the bullet in his neck entered from the front.*

*The investigators did so by showing the surgeons a document described as an autopsy report from the United States Naval Hospital at Bethesda. The surgeons changed their original view to conform with the report they were shown.*

"There was no coercion at all," Dr. Robert N. McClelland told the Post-Dispatch. "They didn't say anything like 'This is what you think, isn't it?'"

*The surgeons' earlier description of a wound in the front of the President's throat as an entry wound had cast doubt on the official belief that Lee Harvey Oswald was the only assassin. . . . The surgeons now support the official view that both bullets that struck the President were from behind. . . . They now believe that the bullet in the neck entered from the back. . . and passed out through the hole in front, about two inches below the Adam's apple.*<sup>56</sup>

#### b) The Parkland Doctors' Testimony

Because the outlines of the frontal throat wound were destroyed by an emergency tracheotomy performed in an attempt to revive the President, the only persons able to see the original throat wound were the staff at Parkland Hospital.

Let us examine their testimony:

DR. MALCOLM PERRY: "The wound was roughly spherical to oval in shape, not a punched-out wound, actually, nor was it particularly ragged. It was rather clean cut, but the blood

obscured any detail about the edges of the wound exactly."<sup>58</sup>

DR. ROBERT MCCLELLAND: ". . . if I saw the wound in its state in which Dr. Perry described it to me, I would probably initially think this were an entrance wound. . . ."<sup>59</sup>

DR. RONALD JONES: "The hole was very small and relatively clean cut, as you would see in a bullet that is entering rather than exiting from a patient."<sup>60</sup>

DR. CHARLES BAXTER: "Judging from the caliber of the rifle that we later found or became acquainted with, this would more resemble a wound of entry."<sup>61</sup>

REGISTERED NURSE MARGARET HENCHLIFFE also thought it was an entrance wound. She testified that she had never seen an exit bullet hole that looked like that one.<sup>62</sup>

The Parkland staff clearly showed, by their testimony, that they observed the throat puncture to have all the characteristics of an entrance wound (small, clean cut) and none of the characteristics of the usual type of exit wound (large, jagged edges). But Commission Counsel Specter was not content to hear testimony on what the only doctors who had seen it observed of the wound. In his questioning, he asked each of them to assume that the bullet had traversed from back to front through the President via a "fascia channel" (fascia are thin tissue membranes that connect muscle), undeflected, without wobble or yaw. The doctors were then asked to express an opinion, based on that type of passage, as to whether the throat puncture was consistent with an exit wound.

Typical was Specter's questioning of Dr. James Carrico: *Permit me to add some facts which I shall ask you to assume as being true for purposes of having you express an opinion. First of all, assume that the President is struck by a . . . bullet from a rifle . . . at a time when the President was approximately 160 to 250 feet from the weapon [Oswald's range], with the President being struck from the rear at a downward angle of approximately 45 degrees [Specter here seems to accept the angle cited in the FBI Summary Report, instead of the angle of about 15 degrees shown in the artist's drawing—Commission Exhibit 385—which accompanies the autopsy report; this 45 degree angle would render the pass-through theory just that much more ridiculous], being struck on the upper right posterior thorax [near the base of the neck]. . . . Assume further that the missile passed through the body of the President striking no bones, traversing the neck and sliding between the large muscles in the posterior aspect of the President's body through a fascia channel . . . then exiting precisely at the point where you observe the puncture wound to exist. Now based on those facts, was the appearance of the wound in your opinion consistent with being an exit wound?*<sup>63</sup>

Dr. Carrico responded: *With those facts, and the fact as I understand it no other bullet was found, this would be . . . I believe . . . an exit wound.*<sup>64</sup>

Dr. Perry, who had given the vivid description of an entry-type wound quoted above, responded to similar questioning ". . . with the facts which you have made available and with these assumptions, I believe that it was an exit wound."<sup>65</sup>

It is obvious that such yanked-from-mouth testimony cannot be taken seriously as independent medical opinion—when, questioned on whether the wound was caused by an entry or an exit, the doctors are asked to assume the wound to be an exit to begin with. Norman Redlich, who wrote chapter three of the Warren Report, made liberal use of such testimony, safely out of context, to support the conclusion that the throat puncture was an exit wound.



Some of the Parkland doctors, however, gave more argumentative answers to Specter's leading questions.

Dr. Charles Baxter testified: *Although it would be unusual for a high velocity missile of this type to cause a wound as you have described, the passage through tissue planes . . . could have well resulted in the sequence which you outline; namely, that the anterior wound does represent a wound of exit . . . . It would be unlikely because . . . the further it went, the more jagged would be the damage that it created; so that ordinarily there would have been a rather large wound of exit.*<sup>66</sup>

Dr. Ronald Jones was highly dubious of the Commission's thesis, but assented with one important condition:

DR. JONES: *If this were an exit wound, you would think that it exited at a very low velocity to produce no more damage than this had done, and if this were a missile of high velocity, you would expect more of an explosive type of exit wound, with more tissue destruction than this appeared to have on superficial examination.*

SPECTER: *Would it be consistent, then with an exit wound but of low velocity, as you put it?*

DR. JONES: *Yes; of very low velocity to the point that you might think that this bullet barely made it through the soft tissues and just enough to drop out of the skin on the opposite side.*<sup>67</sup>

Dr. Jones' testimony is of singular importance. His condition for conceding that the throat wound may have been a wound of exit—that the bullet had to be traveling so slowly as to “barely make it through”—precludes the possibility that it subsequently went through Connally. It could not, then, be the same bullet that hit Connally and smashed ten centimeters of his fifth rib, fractured his right wrist, and went on to wound his thigh. By this criterion, even if the bullet defied all the evidence and passed through Kennedy it would not have possessed sufficient energy to cause any of Connally's wounds.

The Zapruder film shows that the President had his back to the Texas School Book Depository throughout the assassination sequence, and that at the time the throat wound was believed to have been inflicted, he was facing slightly to his right. This position is consistent with the strong evidence that

the throat puncture was a wound of entry.

There was at least one gunman firing from the front. There were at least three assassins.

#### [5. THE 64 WITNESSES INDICATING FIRING FROM THE GRASSY KNOLL AREA]

An estimated 32 known witnesses indicated that shots were fired from the Book Depository,<sup>67-A</sup> an observation consistent with the strong evidence that at least two gunmen were firing from somewhere to the rear of the motorcade.

By the same token 64 known witnesses indicated that shots originated from forward of the motorcade, from the vicinity of the Grassy Knoll, lending further credence to the physical evidence that President Kennedy was hit from the right front. At least four persons saw smoke in the Knoll area, several smelled smoke there, and a healthy majority of witnesses heard the sound of shots coming from the Knoll. Yet the Commission was able to conclude: . . . *There is no question in the mind of any member of the Commission that all the shots . . . were fired from the sixth floor window of the Texas School Book Depository . . . . There is no credible evidence that the shots were fired . . . from any other location.*<sup>67-B</sup>

One reason for the Commission's apparent ignorance of this impressive body of evidence is their consistent failure to call witnesses who indicated, in statements to sheriff's deputies or the FBI, that they thought shots came from the Knoll. For example, photographs show approximately 20 persons standing with their backs to the Knoll, facing the Presidential motorcade, at the time of the assassination. Of these, 12 were interviewed by the sheriff's department or the FBI, 10 of whom thought the shots had come from the Knoll directly behind them. Only two were called to testify before the Commission.

Photographs and documents show more than 100 more witnesses to the event than were interviewed by any investigative agency, let alone the Commission. To call them all, said one member of the Commission staff, would have been “redundant.”

#### A. WITNESSES STANDING ON THE TRIPLE OVERPASS:

A1. SAM HOLLAND, railroad signal supervisor for the Union Terminal, was standing on the Triple Overpass inspecting signals and switches when he stopped to watch the parade. He said in a sworn affidavit on the day of the assassination:

*. . . The President's car was . . . just about to the arcade [when] I heard what I thought for the moment was a firecracker . . . and I looked over towards the arcade and trees and saw a puff of smoke come from the trees. . . . The puff of smoke I saw definitely came from behind the arcade and through the trees.*<sup>68</sup>

What Holland calls the “arcade”—also called by other witnesses the “monument”—is a structure on the Grassy Knoll.

Testifying later before the Commission, Holland reiterated:

*I have no doubt about seeing that puff of smoke come out from under those trees. . . . I definitely saw the puff of smoke and heard the report from under those trees.*<sup>69</sup>

In his lengthy and detailed testimony, Holland tells about “two policemen that were riding in that motorcade and one of them threw the motorcycle down right in the middle of the street and run towards that location with his gun in his hand.” They were heading, he said, toward “where I saw the puff of smoke. And another one tried to ride up the hill on his motorcycle and got halfway up there and he run up the rest of the way on foot.”<sup>70</sup>

Holland advised the Commission that he immediately ran to the corner of the fence near the arcade and that by the time he arrived there were 12 or 15 policemen and people he surmised to be plainclothesmen. He said that among the other cars

backed up to the fence was a station wagon with mud on the bumper “as if someone had cleaned their foot, or stood up on the bumper to see over the fence.” On the grass by the station wagon was “a spot, I'd say three foot by two foot, looked to me like somebody had been standing there for a long period. I guess if you could count them about a hundred foottracks in that little spot and also mud up on the bumper of that station wagon.”<sup>71</sup>

A2. FRANK REILLY, electrician for the Union Terminal, standing with Holland on the Overpass, told the Commission: “It seemed to me like the shots come out of the trees. . . . On the north side of Elm Street at the corner up there. . . . at that park where all the shrubs is up there . . . up the slope.”<sup>72</sup>

A3. JAMES SIMMONS, railroad employee standing on the Triple Overpass, was inter-

viewed by the FBI. An FBI report states: *Simmons said he thought he saw exhaust fumes of smoke near the embankment. . . .*<sup>73</sup>

A4. CLEMON JOHNSON, machinist for the railroad, standing on the Triple Overpass, was interviewed by the FBI (never by the Commission). An FBI report says: "Mr. Johnson stated that white smoke was observed near the pavilion."<sup>74</sup>

A5. AUSTIN L. MILLER, mail clerk and tariff compiler for the Texas-Louisiana Freight Bureau located in Union Terminal, was standing on the railroad overpass. He testified:

*I turned and looked toward the—there is a little plaza sitting on the hill. I looked over there to see if anything was there, who threw the firecracker or whatever it was. . . .*<sup>75</sup>

Miller also swears in a sheriff's department affidavit: "One shot apparently hit the street past the car. I saw something which I thought was smoke or steam coming from a group of trees north of Elm off the railroad tracks."<sup>76</sup>

#### B. WITNESSES STANDING ON THE GRASSY KNOLL

B6. ABRAHAM ZAPRUDER, who was filming the assassination sequence from a concrete abutment extending from the pavilion, testified to Assistant Commission Counsel Wesley Liebeler:

LIEBELER: . . . you say the police ran over behind the concrete structure behind you and down the railroad track behind that, is that right?

ZAPRUDER: . . . 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.<sup>77</sup>

Zapruder said his initial impression was that "it came from back of me," but he added that he could not be positive because "there was too much reverberation. There was an echo which gave me a sound all over."<sup>78</sup> Later in his testimony the following exchange took place:

ZAPRUDER: . . . they claim it was proven it could be done by one man. You know there was an indication there were two?

LIEBELER: Your films were extremely helpful to the work of the Commission, Mr. Zapruder.<sup>79</sup>

B7. MARY WOODWARD, MAGGIE BROWN, AURELIA LORENZO and ANN DONALDSON, four newspaperwomen watching the motorcade from the sidewalk near the east end of the pavilion, said they heard ". . . a horrible, ear-shattering noise coming from behind us and a little to the right."<sup>80</sup>

B8. JEAN NEWMAN, who was standing halfway between the Stemmons Freeway

sign (about halfway down the Elm Street slope) and the Depository, facing the motorcade, said in a sheriff's department affidavit: ". . . the shots came from my right"<sup>81</sup> (the Depository was to her left).<sup>82</sup>

B9. JOHN ARTHUR CHISM swore in his sheriff's department affidavit: "I was standing with my wife and three year old boy, we were directly in front of the Stemmons Freeway sign. . . . At this point [just after the second shot was fired], I looked behind me, to see whether it was a fireworks display or something."<sup>83</sup> Behind Chism was the Grassy Knoll.

B10. MARVIN FAYE CHISM, his wife, said in her affidavit: "It came from what I thought was behind us."<sup>84</sup> The Chisms were not called to testify before the Commission.

B11 and B12. MR. and MRS. WILLIAM NEWMAN were standing near the curb with their two children, further down from the Stemmons Freeway sign, directly in front of the concrete wall on the Grassy Knoll. In William Newman's sheriff's department affidavit, filed within hours after the shooting, he swears:

*I was looking directly at him when he was hit in the side of the head. . . . Then we fell down on the grass as it seemed that we were in direct path of fire. . . . I thought the shot had come from the garden directly behind me, that was on an elevation from where I was as I was right on the curb. I do not recall looking towards the Texas School Book Depository. I looked back in the vicinity of the garden.*<sup>85</sup>

Mrs. Gayle Newman supported her husband's testimony. Neither was called by the Commission.

B13. EMMETT HUDSON, caretaker of Dealey Plaza, was a few feet past the Newmans, standing on the steps that ascend the Grassy Knoll. In his sheriff's department affidavit filed that afternoon, he swears: ". . . I was sitting on the front steps of the sloping area and about half way down the steps. . . . The shots that I heard definitely came from behind and above me."<sup>86 87</sup>

B14. A. J. MILLICAN, standing on the north side of Elm Street, about halfway between Houston Street and the underpass on the Grassy Knoll, states in his deposition:

*Just after the President's car passed, I heard three shots come from up towards Houston and Elm right by the Book Depository Building and then immediately I heard two more shots come from the Arcade between the Book Store and the underpass, and then three more shots came from the same direction only sounded further back. It sounded approximately like a .45 automatic, or a high powered rifle. Then everybody started running up the hill.*<sup>88</sup>

#### C. WITNESSES STANDING IN DEALEY PLAZA

C15. RONALD B. FISHER, standing on the curb at the southwest corner of Houston and Elm (the Texas School Book Depository is on the northwest corner; the Presidential car was heading west) during the assassination, was questioned by Commission Counsel David W. Belin:

BELIN: *Where did the shots appear to be coming from?*

FISHER: . . . *from just west of the School Book Depository Building. There were some railroad tracks and there were some railroad cars back in there.*

BELIN: *And they appeared to be coming from those railroad cars?*

FISHER: *Well, that area somewhere. . . . We ran up to the top of the hill there where all the Secret Service men had run, thinking that that's where the bullets had come from since they seemed to be searching that area over there.*<sup>89</sup>

C16. MRS. JEAN HILL, school teacher and companion of Mrs. Mary Moorman, was standing on the curb of Dealey Plaza directly opposite the concrete wall on the Knoll—as close to the Presidential limousine as any other witness before the Commission. She testified:

*We were standing on the curb and I jumped to the edge of the street and yelled, "Hey, we want to take your picture!" . . . The shot rang out. Mary took the picture and fell to the ground and I . . . grabbed my slacks and said, "Get down, they're shooting. . . ." I have always said there were some four to six shots. There were three shots—one right after the other, and a distinct pause . . . and then I heard more. . . . They were rather rapidly fired. . . . I think there were at least four or five shots and perhaps six. . . .*<sup>90</sup>

*I frankly thought they were coming from the Knoll. . . . I thought it was just people shooting from the Knoll. . . . I did think there was more than one person shooting . . . the way the gun report sounded . . . the timing. . . .*<sup>91</sup>

*The [first] three were fired as though one person were firing . . . just like you could reload and fire again. . . . I thought they [the rest of the shots] were different—I thought the sequence was quicker . . . more automatic.*<sup>92</sup>

Mrs. Hill testified that she had talked to a Secret Service man on the afternoon of the assassination, and that she had asked him, "Am I a kook or what's wrong with me? . . . They keep saying three shots—three shots . . . I know I heard more. I heard from four to six shots anyway." She testified that the Secret Service man replied, "Mrs. Hill, we were standing at the window and we heard more shots also, but we have three wounds and we have three bul-

lets [an apparent reference to the three spent shells found on the sixth floor of the Depository], three shots is all that we are willing to say right now."<sup>93</sup>

As soon as the motorcade passed, Mrs. Hill testified, she saw:

*... a man up there running, or getting away ... at the tip of the slope.*"<sup>94</sup>

Commission Counsel Arlen Specter had Mrs. Hill indicate the location of the running man on a hand-drawn sketch. The sketch appears in the hearings as "Hill Exhibit 5." It is stamped with the notation, "TOP SECRET."<sup>95</sup> Nobody knows why.

Within hours of the shooting, a local newsman, James Featherstone, instructed Mrs. Hill not to mention that she had seen the running man. She testified:

*He said, "You know you were wrong about seeing a man running." He said, "You didn't ..." and I said, "But I did," and he said, "No, don't say that any more on the air." ... He said ... that the shots had come from a window up in the Depository and for me not to say that any more, that I was wrong about it.*"<sup>96</sup>

C17. CHARLES BREHM told police reporter George Carter of The Dallas Times-Herald that he was standing on the curb approximately ten feet from the Presidential limousine when the shots struck. Carter wrote: "Brehm seemed to think the shots came from in front of or beside the President. He explained the President did not slump forward as he would have after being shot from the rear."<sup>97</sup>

#### D. WITNESSES IN OR IMMEDIATELY OUTSIDE THE DEPOSITORY

D18. WILLIAM SHELLEY, manager of the Depository, testified that he was on the top landing of the entrance watching the motorcade when he heard the shots:

BALL: *What seemed to be the direction or source of the sound?*

SHELLEY: *Sounded like it came from the west.*"<sup>98</sup>

The Oswald "nest," of course, was directly over Shelley's head. To the west of his position is the Grassy Knoll area.

D19. ROY S. TRULY, superintendent of the Depository, was standing in front of the building at the time of the shots. He joined a policeman, Marrión Baker, and showed him the way to the top of the Depository.

[Commission Counsel David] BELIN: *Where did you think the shots came from?*

TRULY: *I thought the shots came from the vicinity [of] the railroad or the WPA project, behind the WPA project west of the building [the reference is to the pavilion on the Knoll].*

BELIN: *Did you have any conversation with the officer ... about where you thought the shots came from?*

TRULY: *I said, "... I think we are wasting our time up here," or words to that effect, "I don't believe these shots came from the building."*"<sup>99</sup>

D20. OCHUS VIRGIL CAMPBELL, vice-president of the Depository, was standing next to Truly in front of the building. He gave an affidavit to the FBI:

*... I heard shots being fired from a point which I thought was near the railroad tracks located over the viaduct on Elm Street.*"<sup>100</sup>

D21. STEVEN F. WILSON, vice-president of a textbook publishing company, watched the motorcade from his corner office on the third floor of the Depository—three floors directly beneath the Oswald "nest." Wilson said in an FBI affidavit:

*At that time it seemed the shots came from the west end of the building or from the colonnade located on Elm Street across from the west end of our building. The shots really did not sound like they came from above me.*"<sup>101</sup>

D22. MRS. ALVIN HOPSON was looking out of a fourth floor window on the south side of the Depository, facing on Elm Street, during the assassination. Although she was never called by the Warren Commission, she was questioned by the FBI, which reported:

*She stated that it did not sound to her like the sounds were coming from her building. ... She stated she thought they had been set off on the street below, and she saw people on the street running toward the underpass and the railroad tracks.*"<sup>102</sup>

D23. MRS. CHARLES THOMAS (AVERY) DAVIS was standing on the steps of the Depository, where she worked, when she heard "three explosions." She told the FBI, "I did not know from which direction the shots had come, but thought they were from the direction of the viaduct which crosses Elm Street west from where I was standing."<sup>103</sup>

D24. DOROTHY ANN GARNER was watching the motorcade from a fourth floor window in the Depository when she heard the shots. She said in an FBI affidavit, "I thought at the time the shots or reports came from a point to the west of the building."<sup>104</sup>

D25. MRS. GEORGE ANDREW (DOLORES ARLENE) KOUNAS was outside the Depository, her place of employment, when she heard gunfire. She told the FBI:

*Although I was across the street from the Depository building and was looking in the direction of the building as the motorcade passed and following the shots, I did not look up at the building as I had thought the shots came from a westerly direction in the vicinity of the viaduct.*"<sup>105</sup>

D26. OTIS NEVILLE WILLIAMS, a book-keeping supervisor at the Depository, who

was standing on the steps of the building when the assassination occurred, told the FBI that he heard "three loud blasts" and that "I thought these blasts or shots came from the direction of the viaduct which crosses Elm Street."<sup>106</sup>

D27. VICTORIA ADAMS was watching from a pair of windows on the fourth floor of the Book Depository, where she worked. The alleged assassin's window was two floors above her and to her left; the Grassy Knoll was below and to her right. Testifying about the source of the shots, she said, "... It seemed as if it came from the right below rather than from the left above."<sup>107</sup>

D28. BILLY LOVELADY, an employee of the Depository who at the time of the assassination was standing on the steps at the entrance to the building, was questioned by Commission Counsel Joseph Ball:

BALL: *Where was the direction of the sound?*

LOVELADY: *Right there around that concrete little deal on that knoll.*"<sup>108</sup>

BALL: *How did you happen to go down there?*

LOVELADY: *... because everybody was running ... toward that way; everybody thought it was coming from that direction.*"<sup>109</sup>

Lovelady told the FBI, "I did not at any time believe the shots had come from the Texas School Book Depository Building."<sup>110</sup>

D29. DANNY ARCE, who was standing in front of the Depository, where he worked, testified: "I thought [the shots] came from the railroad tracks to the west" of the Depository."<sup>111</sup>

D30. WESLEY FRAZIER, the Depository employee who had driven Oswald to work that morning, was standing on the steps of the Depository building. He testified:

*Well, to be frank with you I thought it come from down there, you know, where that underpass is. There is a series, quite a few number, of them railroad tracks running together and from where I was standing it sounded like it was coming from down the railroad tracks there.*"<sup>112</sup>

D31. JOSEPH MOLINA was standing on the steps of the Depository building. He was interviewed by the Commission:

BALL: *Where—what was the source of the sound?*

MOLINA: *... sort of kind of came from the west side. ... I didn't want to think what was happening ... but I wanted to find out so I went down to where the grassy slope is.*"<sup>113</sup>

D32. MRS. DONALD BAKER, who had been standing at the southwestern corner of the Depository—at the end of the building nearest the Grassy Knoll—testified that she heard shots after the President's car passed the building.

LIEBELER: Did you have any idea where they were coming from?

MRS. BAKER: Well, the way it sounded . . . there was a railroad track that runs behind the building . . . so I guess it would be by the underpass . . . as well as I can remember now, back there, and we all ran to the plaza. . . .

LIEBELER: And you say there are some railroad tracks back in there . . . immediately behind Dealey Plaza away from Elm Street . . . and is that where you thought the shots came from?

MRS. BAKER: Yes.<sup>113</sup>

D33. JAMES JARMAN JR., a Depository employee, was on the fifth floor of the building watching the motorcade from the southeast windows. He thought the shots came from below, near the motorcade.<sup>114</sup>

Jarman was standing with two other employees, Bonnie Ray Williams and Harold Norman, both of whom testified that they heard shots from above them. Upon hearing the shots, however, the immediate reaction of all three men was to run to the west side of the building, not upstairs. "We saw the policemen and people running. . . . There are some tracks on the west side of the building, railroad tracks. They were running towards that way and so we all ran that way."<sup>115</sup>

Williams was later questioned by Commissioner Gerald Ford:

FORD: Why didn't you go up to the sixth floor?

WILLIAMS: I really don't know. We just never did think about it.<sup>116</sup>

#### E. MEMBERS OF THE DALLAS COUNTY SHERIFF'S DEPARTMENT

Because law enforcement officers are trained observers and familiar with firearms, the following sheriff's deputies, as well as Secret Service agents and Dallas police officers in the sections to follow, are being treated separately.

E34. E. L. BOONE was standing in front of the sheriff's office on Main Street at Houston, a block south of Elm. He raced across Houston Street when he heard shots coming from the vicinity of the President's car (only Dealey Plaza separated him from the car).

"Some of the bystanders said the shots came from the overpass," Boone said. "I ran across the street [Elm] and up the embankment [sic] over the retaining wall and into the freight yard. . . ."<sup>117</sup>

E35. HARRY WEATHERFORD, standing in the same place as Boone, said in his sworn affidavit:

. . . I heard a loud report which I thought was a railroad torpedo, as it sounded as if it came from the railroad yard. . . . By this time I was running to-

wards the railroad yards where the sound seemed to come from.<sup>118</sup>

E36. HAROLD E. ELKINS, who was also standing in front of the sheriff's office at the time of the shooting, declared in an investigation report:

I immediately ran to the area from which it sounded like the shots had been fired. This is an area between the railroads and the Texas School Book Depository. . . . There were several other officers in this area, and we secured it from the public. . . . Later a City of Dallas policeman came to our office with three prisoners who he had arrested on the railroad yards. I took these three to the city jail and turned them over to Captain Fritz.<sup>119</sup>

There is no mention in the Warren Report of who these men were, why they were arrested, or the disposition of their cases.

E37. SEYMOUR WEITZMAN was questioned by Commission Counsel Ball:

WEITZMAN: I immediately ran toward the President's car. Of course, it was speeding away and somebody said the shots or the firecracker, whatever it was at that time, we still didn't know the President was shot, came from the wall. I immediately scaled that wall.

BALL: What is the location of that wall?

WEITZMAN: It would be between the railroad overpass and I can't remember the name of that little street that runs off Elm; it's cater-corner—the section there between the—what do you call it?—the monument section?<sup>120</sup>

\* \* \*

BALL: Didn't you, when you went over to the railroad yard, talk to some yardman?

WEITZMAN: I asked a yardman if he had seen or heard anything during the passing of the President. He said he thought he saw somebody throw something through a bush. . . .

BALL: Did the yardman tell you where he thought the noise came from?

WEITZMAN: Yes, sir; he pointed out the wall section where there was a bunch of shrubbery. . . .<sup>121</sup>

E38. ROGER CRAIG was standing in front of the sheriff's office. "At the retort [sic] of the first shot," he stated, "I started running . . . up the terrace on Elm Street, and into the railroad yards."<sup>122</sup>

E39. A. D. MCCURLEY was also standing at the front entrance of the sheriff's office when the shots were fired. He said:

I rushed towards the park and saw people running towards the railroad yards . . . and I ran over and jumped a fence and a railroad worker stated to me that he believed the smoke from the bullets came from the vicinity of a stockade fence which surrounds the park area.<sup>123</sup>

E40. J. E. DECKER is the sheriff of Dallas

County. He was riding in a car immediately ahead of the President's car.

I noted motorcycle officers coming off their cycles and running up the embankment. . . . I took the microphone and requested the [Dallas Police Department dispatcher] to notify all officers in my department to immediately get over to the area where shooting occurred and saturate the area of the park. . . .<sup>124</sup>

The "park" referred to by Sheriff Decker is the Grassy Knoll.

E41. J. L. OXFORD reported that shots rang out as the end of the motorcade passed in front of him. He declared:

Officer McCurley [E39, above] and myself ran across Houston Street on across Elm and down to the underpass. When we got there, everyone was looking toward the railroad yards. . . . When we got over there, there was a man who told us that he had seen smoke up in the corner of the fence. We went on up to the corner of the fence to see what we could find. . . .<sup>125</sup>

E42. LUKE MOONEY was another deputy who was standing in front of the sheriff's office when he heard the shots. "I started running across Houston Street and down across the lawn to the triple underpass," he stated, "and up the terrace to the railroad yards. I searched, along with many other officers, this area. . . ."<sup>126</sup>

E43. JACK FALKNER, a deputy who later helped to search the Depository, said in his investigative report:

When we got down to the third floor, we talked to office workers who told us they were looking out of the third floor window when the shots were fired from the street near the concrete arcade.<sup>127</sup>

E44. I. C. TODD, watching the motorcade from Houston Street, said that after hearing the shots he "immediately recognized them as being gunfire. I ran across the street and went behind the railroad tracks. . . ."<sup>128</sup>

E45. JAMES N. CRAWFORD, deputy district clerk at the Dallas County Courthouse, watched the motorcade from the corner of Houston and Elm. He was questioned by Commission Counsel Joseph Ball:

BALL: Did you have any impression as to the source of the sound, from what direction the sound came, the sound of the explosions?

CRAWFORD: Yes; I do . . . I thought it was a backfire in the cavalcade from down the hill, down the hill toward the underpass.<sup>129</sup>

#### F. SECRET SERVICE AGENTS

F46. ROY KELLERMAN was the Secret Service agent for the President. He was riding in the right front seat of the President's car. He testified before the Commission:

... there was a sign on the side of the road which I don't recall what it was or what it said, but we no more than passed that and you are out in the open. . . .<sup>130</sup>

\* \* \*

SPECTER: You say that you turned to your right immediately after you heard a shot?

KELLERMAN: Yes, sir.

SPECTER: What was the reason for your reacting to your right?

KELLERMAN: That was the direction I heard this noise, pop.<sup>131</sup>

The sign to which Kellerman referred was probably the Stemmons Freeway sign mentioned in other testimony and shown in the Zapruder film. Directly to Kellerman's right at the moment the gunfire sounded was the Grassy Knoll.

F47. CLINTON HILL was riding in the Presidential follow-up car with fellow Secret Service agent Emory Roberts. At the time of the shooting, the Depository was to the rear of their vehicle; the Grassy Knoll was on the right. Hill was also questioned by Commission Counsel Specter:

SPECTER: And did you have a reaction or impression as to the source or point of origin of the second shot that you described?

HILL: It was right, but I cannot say for sure that it was rear, because when I mounted the car it was—it had a different sound, first of all, than the first sound that I heard. The second one had almost a double sound. . . .<sup>132</sup>

F48. EMORY ROBERTS was riding in the front seat of the follow-up car directly behind the President. He stated, "I could not determine from what direction the shots came, but felt they had come from the right side."<sup>133</sup>

F49. PAUL LANDIS JR. was riding in the right rear of the follow-up car. He recalled: "... I heard what sounded like the report of a high powered rifle from behind me, over my right shoulder." An estimated two or three seconds later, Landis heard another shot. "I still was not certain from which direction the second shot came," he related, "but my reaction at this time was that the shot came from somewhere towards the front, right-hand side of the road."<sup>134</sup>

F50. FORREST SORRELS, head of the Dallas office of the Secret Service, was riding in the lead car of the motorcade. Almost at the Triple Underpass when the shots rang out, he testified that he "... turned around to look up on this terrace part there, because the sound sounded like it came from the back and up in that direction."<sup>135</sup>

#### G. DALLAS POLICE OFFICERS

G51. JESSE CURRY, the chief of police, spoke over the police radio at 12:30 p.m.:  
Notify station five to move all men

available out of my department back into the railroad yards and try to determine what happened and hold everything secure until Homicide and other investigators can get in there.<sup>136</sup>

G52. ROBERT HARGIS, the motorcycle patrolman riding escort at the left rear of the Presidential car:

... At the time it sounded like the shots were right next to me. . . . There was something in my head that said that they probably could have been coming from the railroad overpass, because I thought since I had got splattered, with blood—I was just a little back and left of. . . . Mrs. Kennedy, but I didn't know. . . . I ran up to this kind of a little wall, brick wall up there to see if I could get a better look on the bridge, and, of course, I was looking all around that place by that time.

Hargis then jumped back on his motorcycle and "rode underneath the first underpass to look on the opposite side in order to see if I could see anyone running away from the scene. . . ."<sup>137</sup>

G53. CLYDE HAYGOOD, the motorcycle policeman riding to the right rear of the Presidential car, was just turning the corner from Houston onto Elm when he heard shots:

... I could see all these people laying on the ground there on Elm. Some of them were pointing back up to the railroad yard, and a couple of people were headed back up that way. . . . And I left my motor on the street and ran to the railroad yard.<sup>138</sup>

G54. E. L. SMITH, who at the time of the shots was standing cater-corner from the Depository, testified to the Commission:

I thought when it came to my mind that there were shots, and I was pretty sure there were when I saw his [President Kennedy's] car because they were leaving in such a hurry, I thought they were coming from this area here [the Grassy Knoll area], and I ran over there and checked back of it. . . .<sup>139</sup>

G55. J. M. SMITH was standing at Houston and Main when he heard the shots. He testified, "... This woman came up to me and she was just in hysterics. She told me, 'They are shooting the President from the bushes.'"<sup>140</sup> Smith said he ran past the Depository, up the Grassy Knoll and into the parking lot behind. In a newspaper interview he said that he smelled gunpowder there, a "faint smell of it—I could tell it was in the air."<sup>141</sup>

G56. EARLE BROWN, on duty at a railroad overpass directly behind the railroad yards, testified, "I heard these shots and then I smelled this gunpowder."<sup>142</sup>

#### H. WITNESSES RIDING IN THE MOTORCADE

H57. ROBERT JACKSON, a staff photog-

rapher for The Dallas Times-Herald who rode in the motorcade, testified:

It did sound like it came from ahead of us or from that general vicinity but I could not tell whether it was high up or on the ground. . . . It did sound as though it came from somewhere around the head of the motorcade.<sup>143</sup> Jackson also saw a rifle being withdrawn from a window of the Depository.

H58. MRS. JOHN CONNALLY, wife of the governor and a passenger in the Presidential limousine, testified, "I had no thought of whether they were high or low or where. They just came from the right; sounded like they were to my right."<sup>144</sup> Directly to Mrs. Connally's right was the Grassy Knoll.

H59. MALCOLM COUCH, Dallas TV news cameraman who rode in the motorcade, was questioned by Commission Counsel David Belin:

BELIN: Is there any particular reason, Mr. Couch, why you didn't take your first pictures of the School Book Depository Building itself when you say you saw a rifle being withdrawn?

COUCH: . . . The excitement on the ground . . . the activity on the ground kept my attention. . . . All the policemen had their pistols pulled. And people were pointing back around those shrubs. . . . You would think there was a chase going on in that direction.<sup>145</sup>

H60. DAVID POWERS, a Presidential aide in the right side jump seat of the follow-up car, said in an affidavit:

My first impression was that the shots came from the right and overhead, but I also had a fleeting impression that the noise appeared to come from the front in the area of the Triple Overpass. This may have resulted from my feeling, when I looked forward toward the overpass, that we might have ridden into an ambush.<sup>146</sup>

#### I. OTHER WITNESSES

I61. LEE BOWERS, towerman for the Union Terminal Company, was at work in a railroad tower 14 feet high, located just north of the Grassy Knoll behind the curving railroad tracks. He tells of three cars that slowly cruised the area during the half hour before the shooting.

Two had out-of-state plates, he said, and a third, a 1957 black Ford, had "one male in it that seemed to have a mike or telephone. . . . He was very close to the tower. I could see him. . . ."

The last Bowers saw of another of the cars, "... he was pausing . . . just above the assassination site. . . . At the moment I heard the sound, I was looking directly towards the area. . . . At the time of the shooting there seemed to be some commotion. . . . I just am unable to describe rather than it was something out of the or-

dinary, a sort of milling around, but something occurred in this particular spot which was out of the ordinary, which attracted my eye for some reason, which I could not identify.<sup>147</sup>

162. JAMES TAGUE, an automobile salesman standing on the south side of Main Street near the mouth of the Triple Underpass watching the parade, was wounded in the cheek after a bullet struck the curb near him. He told the Commission:

*My first impression was that up by the, whatever you call the monument . . . somebody was throwing firecrackers up there. . . . When I saw the people throwing themselves on the ground is when I realized there was serious trouble. . . ."*<sup>148</sup>

163. J. C. PRICE had been standing on the roof of the Terminal Annex Building. He said in a sheriff's deposition:

*. . . There was a volley of shots, I think five. . . . I saw one man run towards the passenger cars on the railroad siding after the volley of shots. . . . He had something in his hand. I couldn't be sure but it may have been a head piece.*<sup>149</sup>

164. ARNOLD ROWLAND, who at the time of the shooting was standing with his wife in front of the Dallas Courthouse, about 150 feet from the corner of Main and Houston Streets, gave his impression of the point of origin of the first shot:

*I didn't look at the building mainly, and as practically any of the police officers*

*that were there then will tell you, the echo effect was such that it sounded like it came from the railroad yards. That is where I looked, that is where all the policemen, everyone, converged on the railroads. . . .*

SPECTER: *Why did you not look back at the Texas School Book Depository Building in view of the fact that you had seen a man with a rifle up there earlier in the day?*

ROWLAND: *. . . It was mostly due to . . . the fact that it sounded like it came from this area [indicating the Triple Underpass on Commission Exhibit 354] and that all the officers, enforcement officers, were converging on that area and I just didn't pay any attention to it at that time.*<sup>150</sup>

## Recapitulation:

We have presented two separate bodies of evidence, each of which adds another gunman to the single assassin posited by the Commission. From this, we have concluded that there were at least three assassins firing, and that President Kennedy was caught in a crossfire on November 22.

ONE BODY OF EVIDENCE shows that someone was firing on the motorcade from the rear in addition to the gunman firing the Italian bolt-action rifle.<sup>151</sup>

1] Both Kennedy and Governor Connally, as the Commission concluded, were struck from the rear in less time than the minimum time needed to fire the alleged murder weapon twice.

2] The Commission's attempt to prove the existence of a single assassin by showing that one bullet fired from the rear struck both men, collides with the evidence:

a] Evidence now available shows that the bullet entered the President's back at a point lower than that posited by the Commission. Further, there is no conclusive evidence that it left a continuous path through the President's body, or that it exited at his throat.

b] Testimony of Governor and Mrs. Connally, together with study of the Zapruder film, shows that he and President Kennedy were hit from the rear by separate bullets.

c] The Commission's own experts contradicted the Commission thesis that a bullet (Exhibit 399), discovered un mutilated on a stretcher in Parkland Hospital, caused all the wounds of Governor Connally.

3] One bullet fired from the rear did not pass through President Kennedy and then go on to cause all of Connally's wounds. Wounded within less than 2.3 seconds of each other, they were hit by separate bullets. There were at least two assassins firing from the rear.<sup>151</sup>

A SECOND BODY OF EVIDENCE shows that at least one gunman was firing from a position forward of the motorcade.

1] Study and measurement of the Zapruder film shows the President's head snapping sharply back and to the left, consistent with a shot fired from the right front, where the Grassy Knoll is situated. For the fatal shot to have been fired from the rear would violate Newton's law of conservation of momentum—barring a highly improbable neuromuscular reaction sufficiently strong to overcome any trace of the impact of a bullet traveling 1300 miles an hour.

2] Medical testimony of the Parkland doctors shows a wound of exit on the right rear portion of the President's head, consistent with a shot fired from the front.

3] Medical testimony of the Parkland staff, the only doctors to view the bullet hole in the President's throat before it was obliterated by the tracheotomy, shows that based on the appearance of the wound, it was a wound of entry—consistent with a shot from the front.

4] Testimony of 64 witnesses to the assassination shows that shots originated from forward of the motorcade, from the area of the Grassy Knoll. Witnesses saw smoke rising from the Knoll area, heard the sound of gunfire coming from the Knoll, and smelled smoke behind the Knoll.

THESE TWO ARGUMENTS are logically independent of each other. The validity of either adds one gunman to the Commission's version of the assassination. If either argument could be proved invalid, it would not affect the validity of the other.

We feel the evidence is persuasive that there were at least three gunmen firing at the Presidential motorcade in Dallas. And we feel that a thorough re-investigation should be launched immediately—with the full resources of the United States government and private citizens at its disposal—to discover the identity of the three or more assassins, and the identity of those who planned the crime and ordered its execution.

## Footnotes to Part II:

- 1—XVIII, 1-80.
- 2—XVII, 901.
- 3—WR 115.
- 4—WR 19.
- 5—WR 109.
- 6—WR 109.
- 7—Thomas Stamm, unpublished treatise; italics in original.
- 8—V, 169.
- 9—The rate of change of momentum is proportional to the impressed force, and is in the direction in which the force acts. (Note by Dr. Riddle)
- 9A—We must be careful how we apply these principles. It is only in cases where the impact is with bone, i.e. a rigid part of the body, that a definite statement of the resulting motion can be made. This is true of the present case, but not, for example, of a hit in the stomach. (Note by Dr. Riddle)
- 9B—J. Edgar Hoover has acknowledged that two of these film frames, 314 and 315, were transposed in publication in Volume XVIII. (Note by Dr. Riddle)
- 10—The initial motion of the head (frames 312-313) is consistent with a bullet fired from an elevation of about 25 degrees or more from the direction we have postulated, since this would cause a turning motion about the neck in the direction observed. (Note by Dr. Riddle)
- 11—"Mrs. Connally heard a second shot fired and pulled her husband down into her lap. . . . The governor was lying with his head on his wife's lap when he heard a shot hit the President. At that point, both Governor and Mrs. Connally observed brain tissue spattered over the interior of the car. According to Governor and Mrs. Connally, it was *after* this shot that Kellerman issued emergency instructions and the car accelerated." (WR 50) Note that no other testimony relating to this point is adduced in the Report. The Commission apparently accepted the testimony of the Governor and his wife on this point as accurate and factual. See also testimony of Clint Hill, Secret Service agent who jumped on the back of the President's car, about the sudden acceleration of the car: ". . . the initial surge was quite violent, because it almost jerked me off the left rear step-board." (II, 141) Lyndal Shaneyfelt, the FBI photo expert, testified: ". . . I examined the Zapruder film and determined that Agent Hill first places his hand on the Presidential car at frame 343. This is approximately 1.6 seconds after the President is hit in the head at frame 313. Special Agent Hill placed one foot on the bumper of the car at frame 368, which is approximately three seconds after frame 313. Agent Hill had both feet on the car at frame 381, which is approximately 3.7 seconds after frame 313." (XV, 699) The testimony of Hill and Shaneyfelt, taken together, clearly establishes that the car did not accelerate until several seconds after the fatal head shot. (Note by Dr. Riddle)
- 12—Even if the bullet impacted in such a way as to cause a turning motion of the head, we would expect to see *some* forward motion before the head is completely turned (see footnote 9); we see only a backward motion. (Note by Dr. Riddle)
- 13—R. A. J. Riddle, private study conducted for Ramparts; previously unpublished.
- 14—VI, 56; italics added.
- 15—VI, 33.
- 16—VI, 40-41.
- 17—VI, 20.
- 18—VI, 11.
- 19—VI, 65.
- 20—VI, 136.
- 21—II, 141.
- 22—WR 538-43.
- 23—WR 86.
- 24—VI, 136.
- 25—VI, 48, 71, 74, 11, 25, 35, 42; II, 128.
- 26—XVIII, 731.
- 27—XVIII, 765; italics added.
- 28—XIX, 490; italics added.
- 29—XVIII, 801.
- 30—XX, 353.
- 31—II, 81. Kellerman's first observation was of the gaping (exit) wound in the right rear portion of the head, which he described as "to the left of the [right] ear . . . and a little high." The President's body was face down when Kellerman made this observation. Clearly, he is measuring leftward from the right ear. Kellerman went on to say, "Entry into this man's head was right below that wound, right here." SPECTER: "Indicating the bottom of the hairline immediately to the right of the [right] ear about the lower third of the ear? . . ." KELLERMAN: "Right . . ." SPECTER: "What was the size of that aperture?" KELLERMAN: "The little finger." Again, it is apparent that Kellerman is measuring from the right ear.
- 32—WR 542.
- 33—Commission Exhibits 385, 386, 388.
- 34—XVI, 984.
- 35—II, 349-50.
- 36—Liberation, March 1965; italics in original.
- 37—XVII, 48.
- 38—II, 373.
- 39—V, 180.
- 40—A full photographic record from the autopsy might also help to clear up the question of a possible wound in the forward upper left-hand octant of the President's head. If such a wound existed, it may have been an exit wound for either a bullet or a fragment, or an entry wound for another bullet; and there are competent witnesses who swear that it existed. Father

Oscar L. Huber, pastor of the Holy Trinity Catholic Church of Dallas, administered the last rites to the President. According to one account, he "wet his right thumb with holy oil and anointed a Cross over the President's forehead, noticing as he did a 'terrible wound' over his left eye." (Philadelphia Sunday Bulletin, Nov. 24, 1963).

41—Two eyewitnesses to the assassination, James Altgens and Norman Simalis, made statements indicating the existence of a left temporal wound. Altgens, an Associated Press photographer, was standing on the side of Elm Street to the left of the Presidential car. He testified: "There was flesh particles that flew out of the side of his head in my direction from where I was standing, so much so that it indicated to me that the shot came out of the left side of his head." (VII, 518)

42—Norman Simalis, a visitor from Toronto, said he was ten feet from the President and "could see a hole in the President's left temple and his head and hair were bathed in blood." (New York Times, Nov. 23, 1963) Simalis was not called as a witness before the Commission.

43 and 44—Dr. Robert McClelland of Parkland Hospital—who testified that he was "in such a position that [he] could very closely examine the head wound" (VI, 33)—stated in his written report (dated and timed: November 22, 1963, 4:45 p.m.) that "the *cause of death* was due to massive head and brain injury from a gunshot wound of the *left temple*." (XVII, 12; italics added.) The Commission failed to question Dr. McClelland about these findings.

45—Two other doctors, Dr. Giesecke and Dr. Jenkins, noticed a left frontal wound. Jenkins testified, ". . . I don't know whether this is right or not, but I thought there was a wound on the left temporal area," to which Commission Counsel Specter replied: "The autopsy report discloses no such development, Dr. Jenkins." (VI, 48)

46—Specter was apparently too busy proving that one bullet went through two men to examine carefully the medical documents he himself admitted into evidence. Included in the autopsy report was the pathologist's diagram showing a front view of the President's body, annotated by surgeons during the autopsy (Commission Exhibit 397). Just over the left eye—where Father Huber had observed a "terrible wound"—there appears a thick black dot, similar to the notation used to identify other wounds on the body. A measurement in centimeters, again similar to the notation employed for other wounds, is clearly marked next to the black dot over the left eye. There is no further reference to a wound in the forward upper left hand octant of the President's head, and despite

the clear markings on the pathologist's diagram, the autopsy surgeons were not questioned about them.

47—WR 98.

48—New York Times, Nov. 23, 1963; italics added.

49—New York Times, Nov. 27, 1963; italics added.

50—New York Times, Nov. 27, 1963; italics added.

51—Life undertook to explain the contradiction in its issue of Nov. 29, 1963: "But the 8-mm. film shows the President turning his body far around to the right as he waves to someone in the crowd. His throat is exposed—toward the sniper's nest—just before he clutches it." (italics added)

Unfortunately for Life's explanation, the Zapruder film shows no such thing. One had only to look at the film frames published in that same issue—and more recently republished in Life for November 25, 1966—to see that the President was clearly facing forward and turned slightly to the right when he was shot.

52—St. Louis Post-Dispatch, Dec. 1, 1963; italics added.

53—The problem of resolving an entry wound in the throat with the proposition that a lone assassin was firing from the rear, hadn't gone away by the following week. The New York Times reported: "... Thirteen days after the assassination of President Kennedy, federal investigators were still reconstructing the crime on film today. ... One question was *how the President could have received a bullet in the front of the throat* from a rifle in the Texas School Book Depository after his car had passed the building and was turning a gentle curve away from it. One explanation from a competent source was that the President had turned to his right to wave, and was struck at that moment." (Times, Dec. 6, 1963; italics added.)

54—If the FBI, in reconstructing the event 13 days later, had access to the conclusion of the autopsy—that the throat wound was a wound of exit—it might not have puzzled over this problem. According to Dr. Humes, the autopsy report was written and transmitted to "higher authority" by Sunday, November 24. Why was the FBI reconstructing the crime the "wrong" way on December 5? Did it have the final autopsy report? Did it have another, earlier version? The next lines from the same Times story are not reassuring: "The best authority presumable on the *exact angle of entry* of the bullet is the man who conducted the autopsy. He is Dr. J. J. Humes of the Naval Medical Center, Bethesda, Md. Dr. Humes said he has been forbidden to talk." (Times, Dec. 6, 1963; italics added.)

55—On the following March 16, Dr. Humes was indeed an authority, before the

Warren Commission—on the angle of exit. Yet if we are to accept the findings of the Commission—then we must also accept the spectacle of the FBI reconstructing the crime *as though the front neck wound were one of entrance inflicted by a lone assassin firing from behind*, and doing so two weeks after the autopsy, apparently without access to authoritative medical evidence as to the origin of the shots. J. Edgar Hoover disclosed that the FBI and the Warren Commission did not receive *official* copies of the autopsy report until December 23, 1963, from the Secret Service. (New York Times, Nov. 26, 1966.)

56—St. Louis Post-Dispatch, Dec. 18, 1963.

57—VI, 43.

58—VI, 9.

59—VI, 37.

60—VI, 55.

61—VI, 42.

62—VI, 141.

63—III, 362; italics added.

64—III, 362; WR 92.

65—III, 373; WR 92.

66—VI, 42; italics added.

67—VI, 55.

67-A—Harold Feldman, Minority of One, March 1965.

67-B—WR 19.

68—XXIV, 212.

69—VI, 244.

70—VI, 247.

71—VI, 244-6.

72—VI, 230.

73—XXII, 833.

74—XXII, 836.

75—VI, 225.

76—XIX, 485.

77—VII, 571.

78—VII, 571-2.

79—VII, 576.

80—Dallas Morning News, Nov. 23, 1963; Feldman, Minority of One, March, 1965.

81—XXIV, 218.

82—XXII, 843.

83—XXIV, 204.

84—XXIV, 205.

85—XXIV, 219; italics added.

86—XXIV, 213.

87—VII, 560; italics added.

88—XIX, 486.

89—VI, 195-6.

90—VI, 206-7.

91—VI, 212-3.

92—VI, 207.

93—VI, 220-1.

94—VI, 210-3.

95—XX, 158.

96—VI, 222.

97—Dallas Times-Herald, Nov. 22, 1963

98—VI, 328-9.

99—III, 227.

100—XXII, 638.

101—XXII, 685.

102—XXIV, 521.

103—XXII, 642.

104—XXII, 648.

105—XXII, 659.

106—XXII, 683.

107—VI, 388.

108—VI, 338-9.

109—XXII, 662.

110—VI, 365.

111—II, 234.

112—VI, 371-2.

113—VII, 510-1.

114—III, 204.

115—III, 175.

116—III, 177.

117—XIX, 508.

118—XIX, 502.

119—XIX, 540.

120—VII, 106.

121—VII, 109.

122—XIX, 524.

123—XIX, 514.

124—XIX, 458.

125—XIX, 530.

126—XIX, 528.

127—XIX, 511.

128—XIX, 543.

129—VI, 173.

130—II, 73.

131—II, 74.

132—II, 144.

133—XVIII, 739.

134—XVIII, 754-5.

135—VII, 345.

136—XXI, 390-1.

137—VI, 294-6.

138—VI, 298.

139—VII, 568-9.

140—VII, 535.

141—The Texas Observer, Dec. 13, 1963.

142—VI, 233.

143—II, 162.

144—IV, 149; italics added.

145—VI, 159-60.

146—VII, 473.

147—VI, 286-8.

148—VII, 557.

149—XIX, 492.

150—II, 180-1.

151—See Part One, section 5, for a consideration of the possibility that the Carcano rifle was not used in the assassination.

RESEARCH CONSULTANTS—Mae Brussel, Marjorie Deschamps, Penn Jones Jr., Jones Harris, Paul Hoch, Ray Marcus, Shirley Martin, Elizabeth Stoneborough

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