

Chairman STOKES. Dr. Humes, we certainly want to say to you, I think all of us can understand the very trying circumstances and conditions under which you were called into action after this very tragic event, and we are indeed appreciative of the testimony that you have given here this afternoon and the other cooperation you have shown with our panel.

For that, we, at this time, wish to thank you very much, and you are now excused.

Dr. HUMES. Thank you, Mr. Chairman, I appreciate the opportunity to be of help.

Chairman STOKES. Thank you.

The Chair recognizes Professor Blakey.

NARRATION BY G. ROBERT BLAKEY, CHIEF COUNSEL AND STAFF DIRECTOR

Mr. BLAKEY. Thank you, Mr. Chairman.

Our next witness, the one dissenting member of the autopsy panel, Dr. Cyril Wecht, received an M.D. degree from the University of Pittsburgh School of Medicine in 1956 and an LL. B. from the University of Maryland School of Law in 1962, and a J.D. from the University of Pittsburgh School of Law in 1962.

Dr. Wecht currently serves as coroner of Allegheny County, Pa. He holds numerous editorial positions on the boards of medical and legal publications, and he has written on a wide variety of medical and legal subjects, and in particular, the assassination of President Kennedy.

It would be appropriate at this time, Mr. Chairman, to call Dr. Wecht.

Chairman STOKES. The committee calls Dr. Wecht.

Will you please stand and raise your right hand to be sworn?

You solemnly swear the testimony you will give before this committee is the truth, the whole truth, and nothing but the truth, so help you God,

Dr. WECHT. I do.

TESTIMONY OF DR. CYRIL H. WECHT, CORONER, ALLEGHENY COUNTY, PA.

Chairman STOKES. Thank you. You may be seated.

The Chair recognizes staff counsel, Donald A. Purdy, Jr.

Mr. PURDY. Thank you, Mr. Chairman.

Dr. Wecht, did you request to testify today?

Dr. WECHT. Yes, I did.

Mr. PURDY. Dr. Wecht, what are the major conclusions of the forensic pathology panel with which you are in disagreement?

Dr. WECHT. The major disagreement is the single-bullet theory which I deem to be the very essence of the Warren Commission report's conclusions and all the other corroborating panels and groups since that time.

It is the sine qua non of the Warren Commission report's conclusions vis-a-vis a sole assassin. Without the single-bullet theory, there cannot be one assassin, whether it is Oswald or anybody else.

I am in disagreement with various other conclusions of the panel. I am most unhappy and have been extremely dismayed by their failure to insist upon the performance of appropriate experi-

ments, which I believe could have been undertaken with a reasonable degree of expenditure of time, energy, and money to once and for all show whether a bullet 6.5-millimeter, copper-jacketed, lead-core piece of military-type ammunition could indeed strike a rib and a radius in a human being and emerge in the condition which Commission exhibit 399 is today.

I am extremely unhappy about the fact that a greater and more intensive effort was not made to locate the missing pieces of very important medical evidence in this case, which I pointed out back in the summer of 1972. Not that I was the first to learn of this, but amazingly, nobody had made that public disclosure prior to that time. I have raised some questions concerning the head wound and the possibility, albeit remote, of a second shot fired in synchronized fashion from the right side or the lower right rear, synchronized with the head shot that struck the President in the back of the head.

And this is related to a few pieces, a couple of pieces of evidence and, again, emphasizes the necessity of having the brain to examine. These are the major areas.

There are, of course, numerous facets of all of these disagreements that are related to the so-called single-bullet theory.

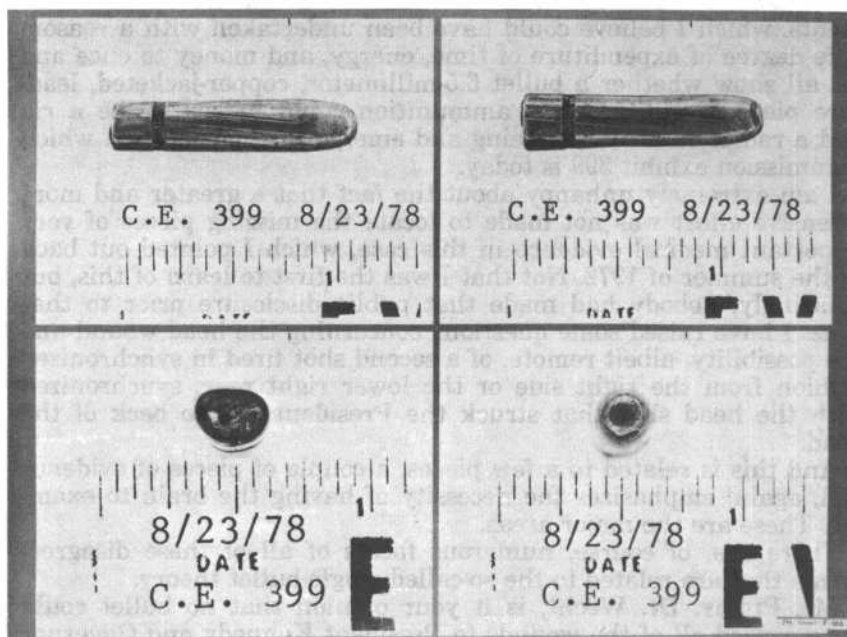
Mr. PURDY. Dr. Wecht, is it your opinion that no bullet could have caused all of the wounds to President Kennedy and Governor Connally or that Commission exhibit 399 could not have caused all of the wounds to both men?

Dr. WECHT. Based upon the findings in this case, it is my opinion that no bullet could have caused all these wounds, not only 399, but no other bullet that we know about or any fragment of any bullet that we know about in this case.

Mr. PURDY. Dr. Wecht, at this time, I would ask you to examine what has been entered into evidence as JFK exhibit No. F-95, which is the bullet Warren Commission 399. I would also like to ask that JFK exhibits F-102 A through D, which are photographic enlargements of this bullet, be entered into evidence at this time.

Chairman STOKES. Without objection, they may be entered into the record at this time.

[The above-referred-to exhibits, JFK F-102 A through D, are shown in JFK exhibit F-102 and follow:]



JFK EXHIBIT F-102

Mr. PURDY. Dr. Wecht, what is the basis for your opinion that Commission exhibit 399 could not have caused all of the wounds to President Kennedy and Governor Connally?

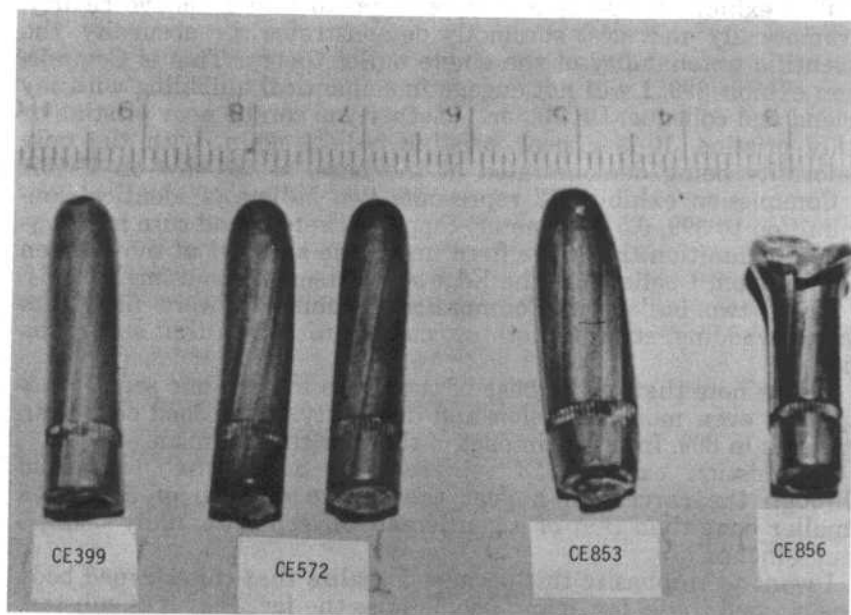
Dr. WECHT. It is a composite based upon several things: The timing of the Zapruder film, which we know runs at 18.3 frames or individual units of the film strip per second; the evaluation of the wounds in the President and Governor Connally; the timing of the test-firing in the hands of the most skilled marksman the Government could find in 1964 of this Mannlicher-Carcano weapon, the bolt action nonautomatic World War II Italian carbine, a grossly inferior weapon; the very vivid testimony of Governor John Connally about which he has been completely consistent for the past 14 years concerning the fact that he was struck by a different bullet; the vertical and horizontal trajectories that must be attributed to Commission exhibit 399 if the single-bullet theory is to be substantiated.

These are the various factors that relate to the single-bullet theory.

Mr. PURDY. Mr. Chairman, I would ask at this time that the item marked "JFK exhibit No. F-294" be entered into the record.

Chairman STOKES. Without objection, it may be entered into the record.

[The above-referred-to exhibit, JFK exhibit F-294, follows:]



JFK EXHIBIT F-294

Mr. PURDY. Dr. Wecht, is it correct that you asked to use this particular exhibit in your presentation today?

Dr. WECHT. Yes, I did. I submitted slides. These are blowups of those slides.

Mr. PURDY. Could you please explain why you feel this exhibit supports your contention that Commission exhibit 399 could not have caused all of the wounds to both men?

Dr. WECHT. Do you wish me to walk over there, Mr. Purdy?

Mr. PURDY. Yes, if you care to, Dr. Wecht.

Dr. WECHT. Commission exhibit 399 in the upper left photo is demonstrated with a side view. It shows the copper jacket to be completely intact, unscathed with no deformity, mutilation or markings. This is another side view. The small defect at the tip is where a piece of metal was properly taken by the FBI for spectrographic analysis.

The photograph on the bottom right shows the nose, the penetrating portion of the missile which is completely unmarked and without any scathing at all.

The photograph on the lower left shows the base of the bullet which is the only area of deformity, what I would refer to as some flattening with indentation of the metallic rim and focal extrusion of the inner lead core. That is the only deformity.

Now, I should like to move over to the next exhibit.

Mr. PURDY. Excuse me, Dr. Wecht. Let the record show that Dr. Wecht is referring to JFK exhibit F-294 now.

Dr. WECHT. Thank you. I do not see—I beg your pardon. Yes, I am sorry, F-294. The one which I was referring to a moment ago was F-102. I forgot to look at the bottom.

This exhibit, F-294, is a composite photo that I believe clearly, dramatically and most succinctly demonstrates the absurdity, the scientific untenability of the single bullet theory. This is Commission exhibit 399. I will not engage in semantical quibbling with my friend and colleague, Dr. Baden, whether you can be near pristine or fully pristine. It is a near pristine bullet, again, with the only deformity being demonstrated at the base, as we saw on F-102.

Commission exhibit 572 represents two bullets of identical ammunition to 399, 6.5 millimeter, copper jacketed, lead core military-type ammunition that were fired under the auspices of the Warren Commission, I believe, at the Edgewood Arsenal, sometime in 1964.

These two bullets in Commission exhibit 572 were fired into cotton wadding, striking nothing, coming to rest in that soft material.

Please note that at the base of those two bullets, one sees, in my opinion, even more extrusion and deformity of the lead core than one sees in 399, from the impact of the firing mechanism.

Commission exhibit 853 represents a bullet that was fired through the carcass of a goat that broke one rib of a goat, a smaller bone than that of a gentleman Governor Connally's size, 6 feet 4 inches.

I want to emphasize this because I realize that this learned body has studied these, but many people miss the fact that it is substantially different. They think maybe it is a visual distortion. The reason that this bullet looks bigger is because it is flattened. Not only is there significant extrusion at the base, but this apparently larger bullet is deformed due to its flattening, a bullet that broke one rib in a goat carcass. And Commission exhibit 856 represents a bullet that went through the wrist of a human cadaver breaking the distal end of the radius.

I would like to emphasize that these are not my selections. They are bullets that were selected by the Warren Commission. I can only assume that for their purposes, since the single bullet theory was their creation, that they chose the bullets that they felt would be best for their vested interest.

I now come back to Commission exhibit 399 and I ask anybody, forensic pathologist, ballistics expert, criminal attorney, investigator, to look at 399 which, under the single bullet theory, is alleged to have broken both a rib and a radius and contrast it with the bullet that was fired through the carcass of a goat breaking only a rib, or the bullet that was fired through the wrist of a human cadaver breaking only a radius.

This is the dramatic evidence that was produced, developed under the auspices of the Warren Commission, and it is this kind of evidence that I wanted to have reproduced by other experiments, I strongly disagree with the statement that has been made by my colleague, Dr. Baden, that perhaps it couldn't be done, it might be too much trouble, and so on I don't know how much he emphasized that today, that was discussed in the past with members of the staff and in our group—and what he did discuss today that this could not be simulated.

I take strong exception to this. We are now in 1978 with technological advancements and greater armamentarium. They could be

simulated in 1964; I have great wonderment as to what the problem is 14 years later.

Mr. PURDY. So, Dr. Wecht, it is your opinion, that were tests to be conducted to simulate these wounds, such tests could sufficiently duplicate the wounds in question to have an accurate illustration?

Dr. WECHT. Let me point out, that these tests that I am referring to have been performed, in fact, by a pathologist, Professor John Nichols, University of Kansas School of Medicine, a full-time academician, who shot them through ribs and wrists.

I know Dr. Nichols. He is not an independently wealthy man. He was able to do this; he was able to get the materials; he was able to set up the experiments and follow through.

Why our panel of distinguished experts with all our expertise and this staff representing a very prominent committee which, in turn, represents the House of Representatives of the United States Congress, why such tests could not be performed is beyond me. I feel constrained to say that they were not performed because people knew full well what the results would be.

I also want to take strong exception with the statement that if one were to shoot through bones that are not innervated and vascularized as they are in living human beings, one cannot be sure that one is getting similar reactions. Here, we are not talking about how the President's body would have reacted to the head wound. We are not talking about that. We are talking only about whether a bullet, as several members of the House Committee have questioned Dr. Baden, we are talking about what the condition of the bullet would be if it went through these bones.

There is no problem in setting up that experiment.

Mr. PURDY. Dr. Wecht, is it your opinion, then, that not only is the conclusion of the forensic pathology panel that Commission exhibit 399 is consistent with the wounds, incorrect, you feel it is demonstrably false, is that correct?

Dr. WECHT. It is absolutely false.

Well, I got involved back in 1965 with the American Academy of Forensic Sciences. For the past 12 or 13 years, I have repeatedly, limited to the context of the forensic pathologist, numerous times implored, beseeched, urged, in writing, orally, privately, collectively, my colleagues; to come up with one bullet, that has done this. I am not talking about 50 percent of the time plus one, 5 percent or 1 percent—just one bullet that have done this.

I also heard reference today by Dr. Baden that, yes, we have seen such bullets, not in the military setting, but we have seen them in civilian life. I can only say to you as a member of the panel, at no time did any of my colleagues ever bring in a bullet from a documented case of the Commonwealth of such and such or the State of such and such versus Jones or Smith and say here is a bullet in a documented case, there is the crime lab's report, it broke two bones in some human being, and look at it, its condition, it is pristine.

I stand here today and I wonder where that bullet is? Maybe it will be presented by the next member of the majority who has conveniently been sandwiched on the other side of me sometime tomorrow.

Mr. PURDY. Dr. Wecht, what is the basis for your opinion that the positions of President Kennedy and Governor Connally in the limousine are inconsistent with the single bullet passing through both men?

Dr. WECHT. The physical——

Mr. PURDY. I think you might want to stay there, we will get to the exhibit in one second.

Dr. WECHT. The physical relationship of the two men clearly demonstrates the physical impossibility of the trajectory attributed to Commission exhibit 399, specifically the horizontal and vertical angles with which it would have had to have struck the President and Governor Connally. Absolutely impossible.

Mr. PURDY. Mr. Chairman, I would ask at this time that exhibits marked JFK exhibit Nos. F-229, F-272, and F-244 be placed up on the board and admitted into evidence.

Chairman STOKES. Without objection, they may be entered at this point.

[The above referred to JFK exhibits were entered previously.]

Mr. PURDY. Dr. Wecht, what point along the film do you feel corresponds with the time when President Kennedy and Governor Connally were supposed to have been hit, according to the single bullet theory?

Dr. WECHT. Commission exhibit of—I am sorry—an exhibit of this panel, of this committee, of 229, which is a blow-up of Zapruder frame 193, demonstrates the President and Governor Connally just before they go in behind the Stemmons Freeway sign. Both gentlemen are turned to the right facing the crowd and their right arms are extended in a wave of greeting or recognition. This exhibit F-272, is a blowup of Zapruder frame 222 and shows Gov. John Connally after emergence from behind the Stemmons Freeway sign, and F-244, which is a blowup of Zapruder frame 225, shows the President and Gov. John Connally.

In my opinion, Zapruder frame 193 clearly demonstrates that neither gentlemen had been shot.

Mr. PURDY. Dr. Wecht, based on F-229, what is the basis for your opinion that neither man had been struck by a bullet in that photograph?

Dr. WECHT. There is absolutely no external physical manifestation, no reaction of any kind on their part of a voluntary or involuntary nature which would even suggest they have been struck by a missile.

Mr. PURDY. Dr. Wecht, is it possible that either or both men have been struck by a bullet but are not yet manifesting a reaction?

Dr. WECHT. In my opinion, without any question, no.

Mr. PURDY. referring to F-272, which corresponds with Zapruder frame 222, is it your opinion that Governor Connally is indicating a reaction to being struck in that photograph?

Dr. WECHT. No; absolutely not.

Mr. PURDY. Referring to F-244, is there any indication on that photograph that either or both men have been struck by a bullet?

Dr. WECHT. Yes. President John F. Kennedy has definitely been struck, as seen on F-244, Zapruder frame 225. Gov. John Connally, in my opinion, has not been struck in that frame, as of that frame.

Mr. PURDY. Referring again to F-244, what is the earliest prior to that point that President Kennedy would have had to have been struck?

Dr. WECHT. I would say probably somewhere like—well I can't—I would put it, based upon the timing of the Zapruder film and counting the frames, I would put it back somewhere about a half a second, maybe even a little bit more, somewhere along there. I cannot be precise.

I do want to point out at this time, if I may, because there is some confusion on this, sometimes there has been deliberate misrepresentation of the period of time during which the two gentlemen are behind the Stemmons Freeway sign. That is a period of 0.9 seconds. I emphasize that because we see in F-229 that indeed Gov. John Connally is sitting directly in front of the President. We see in F-244 that Gov. John Connally is still seated directly in front of the President.

When we bring up the question of the trajectory, that hopefully we will get into later, they say, ah, but we cannot know what happened when they were behind the Stemmons Freeway sign. I just think it is important for the record to reflect upon the fact that what presumably they are asking us to just speculate upon is that in that 0.9 second interval, the President bent down to tie his shoelace or fix his sock, he was then shot and then sat back up. I do not mean to be flip, this is a very serious matter, but I would suggest that is a movement that the most skilled athlete, knowing what he is going to do, could not perform in that period of time.

That is very important to understand, because we see their positions before and immediately afterward. I think it is pure poppycock, it would be an insult to this committee for anybody to suggest that we can't really determine trajectory because we don't know what the physical relationship was between the two men when the President was shot, and when they say under the single bullet theory, John Connally had also been shot.

Mr. PURDY. Dr. Wecht, what was the nature of the wound through President Kennedy that indicates to you that he would have reacted to being struck as quickly as you indicate?

Dr. WECHT. He was struck in the back. There are a variety of nerves that innervate the skin, the musculature, blood vessels, and so on. He, as indeed Gov. John Connally, were both healthy, adult males, in a very vibrant, dynamic sensitive situation, attuned very much to their environment, and there is no question in my mind that the reaction would have occurred immediately in an infinitesimal moment.

Mr. PURDY. Dr. Wecht, based on the photograph, you have already gone into the issue of trajectory and articulated to some extent why you believe the President and the Governor were not lined up in such a way that a bullet could have passed between them.

How certain are you that they could not have been lined up behind the sign when they were out of the view of the camera?

Dr. WECHT. I am absolutely certain for the reasons that I have already given and as are demonstrated on these films. There is simply no way in the world that the kinds of changes of positions of these two men required by the single bullet theory could have

been accomplished. There is no physiological way in which it could have been performed, there is no basis to speculate on why such a movement would have occurred.

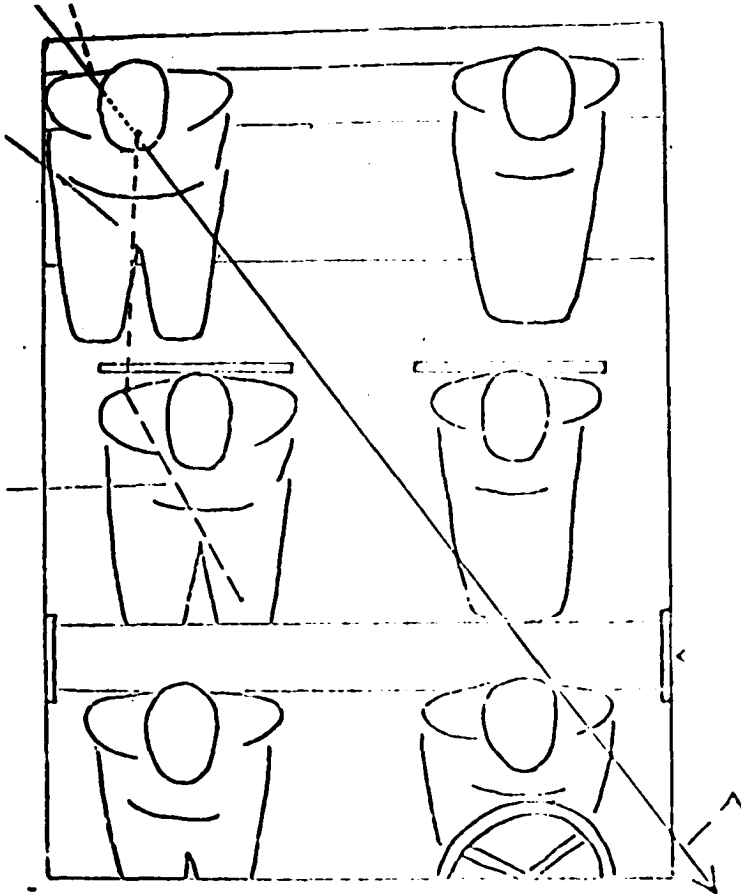
Quite literally, John Connally would have had to have moved a foot or more to his left and then moved back, and/or the President would have had to have almost leaned out of the car and then to have come back to his position. And I am not being the least bit facetious. That is what would have had to have occurred in that nine-tenths of a second interval if we are to assume that this bullet went through the two men in the fashion attributed to it in the single bullet theory.

Mr. PURDY. Mr. Chairman, I would like to ask at this time that the two items marked JFK exhibits F-320 and F-273 be entered into the record.

Chairman STOKES. Without objection, they may be entered into the record.

[JFK exhibit F-273 was entered previously.]

[The above referred to JFK exhibit F-320 follows:]



Figure

Scale schematic illustration of the car interior of the Presidential limousine showing most likely approximate bullet path. Shooting angle shown is 35 degrees.

JFK EXHIBIT F-320

Mr. PURDY. Ms. Godfrey, if we could keep those photographs up also.

Dr. Wecht, is it correct that you asked that these two diagrams be used during this questioning?

Dr. WECHT. Yes, I did.

Mr. PURDY. Dr. Wecht, excuse me.

Dr. WECHT. I am sorry.

Mr. PURDY. For the purposes of the formulation of these diagrams, how was it determined where the men were seated in the car and the angle the bullet would have struck President Kennedy?

Dr. WECHT. The positions of the two men were formulated in this schematic representation based upon my review of the Zapruder film, originally at Life magazine headquarters in 1966, at the National Archives in 1972, and repeated under the auspices of this forensic pathology panel last year and this year. It is also based upon my review of the Nix and Muchmore films, my review of the testimony and accounts of numerous people involved, including Governor and Mrs. Connally, Mrs. Kennedy, and other eye witnesses. All of these things together, plus the discussion that we have just been through, would indicate to me that this is a fair and most reasonably accurate representation of the positions of the Kennedys, the Connallys and the two Secret Service agents, Greer and Kellerman, who were sitting in the front seat.

Mr. PURDY. What is it about the normal paths of bullets which leads you to the conclusion that these diagrams illustrating the photographs, permit you to conclude that the bullet did not pass through both men?

Dr. WECHT. The inescapable fact that unless a bullet, especially one fired from a high speed weapon, reasonably high speed, approximately 2,000 feet per second muzzle velocity—unless it strikes something of firm substance, such as bone or something else, that that bullet will travel in a straight line.

Mr. PURDY. Mr. Chairman, I would ask at this time that the item marked JFK exhibit F-245, which is a blowup of frame 230 of the Zapruder film, be entered into the record.

Chairman STOKES. Without objection, it may be entered into the record.

[The above referred to JFK exhibit F-245 was entered previously.]

Mr. PURDY. Dr. Wecht, in your opinion, could Governor Connally have incurred the damage to his wrist which is described in the medical reports and still be holding the hat as shown in this photograph?

Dr. WECHT. No; absolutely not. In F-245, which is a blowup of Zapruder frame 230, we are told under the single bullet theory that Gov. John Connally, for a period of approximately one and a half seconds, has already been shot through the right chest with the right lung pierced and collapsed, through the right wrist, with the distal end of the radius comminuted and the radial nerve partially severed.

I heard some vague reference to a nerve in the prior testimony, but I didn't hear the followthrough discussion that I was waiting for about nerve damage. There was nerve damage, yes, to the radial nerve. And the thumb which holds this large Texas white Stetson that is required for it to be in apposition with the index or index and middle fingers to hold that hat is innervated by the radial nerve. Note in F-245 that the hat is still being held and Governor Connally is not reacting.

This is again a very alert individual, under a very special circumstance, and I do not believe or accept for one moment the story that we must accept under the single bullet theory that this gentlemen, at this point, one and a half seconds previously, has already been shot through his chest, through his wrist, and into his left thigh.

Mr. PURDY. Dr. Wecht, is it your opinion based on this exhibit, JFK exhibit F-245, that Governor Connally is not yet injured in any way?

Dr. WECHT. Yes; that is my opinion.

Mr. PURDY. Dr. Wecht, Is it possible that he had been injured prior to this frame but has not yet manifested a reaction?

Dr. WECHT. No; I do not believe so, not given the nature and extents of his wounds, the multiplicity and the areas damaged, I do not believe that.

Mr. PURDY. Dr. Wecht, given the nature of his wounds, how much prior to the time that he manifests a reaction is the earliest he could have been struck?

Dr. WECHT. Well, a fraction of a second, again, an infinitesimal moment. It is possible that a fraction of a second earlier he could have been shot, although I do not believe that.

Please keep in mind that now we must correlate that with the Governor's own version, and remembering that this bullet was traveling 2,000 feet per second muzzle velocity, much faster than the speed of sound.

Please keep in mind that it does not seem at all likely. I doubt that it is possible that he had already been struck.

Mr. PURDY. Mr. Chairman, I would ask at this time that items marked JFK exhibits F-246 and F-247, which correspond with Zapruder frame numbers 236 and 237, be entered into the record.

Chairman STOKES. Without objection they may be entered into the record.

[The above referred to JFK exhibits F-246 and F-247 were entered previously.]

Mr. PURDY. Dr. Wecht, from your examination of these photographs, do you conclude that Governor Connally has been struck?

Dr. WECHT. Yes; I believe F-246, which is a blowup of Zapruder frame 237, demonstrates that Gov. John Connally has now been struck.

Mr. PURDY. Dr. Wecht, what is it about his movements that leads you to the conclusion that he has been struck?

Dr. WECHT. The body is turning, the cheeks are puffing out, there is a noticable grimace on his face, in contrast, for instance, to F-245, Z-frame 230, and there seems to be some dishevelment of his hair. These features can be seen very dramatically also one frame later, F-247, or Zapruder frame 238, which I remind you is one-eighteenth of a second interval away, and you can see the hair movement, the twisting of the body. There is no question in my mind that the Governor has now been hit.

Chairman STOKES. Would counsel suspend for a moment. There is a live quorum on with a vote immediately following and at this time, the committee will recess for 15 minutes.

[A short recess was taken.]

Chairman STOKES. The committee will come back to order.

The Chair recognizes staff counsel Purdy.

Mr. PURDY. Thank you, Mr. Chairman.

Dr. Wecht, referring again to the JFK exhibits F-229, F-272 and F-244, which are the frames immediately before and the frames after the sign, you discussed the fact that the men did not line up in a horizontal trajectory?

Dr. WECHT. Yes. The panel, to the best of my recollection, was in unanimous agreement that there was a slight upward trajectory of the bullet through President John F. Kennedy, that is to say, that the bullet wound of entrance on the President's back, lined up with the bullet wound of exit in the front of the President's neck, drawing a straight line, showed that vertically the bullet had moved slightly upward, slightly, but upward.

That is extremely important for two reasons. One, under the single bullet theory—with Oswald as the sole assassin, or anybody else, in the sixth floor window, southeast corner of the Texas School Book Depository Building, you have the bullet coming down at a downward angle of around 20–25 degrees, something like that, maybe a little bit less. It had originally been postulated, I think, by the autopsy team, and the initial investigators, at considerably more. How in the world can a bullet be fired from the sixth floor window, strike the President in the back, and yet have a slightly upward direction?

There was nothing there to cause it to change its course. And then with the slightly upward direction, outside the President's neck, that bullet then embarked upon a rollercoaster ride with a major dip, because it then proceeded; under the single bullet theory, through Gov. John Connally at a 25 degree angle of declination.

To my knowledge, there has never been any disagreement among the proponents and defenders of the Warren Commission report or the critics, about the angle of declination in John Connally—maybe a degree or two. We have that bullet going through the Governor at about 25 degrees downward. How does a bullet that is moving slightly upward in the President proceed then to move downward 25 degrees in John Connally. This is what I cannot understand.

My colleagues on the panel are aware of this. We discussed it, and what we keep coming back to is, "well, don't know how the two men were seated in relationship to each other." I don't care what happened behind the Stemmons freeway sign, there is no way in the world that they can put that together, and likewise on the horizontal plane, the bullet, please keep in mind, entered in the President's right back, I agree, exited in the anterior midline of the President's neck, I agree, and was moving thence by definition, by known facts, on a straight line from entrance to exit, from right to left.

And so with that bullet moving in a leftward fashion, it then somehow made an acute angular turn, came back almost two feet, stopped, made a second turn, and slammed into Gov. John Connally behind the right armpit, referred to medically as the right posterior axillary area.

The vertical and horizontal trajectory of this bullet, 399, under the single bullet theory is absolutely unfathomable, indefensible, and incredible.

Mr. PURDY. Dr. Wecht, I would like you to examine JFK exhibit F-84, which has already been entered into the record, which is an X-ray of Governor Connally's chest—excuse me—of his wrist, and, Dr. Wecht, could you tell us whether you believe that Commission exhibit 399 could have caused the injuries to the wrist of Governor Connally?

Dr. WECHT. No, I do not. I would like to emphasize that this is what is referred to medically as a comminuted fracture. I have been negatively impressed by repeated efforts on the part of my fellow panelists and others to deminimize the nature of the severity of this fracture. They imply it was merely slight linear nondisplaced fracture.

It was a comminuted fracture with substantial displacement—and comminuted means fragmented.

Also, again, despite the testimony of my colleague, my predecessor here today, I must take strong exception. He has indicated that the radius apparently is just not that big a bone. As this distinguished committee and members of the staff saw yesterday, Governor Connally, I think, is about six foot four. I don't know his exact weight, 200 pounds approximately. He is a big man. That is the distal end of the radius where you can see the bone begins to fan out. It indeed is a heavy bone. To suggest that it is no thicker than a phalanx, a finger bone in a 10-year-old child, is not fair. It is not an accurate representation.

I say that a bullet that struck the distal radius, the region above the eight small wrist bones—it is one of the two large bones coming down from the elbow to the wrist—that a bullet that struck and caused that damage and which had previously damaged and destroyed, pulverized 5 inches of the right fifth rib, could not have emerged in the near pristine condition of Commission exhibit 399.

In that relationship I also want to point out that I heard testimony here today, as I heard discussed previously by our panel that we don't really know if the right fifth rib was damaged; if so, and how much; and whether it was struck directly, or perhaps the fracture might have been caused by implosion, or whatever. I don't know where this speculation comes from. I know indeed what the operating surgeon on Friday, November 22, 1963, at Parkland Hospital said about what he found when he explored Gov. John Connally's chest. He found 5 inches of that bone literally pulverized.

Mr. PURDY. Dr. Wecht, is it your opinion that Commission exhibit 399 could not have caused the wounds other than the wrist wound of Governor Connally?

I take it from what you have just stated about the damage to the rib, that you do not believe that Commission exhibit 399 could have caused the damage to Governor Connally's rib, is that correct?

Dr. WECHT. Let me make sure I understand your question. Mr. Purdy, are you asking me could Commission exhibit 399 have caused the damage to the rib alone, if one were to assume that it struck no other bone?

Mr. PURDY. Correct.

Dr. WECHT. That is a possibility that I would accept, that I cannot rule out—

Mr. PURDY. Dr. Wecht—

Dr. WECHT [continuing]. If it struck the rib alone.

Mr. PURDY. Is it possible that Commission exhibit 399 could have caused all of the wounds of Governor Connally, other than the wrist wound?

Dr. WECHT. Only the rib and then a fragment or a portion of a bullet into the left thigh, yes, that is another possibility that I cannot exclude.

Mr. PURDY. Do you want to be seated again?

Dr. WECHT. Yes sir.

Mr. PURDY. Dr. Wecht, earlier today Dr. Baden testified on behalf of the forensic pathology panel that the wound in Governor Connally's back was such that the majority of the panel concluded that the bullet which struck him had struck something else first. Do you agree with that interpretation?

Dr. WECHT. No. I do not feel that there is any such definitive evidence, although it is a possibility that the bullet might have struck a small branch or some leaves coming in. I cannot rule that out, but I think that the fact that the scar on Gov. John Connally's back is in a horizontal plane is more consistent with the shot having been fired from the right side, the right rear, entering with some degree of a tangential nature.

Mr. PURDY. Dr. Wecht, you stated earlier that you have a disagreement with the certainty of the forensic pathology panel's conclusion that the President was struck in the head with only one bullet. If the President was struck by a second bullet in the head, how close in time to the first bullet do you think the other came?

Dr. WECHT. If the President had been struck in the head with a second bullet, then it would have been fired in synchronized fashion simultaneous with the shot that did strike him in the rear of the head, as has been presented here today.

Mr. PURDY. Dr. Wecht, what evidence is there which supports the possibility that there was a shot from the side or from the lower right rear?

Dr. WECHT. Very meager, and the possibility based upon the existing evidence is extremely remote. There is a small piece of some material that is present at the base of the external scalp, just above the hairline, which has never been commented on before except by me following the 1972 investigation of the material at the Archives, and later commented upon by this forensic pathology panel.

There is a total deformation of the right side of the cranial vault with extensive fractures of the calvarium, the top portion of the skull, and extensive scalp lacerations and loss of soft tissue, so that we cannot exactly know where the exit wound was. It is, therefore, possible that that extensive deformity of the scalp, underlying galea, underlying bone calvarium, could also be the locus of the second shot of some kind of frangible ammunition which would not have penetrated deeply or at all through the calvarium.

I want to emphasize that this is remote but I have pointed this out because it is a possibility. The question of the President's movement after he was struck in the head makes us direct our attention toward such a possibility and, of course, the absence of the brain and the failure of the original pathologists to have conducted studies that are routine, perfunctory in any kind of an autopsy where the brain has been fixed in formalin, to serially section the brain 10 to 14 days later, and the absence of the brain and the inability or the failure of the staff to obtain that medical evidence, all of these things, I believe, make it important to just raise that possibility, remote as it may be, that a second shot might have struck the President in the head in synchronized or simultaneous fashion.

Mr. PURDY. Dr. Wecht, to what extent would having access to the brain itself enable a final determination as to whether or not the remote possibility of a shot from the side is supported or refuted by the evidence?

Dr. WECHT. Well, examination of the brain would help a great deal. Of course, if the bullet had not penetrated through the calvarium then there would be no evidence of a second bullet track in the soft brain tissue.

If it had penetrated partly, or even a fragment or two, then certainly at that time, and even today, if the brain had been properly preserved and fixed and the formalin solution changed every so often, one would be able, I believe, to tell whether there is only one bullet track, that is, from the right upper occipital region down to the lower right temporal parietal area. The brain would be extremely important to help us determine whether more than one missile had penetrated or a fragment of a second missile might have penetrated the brain along with the one that we do know definitely penetrated. I am in agreement with the description that was presented today regarding the shot through the head.

Mr. PURDY. Dr. Wecht, does the present state of available evidence permit the conclusion that to a reasonable degree of medical certainty there was not a shot from the side which struck the President?

Dr. WECHT. Yes, with reasonable medical certainty I would have to say that the evidence is not there. I have already said it is a remote possibility and I certainly cannot equate that with reasonable medical certainty.

Mr. PURDY. Thank you.

Mr. Chairman, I have no further questions.

Chairman STOKES. At this time the committee will operate under the 5-minute rule. I withdraw that. The Chair will recognize Counsel Gary Cornwell.

Mr. CORNWELL. Dr. Wecht, first, so that we might understand the reasons for the disagreement as to principally the single bullet theory between you and the rest of the medical panel, let me ask you whether you have had access to any data or information that the rest of the medical panel members have not had access to?

Dr. WECHT. The only thing that I am personally knowledgeable of was the frame-by-frame study in blown up fashion of what I was informed then was the primary copy of the Zapruder film on huge lighted tables at Life magazine headquarters in 1966. Aside from that, I do not know of anything that I have seen that they have not seen.

Mr. CORNWELL. And would you feel that your expertise in the field of forensic pathology differs in a substantial way from the expertise of the other panel members in that field?

Dr. WECHT. Insofar as professional scientific expertise related to formal training in forensic pathology, and practice in the field of forensic pathology in a medical-legal investigative facility are concerned, I would say that I am not aware of any major or substantial difference.

Mr. CORNWELL. Then would it be fair to state that the difference of opinion between you and the other panel members, as again to principally the single bullet theory, is based strictly or derived

strictly from a difference of opinion based on the same evidence from persons of similar backgrounds and training?

Dr. WECHT. Yes; clearly, Mr. Cornwell, it is a difference of opinion. However, I would like to supplement that answer by saying that I believe this is not in the realm of interpretive or speculative or conjectural opinion but is related to things which I truly believe do not even require the expertise of a forensic pathologist to see and interpret.

Mr. CORNWELL. Just so we understand for sure what your testimony is as to the possibility of a head shot on the right, you have called it a remote possibility—

Dr. WECHT. Remote possibility.

Mr. CORNWELL. In a court of law, what would be the normal role of opinions to only that degree of certainty?

Dr. WECHT. You are more of an expert than I, Mr. Cornwell, however, I won't take the easy way out and evade your question in that fashion. I am sure that every judge I have been involved with would not permit such testimony to go in.

But, of course, there are other differences, too. As you know, they work the other way involving the fact that this is not a court of law.

Mr. CORNWELL. So, just again to understand that part of your testimony, would it be fairly accurate to state that what you have suggested basically is that this is not a normal case and that, therefore, it is sort of because it was the President who was killed that we would like to know as much as absolutely possible, and if we had had more data, such as the brain, we might even have been able to do away with all speculation on the subject; is that correct?

Dr. WECHT. I am not sure if I completely follow you. Let me say, and please stop me if I am not being responsive, that had I been involved in the original investigation, then I certainly would have done those things that I have talked about—the examination of the brain in its formal in fixed state, approximately 2 weeks afterward, which incidentally they started to do on December 6, 1963, but which they then aborted. The last sentence of that supplemental report is something like, "No sagittal sections of the brain are made in order to preserve the specimen." Quote, unquote. Were this case brought to me in consultation as a medical-legal expert, not involving the President but just somebody who was able to retain an independent forensic pathologist, I indeed would raise the same points to the attorney, whichever side, the district attorney or the defense attorney, and ask them to look into it.

You see, what I would be permitted to testify to subsequently at a trial would be one thing, but I would raise these things investigatively in advance of the trial. It would make no difference, were it the President, you, me, Mr. Jones, or Mr. Smith.

Mr. CORNWELL. Directing your attention, next, to the single-bullet theory, as I understand your testimony, it is not that one bullet of the Mannlicher-Carcano type would not have been powerful enough to go through the neck, the chest, the wrists and imbed itself in the thigh, is that correct, as a matter of mere power?

Dr. WECHT. Yes; I believe that it is possible for that kind of ammunition to go through those several portions of human body.

Mr. CORNWELL. And if the single-bullet theory is not correct, how many bullets, in your view, did strike the two occupants of the car?

Dr. WECHT. Of course, then—let me answer that, I believe that the President was struck definitely twice, one bullet entering in the back, and one bullet entering in the back of the head. I believe that Gov. John Connally was struck by a bullet, and I believe that another bullet completely missed the car. I think that there were four shots most probably fired. I eagerly await with extreme anticipation the results of the consulting firm that I understand your committee has retained in Boston, Bolt, Beranek & Newman, concerning their interpretative studies of the motorcycle policeman's tape from that day; as to whether or not they have definitely found evidence of four shots having been fired.

But I think your question was, how many bullets struck the occupants, and I think that there is definite evidence for three. There is a possibility of more, but I can't really introduce evidence that would corroborate that; more than three.

Mr. CORNWELL. If I could direct your attention again to, I believe it was JFK exhibit F-294, which showed deformations on various bullets, and simultaneously I would like to ask if we could show the witness 399, the actual bullet.

Have you had a chance to look at the exhibit?

Dr. WECHT. Yes, sir.

Mr. CORNWELL. The question I would like to direct your attention to is under what circumstances does deformation of a bullet occur?

Dr. WECHT. I feel that when a bullet strikes a dense object, such as a distal end of a radius in an adult male, like John Connally, that there would be deformation of a measurable degree.

Mr. CORNWELL. Then, using the example of the wrist you just used, would it be accurate to state that such a bullet perhaps could have gone through the neck without experiencing substantial deformation if it went through the neck of the President alone?

In other words, that's not where you would expect substantial deformation?

Dr. WECHT. Yes, that's correct. There would not have been deformation of a substantial degree. As a matter of fact, based upon the description which we have by documented record and testimony of the physicians who examined the President at Parkland Hospital emergency room, the small even-edged, round symmetrical wound that they thought at that time, mistakenly, was an entrance wound, I would say that the bullet was not deformed, it was not wobbling or tumbling and it had not straightened out from a wobbling course only to start wobbling again.

Mr. CORNWELL. Let's again use the hypothetical of just going through the Governor's chest. Could it have gone through the chest alone, nothing else, and suffered no more deformation, in your opinion, than 399?

Dr. WECHT. You mean after emerging from the President's neck?

Mr. CORNWELL. Either way, or both, if the hypothetical varies, tell me both ways.

Dr. WECHT. I do not believe it could have gone through Governor Connally's chest because the horizontal and vertical trajectories would not have permitted the course of that bullet.

Mr. CORNWELL. I am not talking about trajectories, I am just talking about if a bullet went through the chest alone.

Dr. WECHT. In a hypothetical situation?

Mr. CORNWELL. Yes, sir.

Dr. WECHT. Doing what we believe the bullet did in President Kennedy's upper chest and neck area, and then doing what we know the bullet to have done in Gov. John Connally's chest; is that your question?

Mr. CORNWELL. Let's assume the trajectory is lined up for purposes of discussion.

Dr. WECHT. The answer is it gets back to what Mr. Purdy asked me. The answer is I think it would be possible for a bullet to have emerged with a relatively minimal degree of deformity having gone through those two parts of the human anatomy of two human beings.

Mr. CORNWELL. All right. Then, let's skip the wrist for a moment. Could it also have embedded itself to the degree that it did in Governor Connally's thigh or that some bullet apparently did and suffered no great deformity in that process?

Dr. WECHT. Yes; that would be possible.

Mr. CORNWELL. So, it is the wrist that is primarily the problem?

Dr. WECHT. Well, when you put the wrist on top, it is a cumulative thing, yes; because the rib cannot be totally ignored in a cumulative sense with the wrist. It is rib and wrist together. Rib alone; I recognize the possibility of a bullet doing that damage and emerging in this condition.

Mr. CORNWELL. Let me then rephrase it, it is the wrist which is primarily the problem, that's the one that you would expect the greatest deformation to occur in?

Dr. WECHT. Yes; especially with rib and wrist. Wrist alone, as I have already said, I believe would have produced more deformation than we see here had those injuries been noted that we demonstrated on a blow-up of Gov. John Connally's wrist X-ray a moment ago.

I just want to say that the rib, then followed by the wrist would place greater physical stress on the bullet than wrist alone.

Mr. CORNWELL. Even though the two of them were probably separated by some air between the two; is that correct?

Dr. WECHT. Yes; it is an additive effect.

Mr. CORNWELL. It then simply boils down to, as I understand it, the proposition that 399 could not have gone through the wrist and remained in that good of condition?

Dr. WECHT. I don't know what you mean by "simply" because I am also including—if you are limiting it to that, the answer is yes, but my criticism of the single-bullet theory includes much more than just deformation.

Mr. CORNWELL. May I ask the clerk to hand me the exhibit 399, the one the witness has. It's apparently our exhibit 95; is that correct?

What I would like to do now is discuss with you the implications, if any, of velocity on these hypotheticals we have just been discussing. The markings on the bullet, of course, are of critical importance; is that correct?

Dr. WECHT. Yes.

Mr. CORNWELL. They have been observed by you very carefully on prior occasions and on this occasion?

Dr. WECHT. Are you referring to the piece taken for spectrographic analysis and the deformation at the base?

Mr. CORNWELL. The bullet.

Dr. WECHT. Yes.

Mr. CORNWELL. If I were to hold the bullet up above the table, and tell you I was going to drop it, would it worry you that we might destroy some of the evidence by covering over some of the markings on the end of the bullet?

Dr. WECHT. No; unless one were talking about the possibility of doing some very refined ballistics studies.

Mr. CORNWELL. Nothing observable.

Dr. WECHT. No; I do not believe with the naked eye——

[At this point, counsel dropped bullet.]

Mr. CORNWELL. No damage will occur?

Dr. WECHT. No.

Mr. CORNWELL. What would you estimate the velocity of that to have been?

Dr. WECHT. A free-falling object, if I remember my high school physics, is about 32 feet per second; is that right, gravity?

Mr. CORNWELL. I am not an expert; I don't know.

Dr. WECHT. I am a little bit removed from my physics, but I think that rings a bell, 32 feet per second.

Mr. CORNWELL. Would it be accurate to state that at least in relation to the velocity of a Mannlicher-Carcano with the muzzle, that was virtually zero velocity that we just observed?

Dr. WECHT. Yes, in relationship to 2,000 feet per second, just a fraction thereof.

Mr. CORNWELL. Now, if we were to increase that by dropping it higher and higher or using some other method, such as perhaps embedding it in a piece of wood and hitting it, at what velocity would that bullet begin to deform if the thing it struck was a bone of the nature of the Governor's wrist?

Dr. WECHT. I cannot be certain about what the minimal velocity would be that would be required. And I would like to suggest that this question, and many others like it, which might be extremely relevant, this question could have been easily answered, Mr. Cornwell, by simply shooting 6.5 millimeter ammunition through another Mannlicher-Carcano weapon instead of engaging in cross-examination of me, although I realize you are free to do that, but this is the kind of study, sir, with all due respect, that could have been performed, and if it has been performed, I, as a member of the panel, have not been made aware of it.

Mr. CORNWELL. Would you know whether or not it would be possible to calculate the velocity at which the bullet would begin to deform upon striking a bone such as that?

Dr. WECHT. One could probably work out some experiments that would permit some reasonable conclusions in that regard. I would have to confer with experts in physics, experts in ballistics before expressing a definitive opinion that would get certainly beyond my limited realm, relatively speaking, of forensic pathology.

Mr. CORNWELL. Would it also be possible to determine at what velocity a bullet like that would shatter bone?

Dr. WECHT. Again, I believe, offhand, that such an experiment could probably be worked out within a reasonable range.

Mr. CORNWELL. Let's suppose we determined those two matters, the point at which this bullet hitting straight on, and then perhaps it was going sideways, began to deform upon hitting bone, the velocities there, and we also determined the velocity at which bone shatters, and let's just suppose, hypothetically, those two were not the same and that the bullet deformed at a higher velocity than bone shattered, would there not then be a gap between the two at which the bullet could go through bone, shatter it and suffer no deformation?

Dr. WECHT. I can't answer such a hypothetical—It really involves too much speculation. I really can't respond to that intelligently.

Mr. CORNWELL. Let's see what you could provide us as an insight on this problem. Let me ask you, would you at least know from your experience that it is a relevant factor how fast the bullet is going when it strikes bones in order to determine the amount of deformation that would occur, if any?

Dr. WECHT. To some degree, it is a relevant factor with regard to the extent and severity of such deformation.

Mr. CORNWELL. Now then, returning to the JFK exhibit F-294, you didn't tell us, I believe, when you explained the deformations there, how fast those bullets were going. Would you mind doing that?

Dr. WECHT. To my knowledge, those bullets were fired from another identical weapon, a Mannlicher-Carcano; the ammunition was identical to Commission exhibit 399. To my knowledge, the test which was set up by the Warren Commission, fired that directly through a goat carcass so that the velocity was roughly equivalent to the muzzle velocity, and similarly with the wrist of the human cadaver.

Mr. CORNWELL. Do you have any information as to how fast the bullet was traveling, whatever bullet it was, when it hit Governor Connally in the wrist?

Dr. WECHT. No; there are estimates. My recollection is that it has been estimated that when it struck his chest, it was probably down to about maybe 1,800 feet per second, or thereabout, and the wrist maybe as little as 1,200 to 1,500, something like that, but that's a vague recollection.

Mr. CORNWELL. What are those estimates based upon? What assumptions would necessarily underlie it?

Dr. WECHT. I think that they were based upon some studies that people involved in this field had performed.

Mr. CORNWELL. What I meant was, are they based on assumptions that the bullet hit nothing first and that it was going through the air from its muzzle and the muzzle was located no more or less than certain distances from the Governor, things like that?

Dr. WECHT. No; the estimate of the velocity in the Governor's chest was, of course, predicated upon their belief that the bullet had already gone through President Kennedy's back and out his neck, and their estimate of the velocity through the Governor's right wrist was based upon their speculation that that bullet had gone through the Governor's chest and President Kennedy's back.

Mr. CORNWELL. So, a comparison of 399, then, with that chart might not necessarily be valid if 399 struck bones at one velocity and the bullets on the chart struck the bones at a different velocity?

Dr. WECHT. No; I would not accept that statement, not in toto. With regard to Commission exhibit 572, the two bullets fired in the cotton wadding, that muzzle velocity was exactly the same as 399 initially and 853 through the carcass of a goat, that would have been reduced, it is estimated, about one-tenth, 10 percent of the original velocity, not terribly substantial.

Exhibit 856, again, under the premises of the single bullet theory, would have been down to anywhere from three-fifths, 60 percent, to 75 percent of the original velocity. These are all things that would have to be worked out experimentally and I very much wish had been previously.

Mr. CORNWELL. Then, just one final question. If we don't know at what precise velocity the bullet struck the wrist, what effect, if any, would it make on the single bullet theory if we could show that 399 did hit the wrist?

Dr. WECHT. There is no problem, you see, Mr. Cornwell, in setting up an experiment which would permit all three possibilities to be considered. One could set it up to have it fired.

Mr. CORNWELL. I don't think you understood the question. Let me ask it one more time.

If we could show, even though we don't know the precise velocity at which the bullet hit the Governor's wrist, if we could show that 399 did hit that wrist, what, if any, impact would that make upon your analysis of the lack of validity of the single bullet theory?

Dr. WECHT. If you were to shoot that ammunition through the wrist of the human cadaver, then you would know what damage it would produce traveling at 2,000 feet per second. If you were to set up a goat carcass or even a human chest and then the wrist, you would see and be able to measure that velocity and obtain that batch of the ammunition, and if you wanted to have something representing the President's chest and neck, you could do it with a gelatin block. So, you could do all these things.

Mr. CORNWELL. I understand. I am sorry I am having trouble phrasing my question. Let me try it a different way. You wrote an article at one point in *Modern Medicine*, October 28, 1974, in which you discussed some of the examinations that the FBI had attempted, spectrographic analysis and that sort of thing, at which point after discussing the inconclusiveness of the FBI's examinations, you stated:

If it had been found that the composition of the lead in the fragment recovered from Governor Connally's wrist wound was indistinguishable from the composition of the lead in the nearly whole bullet found at Parkland Hospital, that fact alone would lend strong support to the single bullet theory.

Do you still have that view?

Dr. WECHT. To some extent, that would be true, but in light of my new knowledge about the trajectory, particularly the vertical trajectory with the upward course through the body, then that statement would be much less definitive, much less positive than it was as expressed by me in that article a few years ago.

Mr. CORNWELL. So, in other words, if there were such evidence, it would make a substantial impact upon your analysis of the improbability of a single bullet theory, except, that of course, there is still the question of the positions of bodies in the car; is that accurate?

Dr. WECHT. Extensive, detailed, complete neutron activation analyses of all the bullets and all the fragments, including those which had not been removed, including the one which was in Governor Connally's left thigh, including the one which I understand, according to sworn affidavits, was removed from the Governor's chest, given to a nurse, who gave it to a policeman, who gave it to an FBI agent, if all those things were done, Mr. Cornwell, then I would be prepared to discuss the impact of the NAA findings on the single bullet theory.

In the absence of all NAA tests, I am not prepared to accept a piecemeal presentation of a few tests that some people in some Government agencies felt could be done and others which would not necessarily have to be performed.

Mr. CORNWELL. I have no further questions. Thank you.

Chairman STOKES. The committee, at this time, will operate under the 5-minute rule, starting with the Chair.

Dr. Wecht, you were one of a panel of nine eminently qualified forensic pathologists; is that correct?

Dr. WECHT. Yes, sir, I thank you for the characterization. I was one of nine; yes, sir.

Chairman STOKES. And you do not quarrel with my categorization of them, the other eight, as being eminently qualified, do you?

Dr. WECHT. No.

Chairman STOKES. Now, with all of you being men of a profession in which you are certainly jealous of your reputation in the field, is there any reason why these other eight men would take the position they have taken based upon anything other than medical certification?

Dr. WECHT. Mr. Chairman, you would have to ask them that question. I do not mean to be either evasive and certainly not disrespectful, but it would be presumptuous of me to speculate on that.

There are some things involving some present and former professional relationships and things between some of them, and some people who have served on previous panels. In fact, two of the members of this panel have been previously involved. One under the auspices of CBS with the Government's implied permission and delight, if not expressed sponsorship, and another one with the Rockefeller Commission.

There are things of this nature, but you would have to ask them about whatever particular motivations or thoughts they may have. I can only do my very best, sir, to present to you the evidence as I have interpreted it and give you my conclusions and opinions therefrom.

Chairman STOKES. Perhaps you can help me in this respect. Assuming I am the average American citizen who has been sitting out here today and listening to these hearings and viewing it on television as they are across the country, and when they hear the testimony as it has been reflected through Dr. Baden of the eight other forensic pathologists, as related to your testimony, tell me,

what should the average American believe in terms of the medical evidence that has been presented here today? Should they believe them or should they believe you?

Dr. WECHT. Well, I would give anything within reason to be able to find out what people who have been able to take the afternoon off and observe these hearings believe. I know that as of 1975, in a national poll conducted by CBS, certainly an agency which has not been particularly sympathetic to the critics of this business, about 85 percent of the American public was found to disagree, to reject one or more major conclusions of the Warren Commission report.

I am also mindful of the fact that in numerous other national surveys conducted by top pollsters in the past 12, 15 years, more than 50 percent of the American public has always expressed negative feelings concerning the Warren Commission report.

As I am aware of your distinguished professional reputation prior to becoming a Member of Congress, as a trial attorney, the idea, the reality of forensic scientists disagreeing in a court of law is, of course, nothing that is foreign to you.

I have witnessed it and participated in it many times. The numerical superiority that my eight colleagues have over me is something that I cannot reflect upon. It is in your hands. I have been in that position. I can only hope—you will excuse the possible seeming lack of modesty—that just maybe, and the number fits anyway with nine people, that just maybe this might be analogous to a Supreme Court Justice who sometime in the past expressed a dissent which in 10, 20, or 30 years became the law of the land.

I can only hope, sir, that might be the case here today.

Chairman STOKES. I have some other questions, but my time has expired.

The gentleman from Ohio, Mr. Devine.

Mr. DEVINE. Thank you, Mr. Chairman. I have no questions. I would just say to Dr. Wecht, I think you would probably agree that reasonable men of credibility on the same set of facts can reach different conclusions without questioning the motives of the others; isn't that true?

Dr. WECHT. Yes, sir, I do when there are reasonable differences of facts based upon interpretations. When things relate to hard, physical reality, then, sir, I cannot go along with that statement.

Mr. DEVINE. You don't say this is an exact science what we are talking about, do you?

Dr. WECHT. I believe, sir, such things as straight lines in relationship to horizontal and vertical trajectories, positions of two human beings, measurements of the Zapruder film, the timing of it, the timing of the test-firing of the Mannlicher-Carcano weapon, I believe, sir, these fall very much into the realm of the hard physical sciences as opposed to the kind of things that we, as physicians, are often involved in—did the heart attack follow the emotional or physiological distress; did the cancer come about after the blow to the breast—those are in the realm of speculation and reasonable differences.

In my opinion, I think that the evidence that has been discussed today, the physical measurements, the laws of mathematics, of physics, and so on, I believe, sir, that these do not fall within the realm of reasonable differences of opinion.

Mr. DEVINE. I am sure the other members of your panel would disagree with your conclusion.

Dr. WECHT. Yes, sir, I am sure they would.

Chairman STOKES. The time of the gentleman has expired.

The gentleman from the District of Columbia, Mr. Fauntroy.

Mr. FAUNTROY. Mr. Chairman, I have no questions at this time.

Chairman STOKES. The gentleman from Connecticut, Mr. Dodd.

Mr. DODD. Thank you, Mr. Chairman.

Dr. WECHT, thank you for your testimony. You certainly articulated the issue before us today rather well. I would like to pursue one area of questioning with you, if I could, in the time allotted to me.

Your expertise is as a pathologist. That is your area of expertise. What I am getting at is, you don't have an expertise in photo analysis, your expertise is really as a pathologist; isn't that correct?

Dr. WECHT. Yes, sir, except to the extent that photography, studying of wounds and things of that nature, are related to the practice of forensic pathology.

Mr. DODD. Aside from the condition of Commission exhibit 399, the bullet, I gathered from your testimony that many of your conclusions regarding the single bullet theory rests to a large extent on the Zapruder film; is that a fair assessment?

Dr. WECHT. Yes, I would say that the Zapruder film is very important.

Mr. DODD. For instance, as to the positions of both President Kennedy and Governor Connally in the car, the appearances of both President Kennedy and Governor Connally at various frames in the film footage, and so forth.

Dr. WECHT. Yes, sir.

Mr. DODD. What I am trying to suggest by this line of questioning is that your expertise, using photographs and so forth, rests on making assessments of cadavers of after-the-fact circumstances, looking at wounds or photographs of wounds after a shooting, a killing has occurred, is that correct, generally speaking?

Dr. WECHT. Generally speaking, it so happens that I do a great degree of medical-legal consultation work in all kinds of personal injury actions, medical malpractice, products liability, workmen's compensation, thousands of cases in the past decade and a half, and I have had an opportunity and am called upon quite frequently to become involved in matters of medical-legal, forensic scientific nature which may not necessarily be related to a dead body.

Mr. DODD. What I am getting at is this: Aside from the Zapruder film, and I might suggest the shooting of Jack Ruby, have you ever personally witnessed a killing or have you ever had the opportunity to view film footage of an actual killing?

Dr. WECHT. A shooting, sir?

Mr. DODD. A shooting.

Dr. WECHT. I have never seen a killing by a human being by shooting. I have seen footage, yes, sir.

Mr. DODD. To what extent, how many occurrences, how many different shootings have you seen, actual different shootings of a human being, rough, ball park figure?

Dr. WECHT. Not a great number.

Mr. DODD. Two, three?

Dr. WECHT. Yes; I think, several, different film strips in various cases, documentaries.

Mr. DODD. To what extent is there a body of medical knowledge with regard to the predictable movements, predictable movements of a human body when shot?

Dr. WECHT. Some. It depends on the nature of the weapon, the ammunition, the position of the body, the nature and extent of the wounds, the physical circumstances that the body is in and so on. And these are things, of course, that we, as forensic pathologists, are called upon to reconstruct in a retrospective fashion in a fair number of cases.

I would say that it definitely could not be considered as a hard, physical science. There are biological variations; no question.

Mr. DODD. I wonder if you might refresh my memory as to the various frames in the Zapruder film. You seem to have a very good working knowledge of the various numbers of frames. The frame I want to get at is the frame where you see, first of all, Governor Connally showing appearances of being shot, what frame was that? Do you recall?

Dr. WECHT. That was frame Zapruder 237, I believe, maybe 237; I think 237. I do not know your exhibit number, but I think it was Zapruder 237.

Mr. DODD. And how many frames after that was the first appearances of President Kennedy showing evidence of being shot?

Dr. WECHT. Excuse me, sir—well, in the head wound, that was Zapruder film 313, the earlier one of the President emerging from behind the Stemmons Freeway sign, I think that was 225, Zapruder 225, when we first see the President. So that is then about 12 frames earlier that we see the President's reaction.

Mr. DODD. What I am getting at here is, given the fact there is a very limited amount of medical knowledge with regard to body movements, predictable body movements when an individual is shot, given the fact that there are apparently one or two or three or four instances where you have had the opportunity to actually see film footage of someone being shot, given the fact that your expertise is as a pathologist and not as a photo analyst, how can you state exclusively, as you do, aside from the appearance of 399 and others, that, in fact, there was not a single bullet, given the fact there is this limited amount of knowledge?

Dr. WECHT. That is very easy, sir, in this case.

The fact, the pattern that you set forth, would indeed be extremely applicable, for instance, to the head wound. What about the President, did he move backward, how could he have moved backward, should he have moved forward, and so on? That is indeed something that I have always said I can't be sure of, whether it is opisthotonos, a neuromuscular reaction or whatever.

But given the wound, Mr. Dodd, in the President's back, and knowing its trajectory, and knowing that it did not strike bone, and knowing it was moving slightly upward, then it doesn't make any difference, sir, what we may postulate about Mr. Kennedy's or Mr. Connally's movements. We know in looking at the pictures and from their eye witness testimony, and from all of the bystanders and everybody, we know that there is just no way in the world that—

Mr. DODD. Did I understand your statement, it doesn't make any difference?

Dr. WECHT. No sir, not in this case. Not in this case because we have the bullet moving upward through President Kennedy and then moving downward at a 25 degree angle of declination. There is just no way in the world that the bullet could have done that. I have never heard of an explanation from my colleagues, they just come back to the plausibility and argument—

Mr. DODD. You misunderstood me. I was using your testimony that those various frames and body movements were part of the evidence to indicate that it would be impossible for a single bullet to pass through both individuals.

Chairman STOKES. Time of the gentleman has expired but the witness can finish his answer.

Dr. WECHT. Thank you, Mr. Dodd. I apologize for not understanding your question. I agree with what you just said, and that is evidence that clearly demonstrates to me that it was impossible for 399 to have done what is attributed to it under the single bullet theory.

Mr. DODD. Thank you, Mr. Chairman.

Chairman STOKES. The gentleman from Tennessee, Mr. Ford.

Mr. FORD. Thank you, Mr. Chairman, I don't have but one question.

Doctor, the spokesman for the panel, Dr. Baden, has made the point that their findings were based upon the lack of any evidence to support any other possible alternative.

In supporting your theory, have you been privy to any other information outside of the information that this panel has been reviewing for some time?

Dr. WECHT. No, sir, other than what Mr. Stokes had asked me about before, that examination of the primary copy of the Zapruder film at Life magazine in 1966, nothing else. I also hope that I have kept more of an open mind and have also recognized that it is not my responsibility, I do not mean that I am disinterested or unmindful of the significance, but it is not my responsibility to retroactively justify and defend the investigation that was done, which I think was extremely superficial and sloppy, inept, incomplete, incompetent in many respects, not only on the part of the pathologists who did this horribly inadequate medical-legal autopsy but on the part of many other people.

This is the kind of examination that would not be tolerated in a routine murder case by a good crew of homicide detectives in most major cities of America on anybody just a plain ordinary citizen, let alone a President. So I don't get blocked, Mr. Ford, by the fact that I can't answer everything. I am fast to admit that I can't answer everything, although on one of the photos which we then didn't have a chance to get into, one that I requested Mr. Purdy to blow up, I show that the bullet that went through President Kennedy's neck could have continued on over the left side of the car, and I would like to say, sir, that that diagram was made years ago, before I knew for certain that there was an upward trajectory from the back to the neck with an upward trajectory. That suggestion that I made years ago now in my mind assumes much greater reality.

Mr. FORD. I don't have any further questions, Mr. Chairman. I yield back my time.

Chairman STOKES. Time of the gentleman has expired.

The gentleman from Connecticut, Mr. McKinney.

Mr. McKINNEY. Doctor, this committee has got to evaluate two very extremely different positions. So in looking at your conclusions, if you were to take the three elements, the trajectory of the bullet, the condition of the bullet, or the film, which would you say, in your opinion, is the most important part of that picture, the most important issue?

Dr. WECHT. Well, Mr. McKinney, the trajectory is to some degree related to the Zapruder film.

If I had to list those in priority, sir, I probably would say the trajectory would be No. 1, because these are to me straight-line measurement calculations.

The condition of the bullet, No. 2, and the Zapruder film, which I must tie in back to the trajectories as No. 3.

That is hard to do, sir, but on the spur of the moment, I would list them in that order.

Mr. McKINNEY. On the trajectory point, then, it is your opinion that there is no way that the President could have been in any kind of a position when he was behind that sign that would have allowed the bullet to go from low to high, rear to the front, and still have it in line to hit Governor Connally?

Dr. WECHT. No, sir, not at the point where it struck Governor Connally, not with the angle of declination that it proceeded on through the Governor.

May I just add very briefly, Mr. McKinney, of course, something that we all realize, but I would like to have on the record, that for all practical purposes, when the bullet struck President Kennedy, it was striking Governor Connally. At 2,000 feet per second it is incalculable, it is the kind of time that you and I with our reflexes and our speech and our watches can't even measure. So all of that happened in an infinitesimal moment.

The bullet is through the President and through John Connally. I cannot possibly imagine anything, and I have never heard anybody who was there in the car, behind the car or the motorcycle policemen, and so on, ever suggest that something of a dramatic nature—and it would have had to have been dramatic—had occurred vis-a-vis the physical relationship of these two men at that precise fraction of a second behind the Stemmons Freeway sign.

Mr. McKINNEY. Were you aware of the fact that the radiologists for the committee that examined the X-rays of the President and the X-rays of Governor Connally, didn't find any metal chips or fragments in President Kennedy's neck or Governor Connally's chest?

Dr. WECHT. I am aware of the former, sir, and I believe the latter, too, insofar as the radiologist is concerned. With regard to the latter, a metal fragment in Governor Connally's chest, I am mindful of the information that I do not recall from our panel but which I am aware of, I think, from Earl Golz' column, a reporter in Dallas, and from other news media that a bullet fragment supposedly was removed from Governor Connally's chest, given by a

nurse to a Dallas policeman standing outside, who then gave it to an FBI agent.

Mr. MCKINNEY. Have you ever seen any proof of this?

Dr. WECHT. I seem to recall, Mr. McKinney, and it is vague, that there was some testimony if not some kind of documentation of the receipt that was given to the policeman by the FBI agent, but I am vague on that, sir.

Mr. MCKINNEY. If it were true that there were no traces of metal found in either one of these areas, that could explain the condition of the bullet, couldn't it?

Dr. WECHT. No, sir, because then after emerging from the chest it would have had to have struck the wrist, and as I have already explained, I do not believe that it would have been possible to produce a comminuted fracture and to have emerged in the pristine condition. Then, of course, I must again come back to the trajectory, that even with the absence of metal in the President's neck and the Governor's chest, there is no way that that same bullet could have gone through those two portions of the anatomy of the two gentlemen.

Mr. MCKINNEY. Thank you very much, Doctor.

Chairman STOKES. Time of the gentleman has expired.

The gentleman from Indiana, Mr. Fithian.

Mr. FITHIAN. Thank you, Mr. Chairman.

Doctor, if the acoustical tests were to set up the exact time of the shots, and if it were possible to determine through photoanalysis the precise alinement of the bodies, and these two things turned out to be consistent with the single bullet theory, would you change your views?

Dr. WECHT. The acoustics test and more knowledge of the physical relationship of the two men, both of which, if I understand your question, sir, would permit physically—

Mr. FITHIAN. Yes.

Dr. WECHT [continuing]. The passage of the bullet in the fashion that is attributed to it. I would say that such information would go along way in making me doubt my long held beliefs, and it is all that I would ask, beyond a couple of simple experimental studies with the shooting of this kind of ammunition through some bones, and that would do it for me.

Mr. FITHIAN. Thank you.

Now, you talked about the second synchronized simultaneously fired shot possibility.

Dr. WECHT. Remote possibility.

Mr. FITHIAN. Remote possibility. Can't we as a panel dismiss this out of hand, for these two reasons; first, if it went in the President's head, and there is no exit wound somewhere else, it surely would have shown up on an X-ray somewhere in the brain area?

Dr. WECHT. Oh, yes, if it had been a penetrating missile, Mr. Fithian, and that is why I referred to frangible-type ammunition, which would not have had any degree of in-depth penetration.

Mr. FITHIAN. And, finally, the bullet itself that penetrated Governor Connally's wrist, would it have to have gone through the bone to fracture it?

Dr. WECHT. I believe with this kind of comminuted fracture, sir, yes, it would have had to have gone through the bone. I have heard

arguments advanced in our discussions and prior to that that the bullet just traversing near the soft tissues of the wrist would have produced that kind of fracture. I do not accept that at all.

Mr. FITHIAN. I am not very good at medical analysis. That is why we have you.

If the bullet went through the bone, wouldn't there have to be some sort of a hole where it went through, or the fracture itself would have to be wide enough to let the bullet go through?

Dr. WECHT. Oh, that is only——

Mr. FITHIAN. Unless it was a glancing blow?

Dr. WECHT. Yes, sir. If the bullet went through more or less in the middle of the bone, then there might be a hole, but the bullet would not have had to have gone directly through the midportion. A passageway with the bullet striking some portion of the bone could produce that kind of comminuted fracture. It would not have to leave a hole. As a matter of fact, very often they will not leave precise holes but will cause shattering of bones. I do not believe such shattering would occur by approximal passage of the bullet without some direct contact with the bone.

Mr. FITHIAN. If evidence becomes available that the fragment removed from Governor Connally's wrist matches CE-399, wouldn't this tend to impair your interpretation?

Dr. WECHT. I believe, as I had expressed previously to Mr. Cornwell, that it would certainly be some reason to pause for further reconsideration, but the value of neutron activation analysis would only be of probative value in this case in my opinion, if NAA studies were done on all the bullets and the bullet fragments that are available, or that could be made available with relative ease.

Mr. FITHIAN. Finally, Mr. Chairman, I didn't quite understand your response to Congressman Dodd, but I believe I understood the gist of it, and that is that your interpretation presented here today is really based on other than forensic pathological evidence. Isn't that generally true? Because we are talking about photographic alinement of bodies and things that have really nothing to do with the actual physical evidence taken, either photos of the body or medical examinations of the body?

Dr. WECHT. I would not be able to accept that characterization because, in fact, the kinds of things that we are dealing with here arise in many homicide investigations; the study of photographs, the study of wounds, the study of the physical relationship of bodies to inanimate objects and to other people, eyewitness testimony, depositions, direct interviews with people, and so on. The only thing I haven't had——

Mr. FITHIAN. But these are not medical things, are they doctor?

Dr. WECHT. Well, what I am trying to say they all fall within the purview, indeed, of a functioning, practical forensic pathologist, and I would consider them, yes, within my realm and within the realm of any other forensic pathologist's overall review and evaluation of the case. It is the kind of thing that I have done many times and I am sure my colleagues have, too.

Mr. FITHIAN. Thank you, Mr. Chairman. I have no further questions.

Chairman STOKES. Time of the gentleman has expired.

The gentleman from Michigan, Mr. Sawyer.

Mr. SAWYER. Thank you, Mr. Chairman.

Just a few questions. I was going to ask you what your theory was as to what happened to the other bullet that hit one of these people if it wasn't found in the car and in any place that was hit. But, I deduced from an answer you gave to one of the other questions that your view is that it passed over the top of the car after going through the President's back and neck?

Dr. WECHT. I think, sir that that is a very real possibility.

Mr. SAWYER. Then your theory is it must have been fired from the street?

Dr. WECHT. No sir, from a position much lower than the sixth floor. If it was in the Texas School Book Depository Building, and that is a possibility I do consider, it would have been from a lower floor. You would see, sir, if you had the entire physical terrain laid out for you, that you would be able to get that kind of a trajectory.

Mr. SAWYER. I have been there, so I am familiar with it.

You also used a figure of 2,000 feet per second. Is that the correct velocity of these Mannlicher Carcanos?

Dr. WECHT. I think I have seen 1,980 and 2,000.

Mr. SAWYER. I would have thought from looking at it they would be faster than that.

Dr. WECHT. I think sometimes I have seen it up to 2,100 but I don't think I have ever seen it any higher than that.

Mr. SAWYER. Have you ever seen any studies that show what a bullet does if it hits just a twig, as far as its course and its behavior?

Dr. WECHT. Not controlled studies, sir. I have seen some bullets that have struck twigs but I have not seen or conducted experiments along those lines.

Mr. SAWYER. Well, I have seen studies that show that they go in all erratic behaviors. Just by striking a small twig in hunting studies, really is what they were, you have never seen such?

Dr. WECHT. No sir, not such studies. I do not express here the opinion that there is definitive evidence that the bullet struck a twig. I merely raise that, consider that as a possibility. I really think that it is more likely that the bullet simply struck the Governor on somewhat of a tangential fashion.

Mr. SAWYER. You feel if you were to eliminate President Kennedy from this bullet, and assume that it is other than a single bullet, now we have just a bullet striking, to begin with, Governor Connally, and going through him, as it did, and through his wrist, would you accept that the bullet, No. 399, could be in its present condition?

Dr. WECHT. No, sir, not having fractured the fifth right rib and the distal end of the radius. I do not agree that by excluding President Kennedy, I would be able to accept 399 as the subject missile.

Mr. SAWYER. Then what would you conclude happened to that bullet?

Dr. WECHT. Well, as you know, sir, there were two large fragments of bullets found on the floor of the car in the front area, I think Warren commission exhibits 567 and 569, and then there are other possibilities that one can get into speculatively about frag-

ments or a fragment from the head, fragments from the Governor's chest. There are different possibilities that one can consider.

Mr. SAWYER. But if the bullet that passed through the President's head shows from rather multiple fragments of that that are available to match those two major fragments on the floor, it would be the same bullet, then what would be your idea as to whatever happened to the bullet that hit Governor Connally, if it is not 399?

Dr. WECHT. Well, the bullet that struck Governor Connally in the chest and into the thigh might be 399, or the bullet that struck the Governor in the wrist and then in the thigh could be 399, but I do not believe that 399 would be the bullet that caused all the wounds. As to what happened to it—there are several.

Mr. SAWYER. Just come back for a minute. I asked you in the first place if we were to eliminate the President from 399 and just assume that that is the bullet that hit Governor Connally and did all the damage to Governor Connally, could you then accept that 399 would be that bullet?

Dr. WECHT. No sir.

Mr. SAWYER. You could not?

Dr. WECHT. No sir.

Mr. SAWYER. And you can't, other than claiming that it could be the two particles that were found on the floor, the two major particles, you wouldn't have any idea what did happen to the bullet then that hit Governor Connally?

Dr. WECHT. No sir; but I would like to point out, if I may reflect back to what I said before, I assume no responsibility for the investigation that was conducted.

Mr. SAWYER. I totally understand that.

Dr. WECHT. When one considers all the things that happened and did not happen, missing pieces of evidence and documents that were destroyed, and so on, I have no idea what might have happened in Dallas that day.

Mr. SAWYER. Coming to one of the two things that bothers me the most, this bullet apparently struck the Governor's wrist or the distal end of his arm with sufficient force to comminute the bones, and for people that don't understand comminuted or maybe I don't, I understand it to be shattering it into multiple pieces.

Dr. WECHT. Yes, sir; fragmentation.

Mr. SAWYER. I have heard it described as a bag of bones, in effect, by doctors.

Dr. WECHT. Yes, sir.

Mr. SAWYER. Why the force of that impact on something as free and as relatively light as an arm and hand wouldn't have itself knocked that away from the hat, that seemingly held without moving. Do you have any explanation for that?

Dr. WECHT. That is why I say, sir, that as we look at Zapruder frame 230, which, according to the Warren commission report, is a moment in time approximately 1½ seconds after the Governor is alleged to have already been shot through the wrist and continues to hold his hat, that I cannot accept that. I find it incongruous, and I do not consider it, as my colleague who testified earlier, said something, whatever his words, not unusual. I consider it very unusual.

Mr. SAWYER. Laying aside the nerve question, just the impact on something as free swinging and yet as solid as an arm bone, and with now a reduced velocity significantly below the muzzle velocity at that point, it just appears to me unreasonable that that in itself would not have knocked that hand, just by the force of it, without regard to nerves. So it wouldn't be holding that hat just like it was.

Dr. WECHT. I agree, then, that he would have lost his hat some point later on. He has the hat in 230. I agree with you.

Mr. SAWYER. Well, fine; that is all.

Mr. PREYER [now presiding]. Does Mr. Edgar want to be recognized? Has he left to vote?

[Discussion off the record.]

Mr. PREYER. I just have one question. I understood you earlier in your testimony, when you were testifying at the board, to say something to the effect that your fellow panelists deliberately refused to conduct the experiments because they knew what the result would be. Did I misunderstand you?

Dr. WECHT. That essentially is correct. They refused to go along with the pressing for the performance of these tests, and now I am speculating, because I feel that as they considered the evidence of the bullets fired at Edgewood Arsenal in 1964, they were pretty certain that in their own experience that they could not look forward to coming out with another 399.

Yes, sir, I did say that, and that is exactly what I meant.

Mr. PREYER. Well, you have testified that they are eight eminent pathologists, or forensic pathologists. Are you accusing them of bad faith in refusing to conduct experiments?

Dr. WECHT. Professional eminence and competency, sir, I believe are not exclusionary of some preconceived biases and prejudices, and vice versa. I think that one can have both. I recognize their competency, I will not apply any derogatory comments to them, I would prefer to let the facts speak for themselves, and the facts are, Judge Preyer, that they have not been at all interested, and you heard, sir, the testimony from my colleague, Dr. Baden, in pursuing this because they are not sure that they would be the same; for example, the bone of a dead person is not the same as the bone of a live person, and what would it mean, and then Dr. Baden talked about machinegun fire, et cetera.

We are not talking about the movements of the bodies, we are talking here about the shooting of bullets through inanimate objects, namely bones, recovery of those bullets to see whether they can even begin to compare to commission exhibit 399. And I frankly must say that I do not see the relevance of the comments that my friend and colleague, Dr. Baden, had made before in response to those questions about machineguns, and so on and so forth. I have seen no reason why it poses a great problem for people to be retained by this committee, this staff functioning at the pleasure and discretion of the committee, to have such experiments arranged.

Mr. PREYER. Listening to all of the evidence that we have heard here today on the behavior of bullets, I must say it impresses on me once again the limits of commonsense. Commonsense tells us that no bullet could do anything like that; but commonsense tells us the world is flat, too, and we know the world is round, and so I

think there are limits to how rationally we can think about the course of this bullet under such circumstances.

May I ask Mr. Fithian and Mr. Dodd, have you completed your questioning?

Mr. FITHIAN. I have.

Mr. PREYER. Mr. Fauntroy, have you completed your questions?

Mr. FAUNTROY. Yes, sir.

Mr. PREYER. Mr. Dodd?

Mr. DODD. Thank you, Mr. Chairman.

I just had really one other question. You may have answered it, and so I apologize if I am asking you to repeat what you have already stated in your earlier testimony.

Dr. Baden suggested that there could be a significant difference in the path of a projectile, how a bullet would react to tissue, bone and so forth, between a cadaver, a dead body and a live body. I gathered that you said there could not be, at least I got that impression.

Dr. WECHT. Not with fresh preserved bones. Bones are not extensively innervated nor are they extensively vascularized; I am not talking about dried out, desiccated bones. If one takes preserved bones, in my opinion, for the kind of experiment that we have been discussing today, there would not be any difference, and I do not accept that as a reasonable, fair or scientifically accurate difference. It is a difference without a distinction.

Mr. DODD. You mentioned earlier that in addition to tests that one might take on, for instance on a goat, I think is one of the examples you gave——

Dr. WECHT. That is what was used in 1964, sir.

Mr. DODD. Was that satisfactory to you as a——

Dr. WECHT. It is not really the size of the human rib. I see no reason why we couldn't use human ribs. If we are going to use a human cadaver for the wrist, I see no reason why they couldn't use human cadavers for the chest bone. I would prefer to try and make this as close as possible, not do what the FBI and others did back in 1964 when they wanted to see whether Lee Harvey Oswald, a poor marksman, shooting at a moving target, could do what he did, so they got the finest marksman they could find and put him on a stationary platform in an open field with no tree blocking, and they said they had duplicated what Oswald did. No, not that kind of an experiment.

Mr. DODD. So, to summarize your position, it wouldn't make that much difference?

Dr. WECHT. No sir, absolutely not.

Mr. DODD. Fine, thank you very much.

Mr. FITHIAN. Mr. Chairman, in Congressman Edgar's absence, we talked earlier about a question, let me ask it for him, since he is not back from voting yet, Doctor.

Your testimony that the bullet that exited the throat on a rising plane, is that determined by the bullet path through the body?

Dr. WECHT. Yes sir, and the study of the panel of all the information, pictures, materials, photographic enhancements, X-ray report, of the President and so on.

Mr. FITHIAN. Now, if the body, therefore, were in some position other than you thought it was, that is, with a forward lean, would that alter where you expected the bullet to continue to go?

Dr. WECHT. If the body were in a substantial forward lean it could alter it somewhat in terms of the vertical angle, but that lean would have to be very substantial to fit in with the 25 degree angle of declination, and I repeat, forgive me for being redundant, but I think the pictures just rule out to the reasonable person such an absolutely unexpected movements, I do not mean to be flippant, but clearly the President had no way of knowing he was going to be shot and he wasn't trying to dodge a bullet. He was sitting there, was waving to the crowd, and then the car went behind the Stemmons Freeway sign. he wasn't even familiar with—in terms of his blocking Mr. Zapruder's picture—he didn't know he was being blocked out from Mr. Zapruder's camera. He was just waving to the crowd, and he was sitting in this position at 225, Zapruder frame 225. There is just no way to account for or speculate on such a dramatic movement in less than 1 second.

Then, of course, we have the horizontal angle as well as the vertical angle to contend with.

Chairman STOKES. Time of the gentleman has expired.

The gentleman from Pennsylvania, Mr. Edgar.

Mr. Edgar. Thank you, Mr. Chairman.

Doctor, I was curious. At the beginning of your testimony, you talked about the interest that you have in obtaining the brain for further analysis, and some criticism of our committee and its staff for not doing enough to secure that brain. Is that correct?

Dr. WECHT. Yes sir; whoever it is that is responsible, I have raised the question and have put it in writing, that if an eminent group of House of Representatives Members, a bipartisan group, does not have the authority, then I did ask the question, who does?

Mr. EDGAR. Are you aware of all the steps that our committee has taken to secure the brain tissue?

Dr. WECHT. Only what I have been told by Professor Blakey, by members of the staff. I have not spoken with any Member of the House, any member of your committee.

Mr. EDGAR. What would you have done more than the listing that we have provided you of the actions that we have taken in order to secure the missing brain?

Dr. WECHT. I would get the best trained investigators, homicide detectives, or their equivalent and with an attorney for proper legal guidance and so on. I would do this under the imprimatur of the honorable Chairman of this committee. I would go back to day one and work up with Admiral Burkley and then over to the National Archives on April 26, 1965, I would get the people who were in charge of the Archives. I would depose them under oath. I would follow right through with Mrs. Lincoln, Senator Robert Kennedy's then secretary, who is supposed to have been involved in some way. I would follow through with everybody under oath, and I would, please correct me if I am wrong, I would use the power of subpoena, which I think your committee has. Maybe I am wrong about that.

Mr. EDGAR. If all of those actions were taken and the missing brain was still not made available to the committee, what then would you do?

Dr. WECHT. Well, then, of course, I do not suggest that anybody be put in jail, but I do suggest, Mr. Edgar, that at that point it would be a matter of record, we would know what had happened to that information, to that evidence, and we would know who is responsible for it and that would be the end of it.

I certainly do not ask anything superhuman and I do not suggest that somebody necessarily be fined or incarcerated, but if this has happened, then I would readily stand corrected. If it has not been done in that kind of intensive fashion, then I must with all due respect, say that something is missing.

I reject and find it personally insulting when comments are made like those expressed by Mr. Burke Marshall in the past, that it is ghoulish, and so on, to ask where the President's missing brain is, and who removed it from the National Archives.

Even one of the forensic pathologists, before he became a member of this panel, a forensic pathologist, had made a similar statement, when I was an earlier critic. They have all come around now to recognizing that it was a horrible autopsy. For 10 years you must understand they felt I was being unduly critical, now they all understand what a ridiculous job was done. He said, this forensic pathologist, that I was being ghoul in trying to pursue the brain's location.

I am not suggesting that it be made the cover of Time or Newsweek magazine. The examination would be performed in the most private, discreet circumstances by a competent neuropathologist and forensic pathologist. That is all I am talking about.

Mr. EDGAR. I appreciate your concern and I don't think that in my question I was indicating that it was all a problem of being ghoulish.

Dr. WECHT. No, not you, sir.

Mr. EDGAR. I wonder if Mr. Blakey could for the record indicate in summary form some of the steps that we have taken in order to secure this missing brain?

Mr. Blakey. Mr. Edgar, let me review for you some of the facts.

Following the autopsy of President Kennedy, Robert I. Bouck, the head of the Protective Research Division of the U.S. Secret Service in 1963, received all of the materials relating to the autopsy from Agent Kellerman, and maintained these items in the White House under security for Dr. George Burkley the White House physician.

On April 22, 1965, Robert F. Kennedy authorized a release of all of these materials to Mrs. Evelyn Lincoln, who then had an office in the National Archives. Mrs. Lincoln was in the process of assisting in the transfer of President Kennedy's official papers to the National Archives.

In response to this order, Mr. Bouck and Dr. Burkley prepared an inventory list and transferred these materials to Mrs. Lincoln. Included in those materials was one stainless steel container, 7 inches in diameter and 8 inches—7 by 8, containing the inventory list indicated gross material. The best speculation is that stainless steel container held the brain.

On October 31, 1966, Burke Marshall, a representative of the Kennedy family, formally transferred the autopsy material to the Archives. I don't mean this physically, because the materials were allegedly in the Archives at the time in the custody of Mrs. Lincoln. When that transfer occurred, the steel container was not included.

The committee, as I indicated this morning has conducted a comprehensive investigation in an attempt to locate the missing materials. The people interviewed have included Dr. Burkley, Dr. Humes, Mr. Bouck, Ramsey Clark, Mrs. Lincoln, Ms. Angela Novelli, Robert Kennedy's secretary, Dr. Finck, and Mr. Marshall, and all of the relevant Archives people.

As I indicated this morning, over 30 people have been either interviewed or deposed. The closer they came to the chain of custody they were deposed. We've even interviewed all of the people associated with the reinternment of the President's body. That interviewing and deposition process has not indicated with certainty what happened.

As I indicated earlier this morning, a Kennedy family spokesman did indicate that Robert Kennedy expressed concerns that these materials could conceivably be placed on public display many years from now and he wanted to prevent that. I would infer from that that the most likely result is that the President's brother destroyed the documents. But there is no proof; no documents but the materials. Dr. Wecht, if you can suggest anybody else that we can interview or anybody else that could be deposed I can assure you there is no reluctance on the part of this staff, under the direction of Chairman Stokes, to do so.

Mr. EDGAR. I thank the chief counsel for the summary of our efforts to secure the missing materials.

I have no further questions, Mr. Chairman.

Chairman STOKES. Thank you, Dr. Wecht. I think I have one, maybe two more questions.

As a forensic pathologist, are you automatically qualified also as a ballistics expert?

Dr. WECHT. No, sir, except with regard to the impact, damage, trajectories, and relationships of bullets to the human body. As a separate, distinct science, not related to human wounds, the answer would be no. I am not a criminalist or a ballistics specialist.

As a forensic pathologist, I am involved very frequently in the evaluation of gunshot wounds, different kinds of ammunition, weaponry, et cetera, in its relationships to wounds inflicted upon the human body, angles, degree, mortality, ability of the victim to have moved, walked, talked, direction of fire, sequence of shooting, and things like that.

Chairman STOKES. And would it be fair to say, also, that most of your experience in terms of the wounds has been with gunshot wounds as opposed to rifle wounds?

Dr. WECHT. Yes, sir, by far, many more handguns but a fair number through the last 20 years I have been in pathology, since I started my training, have involved rifles, carbines and, of course, shotguns, but predominantly, as I am sure in every jurisdiction in this country, the great percentage of gunshot wounds in murders, suicides and accidents involve handguns.

Chairman STOKES. Thank you very much.

Are there any further questions from any members of the committee?

Mr. FAUNTROY. Mr. Chairman?

Chairman STOKES. The gentlemen from the District of Columbia, Mr. Fauntroy.

Mr. FAUNTROY. Thank you. I was not present at the time Dr. Wecht made reference to experiments that he felt could have and should have been conducted that would have cleared up some questions which he apparently still has.

Do I understand that it is your belief that a separate shot entered the body of Mr. Connally from the rear and that that shot damaged his wrist and lodged in his knee and in his thigh?

Dr. WECHT. I believe, yes, Mr. Fauntroy, that a bullet other than 399 caused some of the damage to Governor Connally, that 399 might have—excuse me, I do not believe that 399 caused the damage to Governor Connally. I believe that another bullet struck Governor Connally, and I believe that there was a possibility of fragments from the President's head wound, that bullet, there is a possibility of a fragment from that shot having struck Governor Connally.

Mr. Fauntroy. So, do you believe that one bullet caused all of the damage to Governor Connally?

Dr. WECHT. That is a possibility that I cannot exclude, but there are other possibilities that would have to be considered.

Mr. FAUNTROY. What kind of experiment do you envision that could establish that, for example, the missile that shattered his wrist did or did not lodge in his thigh?

Dr. WECHT. That one could be simulated, Mr. Fauntroy, by just using one human cadaver set in a position similar to that which was occupied by Governor Connally.

Mr. FAUNTROY. Where would the entry wound be found?

Dr. WECHT. The entry wound would be found on the dorsal or back surface of the lower portion of the forearm above the wrist crease at the same location that the bullet struck Governor Connally.

Mr. FAUNTROY. So that you envision that bullet coming from in front?

Dr. WECHT. No, sir.

Mr. FAUNTROY. Was his arm not in front of his body?

Dr. WECHT. Yes, sir, but the bullet would have come from the rear and would have struck him on this dorsal surface and exited on the ventral or volar surface.

Mr. FAUNTROY. And then into the thigh like this—

Dr. WECHT. Yes; possibly into the thigh; yes, sir. He was holding his arm thusly, Mr. Fauntroy, holding his hat, and so the shot, I believe, would have come from the right rear, not from the front.

Mr. FAUNTROY. Is it your view that you could take a cadaver, sit it in a car or place it in that position and you would get the exact same reaction from a bullet fired from a theorized distance?

Dr. WECHT. Yes; the distance could be determined within a very close range by talking with Governor Connally and studying the Zapruder film.

Of course, more than one bullet would be fired in the experiments which I have postulated, just as the Warren Commission people or the individuals functioning in their behalf in 1964 used several goat carcasses and several human cadavers, and just as Prof. John Nichols in Kansas, for instance, has used more than one set of bones for these tests.

Mr. FAUNTROY. And that you could reliably say that what happened to one cadaver, one wrist, happened to Governor Connally; that's your view?

Dr. WECHT. My view is, sir, that, again, numerous subjects, animals, cadavers, should be employed and all of the retrieved ammunition studied very carefully. I repeat that I am not holding out personally for a percentage—proof that it happens more than 50 percent of the time—because I don't think that would be reasonable unless one conducted, oh, maybe 500 or 1,000 such shootings. Then at that point, I think you would have to say it can't happen. But I want to see one bullet, just one, from as many animal carcasses and human cadavers as can be obtained, just one bullet breaking two bones.

That's really the key. I have, of course, answered your question about the wrist and the thigh, but I should like to repeat that the major emphasis, from my standpoint, in terms of the near pristine state of 399, is related to its presumed trajectory through two bones so that it would be necessary in order to simulate the conditions of the Kennedy-Connally shooting to have that ammunition go through a rib and a radius.

Mr. FAUNTROY. That is precisely why the question came to mind. I just wonder how you could do that. You have to be a pretty good marksman to reproduce that.

Dr. WECHT. Yes, sir, these things would be fixed, sir, in a kind of a vise-like fashion by appropriate equipment so that there would be no movement or flapping or so on.

Mr. FAUNTROY. So that someone could hit the back exactly where the wound that Mr. Connally had, is alleged to have been and could hit the rib just where it was supposed to have been hit and could have passed through and hit the wrist just the way it was supposed to have been hit and fall into the thigh just where it had fallen and we could reproduce it?

Dr. WECHT. You would not have to depend upon the bodies being set up in such a fashion that the bullets will go through. You can set it up so that the bullets cause this bone damage. Remember, the soft tissue is not going to detract from the damage. It may not add much to it, but it certainly is not going to detract from it. Therefore, if you just have the bones set up with the distances of rib to wrist and wrist to thigh and shoot through them, as has been done without any problem, so all you have to do, is draw a circle or make an "X", and an expert marksman will do that 100 times out of 100, or close to it. You don't have to worry about soft tissues.

Again I repeat, these very studies have been performed by Dr. John Nichols shooting through two bones.

Mr. FAUNTROY. Thank you, Mr. Chairman.

Chairman STOKES. The time of the gentleman has expired. The gentleman from Michigan, Mr. Sawyer.

Mr. SAWYER. Just one question. I think I understood you to say that it is your view that these wounds that Connally received were from fragments from the head wound the President received.

Dr. WECHT. I said, sir, that one of the possibilities for one of the wounds either in the wrist or the thigh, possibly the chest, but less likely, might, might have been from a fragment of the bullet that struck the President's head.

It is not a possibility that I cling to. I just say that it is a physical possibility to be considered.

Mr. SAWYER. But doesn't the Zapruder film show that Governor Connally was hit before the President received that hit in the head, which is quite visible in that film?

Dr. WECHT. Yes, sir, that's a very excellent point.

Mr. SAWYER. It is destructive of that theory, isn't it?

Dr. WECHT. And thank you very much for correcting me. I am wrong on that. I completely withdraw. I thank you very much.

Mr. SAWYER. You are entirely welcome.

Dr. WECHT. I have been saying that, and I have not been corrected. I apologize.

Chairman STOKES. The time of the gentleman has expired.

Are there any other members seeking additional recognition?

[No response.]

Chairman STOKES. Dr. Wecht, at the conclusion of any witness' testimony before this committee, he is entitled to five minutes in which to explain his testimony or to in any way amplify or expand upon it. On behalf of the committee, I extend to you at this time the 5 minutes, if you so desire.

Dr. WECHT. I would like to thank you, Mr. Chairman, and the members of the House Select Committee on Assassinations for having afforded me this opportunity to meet.

I am particularly grateful for the fact that you gentlemen have seen fit to stay here for this time, and I am deeply appreciative of the personal courtesy that has been extended to me.

I should like to thank Professor Blakey for having recommended to the committee that I be permitted to testify, something certainly that he did not have to do. I have enjoyed working with all the members of the committee and especially with Mr. Andy Purdy, who has been most helpful, extremely cooperative and who was, I think, extremely adroit in his handling of the elicitation of my direct testimony today.

I would want to say that I am pleased that hearings of this nature are being conducted. I am very sorry that they were not conducted back in 1963 and 1964 when more people were around and more fresh evidence could have been obtained.

I think that whatever the truth may be, and hopefully, we will ultimately come to know it, that there is much that must, as a matter of record, be pointed out with regard to the manner in which these things have been handled. I think that, for instance, our panel was charged with addressing ourselves to the performance of the autopsy in this case and in the words, I think, of Professor Blakey, to set forth in our final report, as part of everything else, a protocol, a modus operandi in cases of this nature that would stand for all times for the foreseeable future in forensic pathology—which I wholeheartedly agree with.

I believe this has not been done thus far, although I have not seen the final draft of the proposal. I do not feel that this should be done because of any ad hominem criticism of the three pathologists who were involved in the autopsy, but because it is important to have such a protocol should any case like this ever arise in the future.

I believe that the Federal Government should address itself to this question of what will happen if any particular figures, be they Congressmen, Senators, judges, Cabinet officers, Vice President, President and so on, are assassinated. God forbid that it should ever happen again, but it is not an impossibility certainly. What would happen in that kind of a case, where would the post mortem examination be performed, what would be the conduct of the medical-legal investigation?

I would like to say there have been all kinds of speculations in this case through the years and all kinds of input from many people. I believe that I would be less than candid if I did not express publicly what I have said many times to others and in other public forums, that I feel that in the past, there has been a mental block, there has been an impediment, a formidable obstacle, indeed, which I recognize of a political nature that I think prevents many individuals from just letting it all hang out in this case. I think that this comes back to the single bullet theory because it is clearly recognized by everybody that the moment you abandon the single bullet theory, that is the moment that you are into two people who were shooting, that is the moment that you are into Black's Legal Dictionary definition of a criminal conspiracy as well as the definition of the statutes of every jurisdiction and the Federal Government of this country.

I think that this is recognized by many people and I think it is a step that many individuals find some difficulty in considering.

The President is gone, beloved as he may have been. We cannot bring him back. This would be of such a nature, the concept of political assassination, in effect, a political coup d'etat, that we simply cannot consider it ever occurring in this country. It can happen in the totalitarian nations of Eastern Europe, it might happen in the emerging nations of Asia or Africa, it certainly can be expected to happen in the banana republics of Central America, it might even happen in a Western democracy, but never, never in our country. I think that it can happen. Whether it did or not, I do not know.

Obviously, I have no personal knowledge of who the assassins were and what their motivations were. I am not an expert on that. Just some general beliefs that are, indeed, related to my political biases, I am sure. But I think that it is most important that this scientific evidence, not to denigrate the significance or importance of any other evidence and the competency of all the people and the tremendous work that other panels, individuals in this committee and staff, may have done and that will be deliberated upon, reviewed and analyzed and discussed in the days and weeks ahead, but I must say that this evidence is the foundation, because as long as the single bullet theory is clung to, then whether people consciously or subconsciously realize it, they are able to hold on to the sole assassin theory.

Everything else at that point becomes either academic or speculative—did Oswald know Ruby, was Oswald going to Ruby's home, what was J. D. Tippit doing there—important things, but things probably that this group of human beings, given the absence of the major actors in this drama today, will never be able to answer.

I very much hope that this evidence will be thoroughly reviewed. The fact that it is an eight to one decision, so to speak, of this forensic pathology panel, hopefully will not sway the members of this committee, especially those of you who are attorneys, and Judge Preyer, who has been both an attorney and a member of the judiciary, and that you will consider the evidence on its own merits.

I hope that it will be possible for more definitive evidence to emanate from the tests being conducted by the Boston firm, that more investigation will be permitted, that Professor Blakey's committee, staff will continue to be funded through your committee.

I thank you, sir, for your courtesy. And I hope that something of a definitive nature will emanate in the weeks ahead.

Chairman STOKES. Thank you, Dr. Wecht, very much, personally for being a member of this very distinguished panel of medical experts.

We thank you for the time you have expended on behalf of this committee working with that panel of experts and certainly for the point of view you have expressed here today. We are indeed grateful to you for that, also.

So, we think you certainly have performed a service, and we thank you for having been a witness here today.

Dr. WECHE. Thank you, sir.

Chairman STOKES. Thank you.

There being nothing further to come before the committee, the committee is adjourned, then, until 9 a.m. tomorrow morning.

[Whereupon, at 6:11 p.m., the committee recessed, to reconvene at 9 a.m., Friday, September 8, 1978.]

