

January 31, 1969

J.F.K. AUTOPSY - PHOTOS AND X-RAYS

Summary of Pleadings Introduced by Jim Garrison
On January 31, 1969
In Continuing Effort To Get Photos and X-rays

Jim Garrison today filed additional pleadings in a District of Columbia court in a renewed effort to get the photographs and X-rays taken at the autopsy of President John F. Kennedy.

On January 17th, Judge Charles Halleck told Garrison he would not order release of the materials until there had been a showing that, as Garrison alleged, "there is substantial evidence that shots came from more than one direction".

To prove his point, Garrison entered statements by three qualified scientific experts:

--Dr. Robert McClelland, senior surgeon attending President Kennedy, stating that "the cause of death was due to massive head and brain injury from gunshot wound of the left temple" (whereas the Warren Report specifies the right side.)

--Dr. Robert Forman, Head of the Dept. of Anthropology, Wisconsin State University, demonstrating that the same "Magic Bullet" could not have inflicted the neck wound on President Kennedy and all the wounds on Governor Connally.

--Dr. Cyril Wecht, one of the Nation's leading forensic pathologists, pointing out a series of serious flaws in the handling of the autopsy from November 22, 1963, until the present, and questioning the number and direction of shots.

Garrison buttressed these experts by pointing out major fallacies in the latest Government analysis of the autopsy which was made in 1968 by a Review Panel appointed by Ramsey Clark. The New Orleans D. A. contends that the analysis itself shows:

1. A single bullet did not hit both Kennedy and Connally.
2. The wound in the "back" of Kennedy's head was four inches higher than reported by the Warren Report.
3. There are no photographs of the front of the body.

Garrison offered to have Doctors Wecht and Forman cross-examined by the Government. He asked Judge Halleck to have the Government produce its witnesses if it continues to resist production of the photos and X-rays for the trial of Clay Shaw in New Orleans.

* * * * *

IN THE DISTRICT OF COLUMBIA COURT
OF GENERAL SESSIONS

CIVIL DIVISION

STATE OF LOUISIANA)
)
 v.)
CLAY L. SHAW)

REPLY TO GOVERNMENT'S PLEADINGS TO SHOW
CAUSE WHY JAMES B. RHOADS, ARCHIVIST OF
THE UNITED STATES SHOULD NOT BE ORDERED
TO APPEAR AS A WITNESS IN THE ABOVE TITLED
CASE IN THE PARISH OF ORLEANS, STATE OF
LOUISIANA

On January 17th, 1969, a hearing was had before the Honorable Judge Halleck on the above titled order to show cause.

The order originated out of a request under the Out-of-State-Witness Act (23 D.C. Code 802) by the District Attorney of Orleans Parish for the attendance of the Archivist of the United States at the trial of Clay L. Shaw and for the production by the Archivist of forty-five photographs and twenty-four X-rays taken during the autopsy of John F. Kennedy on November 22, 1963.

On January 16, 1969, one day prior to the show cause hearing, the Government filed a pleading in opposition to the request, consisting of the following:

- a) A formal pleading of fourteen pages, signed by Edwin L. Weisl, Jr., Assistant Attorney General, and others.
- b) A covering statement of January 16, 1969, by Burke Marshall, as spokesman of the executors of John F. Kennedy.
- c) An affidavit of five pages, signed by James B. Rhoads, and dated January 16, 1969.
- d) A letter of seven pages, signed by Burke Marshall, on behalf of the Executors of the Estate of John F. Kennedy, and dated October 29, 1966, and hereafter referred to as the "Letter Agreement of 1966."

e) A memorandum of five pages, signed by Dr. James J. Humes, Dr. J. Thornton Boswell, and Dr. Pierre A. Finck, dated January 26, 1967, and hereafter referred to as the "Supplementary Report of 1967."

f) A letter of one page from Dr. J. Thornton Boswell to Attorney General Ramsey Clark, dated January 26, 1968.

g) A memorandum of sixteen pages, signed by Dr. William H. Carnes, Dr. Russell S. Fisher, Dr. Russell H. Morgan, and Dr. Alan R. Moritz, dated individually from March 28, 1968, to April 9, 1968, and hereinafter referred to as the "1968 Panel Review."

In his original request, the District Attorney of Orleans Parish alleged that the "aforedescribed photographs and x-rays are necessary and material to the prosecution of the above-entitled cause" and that he "has substantial evidence indicating that the aforedescribed photographs and x-rays will reveal that John F. Kennedy was struck by bullets fired from at least two directions."

At the hearing on January 17, the Court ruled that the District Attorney's prima facie showing of need for the photographs and x-rays had been overcome by the Government's pleading of January 16, 1969. In the Court's words, "the ball had been returned to the District Attorney's court." The Court gave the District Attorney two weeks in which to produce some of his substantial evidence that shots came from more than one direction.

This reply will provide such evidence and also make certain additional replies to the Government's pleading of January 16, 1969.

PART I

SUBSTANTIAL EVIDENCE THAT JOHN F. KENNEDY WAS STRUCK WITH BULLETS FROM AT LEAST TWO DIFFERENT DIRECTIONS

For the sake of accuracy, it should be noted that "direction" in the sense it is used in the present context refers both to the horizontal and vertical planes. In the same way that two bullets entering the President's body from street level at angles of 20° and 60° from the front would be considered coming from two "directions",

two bullets entering the President's body from directly behind but from angles of 20° and 60° downward from the horizontal plane would be considered coming from two different "directions".

(1) Statement by Dr. Robert N. McClelland, Assistant Professor of Surgery, Parkland Hospital, Dallas, Texas.

At pages 11 and 12 of Volume XVII of the Warren Commission Hearings, a diligent reader will find a very dim reproduction of a hand written account of President Kennedy's admission and treatment at Parkland Hospital. The account was written on November 22, 1963, by the senior surgeon who actually attended President Kennedy, i.e., Dr. Robert N. McClelland. The penultimate sentence is of particular interest:

"The cause of death was due to massive head and brain injury from a gunshot wound of the left temple."
(Emphasis added)

The whole of Dr. McClelland's report is reproduced as Appendix A to this reply pleading.

(2) Statement by Dr. Robert Forman.

Dr. Robert Forman is Chairman of the Department of Sociology and Anthropology, Wisconsin State University, Oshkosh, Wisconsin. Dr. Forman has supplied the District Attorney of Orleans Parish with a scientific monograph entitled "The First Shot: A New Line of Evidence; Challenging the Warren Report". With Dr. Forman's permission, this monograph is reproduced in its entirety (with accompanying photographs) as Appendix B to this reply pleading.

Upon reading the monograph, the Court will see that Dr. Forman's training and knowledge as a distinguished anthropologist, gives him a whole new insight into the problem of the direction of the missiles; he concentrates upon the lateral as well as vertical angles of the shots in relation to the bone structure of the human body.

In brief, here is Dr. Forman's thesis of bullets from more than one direction.

a) The Warren Report says that there were three shots, all fired from one gun, by one person (Oswald),

from one location (6th floor, Southeast corner, of the Book Depository) within a period of 6 seconds.

b) As to the shots, the Warren Report says that (i) one missed completely, (ii) another inflicted the fatal head wound of the President, and (III) one shot went thru the President's neck, then went through Governor Connally's chest and wrist and entered his thigh. This latter bullet has been labeled as Commission Exhibit 399 and frequently referred to as the "Magic Bullet".

c) If the Magic Bullet could not have done all ascribed to it by the Commission there would have to be a fourth shot from Oswald's gun within the 6 seconds or a second assassin. It is generally conceded that a fourth shot from Oswald's gun would be an impossibility within the time limit. Hence, the Magic Bullet is crucial. Could it have done what was required of it?

d) According to the original autopsy, the Warren Commission Report, and all other known authorities, the missile which went thru President Kennedy's neck did not strike bone.

e) A bullet from directly behind and exiting below the Adams apple would shatter the neck **vertebrae**

f) Examining the human skeleton, for a shot to enter the neck from "behind" and exit from the area of the Adams apple, it must enter at a sideward angle of 30° - 45°. In other words, the Magic Bullet entered at a considerable lateral angle. Yet, had it been fired from Oswald's alleged position it would have entered at a considerably less angle from behind.

g) The "neck shot", having struck President Kennedy on a course toward his left and downward and having struck no bone, could not possibly have hit Governor Connally, especially in the right arm pit. Depending on its exact vertical and horizontal angles, it would either have hit Mrs. Connally, the driver of the car, or no one.

h) Hence, the "Magic Bullet" theory is impossible from an anatomical standpoint; hence, there must have been at least a fourth shot; and hence, there must have been at least a second assassin.

Dr. Forman's monograph, as noted above, is included as Appendix B to this pleading. Further, Dr. Forman has consented to make himself available at the Court's convenience for direct and cross examination.

(3) Dr. Cyril M. Wecht is Research Professor of Law and Director of the Institute of Forensic Sciences, Duquesne University School of Law, and Chief Forensic Pathologist, Allegheny County Coroner's office. In February 1967, he was elected Secretary of the Pathology and Biology Section of the American Academy of Forensic Sciences. He is also Director of the Pittsburgh Institute of Legal Medicine.

Dr. Wecht, who is both a practicing doctor and practicing lawyer, has long been interested in the assassination of President John F. Kennedy. In mid-1967 he published a "Critique of President Kennedy's Autopsy" (printed in Six Seconds in Dallas by Professor Josiah Thompson, Bernard Geis Associates & Random House, at pp. 278-284). Dr. Wecht's Critique is reproduced in full as Appendix C to this reply pleading.

Following are a few highlights of the Critique:

"The official conclusion of the military pathologists that a bullet entered the back of the President's neck and emerged from his throat, along with the 'single bullet theory' which it spawned, is brought into question by four different clusters of evidence:

- (1) The location of the back wound.....
- (2) Size of the throat wound.....
- (3) Lack of metal traces on the President's tie and shirt front.....
- (4) The Zapruder film.....

"In February 1966 I gave a talk to the American Academy of Forensic Sciences which covered many of the points touched on in this paper. At that time, in spite of omissions and deficiencies already apparent in the official autopsy report, I nevertheless concluded my talk by saying that I agreed with the essential findings of the Warren Commission. Some eighteen months later, I must now say that I wish I had not written that final paragraph. For no longer can I agree with the essential findings of either the Warren Report or the autopsy on which it was based."

Dr. Wecht is still of the same opinion and has expressed a willingness to come and so testify before this Court at its convenience. As noted above, Dr. Wecht's Critique is reproduced in its entirety as Appendix C to this reply pleading.

PART II

REPLY TO MAJOR CONTENTIONS IN GOVERNMENT'S

PLEADING OF JANUARY 16, 1969

In order to understand more fully the magnitude of the following contention, the Court's attention is called to Appendix D of this reply which contains a brief chronological account of the autopsy photographs and X-rays from November 22, 1963, to date.

- (1) Introduction by the Government in its pleadings of the Letter Agreement of October 29, 1966, would appear to be an attempt to convince the Court that the said photographs and X-rays came within 44 USC 397; whereas, in fact, the photographs and X-rays may have been transferred to the Archives some eighteen months earlier and may never

have been either the property of or in the custody of the executors of John F. Kennedy.

According to the Government's pleading (page 2), "Dr. James B. Rhoads has custody of the materials requested in his official capacity as Archivist of the United States, pursuant to a letter agreement entered into by the legal representative of the Executors of the estate of John F. Kennedy and the Administrator of General Services on October 29, 1966."

And Dr. Rhoads affidavit of January 16, 1969 (at page 1) says: "Said photographs and X-rays were transferred to the custody of the United States of America by the executors of the estate of the late President John F. Kennedy by letter agreement dated October 29, 1966, executed by Burke Marshall on behalf of the executors of the estate of John F. Kennedy, and by Lawson B. Knott, Jr., Administrator of General Services."

However, at page 5 of the Report of the 1968 Panel Review, which was made a part of the Government's own pleadings, in reference to "Inventory of Material Examined; Black and White colored prints and transparencies" the following curious and unexplained sentence is found:

"All of the above were listed in a memorandum of transfer, located in the National Archives, and dated April 26, 1965."

Presumably, this transfer was from the Secret Service; the question is to whom? To Robert F. Kennedy? To the "executors of John F. Kennedy?" To the National Archives itself? If to either of the former, under what authority was the transfer made, as the photographs and X-rays were part of the Bethesda Naval Hospital autopsy and, under Navy Regulations, were to be retained by the Navy in its permanent files. If the transfer were to the Archives, the letter of October 29, 1966, would, at best, appear to be misleading, and, in any event, irrelevant as to 44 U.S.C. 397.

This raises another interesting and relevant question: if the photographs and X-rays were in the custody of the Secret Service from November 22, 1963, until April 26, 1965, why was Chief Justice Warren

and the Commission absolutely denied access to them, especially in view of Executive Order 11130 and S. J. Res. 137, 88th Cong., which required the Secret Service (along with all Government Agencies) to give to the Commission any and all documents and other information in their possession?

It is also interesting to note that the agent of the Kennedy family, Burke Marshall, was apparently not informed of the 1968 Panel Review until after it had been completed; at some subsequent date, the results were "described" to him. (See Statement of Burke Marshall of January 16, 1969). Did he, in fact, see it before he told the members of the family of its existence and proposed public release?

(2) The 1968 Panel Review does not, as alleged in the Government's pleadings, confirm the original autopsy findings, but, on the contrary, provides new and more serious questions as to the number of missile wounds and the directions from which the missiles came.

a) Crucial ambiguities in the original autopsy.

There have been several ambiguous points re the X-rays taken at the autopsy.

Were they taken of the whole body? According to the 1968 Panel Review (pages 2 and 3), "The Autopsy Report stated that X-rays had been made of the entire body of the deceased". Indeed, Commander Humes confirmed this in his testimony:

"Before the arrival of Colonel Finck we had made X-rays of the head, neck, and torso of the President, and the upper portion of his major extremities, or both his upper and lower extremities. At Colonel Finck's suggestion, we then completed the X-ray examination by X-raying the President's body in toto, and those X-rays are available." (Hearings, Vol. II, p. 364)

"The 1968 Panel's inventory disclosed X-ray films of the entire body except for the lower arms, wrists and hands and the lower legs, ankles and feet." Were X-rays in fact taken of the entire body and, if so, why were they not shown in their entirety to the 1968 Review Panel?

When and by whom were the X-rays developed? At the beginning of his testimony, Commander Humes observed that the photographs and

X-rays were exposed in the morgue of the Naval Medical Center on this night November 22, and they were not developed, neither the X-rays nor the photographs" (Hearings, Vol. 2, p. 351). This tends to be confirmed by the fact that the autopsy doctors did not see and/or report the metallic fragments in the neck which were subsequently reported by the 1968 Panel Review. However, later in his testimony (Hearings, Vol. 2, pp. 364, 372) Dr. Humes speaks as if the X-rays had been developed and were used in the course of the autopsy. Still later (Page 1 of his Supplementary Review of 1967), Dr. Humes says that the X-rays were examined that same evening. What X-rays? Of the whole body? The "main" parts of the body? He also adds, "All X-rays and photographic plates were delivered that evening to Secret Service personnel". Plates? How about undeveloped films both of X-rays and photographs? To whom were they delivered? On whose orders or authority? Was an inventory made at that time? Was there a receipt?

All of these questions remain unanswered to this day.

Additionally, the original autopsy was filled with ambiguous phrases, such as "wound presumably of entry" and "wound presumably of exit". At one point, the autopsy says, "As far as can be ascertained this missile struck no bony structures in its path through the body". (Emphasis added). If X-rays were taken, developed and seen, how can this ambiguity remain? If this "Magic Bullet" had struck bone, it would have fractured the bone, shattered itself, caused an enlarged exit wound, and, in all likelihood, have changed course.

b) Ambiguity left after the 1967 Supplementary Review by the Autopsy doctors.

Although the X-rays and photographs had been examined by Drs. Humes and Boswell on November 1, 1966, they were requested by the Attorney General to re-examine them to see if they were "consistent with the autopsy report". (1967 Review, page 1). This review took place on January 20, 1967. Instead of clearing up the ambiguities, it added certain new ones. For example, at page 4, the doctors say that there is "no evidence of a bullet or a major portion of a

bullet in the body". Were there minor portions? How minor? Where? How many?

The Report of the 1968 Review Panel states in three places that metal fragments were left in the body. Yet, we know that, according to the Panel, the bullet went only through soft tissue. Under these circumstances, it would not be expected to leave fragments, large or small, if it was a bullet like CE 399.

And, although the Review speaks in detail of the size of the entrance wound of the neck (page 3) there is no mention whatever of the size of the exit wound of the neck!

c) Ambiguities left by the 1968 Panel Review

It should be noted that the four eminent pathologists who conducted the 1968 Review were necessarily operating under a number of serious handicaps:

- They were, of course, unable to examine the body upon which the autopsy had been made.
- The hand-written notes made by Dr. Humes at the time of the autopsy were not before them; nor were they able to see the first draft of the written autopsy report, as Dr. Humes had burned this.
- They were, admittedly, unfamiliar with a most complex matter involving wounds to two individuals.
- They did not consider the medical evidence re
- Governor Connally.
- They were not supplied with full body X-rays.
- They were supplied with only part of the extant X-rays and photographs as inventoried on October 29, 1965 (Compare p. 5. of the 1968 Panel Review with Inventory in Appendix B of Burke Marshall's letter of October 29, 1965).
- They were unable in the two days at their disposal to examine more than a very small fraction of material available in the 27 Volumes of the Report, Hearings, and Exhibits.
- Two crucial X-rays, #1 and #2 of the cranial cavity, that they were shown were damaged somewhat. (See page 12 of the Panel Review).

Under all of these handicaps it is not surprising that the 1968 Panel failed to clarify the ambiguous points then present. Nor is it too surprising that they, in fact, brought to light certain new mysteries which tend to undermine the original autopsy and the Warren Commission Report.

Here are a few:

Page 8 - "In the central portion of the canal's base there can be seen a gray brown rectangular structure measuring approximately 13 x 20 mm. Its identity cannot be established by the Panel". What is this sizeable (3/4 x 1/2 inch) unidentified mass in the President's skull?

Page 10 - "Distributed through the right cerebral hemisphere are numerous small, irregular metallic fragments, most of which are less than 1 mm. in maximum dimension." (Emphasis added). How many larger than 1 mm? How large?

Page 13 - "On film #13, a small round opaque structure, a little more than 1 mm. in diameter, is visible just to the right of the midline at the level of the first sacral segment of the spine. Its smooth characteristics are not similar to those of the projectile fragments seen in the X-rays of the skull and neck." This could have probably been identified as a pin put in the President's back during surgery.

Page 13 - The Panel reports the hole in the back of the President's coat almost an inch higher than the hole as reported by the FBI.

There are several significant ambiguities in the Report of the 1968 Panel Review. For example:

Page 15 - "The absence of metallic fragments in the left cerebral hemisphere or below the level of the frontal fossa on the right side together with the absence of any holes in the skull to the left of the midline or in its base and the absence of any penetrating injury of the left hemisphere eliminate with reasonable certainty the possibility of a projectile having passed through the head in any direction other than from back to front as described in preceding sections of this report." (Emphasis added).

Part 16 - "Although the precise path of the bullet could undoubtedly have been demonstrated by complete dissection of the soft tissue between the two cutaneous wounds, there is no reason to believe that the information disclosed thereby would alter significantly the conclusions expressed in this report." (Emphasis added).

The "Summary" of the 1968 Panel Review is worth quoting in toto because it is very carefully hedged about with more ambiguities:

Summary

Examination of the clothing and of the photographs and X-rays taken at autopsy reveal that President Kennedy was struck by two bullets fired from above and behind him, one of which traversed the base of the neck on the right side without striking bone and the other of which entered the skull from behind and exploded its right side.

The photographs and X-rays discussed herein support the above-quoted portions of the original Autopsy Report and the above-quoted medical conclusions of the Warren Report. (P. 16, Emphasis added).

Does the word "support" mean confirm?

The "support" is strictly limited to the "above-quoted portions of the original Autopsy Report and the above-quoted medical conclusions of the Warren Commission Report." These "portions" and "medical conclusions" are herewith quoted in their entirety:

The Autopsy report also described the decedent's wounds as follows:

"The fatal missile entered the skull above and to the right of the external occipital protuberance. A portion of the projectile traversed the cranial cavity in a posterior-anterior direction (see lateral skull roentgenograms) depositing minute particles along its path. A portion of the projectile made its exit through the parietal bone on the right carrying with it portions of cerebrum, skull and scalp. The two wounds of the skull combined with the force of the missile produced extensive fragmentation of the skull, laceration of the superior sagittal sinus, and of the right cerebral hemisphere.

The other missile entered the right superior posterior thorax above the scapula and traversed the soft tissues of the supra-scapular and the supra-clavicular portions of the base of the right side of the neck. This missile produced contusions of the right apical parietal pleura and of the apical portion of the right upper lobe of the lung. 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. As far as can be ascertained this missile struck no bony structures in its path through the body.

In addition, it is our opinion that the wound of the skull produced such extensive damage to the brain as to preclude the possibility of the deceased surviving this injury."

The medical conclusions of the Warren Commission Report (pp. 18 and 19) concerning President Kennedy's wounds are as follows:

"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 the Presidential limousine, striking the President * * * as follows:

President Kennedy was first struck by a bullet which entered at the back of his neck and exited through the lower front portion of his neck, causing a wound which would not necessarily have been lethal. The President was struck a second time by a bullet which entered the right rear portion of his head, causing a massive and fatal wound."

In essence, what the Panel is saying is that it agrees that two missiles struck President Kennedy from some point "behind" and "above" the President.

The Panel does not say at any juncture that these were the only wounds received by the President; some of its reported evidence in fact points in the other direction.

Further, the Panel never considered Governor Connally's wounds and made no comment whatever on the central question of the validity of the "Magic Bullet Theory" from a medical viewpoint.

Further, it limited its support to only the medical conclusions contained in a highly edited passage in the Commission's Report.

As eminent scientists, the four Panel pathologists were wise to so hedge their findings.

* * * * *

The Government's pleadings taken as a whole utterly destroy the basic thesis of the Warren Commission Report (i.e., Oswald, one assassin, one rifle, three shots) by demonstrating the impossibility of the "Magic Bullet Theory" upon which the whole thesis lies.

The pleadings confirm that the neck wound (or back wound) entered from the right and on a downward course and that it did not strike bone.

To inflict all of Governor Connally's wounds, the Magic Bullet, upon exiting the President's throat would have to change course radically upward and to the right in order to strike Governor Connally in the right arm pit; then, it would have to change course radically again, downward and to the left, break a rib, transit the chest,

demolish a wrist, and enter Governor Connally's thigh ... and still remain almost pristine. In addition to the lead left in Governor Connally's chest, wrist, and thigh, the 1968 Panel says that some lead was left in President Kennedy's neck (p. 13). This could not be the "Magic Bullet", Commission Exhibit 399.

d) Debris from President's head goes to left, not right.

It should be noted that most of the debris caused by the shattering of the President's head flew to the left, covering Mrs. Kennedy and the motorcycle escort on the left. This is completely consistent with Dr. McClelland's statement of a wound on the left temple.

e) Right to Privacy.

In its pleadings, the Government has contended strongly that any public use (even for purposes of a criminal trial) of the President's X-rays and photographs would be an invasion of privacy. Yet, the Warren Commission itself had no apparent hesitancy in publishing the X-rays and photographs of Governor Connally's wounds. Is a murdered President entitled to more "privacy" than a living Governor, especially when it comes to a question of determining the guilt or innocence of a person criminally charged with conspiring to commit his murder?

f) Authenticity.

As the Court must realize by this point, the Government's pleadings of January 16, 1969, raise certain questions as to the authenticity of the documents in question. These are questions which did not appear worthy of attention prior to January 16th, but which now must be taken into account.

(a) Chain of Possession: Previously it had been thought that the Secret Service, to whom the photographs and X-rays had been curiously handed on November 22, 1963, had retained them only briefly, and that they had been promptly (if irregularly) turned over to the executors of the estate of John F. Kennedy. Now we are not at all sure, as the only evidence of transfer between November 22, 1963, and this

date is reference in the Government's pleading (1968 Panel Review, P. 5) to a "memorandum of transfer, located in the National Archives, and dated April 26, 1965." Custody, possession, and ownership of the documents before and after this date is an unknown quantity. In other words, there is no chain of possession.

b) Missing documents. From the inventory of what was shown to the 1968 Panel (see pp. 5-6 of 1968 Panel Review) many photographs and X-rays taken on November 22, 1968, appear to be missing. Incredible as it may seem, either there were no photographs taken of the front of the body or these photographs were ruined in the process of development or they simply were not shown to the 1968 Panel or there is something else unexplained. Further, (see pages 2 and 3 of 1968 Panel Review) although X-rays of the entire body were taken, the Panel was not shown X-rays of the lower arms, hands, lower legs, or feet; yet we know they were made. In gunshot deaths this is peculiar and possibly of great significance, as bullets have a habit of traversing the body in unexpected ways.

c) Radical inconsistencies. Radical inconsistencies have begun to appear between descriptions of the wounds by eye witnesses at the autopsy, by the autopsy doctors, and by the 1968 Review panelists.

For example, the back wound keeps moving up from the position attributed to it by autopsy witnesses, such as Secret Service Agents Clint Hill, Roy Kellerman, and William Green, and FBI Agents James Sibert and Francis O'Neil. Even the Review Panelists place the hole in the President's coat an inch higher than did the FBI. Measurements of a hole in a coat should be reasonably accurate and immutable ... but not in this case.

More important, is the change in the position of the head wound. According to the autopsy (CE 387, p. 4), the bullet entered to the right and a "short distance" above the occipital protuberance. Yet the 1968 Review Panelists now place it at 100 mm above the occipital protuberance. This is a change of approximately four inches and the entrance wound now appears to be moved in such a way as to be nearer

the top of the head than the back of the head. Could the autopsy doctors and 1968 Review Panelists have been examining the same X-rays? If so, how could their descriptions be so radically different?

Likewise, the 1968 Review Panelists describe the entrance wound in the head as ranging from 8 to 20 mm. in diameter. Yet the alleged Oswald rifle fired bullets of only 6.5 mm. This, too, is curious as entrance wounds normally are approximately the size of the calibre of the bullet. The entrance wound in the back, allegedly by an identical bullet, made an entrance hole of 4 x 7 mm., and allegedly, in exiting the front of the neck, a hole of 3 x 5 mm. (See CE 387). Could the hole in the "back" of the skull possibly have been an exit wound or an entrance wound by a bullet of larger calibre.

The above three elements of chain of possession, missing documents, and inexplicable inconsistencies do lead to the possibility that, consciously or accidentally, certain changes in these documents have been made between November 22, 1963, and the present date.

If such changes have been made, the photographs and X-rays are of intensified interest. If no changes have occurred, they are still necessary to the proper prosecution of Clay L. Shaw, because (as shown above) there is substantial evidence that the photographs and X-rays will show that John F. Kennedy was shot from more than one direction, and the charge against Clay L. Shaw is for conspiracy to commit murder.

CONCLUSION

For the foregoing reasons, the request is renewed to compel Dr. James B. Rhoads to attend the trial of Clay L. Shaw, now in process in New Orleans, and to bring and produce all of the photographs and X-rays taken at the autopsy of President John F. Kennedy on November 22, 1963.

If the Court deems it necessary to have further hearings on this motion, it is urged that the date be set in the immediate future, as the trial in question in New Orleans is proceeding, and the said

photographs and X-rays are necessary to its proper prosecution. If and when such hearing is set, the District Attorney of Orleans Parish is prepared to produce Dr. Robert Forman and Dr. Cyril Wecht for direct and cross examination.

It is requested that at that time the Government be instructed to produce for questioning Dr. James J. Humes, at least one of the 1968 Review Panelists, as well as Burke Marshall and the Administrator of General Services (to explain to the Court the chain of possession of the photographs and X-rays from November 22, 1963, to date).

Bernard Fensterwald, Jr.
Counsel Representing the District
Attorney, Orleans Parish, State of
Louisiana

APPENDIX A

Warren Commission Hearings, Volume XVII.

Commission Exhibit 392, pp.11&12.

PARKLAND MEMORIAL HOSPITAL

ADMISSION NOTE

DATE AND HOUR: Nov 22, 1963 4:45 P.M. DOCTOR: Robert N. McClelland

Statement Regarding Assassination of
President Kennedy

At approximately 12:45 P.M. on the above date I was called from the second floor of Parkland Hospital and went immediately to the Emergency Operating Room. When I arrived President Kennedy was being attended by Drs. Malcolm Perry, Charles Baxter, James Carver and Ronald Jones. The President was at that time comatose from a massive gunshot wound of the head with a fragment removal of the trachea. An endotracheal tube and assisted respiration was started immediately by Dr. Carver on duty in the EOR when the President arrived. Drs. Perry, Baxter and I then performed a tracheostomy for respiratory distress and tracheal injury and Drs. Jones and Paul Peters inserted bilateral anterior chest tubes for pneumothoraces secondary to the tracheo-mediastinal injury. Simultaneously Dr. Jones had started 3 cut-downs giving blood and fluids immediately. In spite of this, at 12:55 he was pronounced dead by Dr. Perry, Clark the neurosurgeon and professor of neurosurgery who arrived immediately after the above.

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(OVER)

COMMISSION EXHIBIT 392—Continued

APPENDIX B

By Robert Forman
Chairman, Department of Sociology and Anthropology
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The First Shot: A New Line of Evidence

Challenging the Warren Report

It is almost unbelievable that for the four years since the Kennedy assassination the simple physical facts reported here have gone unnoticed. When I combine these facts with evidence from the Warren Report, I am forced to conclude that more than one person was involved in the assassination.

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ADMISSION NOTE I

Cause of death was due to massive head and brain injury from a gunshot wound of the left temple. He was pronounced dead after external cardiac massage failed. ECG definitely was gone.

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COMMISSION EXHIBIT 392—Continued

APPENDIX B

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The First Shot: A New Line of Evidence

Challenging the Warren Report

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Most people are by now familiar with the basic issues concerned with the assassination question. As shown on the Zapruder film, everything appeared normal until the Presidential limousine was briefly blocked from view by a road sign. As the car emerged from behind the sign the President was raising his hands up to his throat and it was obvious he had already been hit. Governor Connally did not appear to be hit until slightly later.

The interval between the time when a tree no longer blocked the limousine from view of the Texas School Book Depository sixth floor and the time when Governor Connally was struck was so short it would have been impossible for two bullets to have been fired from the same bolt action rifle.

Also, if the bullet which struck the President were fired downward from the sixth floor it would have been found either in the President's body or inside the car, yet no bullet was found. The single-bullet theory propounded by the Commission attempted to solve these problems by maintaining that one bullet had passed through President Kennedy's body and gone on to inflict wounds on Governor Connally, and that the time difference in response to the wounds could be accounted for by assuming a delayed reaction to the shot by Governor Connally.

Many, perhaps most, people have found it hard to accept the single-bullet theory, but have not been able to go beyond saying it doesn't seem likely. Thompson casts grave doubt on the theory. I will show here why it is anatomically impossible for a bullet to have followed the path the Warren Commission said it did.

First we need to consider some preliminary issues. The President's wound in back has been variously referred to as a "back" wound, a "neck" wound, and a "shoulder" wound. We will consider its exact location later, but in order to have a consistent term of reference let us designate it as the shoulder wound. The wound in front we will refer to as the neck wound. Let us consider the nature of each wound and its possible relationship to the other.

No serious doubts have been raised about the Commission's conclusion that the shoulder wound was an entrance and not an exit wound. I am not questioning this either. The autopsy doctors agreed that this wound was "presumably of entry." This was supported by examination of the President's clothing, the fibers of which were turned in at the site of the wound. We will accept that the shoulder wound was one of entrance.

The situation is not so clear for the neck wound. An entrance wound is generally small, round, and neat. An exit wound tends to be larger, more irregular in shape, and to have ragged edges. The amount of difference can vary though depending on type and speed of bullet, and the amount and type of tissue the bullet encounters in the body. The statements of the doctors at Parkland Hospital who first treated the President agreed in describing the wound as small (four to seven millimeters in size), round, and with smooth edges. Mark Lane has emphasized the entrance-like characteristics of the neck wound.

If we base our decision about the neck wound on its physical characteristics alone then we must conclude that it was an entrance wound. A front entrance wound however, implies certain things. First of these is the presence at some position in front of the presidential limousine of a rifleman. This in turn implies a location for the rifleman which is consistent with the layout of Dealey Plaza, the limousine and the President's position in it, and with other physical characteristics of the President's body as determined either at Parkland Hospital or at Bethesda during the autopsy.

Another necessary implication of a front entrance wound is that the bullet either exited the body or remained within it to be found later. Except for bullet fragments in the President's skull from the fatal head shot or shots, no bullets or fragments of bullets were found in the President's body during the autopsy examination which included the use of X rays. A theory of a front entrance wound cannot be viable without accounting for the bullet.

There are some simple principles of physics which should not be overlooked either. The advocates of a front entrance wound would have us believe that a bullet which had not previously encountered any other person or object and consequently was traveling at approximately its initial velocity could strike from the front and then apparently come to a full stop within a distance of no more than two inches, neither damaging the neck vertebrae immediately behind the wound nor having enough velocity to continue in a lateral angle into the body and possibly exit from it.

The final argument against accepting the neck wound as one of entrance arises from the utilization of a principle which has been overlooked in material dealing with the assassination up until now and which is of vital importance in determining what happened during the assassination. I am referring to the principle of lateral angle. The importance of this principle will become evident as we proceed, because without it there would be no basis for this article.

Here we need to relate physical evidence from the President's body to possible locations of an assassin in front of the limousine. Given the configuration of the automobile and the location of the President within it there is only a certain direction from which a bullet could have struck from in front. This direction coincides with the only possible area where such an assassin could be concealed— behind the trees and shrubbery of the grassy knoll. This site at first seems plausible and Mark Lane has argued strongly for it.

But we must take into account the principle of lateral angle. A shot fired from the grassy knoll would have been traveling at a lateral or side-ways angle of about 35 degrees. Striking the President at the midline of the neck it would necessarily have continued into the left side of his body. There simply is no evidence— from clothing, the doctors who gave treatment at Parkland Hospital, or from the autopsy— that there was any damage to the left side of the President's body whether in the neck, shoulder, or back.

Considering the total situation I can only conclude that however much the neck wound looked like an entrance wound, it could not have been one.

The neck and shoulder wounds in themselves would not have been fatal to the President. The fatal wounds were those inflicted on his head. The resulting massive damage prevents us from establishing conclusively from autopsy information whether there was more than one shot to the head and what direction another shot would have come from. Thompson's frame-by-frame study of the Zapruder film led him to conclude that more than one shot struck the President in the head, with one of the shots coming from the grassy knoll area. I have no basis for not accepting his conclusion in this matter.

If the first shot was not fatal then why is it so important? In effect, this whole article is an answer to the question because it will show how evidence relating to the first shot gives much more ^{information} ~~evidence~~ about the assassination than does that pertaining to the fatal shot or shots.

Let us go back to the day of the assassination. Rightly or wrongly, federal officials wanted to return to Washington as soon as possible and so did not permit an autopsy in Parkland Hospital in Dallas. This not only produced a delay in the time of the autopsy but it also resulted in part of our information coming from one group of doctors at Parkland Hospital in Dallas and another part coming from the group of doctors who performed the autopsy at the National Naval Medical Center in Bethesda, Maryland.

An almost incredible consequence arises from this, in that at no time after the assassination while the President's body was still available for examination did any doctor realize that the President had both a neck wound and a shoulder wound. The doctors at Parkland Hospital who first treated the President saw the neck wound but did not turn him over and so discover the shoulder wound in back. In their doomed attempts to save his life they made a tracheotomy incision into his windpipe to aid in his breathing— the incision being right at the site of the neck wound thus obscuring the evidence of it. During the autopsy the doctors at Bethesda located the shoulder wound but because of the tracheotomy incision did not detect the neck wound.

It was only the next day, when Dr. Humes at Bethesda called Dr. Perry in Dallas that the autopsy doctors learned that there had also been a neck wound in front. By this time the President's body was no longer available so the assumed path of the bullet was deduced ex post facto rather than actually observed. In the language of the Commission Report the doctors "concluded" and the path of the bullet was "traced."

Photographs of the President's body were made at the time of the autopsy, but the undeveloped film was taken by secret service agents and Dr. Humes never saw the pictures before testifying before the Commission. X rays were also made during the autopsy, at least some of which were developed immediately and were available during the autopsy and afterward.

Didn't the autopsy doctors try to probe the shoulder wound and if they did, why didn't they discover the neck wound in the process if both were actually caused by one bullet? The answer to the first question is yes, the doctors at the autopsy did try to probe the shoulder wound. The autopsy report itself only says that "The missile path through the fascia and musculature cannot be easily probed."

Fortunately, we have other evidence relating to the autopsy. Secret Service Agent Roy Kellerman was present at the autopsy and testified that Lieutenant Colonel Pierre A. Finck tried to run a probe through the body from the site of the shoulder wound and was unable to do so, saying "There are no lanes for an outlet of this entry in this man's shoulder." Chief autopsy pathologist Commander J. J. Humes testified that they could not "take probes and have them satisfactorily fall through any path at this point."

Also present at the autopsy were FBI agents Francis X. O'Neill, Jr. and James W. Sibert. In their report dated 26 November 1963 they wrote, "This [shoulder] opening was probed by Dr. HUMES with the finger, at which time it was determined that the trajectory of the missile entering at this point had entered at a downward ~~angle~~ position of 45 to 60 degrees. Further probing determined that the distance travelled by this missile was a short distance inasmuch as the end of the opening could be felt with the finger."

We have answered our two previous questions. The doctors did try to probe the shoulder wound and they did not discover the neck wound because their attempts to probe were unsuccessful. Does this mean then that a bullet did not pass through the President's body? We will deal with this question later and believe that in the process of doing so will be able to answer another intriguing question which obviously should have been raised immediately by the above-mentioned FBI report but until now has not been raised at all. The question is this: Given that the highest vantage point in the whole Dealey Plaza area would have resulted in a downward angle of bullet travel of no more than about 25 degrees, how could a bullet have entered the President's body at an angle of from 45 to 60 degrees?

What Did Not Happen During the Assassination

I believe that the material which is presented in this section comes as close as possible to being proof in the technical scientific meaning of the term that the single-bullet theory is false. On the basis of this, we can say how the assassination did not happen. Later on we will suggest what did happen.

When the Commission called Dr. Humes to testify several months later, he had a medical illustrator prepare an "artist's conception" of the path of the bullet and the nature of the injuries. This drawing, Commission Exhibit 385, has added to confusion rather than reducing it. It is not correct in its proportions. Dr. Humes explained this by saying that he had had only two days in which to prepare the exhibit. I was able to prepare an outline profile of the President in less than an hour by the simple device of projecting a profile photograph of him on a sheet of paper and tracing the outline. ^[See profile outline.] Furthermore, the bullet on Exhibit 385 was shown as following a 10 degree angle downward although the Commission concluded that the actual angle was approximately 18 degrees.

Thus we have the stage set for a monumental oversight. Dr. Humes was concerned with bullet path and anatomy, as remembered without aid of photographs several months after the autopsy, but was not concerned with

exact location of others, either Governor Connally or the rifleman. The Commission was concerned with these, but was not aware of a very misleading aspect of Exhibit 385. The exhibit implies that a bullet not striking any bones can exit at the center of the neck below the Adam's apple (the site of the wound in front) and travel in a straight direction forward. The fact is that it cannot.

Both the X rays and the observations made during the autopsy showed that the bullet did not damage any bones in the President's body. Thus any bullet traveling through his body had to travel in a path which was outside the bony structure of the body or in between the bones. This means that study of the human skeleton might give us valuable information about the first shot in the assassination, and in fact it does. The one used and shown in the accompanying pictures is a standard articulated male skeleton from our anthropology laboratory. Comparison with others and with standard anatomy textbooks shows that it is not atypical. While there are, of course, differences between people in skeletal sizes and proportions the matters with which we will be concerned are basic characteristics of the human skeleton and beyond the range of normal variations between individuals.

Observation of the shoulder and neck area of a skeleton shows clearly that there is a great deal of bony structure there--the scapula (shoulder blade), clavicle (collar bone), sternum (breastbone), ribs and the neck and back vertebrae. (see figure 1) The freedom of a bullet to pass through this jumble of bones without hitting any of them is extremely limited. The Commission apparently did not take this into account.

We know quite precisely where the wound was located in front. Bullet holes in the shirt in the two overlapping portions just below the collar button, a nick in the knot of the President's necktie, and the fact that the wound was at the site of a tracheotomy incision all locate the wound in the midline of the body between the Adam's apple and the sternum. The bullet would have to have passed just above the sternum and between the right and left clavicles.

Just behind this point though, are the neck vertebrae. Regardless of the size of its downward angle, a bullet not striking the neck vertebrae and passing through this point would need to be traveling at an angle of 30 to 45 degrees sideways to the left. (see figure 2)

I suggest that this matter of lateral or sideways angle is a crucial factor which has been ignored in analyzing evidence in all previously published material about the assassination from the Warren Report itself up to and including Thompson's recently published book. Sideways angle alone would rule out the possibility of the bullet striking Governor Connally. If the bullet would have struck anyone it would have been either Mrs. Connally or William Greer, the driver.

There is only one way in which a bullet traveling at such an angle sideways through the President's body could have struck Governor Connally and that is if the President were himself turned at a 30 to 45 degree angle. The Zapruder film and other pictures show clearly that this was not the case as his body was facing squarely ahead in the car. His head was turned to the right at about the time the first shot was fired but this

would not affect his chest or shoulders. The reader can check this for himself by placing a finger on the hollow of his throat between the Adam's apple and breastbone and turning his head. The lower part of the neck moves hardly at all.

What we have seen about the necessary sideways angle of bullet travel makes the single bullet theory untenable. The assassination could not have happened the way the Warren Commission says it did.

An Attempt to Explain What Did Happen

While physical facts of anatomy enable us to determine what did not happen, we must piece together different kinds of evidence to try to determine what did happen. My concern here is only with the non-fatal shots. I have no basis for rejecting Thompson's conclusion that more than one fatal shot struck the President in the head and that at least one assassin could have been concealed behind the fence on the greasy knoll. If there was more than one assassin, there is no reason why there could not have been several.

I agree with Thompson on the matter of the President and Governor Connally being struck by separate bullets. Both Governor Connally and Mrs. Connally testified before the Commission that he was struck by a second bullet after the President was hit. The Governor later studied the Zapruder films frame by frame and reaffirmed this in a magazine article. Thompson also arrived at the same conclusion. The sideways angle of bullet travel described above confirms them and requires two bullets striking at two different times.

Let us assume that the first bullet passed through the President's body in a sideways direction. If the bullet exited toward the left of the President and was going at a downward angle, how could it have avoided landing in the car? The window beside Mrs. Connally was even partly raised so that a bullet would have to be traveling almost horizontally in order to miss the car. This raises the question, just what was the downward angle of the bullet?

The downward angle of approximately 18 degrees determined by the Commission was established by surveying techniques based on both the position of the car at the time the shot was assumed to have been fired and the position of the sixth floor window of the Depository building.

This angle then is predicated on the assumption that the shot came from what is thought to be Oswald's position. But where the shots came from is what the Commission was trying to establish--the position should have been a conclusion of the Commission rather than one of the assumptions used in arriving at a conclusion. The Commission used circular reasoning.

There is another way of determining the downward angle of the shot, and that is to ascertain the angle of the bullet through the President's body. We already have seen that the exit was at a point approximately at the center of the necktie knot. We can determine the downward angle if we can establish the point of entrance in back.

Before attempting this though, let us look at the skeletal structure of the shoulder, which is a very complicated part of the body. Not only are there many bones in the area, but they are related to each other in complex ways. The back vertebrae and ribs form a relatively solid unit, frequently called the ribcage. The neck vertebrae are somewhat more free to move, and the head pivots forward or backward on the uppermost vertebra.

The bones of the shoulder--the clavicle and the scapula--are only loosely attached to the ribcage. It is this flexible attachment which permits us to move our shoulders up and down and to the front and back. Most of the muscles of the upper back are attached to the scapula and control it. Thus, movements of the scapula are associated with (indeed, are caused by) movements of the muscles in back. Also, as the muscles move so will the skin covering them.

With the amount of bony structure in the shoulder area, it is clear that any bullet which passes through the area and does not strike any bone has only a limited number of paths it could follow. Specifically, there would be only three possible paths.

The first path would be outside of and over the top of the ribcage. The other two would both be through the ribcage between the scapula and the vertebrae. The second path would be between the first and second ribs, and the third would be between the second and third ribs (see figure 3) A bullet following the latter path would be traveling in practically a horizontal direction. A point of entrance lower than this would require an upward direction of travel which would have been impossible under the circumstances.

Our task now is to determine which of these three possible paths the bullet actually followed. We have four sources of information about the point of entrance that should enable us to do this. These sources are: 1) the verbal description given in the autopsy report; 2) measurements on the President's body locating the wound also given in the autopsy report; 3) statements of observations made by FBI and Secret Service agents who saw the wounds either in Dallas or during the autopsy; 4) bullet holes in the President's shirt and jacket measured, photographed, and reported on by the FBI. We might expect that the first two sources would agree with each other--that the verbal description of the bullet path would be supported by the autopsy measurements. They do not agree.

The autopsy report states, "The [non-fatal] missile entered the right superior posterior thorax above the scapula" (emphasis added) and damaged soft tissues and muscles above the scapula and clavicle along the right side of the neck.

As the illustrations show, if the bullet entered "above the scapula" the entrance would be very high on the shoulder and the bullet would need to be traveling at a downward angle of about 30 degrees to exit in the area of the necktie knot. More important though is the sideways angle of the bullet following such a path. Even if the bullet passed over the scapula at its extreme edge nearest the center of the body, the entrance would be three or more inches to the right of the midline. It is obvious that if it exited at the midline it would necessarily be traveling at an angle to the left. Pictures taken at the time of the assassination show clearly that the President was seated squarely in the car. His head was turned to the right, but this would not have affected his shoulders. Given the downward and crossways angle of the bullet, it would have been impossible for it to have struck Governor Connally--particularly in the area of his right shoulder. It also could not have escaped the car.

The verbal description of the bullet path does not seem to agree with the other three sources of information about the location of the wound, all of which would place it lower on the body. Let us now look at the second source, the autopsy measurements.

We have already seen that the scapula and flesh of the upper back move about quite freely outside the ribcage. We cannot automatically assume that the position of the flesh at the time of the autopsy measurement was the same as at the time the wound was received. As a matter of fact, there is evidence that it was not.

The location of the bullet hole was determined by measuring down from the mastoid process. The latter is a bony knob on the lower part of the skull just behind the ear. The autopsy measurements located the wound as being 14 centimeters (5 1/2 inches) down from the mastoid process. Measuring from a point on the skull can introduce some error because of flexibility of the neck and variation in the position of the head.

A much greater error is caused by the fact that when the body is in a prone position the shoulders have a different relationship to the rest of the body than they do when the person is standing or sitting erect.

In the prone position, the shoulders fall forward and downward closer to the head and front of the body than they are in the erect position.

(see figures 7 & 8) This difference in shoulder position produces a measurement difference of from 1 1/2 to 2 inches. Observations on people varying considerably in size and shoulder-neck proportions shows this difference to be a fairly constant one.

What this means is that a point on the shoulders which measures 5 1/2 inches (14 cm) down from the mastoid process in the prone position would be 7 to 7 1/2 inches down with the person erect. In the actual sequence of events, the order was reversed. The President was sitting

erect when hit with a bullet entering 7 to 7 1/2 inches below the mastoid process. In the prone position during the autopsy, his head and shoulders were closer together so that a measurement of 5 1/2 inches resulted. In other words, the bullet hole as observed during autopsy was not in line with the path of the bullet through the rest of the body.

This should help us to explain a conflict between the autopsy report and the FBI Summary Report of 9 December 1963 and Supplementary Report of 13 January 1964. The information about the autopsy in the FBI reports is based on the observations of two FBI agents who were present during the autopsy. The agents reported that the missile path extended downward at an angle of 45 to 60 degrees and was less than a finger length in depth.

It has never been explained how a bullet traveling at a downward angle of approximately 18 degrees (as determined by the Commission) could make a wound at an angle of 45 to 60 degrees, and also why a bullet which traveled through the President's body would not have left a path that could have been probed all the way. What we conclude here is that the angle observed at autopsy was determined not by the actual angle of travel of the bullet, but rather by the change in the position of the President's shoulders caused by being in the prone position. This would also produce a bend in the bullet path which would make the wound appear to be a shallow one. I suggest that had the doctors arranged the President's shoulders in their natural position while erect, they could have run a probe through the body following the bullet path. (See diagrams **A** and **B**)

We still need to inquire into the two other sources of information about the back wound to see if they support either of the first two or raise still more problems. Statements by Secret Service and FBI agents who saw the wound either in Dallas or during the autopsy show a considerable amount of agreement in placing the wound four to six inches down on the back. The two FBI agents present at the autopsy described the wound as "below the shoulders." While the statements of agents do not pinpoint an exact location, there is nothing from this source to support the verbal description indicating a high location of the wound.

The fourth source, definitely in the category of "hard" information, is the bullet holes in the President's clothing. They were to the right of center and were located 5 3/4 inches down from the top of shirt collar and 5 3/8 inches down from the top of the jacket collar. These measurements may be confirmed by photographs.

The clothing measurements would place the wound lower on the body than would the autopsy measurement of 5 1/2 inches from the mastoid process. Edward Jay Epstein noted this discrepancy. Various people have suggested that the shirt and jacket could have ridden up on the President's shoulder as he waved his arm. If the clothing were bulged or folded a wound high on the shoulder would appear to be lower when the clothing was flattened out and measured. This explanation has been widely accepted and until now the matter has not been pursued further.

We can now resolve this apparent conflict. We saw earlier that differences in shoulder position would result in the point of entrance actually being 7 to 7 1/2 inches below the mastoid process at the time the wound was received. The top of the President's shirt collar would have been about 1 1/2 inches below the mastoid process. Subtracting this amount from the 7 to 7 1/2 inch measurement shows us that the bullet would have entered the body 5 1/2 to 6 inches down from the top of the shirt collar. This is exactly where measurements on the shirt place the bullet hole, as do the jacket measurements. There is no necessity to speculate that the clothing rode up or was folded, for which there is no evidence in various pictures taken at the time.

We have looked at four indicators of the location of the wound in back and have seen that three of them agree very closely with each other. Reports of agents, the bullet holes in the President's clothing, and the autopsy measurements as explained here all place the wound at about the same location. When we keep in mind that the verbal portion of the autopsy report was written well after the autopsy itself and was attempting to piece together information from the autopsy plus telephone reports of doctors in Dallas, that Dr. Humes burned his original autopsy notes, and that ^{he could well have been influenced by knowledge of} the location of the presumed assassin, ~~we cannot~~ we cannot have utmost confidence in the verbal description.

Agreement between indicators is only part of the picture though, because we have an objective way of verifying the bullet path. Our task is simple because there are only three possible bullet paths, and two of

them can be ruled out. If the bullet traveled either over the outside of the ribcage or entered between the first and second rib, it would have been traveling in a downward direction and could not have escaped either hitting someone else in the car or being trapped and discovered in the car. Because of the sideways angle of the bullet it could not possibly have hit Governor Connally.


This leaves only the third possibility--that the bullet entered between the second and third rib, the place suggested by three of the four sources. But this place is level with the point of exit in front and while the bullet would have been going in a sideways direction it would not be traveling at a downward angle. (see figure 9) There are two implications to this: 1) the bullet must have come from near the street level and not from the sixth floor of the Texas School Book Depository, and 2) a bullet traveling in that direction could have escaped the car out the side window and buried itself in the grass in Dealey Plaza.

While the horizontal direction of the bullet was determined on the basis of autopsy measurements supported by evidence from clothing and agents' reports, it is thus confirmed by the fact that the bullet was not found in the car. The absence of the bullet in the car is what suggested the one-bullet theory in the first place, because Arlen Specter concluded that if the bullet were fired from above and did not land in the car the only place it could go was into Governor Connally. But we have seen that the sideways angle of the bullet would make it impossible for it to hit the Governor.

The evidence we have looked at here supports the testimony given before the Commission and the subsequent statements of one of the principals in the case--Governor Connally. The Governor has said that he heard the first shot, had time for it to register on his consciousness, turned to the right to look at the President, could not see him from that direction so started to turn to the left, and was hit only after he was in the process of turning to the left. Mrs. Connally's recollection is similar--that she had time to turn around and observe the effect of the shot on the President's facial expression before her husband was struck. The Commission chose to disregard the Governor's view that the President had been hit by a different and earlier bullet than the one which struck the Governor in the shoulder.

We may note in passing that the path of the bullet which struck Governor Connally as determined from the location of his wounds is quite consistent with a shooting position on the sixth floor of the Depository building. The path was in a downward and right-to-left sideways direction. The bullet entered by the Governor's right armpit and finally stopped in his left thigh. A bullet fired from the same position would have followed a similar path if it struck the President. It would have traveled downward and to the left. It could no more have struck the Governor in the right shoulder than could the bullet which actually struck the Governor have gone ahead to hit the right shoulder of secret service agent Roy Kellerman in the front seat of the car.

Consideration of sideways angle leads me to question whether the President and Governor Connally ever were both in line with the Depository window in a way assumed by the Commission and required by the locations of their wounds. The idea that they were so in line is based on casual observation and pictures made with telephoto lenses--which distort distances and perspectives.

Let us look first at their relationship to each other in the car. (See diagram  [schematic of limousine]) Governor Connally was seated more toward the center of the car than was the President, but the bullet supposedly travelled from the center of the President's body to the right shoulder-armpit area of the Governor. This would offset their differences in position and result in a line of bullet travel parallel with that of the car.

Reference to the scale map of Dealey Plaza shows that at the time the Commission said the President was first hit the car was at a 15 degree angle sideways to a line connecting it to the sixth floor depository window. This, of course, is only half the angle required for a bullet to clear the neck vertebrae. The sideways angle of the car relative to the depository is clearly evident in Commission Exhibit 893, showing the re-enactment of Zapruder frame 210. In this exhibit, although the person representing the Governor appears to be in line with the vertical crosshair, it is the center of his body and not the right side.

Exhibit 893 also permits some observations about downward angle. One can see that the horizontal crosshair is in line with the small of the back of the person representing Governor Connally, and with the back of the

jumpseat. A bullet entering in the area of the President's shoulder and traveling at a downward angle of 18 degrees would, of course, strike lower on the body of the Governor than the shoulder-arpit area.

I can only conclude that the bullet was fired from the Depository and that in striking one of the Governor's ribs (which we know it did) it was deflected somewhat increasing the downward angle by no more than 10 degrees.

The sixth floor of the Depository can thus be located as the point of origin of the shot which struck Governor Connally. Having already eliminated the single-bullet theory, we can rule out the upper floors of the Depository as the source of the first shot which struck the President, because the motorcade was blocked from view from there until less than two seconds from the time the Governor was struck--a period of time insufficient to have fired the Mannlicher-Carcano rifle twice. This in turn eliminates the possibility of a shallow back wound on the President being due to out-of-date Mannlicher-

Carcano ammunition because there is no evidence that the first wound was from such a rifle.

Keeping this in mind we can go back to an issue discussed earlier, namely the entrance-like characteristics of the neck wound. If the bullet involved were from a gun other than ~~the~~ a Mannlicher-Carcano we can not make any assumptions about the bullet type or velocity. The smaller the bullet and the lower its velocity the more its exit wound would tend to resemble a wound of entrance.

To say that a person was shooting from near street level raises the questions of his location, the location of the car at the time, and the time of the first shot. These questions are all interrelated. The bullet angle sideways can be estimated by reference to the Presidential limousine taking into account the President's location in the car and possible exit paths in back of or just in front of the vertical glass panel on the side of the car. The angle, as determined by the layout of the car, would be between approximately 38 and 45 degrees. This angle is within the same range as that determined by skeletal anatomy. (See diagram of car and compare the angle with that shown in figure 2.)

We can give a more exact definition to the term "near street level." Allowing for the fact that the President's neck was somewhat above the level of the car door and taking into account the length of bullet travel inside the car I estimate that a bullet could have had a downward angle of five degrees and still cleared the car.

While skeletal evidence will allow us to establish the bullet path as being in a near-horizontal direction it cannot determine the exact angle of travel because the data are not that precise and could also be influenced by variations in body position. We do not know the exact vertical angle at which the President was sitting at the instant he was struck. A five degree downward angle is thus just as much in accord with our evidence as an angle of zero degrees. This would allow a position of origin of the shot to be up to 12 feet off the ground for every one hundred feet of distance away, even more if we take into account the incline of Elm Street itself.

The Commission concluded that the President was first struck at about Zapruder frame 210. This would place the car at approximately the beginning of the fourth road stripe on Elm Street. If we project backwards from this point with the angle range of 38 to 45 degrees we see that possible locations for a rifleman are a window on ~~the~~ a lower floor on the west end of the Depository, the roof of the one story irregularly shaped portion of the Depository on the west, inside the one story portion of the Depository, or a car or truck parked in front of the Depository toward its western end. Regardless of the specific location, the general area is near the western end of the main Depository building.

In view of the location determined by the approach used here it is interesting to consider File 1546, a report of FBI Agent Robert P. Gemberling. On pages 66-68 of this report Gemberling refers to a bullet mark on a sidewalk in Dealey Plaza reported to him by a Dallas resident. This citizen said that the mark had been shown on television shortly after the assassination and he was surprised that no mention had been made of it in the Commission Report which had then just been released. Two FBI agents investigated the next day.

Gemberling's report said they found that, "In the area of the second lamppost, approximately thirty-three feet east of the post, in the sixth large cement square, four feet from the street curb and six feet from the parkside curbing, is an approximately four inches long by one-half inch wide dug-out scar, which could possibly have been made by some blunt-end type instrument or projectile....This particular scar is in line with the western end of the multifloor section of the Texas School Book Depository Building." The report also states that the line of the scar is such it could not have come from the sixth floor window the Commission said Oswald fired from.

This scar is in line with the position we have determined here as the location of the first shot. I suggest that the scar was made by a second shot from this position which missed and struck the sidewalk instead.

If a bullet did pass through the President's body, which the Commission said it did, I do not see how it could have happened in a way other than the one described here.

We can summarize what has been said so far in the following steps:

1. The location of the front wound can be established with considerable accuracy.
2. Any bullet passing through this location would necessarily have to be traveling at a 30-45 degree angle to the left in a sideways direction for it to miss the vertebrae (as the autopsy said no bones were struck).
3. A bullet traveling at this angle sideways could not possibly have hit Governor Connally.
4. It struck no one else in the car and did not land inside the car.
5. The only other possibility is that it exited from the car.
6. It would not have exited from the car unless it were traveling in a near-horizontal angle.
7. A near-horizontal angle is the only one which is strongly supported by the various sources of information about the location of the wound in back.
8. A bullet traveling at this angle would have to have been fired by someone near the street level.
9. Given that at least one shot was fired from the Depository, the evidence shows there was more than one assassin.

Taking into account the various kinds of evidence we have surveyed, I believe the evidence most strongly supports the view that the President's back and front neck wounds were both made by one bullet which passed through the President's body. We have seen how such a bullet could not have also struck Governor Connally.

If both wounds were not made by one bullet, what other alternatives are possible and what do they imply about the number of people taking part in the assassination?

Alternative 1, -- The back wound was in fact a shallow one and the front neck wound was made by a separate entering bullet.

A bullet making such a front wound would have to have been fired from a position other than the Depository, and consequently there would have been more than one assassin.

Alternative 2, -- The back wound was a shallow one and the front wound was made by a fragment of bullet or bone from the fatal head shot(s).

The shallow back wound and the wounds to Governor Connally would then have to have been inflicted by different bullets. The time difference between them would not have been sufficient for both to have been fired from the same bolt action rifle--thus there was more than one rifle and more than one assassin.

There seems to be no alternative to the conclusion that the assassination was not the work of just one person.

I have not been concerned with trying to prove either Lee Oswald's guilt or innocence. Also, I do not believe that because an act is of such crucial importance either in itself or in its consequences it could not be the work of one unbalanced individual. I simply have been forced to the conclusion by hard physical evidence that more than one assassin was involved.

Legends for photographs

Figure 1

The shoulder area is a veritable jumble of bones. Obviously, the places a bullet can go through this area without striking any bones are quite limited. Note how little space there is between the front of the neck vertebrae and the breastbone.

Figure 2

View of shoulder area from top with skull removed. Sideways angle of 42 degrees is the minimum possible as rod touches the neck vertebra. Somewhat smaller sideways angle is possible if path is between ribs rather than over top of ribcage. In this picture rod represents same path as in Figure 4.

Figure 3

Shoulder area viewed from the rear. There are only three places through which bullet could pass: 1) over top of ribcage; 2) between first and second ribs; 3) between second and third rib. All three positions would result in a 30-42 degree angle of travel sideways.

Figures 4, 5, and 6

Wooden rod shows the path of bullet travel for each of the three possible positions of bullet entrance. It can be seen that each of the three possible paths is at a definite sideways angle. The approximate downward angles of the three paths are respectively 30 degrees, 20 degrees, and zero degrees. Bullets following either of the first two paths could not escape the car or another person in the car.

Figures 7 and 8

Anthropology instructor William Gerritsen serves as a model to demonstrate difference in shoulder relationships to head according to body position. Spot behind ear marks tip of mastoid process. Mark is made on shoulder 5 1/2 inches (14 cm) from mastoid process while Gerritsen is in prone position. When he is in the erect position, the mark is 7 3/8 inches from the mastoid process. A bullet entering at this point would appear to have entered almost two inches higher when measured in the prone autopsy position.

Figure 9:

Anthropology instructor William Gerritsen sits in front of skeleton and slightly to the left in position occupied by Governor Connally. Bullet path would have been to the left of Governor Connally. Bullet could not possibly have struck the Governor in the right shoulder. If bullet struck anyone else, it would have been either Mrs. Connally or the driver.

Credits:

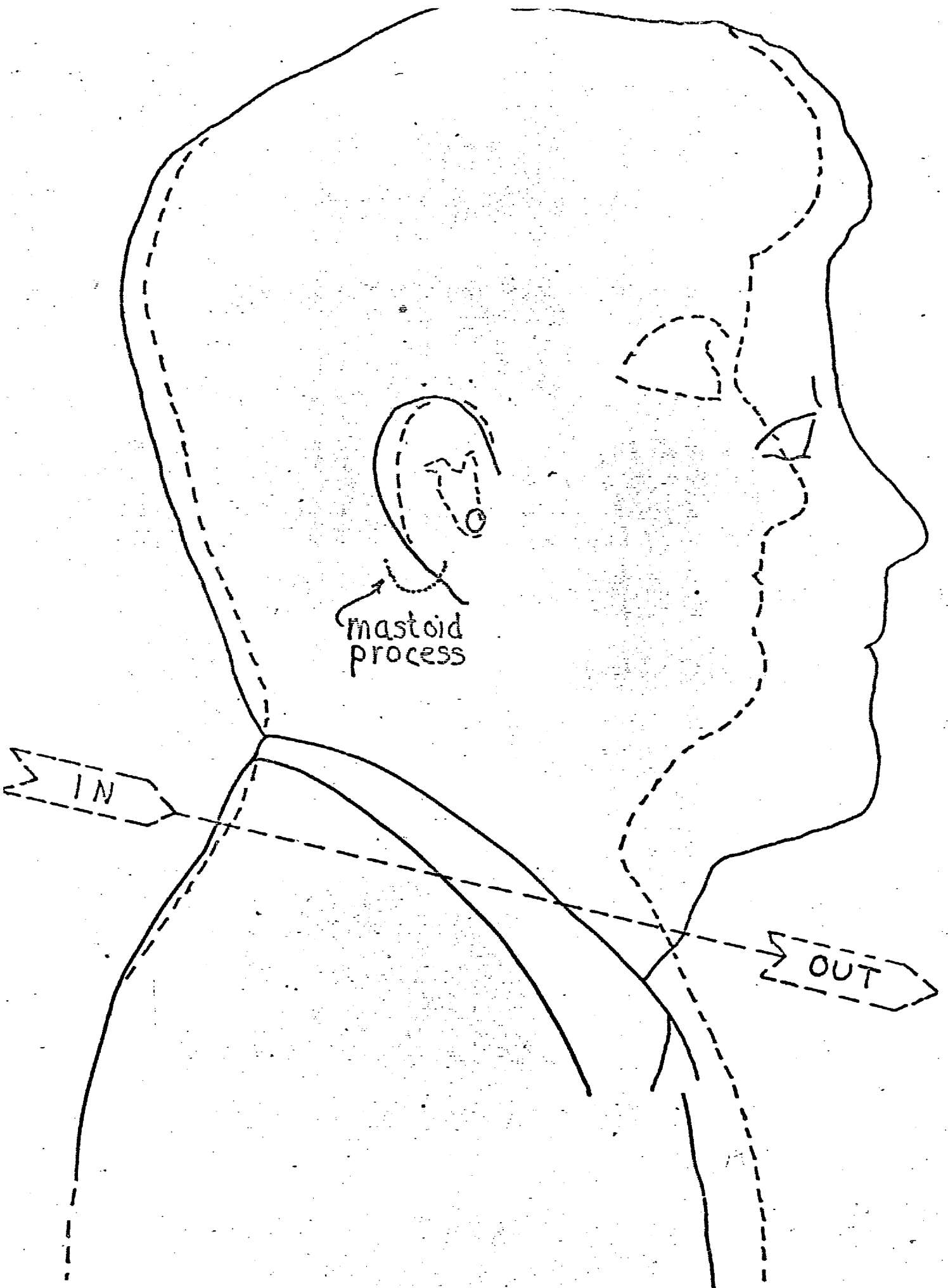
Photos -- William Krueger
Drawings -- Ruth Forman

Legend to accompany profile outlines of the President

Dotted profile is taken from Commission Exhibit 385. Profile with solid lines is taken from photograph of the President. Exhibit 385 does not pretend to be to scale, but there is little excuse for it not being so. The two profiles were lined up according to the ear because of its relationship to the mastoid process which was a reference point for the measurement of bullet wound location during the autopsy.

The downward bullet angle shown in Exhibit 385 is inaccurate, being 10 degrees rather than the 18 degrees established by the Commission. A bullet exiting just below the collar button would at an 18 degree downward angle would have entered higher than is indicated by either autopsy measurements or bullet holes in clothing. Such a bullet entering where these indicators show would have exited well below the neck area.

The most serious error in Exhibit 385 is that it implies that a bullet can pass through the neck area traveling in a near straight-ahead direction.



mastoid
process

IN

OUT

DIAGRAMS A + B.

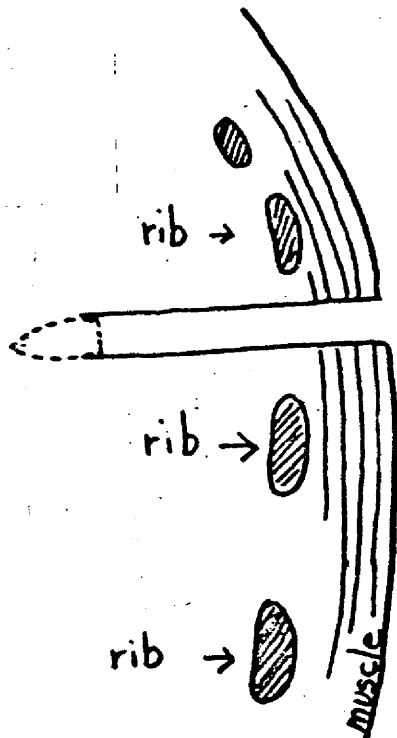
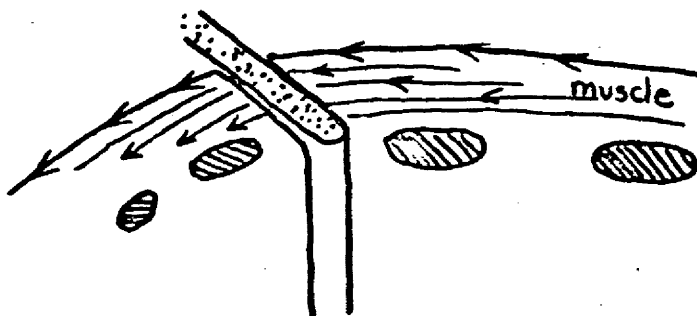


Diagram A

Bullet entered in straight line when President's body was in erect position.

Diagram B

In prone position during autopsy, shoulders fall forward toward head. Bullet hole appears to be at 45-60 degree angle and to have no point of exit.



Legend to accompany revised schematic diagram^C of passenger compartment
^

- A. Postulated path of first bullet striking the President. Bullet travels in a near-horizontal direction so that it exits car out left front window. Sideways angle is about 38 degrees.
- B. Assumed path of bullet according to the Warren Commission. Bullet approaches car at a 15 degree angle sideways and 18 degree angle downwards. In order to strike the Governor in the armpit, bullet must change angle laterally to travel parallel with car. Downward angle also must change to about 12 degrees.
- C. Actual path of bullet striking Governor Connally. Direction downward is about 25 degrees. Sideways angle is about 30 degrees.
- D. Path of bullet striking Governor Connally according to Josiah Thompson. Bullet approaches from left side and would need a lateral deflection of over ⁶⁰~~90~~ degrees.

There is no evidence to support the deflections required either by the Commission's or Thompson's view of what happened. In at least Thompson's case, the deflection would have to have occurred before the bullet struck Governor Connally's rib. A bullet from the ^{sixth-floor easternmost} Depository window striking Connally directly would need a total deflection of no more than 10 degrees which could result from striking his rib.

DIAGRAM C

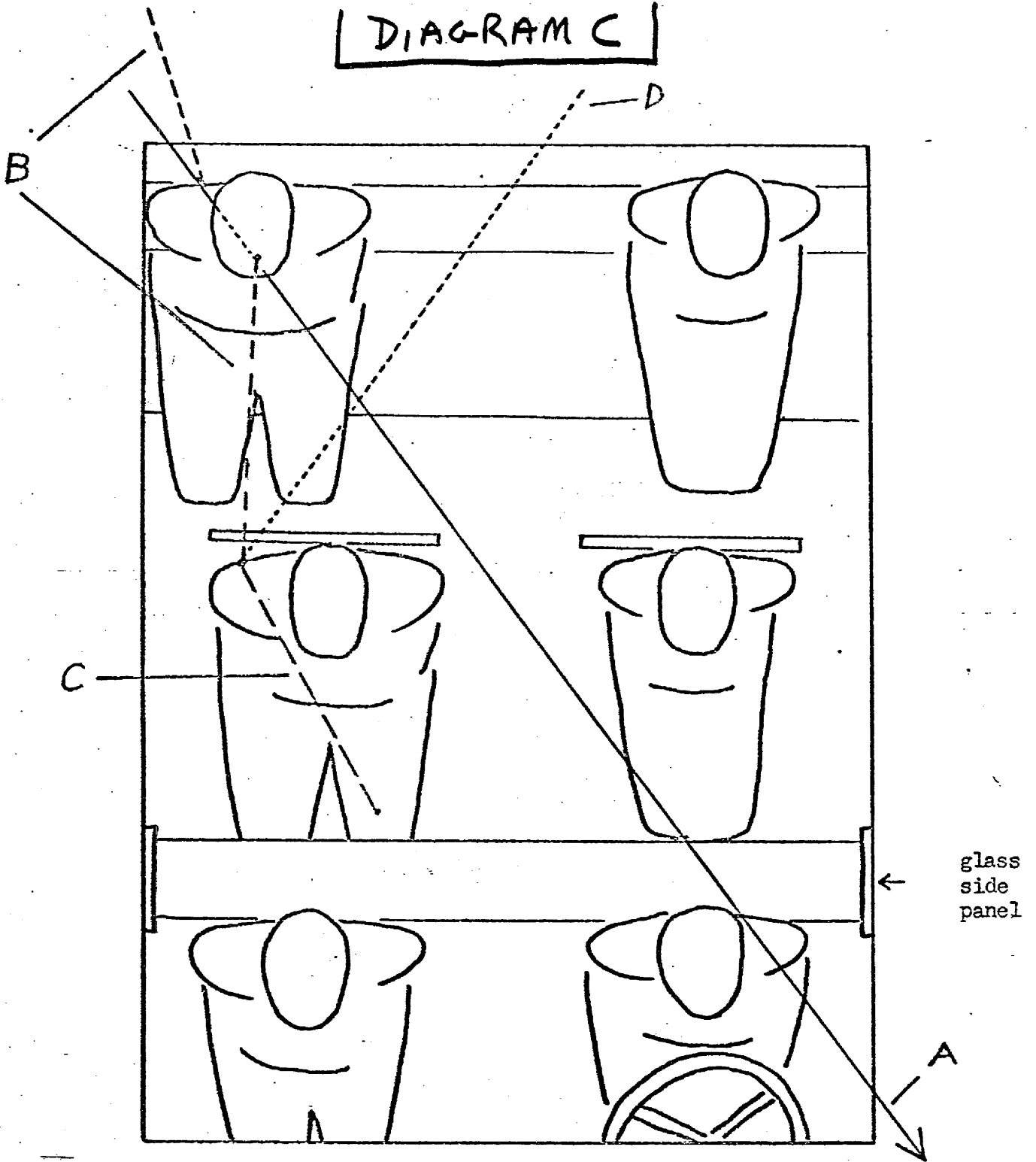
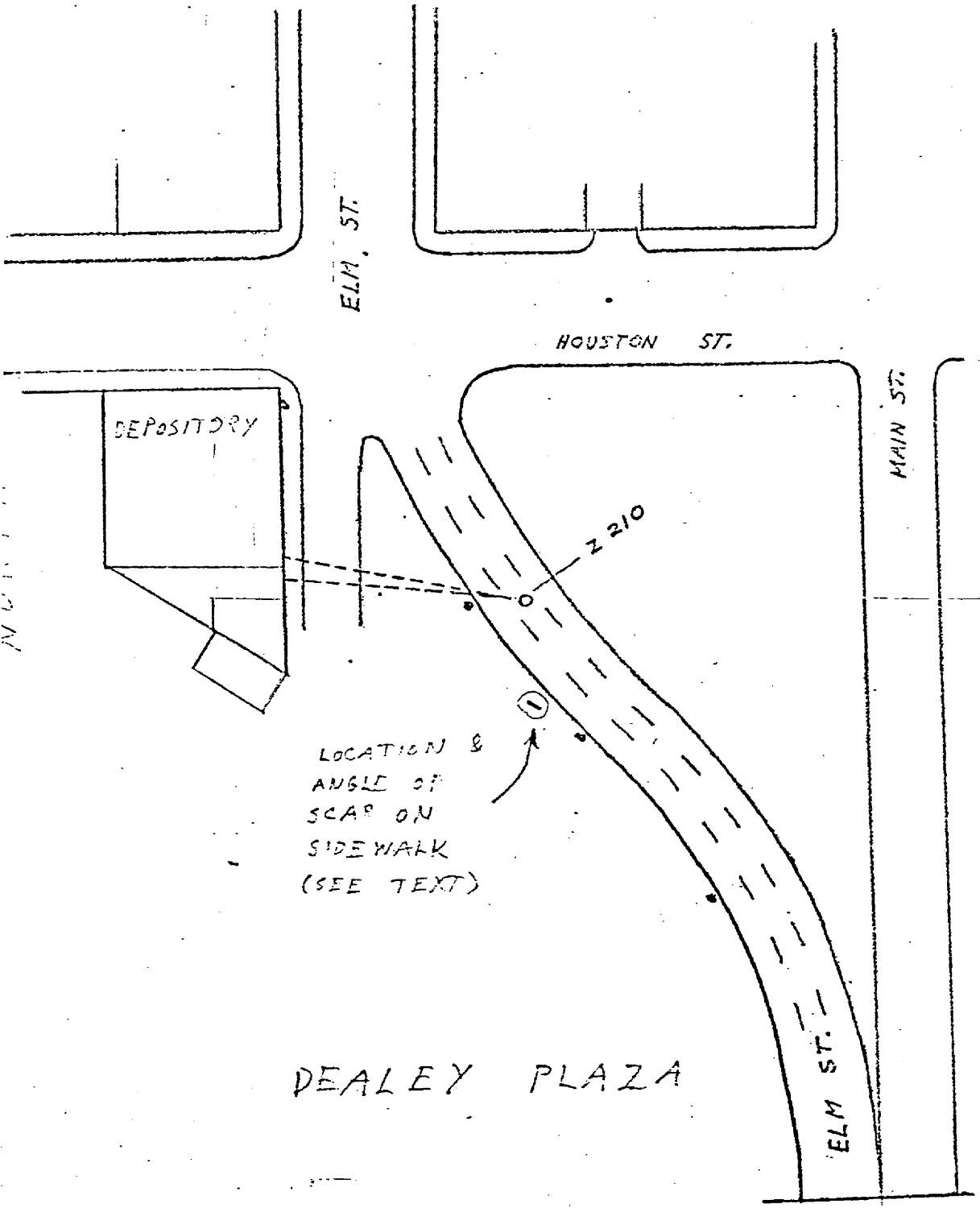


Diagram C

Scale schematic illustration of passenger compartment of Presidential limousine showing most likely approximate bullet path. Sideways angle shown is 38 degrees.

EAST



DEALEY PLAZA

WEST

SOUTH

SCALE MAP OF DEALEY PLAZA

APPENDIX C

SIX SECONDS IN DALLAS, Josiah Thompson, Bernard Geis Assoc., 1967.

A CRITIQUE OF PRESIDENT KENNEDY'S AUTOPSY

by

Cyril H. Wecht, M.D., LL.B.

Had President Kennedy been a European head of state, his government would have appointed the most eminent forensic pathologist in the country to conduct the autopsy. As assistants, such a man would have had two or three other forensic experts or heads of medico-legal institutes. It is history's profound loss that men of this caliber were not appointed to perform the President's autopsy. Had they been, nearly all the troubling questions about the assassination which continue to vex us today could have been settled at the outset with scientific precision.

CHOICE OF PATHOLOGISTS

The specialty of forensic pathology is recognized by the American Board of Pathology, which gives subspecialty examinations in this field. The practice, experience, and knowledge of a forensic pathologist are to a great extent quite different from those of a general "hospital" pathologist. The hospital pathologist spends much of his time examining organs or tissue slides as a means to establishing diagnoses on living patients. When he is called upon to do an autopsy, it usually concerns a patient who has succumbed in the hospital from some natural disease. The autopsy most often is performed to confirm a diagnosis already arrived at, or for research purposes.

The forensic pathologist operates within quite a different setting. Often associated with the medical examiner's office, his job is not to verify an already arrived at diagnosis, but to establish independently the exact cause and manner of death.

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Whereas the hospital pathologist's milieu is natural disease, the forensic pathologist's setting is very often violent death. The expertise and tasks of the two specialties are quite distinct. As my colleague Dr. Milton Helpert, Chief Medical Examiner of New York City, has noted, to give a hospital pathologist a gunshot wound case is "like sending a seven-year-old boy who has taken three lessons on the violin over to the New York Philharmonic and expecting him to perform a Tchaikovsky symphony. He knows how to hold the violin and bow, but he has a long way to go before he can make music."¹

It is troubling in the extreme, then, to learn that a hospital pathologist was in charge of the President's autopsy. Commander [now Captain] James J. Humes of Bethesda Naval Hospital directed the autopsy. With the exception of a single course at the Armed Forces Institute of Pathology, Commander Humes had no special knowledge or expertise in forensic pathology (2H348). His official title was "Director of Laboratories of the Naval Medical School at Naval Medical Center, Bethesda, Md." (2H348). He was assisted by Navy Commander J. Thornton Boswell, like Humes a hospital pathologist with no special experience in medico-legal autopsies. After Commanders Humes and Boswell saw the body and realized how difficult their job would be, Lt. Col. Pierre Finck of the Armed Forces Institute of Pathology was called in to assist. Lt. Col. Finck is an able forensic pathologist, but his experience as of November 1963 had been mainly administrative — limited chiefly to reviewing files, pictures, and records of finished cases. More importantly, his position at the autopsy table on November 22 was extremely difficult. He had been summoned only after the autopsy had begun, and he was working in a Navy hospital under the direction of a Navy doctor.

Given the circumstances, what seems so inexplicable is the fact that not one of a score of available civilian forensic experts was called in to perform the autopsy on President Kennedy. When Presidents Eisenhower or Johnson had medical problems, civilian experts were immediately summoned. In this case, however, a case which might take on the most awesome international political significance, the decision was made to get by with three military pathologists. Yet within one hour's flying time were some of the greatest forensic pathologists in the world. Dr. Russell S. Fisher in Baltimore, Dr. Milton Helpert in New York City, Dr. Joseph W. Spelman in Philadelphia, Dr. Geoffrey T. Mann in Virginia, and Dr. Alan R. Moritz in Cleveland are only some of the people who are located in areas quite close to Washington, D.C., and who could have been called upon by the government to assist. The irony of the situation is that these experts are men the military has called upon countless times in the past. They have lectured at the Armed Forces Institute of Pathology on forensic pathology. These are men the government uses to teach, yet in this autopsy—probably the most important of the century—the government chose not to call on them. Much of the controversy and mystery which enfolds the case owes its origin to this tragic choice.

CONSEQUENCES OF THE CHOICE

Cdr. Humes's final autopsy report and his subsequent testimony before the Warren Commission reveal mistakes of procedure and technique which only an inexperienced person could make in performing a medico-legal autopsy.

Experienced forensic pathologists do not probe bullet wounds with their fingers, as Cdr. Humes did (2H367), nor do their autopsy reports include newspaper articles as relevant to their findings.² The location of the controversial back wound is given from rather unorthodox reference points: "14 cm. from the tip of the right acromion process and 14 cm. below the tip of the right mastoid process" (16H980); experienced forensic patholo-

gists would use the top of the head and the midline of the body to locate such a wound. These technical errors are not important in themselves, but they do reveal the unconventional character of the whole report. Other errors of procedure have greater importance and wider ramifications.

The Bethesda surgeons knew by 4:00 P.M. on the afternoon of November 22 that they would be performing the President's autopsy. The first move of any experienced forensic pathologist at that time would have been to get in touch with the Dallas doctors who had tried to save the President's life. Such a call would have alerted the Bethesda doctors to the existence of a small throat wound, a wound they only learned of the next day (*after* the body was out of their hands) when Humes belatedly called Dr. Malcolm Perry in Dallas. Had they known of this wound on Friday night they might have been more zealous in tracing the course of the bullet which entered the President's back. As it was, when the body left their hands on Friday night they held the *hypothesis* that the bullet that entered the back had fallen out of the wound, an hypothesis they later felt bound to reject. An experienced forensic pathologist does not settle for hypotheses or inferences. Had an experienced forensic pathologist been in the Bethesda autopsy room, he would not have permitted the body to be taken away until he had *traced out* (most likely by dissection) the actual course of the bullet that had entered the President's back.

The official autopsy report contains two omissions which cast a shadow over the whole proceeding. First, the failure to mention the adrenal glands, either grossly or microscopically. There can be no doubt that the adrenal glands were identified and examined; Cdr. Boswell himself has admitted this.³ I should stress that these glands played no role whatsoever in President Kennedy's death and from that standpoint have no significance. The import of their omission lies in the fact that it makes the entire report susceptible to sincere and serious challenge inasmuch as it is incomplete. Any competent forensic

pathologist knows that he cannot afford to have such a glaring omission in his report. Otherwise, his entire examination may become worthless in the eyes of the jury and the judge when such an oversight is pointed out by a skilled defense attorney on cross-examination.

Another deficiency in the overall report (and one directly associated with the murder) concerns the examination of the President's brain. A reading of the supplementary autopsy report on the brain examination discloses that the entire brain was not cut into coronal sections (16H987). Although one small section was excised from the front on the left side, the description indicates that no examination of the brain's left side was performed. This is appalling. We cannot know what injuries were present in the left cerebral hemisphere if no examination was made. No competent forensic pathologist would examine only half a brain, particularly in a case where it had been injured by one or more bullets.

Either way we consider these deficiencies, the picture is not reassuring. If the military pathologists on their own decided not to examine the adrenal glands and the left cerebral hemisphere, then they are to be soundly condemned, and their report is to be strongly criticized. If they were told by their military superiors to make the omissions and obeyed that order, then two things follow: (1) The pathologists and their report are totally discredited, and (2) it becomes comprehensible why civilian medico-legal experts were excluded from the autopsy—they could not have been controlled in this way.

WHAT CAN WE KNOW?

Given the incomplete and flawed character of the whole autopsy, what can we know of the nature of the President's wounds?

Histological slides taken from the periphery of the bullet holes in the President's upper back and the occipital region of the skull apparently show "coagulation necrosis of the tissues at the wound margins" (16H988). This would be a sure

sign that the holes in question were bullet entry holes (the speed of an entering projectile almost always produces this effect in the immediately surrounding tissue), and that two bullets entered the President's body at these points.

But with the exception of these two facts, everything else—whether the President was hit in the head by one or two bullets, whether the throat wound was caused by a fragment from the head impact, from an entering bullet, or from a transiting one—must remain open to question on the basis of medical evidence alone. Other evidence must be brought to bear if any of these puzzles are to be solved. However, as other evidence accumulates and as the medico-legal expert can begin to weigh the plausibility of alternative hypotheses, two conclusions of the Commission become less plausible.

The first concerns the nature of the head wound or wounds. On the basis of the autopsy report we cannot rule out the possibility that the President was struck on the right front side of the head. Although the official report mentions the microscopic examination of the periphery of the small occipital wound, no mention is made of a similar examination of the periphery of the large gaping wound on the right side of the head. Without such an examination (or, for that matter, without a careful scrutiny of the remaining scalp and hair, which might easily mask a bullet hole) we cannot be sure that there was not a second wound of entrance in the head forward on the right side. I mention this only because of the extremely persuasive evidence on this point in the Zapruder film. I have seen this film in the superior copy owned by *Life* magazine. Quite clearly, the President's body moves sharply backward and to the left under the impact of the fatal shot. It seems to me extremely unlikely that his body would have moved in this direction if he had been struck from above and behind as concluded by the Warren Commission.

The second concerns the back wound. The official conclusion of the military pathologists that a bullet entered the back of the President's neck and emerged from his throat, along with the "single-bullet

theory" which it spawned, is brought into question by four different clusters of evidence:

(1) *The location of the back wound.* As mentioned earlier, Humes's official report locates the back wound with respect to two unorthodox reference points—the acromion and the mastoid process. The difficulty with using these two points is that measurements taken from them locate positions which vary from person to person. The same measurements will define different points depending upon the length of neck and width of shoulders of the person involved. Still, it is clear that the location of the back wound as given in the official autopsy report is much higher than the location drawn on the face sheet during the autopsy by Cdr. Boswell. When this discrepancy was pointed out to Boswell, he ascribed it to carelessness. "If I had known at the time that this sketch would become public record," he remarked, "I would have been more careful."⁴ Clearly, his excuse is unacceptable. It is true that pathologists do not make such sketches on an accurate-scale basis at the time of the autopsy. No one would dispute a matter of an inch or so. But in this case we are talking about completely different parts of the body—his sketch shows a hole in the back, not in the lower neck. In addition, we should remember that Boswell managed to locate properly all the other scars or wounds on the President's body. Why should he make a mistake on only this one wound? And why should his "mistake" align perfectly with the location defined by the holes in the President's clothing, the report of FBI agents Sibert and O'Neill, and the testimony of Secret Service agents Hill, Kellerman, and Greer?

The problem, of course, is that this overwhelming body of evidence marks an entrance hole in the back substantially lower than the purported exit in the throat—clearly an impossibility if the shot came from behind and above the President.

One additional consideration germane to this point has never before been raised. Both the Secret Service and FBI agents present at the autopsy and Cdr. Humes

himself have pointed out that on November 22 the military doctors thought the bullet that entered the President's back had fallen out during closed chest cardiac massage at Parkland Hospital in Dallas. External cardiac massage is applied on the anterior chest wall at the level of the breast bone. This would define a location more or less directly in front of the spot where all the evidence except the official autopsy report places the back wound. A question which has never been asked Humes and his colleagues is how they concluded the bullet had been forced out during cardiac massage if indeed the hole was not in the back but in the lower neck.

(2) *Size of the throat wound.* Subsequent experiments performed at Edgewood Arsenal disclosed that a bullet fired from Oswald's rifle through sufficient goat flesh to simulate a transit of the President's neck left exit holes over twice the size of entry holes (5H77-78). But the hole in the President's throat (the putative exit hole) was actually smaller (3 to 5 mm. in largest diameter) than the back entry wound (4 by 7 mm.). It is true that exit wounds may sometimes be smaller than entrance wounds, but in this case the very tests ordered by the Commission to buttress the contention of a back to front transit actually militated against the autopsy report's conclusion.

(3) *Lack of metal traces on the President's tie and shirt front.* An FBI examination of a slit in the President's shirt near the collar button and a nick in the tie failed to disclose the presence of any metallic traces (5H60-62). It seems unlikely that a bullet could have transited from back to front without leaving some evidence of its passing at the point of exit.

(4) *The Zapruder film.* My viewing of the Zapruder film at *Life* would suggest that Governor Connally is most likely correct when he says he was hit by a different bullet than the one which struck the President. On the film, the Governor appears to be hit at frame 238—at least $\frac{3}{4}$ second after the President first shows signs of injury. Clearly, if the President and the Governor were hit by different

bullets, the bullet which struck the President could not have transited his (the President's) body as the Commission concluded.

All this indicates that the autopsy conclusion of a back to front transit has become progressively more unacceptable as the evidence accumulates. Unfortunately, this same evidence does not dictate unambiguously an alternative hypothesis. Any attempt to formulate an alternative hypothesis should take into account the following possibility:

At the beginning of his testimony Cdr. Humes observed that "the photographs and X-Rays were exposed in the morgue of the Naval Medical Center on this night [November 22], and they were not developed, neither the X-Rays nor the photographs" (2H351). Somewhat later in his testimony Humes speaks as if the X-Rays had been developed and were used in the course of the autopsy (2H364, 372). Yet his assertion here that the autopsy was done without their benefit raises the very real possibility that a bullet or bullets may still remain in the President's body. Bullets have a curious way of moving around in the body. Any experienced forensic pathologist can cite a long list of stories of bullets turning up in the oddest places. In many cases total body X-Rays are the only means by which wandering bullets can be located. With respect to the Kennedy autopsy there is conflicting testimony as to whether such X-Rays were developed and used on November 22, and even if they were used it is doubtful whether either of the Bethesda pathologists was experienced enough in gunshot cases to interpret them correctly. Thus the possibility that a bullet or bullets may still remain in the President's body cannot be ruled out. If this were shown to be the case, many problematical aspects of the assassination would become clear.

THE FUTURE

Can anything be done at this point to clarify the situation?

The autopsy photos and X-Rays are critical. Their examination by qualified experts might throw great light on some

of the questions that continue to puzzle us today. If a photograph of the President's back exists, it would definitely settle the controversy over the location of the back wound. Total body X-Rays might reveal the presence of other missiles still in the body. Head X-Rays might help us decide whether or not the President was struck more than once in the head.

The treatment of these photos and X-Rays by the government has been extremely irresponsible. Although they constituted primary evidence of a critical sort, they were never viewed by any member of the Warren Commission or its staff—and this in spite of the fact that they remained in government custody until April 1965.⁵ At that time they were turned over to the Kennedy family. In November 1966 this material returned to government custody under an agreement with the family which prohibits non-governmental experts from viewing it until 1971.

Has anyone seen this material?

William Manchester, in an early draft of his book *The Death of a President*, implied that he had examined it.⁶ When Richard Goodwin learned that this was false, that Manchester had actually been denied permission to see it, he pressured the author to remove the offending paragraph.⁷ The result was a mystifying footnote in the present edition in which Manchester admitted that he had not seen the X-Rays and photos, but had discussed them with three men, each a stranger to the others, who carried "special professional qualifications," and who had examined the material.⁸ It would be interesting to know just what "special professional qualifications" these shadowy experts hold. Not one of them is known to either Dr. Milton Helpert or myself, or for that matter (as far as I know) to any other member of the American Academy of Forensic Sciences.

On the day the photos and X-Rays were turned over to the Archives they were viewed by the two Bethesda pathologists, Humes and Boswell, who proudly announced that they confirmed their earlier autopsy findings. However, both are inter-

ested parties to the growing controversy surrounding the autopsy, and the earlier cited omissions and deficiencies in the official report render their judgments suspect. More importantly, they are not forensic pathologists and thus are unequipped by either training or experience to interpret the photos and X-Rays correctly.

At the present time, then, there is no credible evidence that any qualified expert has in fact examined these photos and X-Rays. Surely such a situation should be remedied with all due speed. A move in this direction was made by Representative Theodore R. Kupferman of New York. In letters to the Archivist of the United States (Dec. 27, 1966) and to President Johnson (Feb. 16, 1967) he requested permission to view the autopsy photos and X-Rays in company with Dr. Milton Helpert and me.⁹ Representative Kupferman's request was turned down both by the executive branch of the government and by Burke Marshall, a lawyer for the Kennedy family.

This refusal to let qualified experts examine the material raises many interesting questions. If the bullet wound in the back is where the autopsy report says it is, then why won't the present administration permit qualified experts to verify this fact? The request was made in a proper and official way by a respected member of the Congress. No one could dispute the fact that Milton Helpert is very likely the most respected forensic pathologist in the world. Clearly, nothing is gained by keeping this evidence sequestered and unexamined when qualified experts are available. Why then are we not permitted to examine it? The present administration in Washington may be able to answer this question. I cannot.

CONCLUSION

In February 1966 I gave a talk to the American Academy of Forensic Sciences which covered many of the points touched on in this paper. At that time, in spite of the omissions and deficiencies already apparent in the official autopsy report, I nevertheless concluded my talk by saying that I agreed with the essential findings

of the Warren Commission. Some eighteen months later, I must now say that I wish I had not written that final paragraph. For no longer can I agree with the essential findings of either the Warren *Report* or the autopsy on which it was based.

The more one analyzes the critical area of the autopsy the more one comes to recognize that the government's handling of the case is fraught with irregularities. The inexplicable unwillingness of officials to permit civilian forensic experts to participate in the autopsy, Humes's burning of his autopsy draft notes on November 24, the omissions and deficiencies which plague the official report itself, the mysterious transmutation of a wound in the upper back into a wound in the lower neck, the Commission's reticence to view the autopsy photos and X-Rays even though they were in government possession, and finally, the refusal of the present administration to permit qualified experts to examine these same photos and X-Rays—it is this concatenation of facts which nurtures the reasonable man's suspicions.

Nor is the autopsy the only part of the case where the government's handling of evidence and testimony lends itself to suspicion. Commission Exhibit 399 is another case in point.

Although this bullet is nearly pristine in appearance and lacking only 2.4 grains of its substance, the Commission concluded that it smashed through both President Kennedy and Governor Connally, causing seven separate wounds, and shattering the Governor's fifth rib and right wrist. From a medico-legal standpoint such a conclusion is utterly unacceptable—bullets which strike two large bones do not remain undeformed. Its unacceptability, moreover, was shown by the Commission's own tests and echoed in the opinions of its ballistic experts. The conclusion was accepted in spite of overwhelming contrary evidence because the single-bullet theory—the keystone of the Commission's case—required it.

Photographs of CE 399 show a slice missing from the nose where a sliver of metal was removed for spectrographic analysis. Had a similar examination of

Governor Connally's clothes been possible, a firm conclusion might have been reached as to whether CE 399 was the bullet which wounded him or whether, alternately, his wounds had been caused by a pristine bullet. Yet Connally's clothes were not available for such a comparison—his suit was dry cleaned and his shirt laundered before any of the investigating officials thought to have them examined by the FBI. It is hard to believe that the FBI would not have wanted the clothes of the victims immediately, inasmuch as this is a cardinal rule in the investigation of any shooting. As with so many other aspects of the federal investigation of the crime, one is driven to believe that this oversight was due more to premeditated deliberation than to innocent, albeit negligent, omission.

The list of irregularities and evasions in the official report may be multiplied at will. As the person trained in criminological procedures delves more deeply into the case, the more certain he becomes that

the truth about the Kennedy assassination is not the "official truth" contained in the *Warren Report*. Truth was not the aim of the Commission, nor was truth the end product of its labors. We will know the real truth about the assassination only when impartial and scientific investigation replaces governmental promulgation and official obfuscation.

NOTES

1. Marshall Houts, *Where Death Delights* (New York: Coward-McCann, Inc., 1967), p. 55.
2. See 16H979.
3. See *Kansas City Times*, July 29, 1967.
4. *Philadelphia Inquirer*, November 25, 1966.
5. *Saturday Evening Post*, January 14, 1967, p. 69.
6. Edward Jay Epstein, "Manchester Unexpurgated," *Commentary*, Volume 44, No. 1 (July 1967), p. 30.
7. *Ibid.*
8. William Manchester, *The Death of a President* (New York: Harper & Row, 1967), pp. 156-157.
9. This correspondence is reproduced in Appendix E of this book.

APPENDIX D

TIMETABLE

- 11/22/63 Autopsy performed.
- 11/22/63 Photos and X-rays turned over to Secret Service.
- ? Chief Justice Warren asked for photos and X-rays —
Never got them.
- Sept 1964 Warren Commission Report issued.
- 4/26/65 Photos and X-rays transferred (See p. 5g 1968 Panel Review).
- 10/29/66 Letter Agreement between Burke Marshall and Lawson Knott.
- 11/1/66 Drs. Humes and Boswell examine, identify and inventory
photos and X-rays.
- ? Dept. Justice requests 3 autopsy doctors to examine.
- 1/20/67 Three autopsy doctors examine — Finch for first time.
- 1/26/67 Three doctors reconfirm their own autopsy findings.
- 1/26/68 Dr. Boswell writes letter to A.G. for himself and Dr. Humes
requesting Panel Review.
- 2/26 and
2/27/68 Panel examines some X-rays and photos.
- 4/9/68 Last of four panelists sign Panel Review.
- 1/?/69 Garrison/Haggerty/Halleck show cause order.
- 1/16/69 Dept. Justice releases pleadings.
- 1/17/69 Hearing before Judge Halleck.