

Dr. SHAW. No; I believe that we have covered all of the points that are germane to this incident. Anything else that I would have would actually be hearsay.

Mr. SPECTER. Thank you very much, sir, for appearing.

Dr. SHAW. All right, you are welcome.

Mr. SPECTER. Off the record.

(Discussion between Counsel Specter and the witness, Dr. Shaw, off the record.)

Mr. SPECTER. Dr. Shaw, permit me to ask you one or two more questions. Did you find any bullets in Governor Connally's body?

Dr. SHAW. No.

Mr. SPECTER. Did you find any fragments of bullets in his chest?

Dr. SHAW. No; only fragments of shattered rib.

Mr. SPECTER. And did you find, or do you know whether any fragment was found in his wrist or the quantity of fragments in his wrist?

Dr. SHAW. It is my understanding that only foreign material from the suit of Governor Connally was found in the wrist, although in the X-ray of the wrist there appeared to be some minute metallic fragments in the wrist.

Mr. SPECTER. As to the wound on the back of Governor Connally, was there any indication that the bullet was tumbling prior to the time it struck him?

Dr. SHAW. I would only have to say that I'm not a ballistics expert, but the wound on his chest was not a single puncture wound, it was long enough so that there might have been some tumbling.

Mr. SPECTER. You mean the wound on his back?

Dr. SHAW. The wound on his back—yes, it was long enough so that there might have been some tumbling. In other words, it was not a spherical puncture wound.

Mr. SPECTER. So it might have had some tumbling involved, or it might not have?

Dr. SHAW. Yes; I don't know whether the clothes would have occasioned this or not.

Mr. SPECTER. My question would be that perhaps some tumbling might have been involved as a result of decrease in velocity as the bullet passed through President Kennedy, whether there was any indication from the surface of the wound which would indicate tumbling.

Dr. SHAW. The wound entrance was an elliptical wound. In other words, it had a long diameter and a short diameter. It didn't have the appearance of a wound caused by a high velocity bullet that had not struck anything else; in other words, a puncture wound.

Now, you have to also take into consideration, however, whether the bullet enters at a right angle or at a tangent. If it enters at a tangent there will be some length to the wound of entrance.

Mr. SPECTER. So, would you say in net that there could have been some tumbling occasioned by having it pass through another body or perhaps the oblique character of entry might have been occasioned by the angle of entry.

Dr. SHAW. Yes; either would have explained a wound of entry.

Mr. SPECTER. Fine, thank you very much, Doctor.

Dr. SHAW. Thank you.

TESTIMONY OF DR. CHARLES FRANCIS GREGORY

The testimony of Dr. Charles Francis Gregory was taken at 2:30 p.m., on March 23, 1964, at Parkland Memorial Hospital, Dallas, Tex., by Mr. Arlen Specter, assistant counsel of the President's Commission.

Mr. SPECTER. May the record show that at the start of this session that I have here at the moment Dr. Charles Gregory, who has appeared here in response to a letter of request from the President's Commission on the Assassination of President Kennedy.

May I say to you, Dr. Gregory, that the purpose of the Commission is to investigate all facets relating to the assassination, including the wounding of President Kennedy, and the wounding of Governor Connally, and we have asked you to appear here for the purpose of testifying concerning your treatment of Governor Connally. Our rules specify that we make a brief statement of the purpose of the Commission, and the purpose of our calling on you.

Now, will you stand up and raise your right hand?

Do you solemnly swear the testimony you will give before the President's Commission in this deposition proceeding will be the truth, the whole truth, and nothing but the truth, so help you God?

Dr. GREGORY. I do.

Mr. SPECTER. Will you state your full name for the record, please?

Dr. GREGORY. Dr. Charles Francis Gregory.

Mr. SPECTER. And what is your profession, sir?

Dr. GREGORY. I am a physician and surgeon.

Mr. SPECTER. Will you outline your educational background, please?

Dr. GREGORY. Yes; I received a bachelor of science degree from Indiana University in 1941, and a doctor of medicine in 1944. I have completed 5 years of post-graduate training in orthopedic surgery at the Indiana University Medical Center in 1951. I remained there excepting for an interlude with the U.S. Navy in 1953 and 1954, until 1956. In 1956 I assumed my present position, which is that of professor of orthopedic surgery and chairman of the division of orthopedic surgery at the Southwestern Medical School, University of Texas.

Mr. SPECTER. Dr. Gregory, are you certified by the American Board?

Dr. GREGORY. I am certified by the American Board of Orthopedic Surgery; yes, sir.

Mr. SPECTER. And what year were you so certified?

Dr. GREGORY. In 1953. I am now a member of the American Board of Orthopedic Surgery, as a matter of fact.

Mr. SPECTER. Dr. Gregory, what experience, if any, have you had in the treatment of gunshot wounds?

Dr. GREGORY. My experience with the treatment of gunshot wounds began with my training in orthopedic surgery, but its greatest impetus occurred in 1953 and 1954 in the Korean theatre of operations with the U.S. Navy. Since that time here at the Parkland Hospital in Dallas our service has attended a considerable number of such injuries, plus my experience is continuing.

Mr. SPECTER. Could you approximate the total number of gunshot wounds you have had experience with?

Dr. GREGORY. I have had personal experience with, I suppose, in approximately 500 such missile wounds.

Mr. SPECTER. Dr. Gregory, back on November 22, 1963, did you have occasion to treat Governor Connally?

Dr. GREGORY. I did.

Mr. SPECTER. Will you relate briefly the circumstances surrounding your call to treat the Governor?

Dr. GREGORY. I had been seeing patients in the health service at the medical school building on the morning of November 22 and was there when word was received that the President had been shot. I did not then know that the Governor had also been injured. I came to the emergency room of Parkland Hospital and upon gaining entrance to it, inquired as to whether or not Mr. Kennedy's wounds were of a nature that would require my assistance.

I was advised that they were not. I then took a number of persons from the emergency room area with me away from it in order to reduce the confusion, and I went to the orthopedic ward on the fifth floor west of Parkland Hospital. After attending some of the patients on that ward, I was preparing to leave the hospital and went by the operating room area to see whether or not I could be of any other assistance, and was apprised then that a page was out for me. At that time Dr. Shaw advised me that Governor Connally had been wounded and that among his wounds were those to the right forearm and the left thigh. He had asked that I stay and attend those wounds after he had completed care of the Governor's chest wound.

Mr. SPECTER. At approximately what time did you have that conversation with Dr. Shaw?

Dr. GREGORY. To the best of my knowledge, that conversation must have been about between 1 and 1:15 in the afternoon of November 22.

Mr. SPECTER. And that conversation was with Dr. Shaw?

Dr. GREGORY. Dr. Robert Shaw.

Mr. SPECTER. Now, what part did Dr. Robert Shaw have in the treatment of Governor Connally in a general way?

Dr. GREGORY. Well, Dr. Robert Shaw attended the most serious wound that the Governor sustained, which was one to his right chest, and it was his operation which took precedence over all others.

Mr. SPECTER. And, was that operation completed before your operation commenced?

Dr. GREGORY. Yes; Dr. Shaw's operation had been completed before we even arranged the Governor's right arm and left thigh for definitive care.

Mr. SPECTER. At approximately what time did your operation of Governor Connally begin?

Dr. GREGORY. My operation on Governor Connally began about 4 o'clock p.m. on Friday, November 22.

Mr. SPECTER. And approximately how long did it last?

Dr. GREGORY. The better part of an hour—I should judge—45 to 50 minutes.

Mr. SPECTER. Who, if anyone, assisted you in that operation?

Dr. GREGORY. I was assisted by the junior orthopedic resident, Dr. William Osborne, and the orthopedic intern, Dr. John Parker.

Mr. SPECTER. What was Governor Connally's condition when you first saw him with respect to his chest wounds, first, if you will, please tell us?

Dr. GREGORY. I did not see Governor Connally myself until he had been taken into the operating room and had had an endotracheal tube placed in his larynx and had been anesthetized. Having accomplished this, the very precarious mechanics of respiration had been corrected and his general status at that time was quite satisfactory.

Mr. SPECTER. What observations did you have with respect to his wound in the chest?

Dr. GREGORY. I had none, really, for the business of prepping and draping was underway at that time, and I did not intrude other than to observe very casually, and I don't remember any details of it.

Now, I did see in the course of the operation the wound in his chest, the wound of entry, and its posterior surface and the wound of exit on the anterior surface.

Mr. SPECTER. What did the wound of entry look like, Doctor?

Dr. GREGORY. It appeared to me that the wound of entry was sort of a linear wound, perhaps three-quarters of an inch in length with a rounded central portion. Whereas, the wound of exit was rather larger than this, perhaps an inch and a half across.

Mr. SPECTER. And at approximately what part of the body was the wound that you described as the wound of entry?

Dr. GREGORY. In view of the drapes that were on the Governor at the time, I will have to speculate, but as I recall best, it was in an area probably 2 inches below and medial to the right nipple.

Mr. SPECTER. Is that the wound of entry or exit?

Dr. GREGORY. That's the wound of exit.

Mr. SPECTER. How about the wound of entry?

Dr. GREGORY. The wound of entry was too obscure for me to identify, since it was just in general over the posterior aspect of his chest.

Mr. SPECTER. What did you observe with respect to the wound of his wrist?

Dr. GREGORY. I didn't see the wound of his wrist until after the chest operation had been completed, because his arm was covered by the operation drapes, the surgical drapes for the chest procedure.

Mr. SPECTER. And when you did have an opportunity to observe the wound of the wrist, what did you then see?

Dr. GREGORY. I observed the wound on the dorsal aspect of his wrist, which was about 2 cm. in length, ragged, somewhat irregular, and lay about an inch

and a half or 2 inches above the wrist joint. It was a little to the radial side of the wrist area.

There was a second wound in the wrist on the volar surface, about a centimeter and a half proximal to the distal flexion crease and this wound was a transverse laceration no more than a centimeter in length and did not gape.

Mr. SPECTER. When you say on the dorsal aspect, what is that?

Dr. GREGORY. In lay terms, that's equivalent to the back of the hand.

Mr. SPECTER. And the volar is equivalent to what?

Dr. GREGORY. The palm surface of the hand.

Mr. SPECTER. What conclusion, if any, did you reach as to which was the wound of entry and exit on the wrist?

Dr. GREGORY. Based on certain findings in the wound at the time the debridement was carried out—

Mr. SPECTER. Will you define debridement before you proceed with that?

Dr. GREGORY. Yes; debridement is a surgical term used to designate that procedure in attending a wound which removes by sharp excision all nonvital tissue in the area together with any identifiable foreign objects.

In attending this wound, it was evident early that clot had been carried into the wound from the dorsal surface to the bone and into the fracture. This would imply that an irregular missile had passed through the wrist from the dorsal to the volar aspect.

Mr. SPECTER. Now, were there any characteristics in the volar aspect which would indicate that it was a wound of exit?

Dr. GREGORY. No; there were none, really. It was my assumption that the missile had expended much of its remaining energy in passing through the radius bone, which it did before it could emerge through the soft tissues.

Mr. SPECTER. Did you observe any foreign objects identifiable as bits of fragments or portions of a bullet missile?

Dr. GREGORY. A preliminary X-ray had indicated that there were metallic fragments or at least metallic fragments which cast metallic shadows in the soft tissues around the wounded forearm. Two or three of these were identified and were recovered and were observed to be metallic in consistency. These were turned over to appropriate authorities for further disposition.

Mr. SPECTER. Approximately how large were those fragments, Dr. Gregory?

Dr. GREGORY. I would judge that they were first—flat, rather thin, and that their greatest dimension would probably not exceed one-eighth of an inch. They were very small.

Mr. SPECTER. Would you have sufficient experience with gunshot wounds to comment as to whether a 6.5-mm. bullet could have passed through the Governor's wrist in the way you have described, leaving the fragments which you have described and still have virtually all the bullet missile intact, or having 158 grains of a bullet at that time?

Dr. GREGORY. Well, I am not an expert on ballistics, but one cannot escape certain ballistic implications in this business.

I would say, first of all, that how much of the missile remains intact as a mass depends to some extent on how hard the metal is. Obviously, if it is very soft, as lead, it may lose more fragments and therefore more weight and volume than it might if it is made of a harder material or is jacketed in some way.

Now, the energy in the missile is a product, not so much of its mass as it is of its velocity, for by doubling the velocity, you can increase the kinetic energy in the force it transmits, fourfold, since the formula for determining energy in these cases is a matter of mass times velocity squared, rather than just linear functional velocity. So, some knowledge of how much of the cartridge force might have been behind the missile would be useful here too.

Mr. SPECTER. For the purpose of this consideration, I am interested to know whether the metal which you found in the wrist was of sufficient size so that the bullet which passed through the wrist could not have emerged virtually completely intact or with 158 grains intact, or whether the portions of the metallic fragments were so small that that would be consistent with having virtually the entire 6.5-mm. bullet emerge.

Dr. GREGORY. Well, considering the small volume of metal as seen by X-ray, and the very small dimensions of the metal which was recovered, I think several

such fragments could have been flaked off of a total missile mass without reducing its volume greatly.

Now, just how much, depends of course upon what the original missile weighed. In other words, on the basis of the metal left behind in Governor Connally's body, as far as I could tell, the missile that struck it could be virtually intact, insofar as mass was concerned, but probably was distorted.

Mr. SPECTER. Would you have any idea at all as to what the fragments which you observed in the Governor's wrist might weigh, Doctor?

Dr. GREGORY. No, not really, but it would have been very small—very small.

Mr. SPECTER. What treatment or action did you take with respect to treating the Governor's wrist for him, Dr. Gregory?

Dr. GREGORY. Upon completing the debridement, we were then faced with a decision as to whether we should suture his wound in the conventional manner or not, and we chose not to, leaving the wound open in deference to potential infection that might be produced by retained fragments of clothing. Having decided upon that course of action, the fractured radius bone was then manipulated into a reduced position and the entire limb was encased in a plaster-paris cast.

Mr. SPECTER. Did that complete your operative procedure?

Dr. GREGORY. That completed my operative procedure for that day for Governor Connally—yes.

Mr. SPECTER. What other wounds, if any, did you notice on the Governor at that time?

Dr. GREGORY. In addition to the chest wound and the wound just described in his right forearm there was a wound in the medical aspect of his left thigh. This was almost round and did not seem to have disturbed the tissues badly, but did definitely penetrate and pass through the skin and to the fascia beneath. I could not tell from the superficial inspection whether it had passed through the fascia. An X-ray was made of his thigh at that time and there was not present in his thigh any missile of sufficient magnitude, in my opinion, to have produced the wound observed on his medial aspect. Repeat X-rays failed to reveal any such missile and an additional examination failed to reveal any wound of exit.

Mr. SPECTER. What did the X-rays reveal with respect to the presence of a missile?

Dr. GREGORY. In the thigh there was a very small shadow, perhaps 1 mm. by 2 mm. in dimension, lying close to the medial aspect of the femur, that is, the thigh bone, but was in my opinion much too small to have accounted for the dimensions of the wound on the medial aspect of his thigh or a wound of that character.

Mr. SPECTER. What were the dimensions of the wound on the medial aspect of his thigh.

Dr. GREGORY. I would say that that wound was about a centimeter in diameter, much larger than the identifiable fragment of metal in the thigh. I might add that this prompted some speculation on our part, my part, which was voiced to someone that some search ought to be made in the Governor's clothing or perhaps in the auto or some place, wherever he may have been, for the missile which had produced this much damage but which was not resident in him.

Mr. SPECTER. Approximately what type of a missile would it have taken to produce a wound which you have described on his thigh?

Dr. GREGORY. Well, it would take a fragment of metal of approximately the same diameter—a centimeter, and in general—round.

Mr. SPECTER. Would that correspond with the measurement of a 6.5-mm. missile?

Dr. GREGORY. I will have to guess—I don't know what dimension—of a 6.5-mm.—yes, a 6.5-mm. would be .65 cm., approximately, yes, that could have very well have occurred from such a missile, yes, sir.

Mr. SPECTER. Dr. Gregory, I now show you two typewritten pages which are a portion of a document identified as Commission Exhibit No. 392, which in its total aspect constitutes all of the medical records from Parkland Hospital on President Kennedy and Governor Connally and the two pages to which I direct your attention relate an operation on Governor Connally, where you are

listed as the surgeon, and I ask you if you will take a minute and look those over and tell us whether or not that is your report on the operation which you have just been describing.

Dr. GREGORY. (Examining instrument referred to.) Yes, this appears to be the essence of the report which I dictated at the conclusion of my operation on Governor Connally.

Mr. SPECTER. And are the facts contained in this report the same as those to which you have testified here today?

Dr. GREGORY. I think they are—I hope so.

Mr. SPECTER. Now, will you describe in a general way what treatment you have given Governor Connally following the time when you completed this report on November 22, 1963?

Dr. GREGORY. The Governor remained in Parkland Hospital for some 2 weeks after his admission. On the 5th day after the operation, in the Governor's hospital room, the wound on the dorsal surface of his wrist was closed by wire sutures and this was carried out in the room. On the 10th day, I believe it was, the 10th day from injury, the Governor was taken back to the operating room and there under a light general anesthesia, his wounds were dressed and inspected, and a new plaster of paris cast was applied at that time.

The Governor was then permitted up and about with his arm in a sling, and shortly thereafter returned to the Governor's Mansion in Austin. I visited Governor Connally in the Governor's Mansion in Austin about 1 week after his discharge from the hospital, simply for check-up examination and I found things to be in a satisfactory state.

I saw the Governor again about 1 month after his discharge, in the office of Dr. Robert A. Dennison in Austin, Tex., and another examination this time, including an X-ray, was made, and again the condition of his right forearm and of the fractured bone were considered to be satisfactory.

Now, I've got to think of the next date—off of the record or on as you wish—

Mr. SPECTER. All right, we will go off of the record, Doctor, while you are thinking that through.

Dr. GREGORY. All right.

(Discussion between Counsel Specter and the Witness Gregory off the record.)

Mr. SPECTER. All right, Dr. Gregory.

Dr. GREGORY. I'll say on or about February 14, the Governor came to Dallas and on that occasion we removed his cast, obtained an X-ray, found his fracture to be healing satisfactorily, and so we applied a new cast. The Governor wore that cast until 1 week ago, when he again came to Dallas. The cast was removed, and X-ray revealed satisfactory healing of his fracture, and the cast, as a continuous form of treatment, was discontinued.

At the present time the Governor is on a regiment of exercises, and he wears a demountable splint, whenever it looks as though the electorate may be over enthusiastic by shaking his hand.

Mr. SPECTER. Do you anticipate any future cast for Governor Connally?

Dr. GREGORY. I anticipate probably an uneventful, though slow, recovery of normal function in his right arm and wrist and hand.

I think he will have some permanent impairment, but I think he will have a very minimal amount of disability, and I do not at this time anticipate any need for any further surgical intervention. That will have to become manifest by the appearance of some other as yet unanticipated symptom.

I would like to add that on each of the examination interviews here in Dallas, the Governor was also checked over by Dr. Robert Shaw, from the point of view of recovery from his chest wound.

Mr. SPECTER. Dr. Gregory, I now show you a series of diagrams which are a part of reports bearing Commission No. 326 and may the record show these differ from Commission Exhibit numbers, reflecting the number assigned to reports.

I am going to ask the Court Reporter to mark this particular copy as Dr. Gregory's Exhibit No. 1.

(Instrument marked by the Reporter as Dr. Gregory's Exhibit No. 1, for identification.)

Mr. SPECTER. I am going to ask you, pointing first to Diagram No. 1, whether or not this accurately depicts the wounds of Governor Connally?

Dr. GREGORY. This one does not.

Mr. SPECTER. In what respect?

Dr. GREGORY. In the respect that the wound of entry is shown to exist on the volar surface of the forearm, whereas, it was on the dorsal surface of the forearm in my view—in my opinion—and the reverse holds for the wound of exit.

Mr. SPECTER. Will you take my pen and correct those as they should be, Doctor Gregory?

Dr. GREGORY. (Complied with request of Counsel Specter.)

Mr. SPECTER. Now, turning to Exhibit, Diagram No. 2 on this exhibit, and calling your attention specifically to the point of entry and the point of exit on the diagram of a man standing, does that correspond with the angle of declination on Governor Connally's wound?

Dr. GREGORY. To the best of my knowledge, this would fairly accurately depict that angle. If I were to have any reservation at all, it would be with reference to the height or the position of the wounds of entry, as being marked a little high, but this is recalling from memory, and it may not be correct.

Mr. SPECTER. I now call your attention to Diagram No. 3 on this sequence and ask if this accurately depicts the condition of the Governor's wounds?

Dr. GREGORY. I think that this one comes more closely into line with their actual location, especially with reference to the wound of entry in the posterior aspect of the chest. It is a little lower here, as I recall it to be. Those of the wrist, I think are accurately depicted, and that of the thigh are believed to be accurately depicted.

Mr. SPECTER. And on these wrist wounds, do they show the point of entry to be on the dorsal aspect and the point of exit to be on the volar aspect?

Dr. GREGORY. According to the anatomical position, I believe that they do; yes.

Mr. SPECTER. Now, looking at Diagram No. 4, does this again correspond with your recollection of the angle of decline on Governor Connally?

Dr. GREGORY. Again, if I have a reservation it would be to the wound of entry and the posterior aspect as being shown a little higher than it actually existed.

Mr. SPECTER. Now, Dr. Gregory, I turn to Diagram No. 5, which depicts a seated man and what does Diagram No. 5 depict to your eye with respect to what action is described on the seated man?

Dr. GREGORY. Well, I should say that this composite has alined the several parts of the body demonstrated in such a way that a single missile following a constant trajectory could have accounted for all of the wounds which are shown.

Moreover, this is consistent with the point of entry which is depicted on the side views showing the angle of declination. I submit that the angle of declination in passing through the chest could be very simply altered by having an individual lean forward a few degrees, and similarly could be made much deeper by having him lean backward, without really changing the basic relationship between the parts, nor in any way affecting the likelihood that all parts could have come into this same trajectory.

Mr. SPECTER. Would you consider it possible, in your professional opinion, for the same bullet to have inflicted all of the wounds which you have described on Governor Connally?

Dr. GREGORY. Yes; I believe it very possible, for a number of reasons. One of these—is the apparent loss of energy manifested at each of the various body surfaces, which I transected, the greatest energy being at the point of entry on the posterior aspect of the chest and of the fifth rib, where considerable destruction was done and the least destruction having been done in the medial aspect of the thigh where the bullet apparently expended itself.

Mr. SPECTER. What destruction was done on the fifth rib, Dr. Gregory?

Dr. GREGORY. It is my understanding from conversations with Dr. Shaw, and I believe his medical reports bear this out, that the fifth rib was literally shattered by the missile.

We know that high velocity bullets striking bone have a strong tendency to shatter bones and the degree to which the fifth rib was shattered was considerably in excess of the amount of shattering which occurred in the radius—the forearm.

Mr. SPECTER. And what conclusion, if any, did you draw as to the velocity of the missile, as to the time it struck each of those bony portions?

Dr. GREGORY. I think that the missile was continually losing velocity with each set of tissues which it encountered and transected, and the amount of damage done is progressively less from first entrance in the thorax to the last entrance in the thigh.

Mr. SPECTER. Do you think it possible that Governor Connally was shot by two bullets, with one hitting in the posterior part of his body and the second one striking the back side of his wrist?

Dr. GREGORY. The possibility exists, but I would discount it for these reasons—ordinarily, a missile in flight—I'll qualify that—a high velocity missile in flight does not tend to carry organic material into the wound which it creates.

I believe if you will inspect the record which was prepared by Dr. Shaw, there is no indication that any clothing or other organic material was found in the chest wound.

An irregular missile can carry debris into a wound and such debris was carried into the wound of the wrist.

I would have expected that an undistorted high velocity missile striking the wrist would not have carried material into it.

Mr. SPECTER. Was there any other characteristic which led and leads you to conclude that the wrist was not the initial point of impact of a single high velocity bullet?

Dr. GREGORY. Yes. Based on our experience with high velocity missile wounds of the forearm produced by rifles of the deer hunting calibre, there is tremendous soft tissue destruction as well as bone fragmentation which not infrequently culminates in amputation of the part.

I do not believe that the missile wound in Governor Connally's right forearm was produced by a missile of such magnitude at the time it struck him. It either had to be one of lower initial energy or a missile which had been partially expended elsewhere before it struck his wrist.

Mr. SPECTER. Would that opinion apply if you assumed that the missile had initial velocity when leaving the muzzle of the weapon of 200 feet per second?

Dr. GREGORY. That's not a very high velocity missile.

Mr. SPECTER. Pardon me—2,000 feet per second.

Dr. GREGORY. I should say that a missile at 2,000 feet per second that strikes the forearm is likely to blow it very nearly off, if it is a missile of any mass as well.

Mr. SPECTER. Well, assume that you have a muzzle velocity of 2,000 feet per second and assume the mass is 6.5 mm., and assume further that the distance between the muzzle and the wrist is approximately 160 to 250 feet away, what would you expect, based on your experience, that the consequences would be on that wrist?

Dr. GREGORY. I will have to say that most of the high velocity rifle wounds that I have seen of the forearm have, in fact, been at a closer range than that which you have stipulated, but I doubt that a range of 155 or 200 feet would seriously reduce the energy, and I would expect a similar wound, under the circumstances which you have described.

Mr. SPECTER. Let me add another possibility in this sequence, Dr. Gregory, and ask you your opinion with respect to an additional intervening victim in the path of the same bullet to this effect—assume that President Kennedy was riding in an open automobile directly behind Governor Connally, and that at a distance of approximately 175 feet President Kennedy was struck by a bullet from a weapon with a muzzle velocity of 2,000 feet per second, carrying a 6.5 mm. missile and that the missile entered in the upper right of the President's back very near the neckline and passed through his body, striking no bony material, and emerged from the throat of the President. Is it possible that missile could have then entered the back of the Governor and inflicted the chest wound which you have described?

Dr. GREGORY. I would have to concede that that would be possible—yes.

Mr. SPECTER. What would your professional opinion be, if you can formulate one, as to whether or not that actually did happen in this situation?

Dr. GREGORY. I really couldn't formulate an objective opinion about it. Only, for this reason, that it would then become a question simply of trajectories, and lining the two bodies up in such a way that this sequence of events could have occurred. I would hazard one guess, that is, that had the missile that struck Governor Connally passed through President Kennedy first, that though the missile would not have been distorted necessarily, it would very probably have begun to tumble. Now, if you like, I will define that for you.

Mr. SPECTER. Would you please?

Dr. GREGORY. A tumbling is a second—it actually is a third component of motion that a missile may go through in its trajectory. First, there is a linear motion from muzzle to target on point of impact. In order to keep a missile on its path, there is imparted to it a rotary motion so that it is spinning. Now, both of these are commensurate with the constant trajectory. A third component, which is tumbling, and is literally the end over end motion, which may be imparted to a missile should it strike something in flight that deflects but does not stop it—in this circumstance the wound of entry created by such a missile usually is quite large and the destruction it creates is increased, as a matter of fact, by such tumbling, and I would have therefore expected to see perhaps some organic material carried into a large wound of entry in Governor Connally's back.

These are only theoretical observations, but these are some of the reasons why I would believe that the missile in the Governor behaved as though it had never struck anything except him.

Mr. SPECTER. Did you observe the nature of the wound in the Governor's back?

Dr. GREGORY. Only so far as I saw it as Dr. Shaw was preparing to operate on it, but I was unable to see the nature of the wound as he carried out his operation. I did, however, specifically question him about this matter of containing foreign material, clothing, etc.

Mr. SPECTER. What did he say about that?

Dr. GREGORY. Well, as I recall it, he said none was found, and I would not have expected any to be found as I explained to you, if this was the initial impact of that missile.

Mr. SPECTER. Well, wouldn't you think it possible, bearing in mind that my last question only went as to whether the same bullet could have gone through President Kennedy and inflicted the wound on Governor Connally's chest, would you think it possible that the same missile could have gone through President Kennedy in the way I described and have inflicted all three of the wounds, that is, the entry and exit on the chest, the entry and exit on the wrist, and the entry into the thigh which you described.

Dr. GREGORY. I suspect it's possible, but I would say it would have to be a remarkably powerful missile to have done so.

Mr. SPECTER. Dr. Gregory, have you been interviewed about this matter prior to today by any representative of the Federal Government?

Dr. GREGORY. Yes; on two or three occasions I have talked to a properly identified member of the Secret Service, Mr. Warren, I believe it was.

Mr. SPECTER. And what was the nature of the information which you gave to Mr. Warren on those occasions?

Dr. GREGORY. Essentially the same thing as I have told you here, but in much less detail.

Mr. SPECTER. And have you ever talked to anyone besides Mr. Warren and me about these matters, from the Federal Government?

Dr. GREGORY. No; not that I know of. I was on a day or so after the assassination spoken to in these offices by a member of the Federal Bureau of Investigation, but it was a very brief interview.

Mr. SPECTER. What was that about?

Dr. GREGORY. And I think it was the question of whether or not I had been able to recover any metal from Governor Connally which they might use for ballistic analysis.

I regret to say I don't know the gentleman's name, but he too was properly identified.

Mr. SPECTER. And prior to the time when the Court Reporter started to transcribe the deposition which you have been kind enough to provide us with, had you and I been talking about the same subjects which you have answered questions on all during the course of this deposition?

Dr. GREGORY. Yes.

Mr. SPECTER. And during the time that you first were interviewed by the Secret Service down through the present moment, have you had the same general opinion concerning the matters which you have testified about here today?

Dr. GREGORY. Yes.

Mr. SPECTER. Do you have anything to add which you think would be helpful in any way to the work of the Commission?

Dr. GREGORY. No; not really. This is the only articulation I have had with this whole episode concerning Governor Connally's wound and his subsequent recovery and none other.

Mr. SPECTER. Thank you very much, Dr. Gregory, for coming.

Dr. GREGORY. Very well.

TESTIMONY OF DR. GEORGE T. SHIRES

The testimony of Dr. George T. Shires was taken at 4:35 p.m., on March 23, 1964, at Parkland Memorial Hospital, Dallas, Tex., by Mr. Arlen Specter, assistant counsel of the President's Commission.

Mr. SPECTER. Let the record show that as we are reconvening this session and about to commence the deposition of Dr. George T. Shires, that the preliminary statement is being made that this is pursuant to the investigation being conducted by the President's Commission on the Assassination of President Kennedy to determine all the facts relating to the shooting, including the treatment rendered to Governor Connally as well as President Kennedy, and that Dr. Shires has appeared here today in response to a letter of request from the President's Commission to testify concerning his knowledge of the treatment which he and other medical personnel at Parkland Hospital performed on Governor Connally.

Will you rise, please, Dr. Shires and raise your right hand. Do you solemnly swear that the testimony you will give before the President's Commission in this deposition proceeding will be the truth, the whole truth, and nothing but the truth, so help you God?

Dr. SHIRES. I do.

Mr. SPECTER. Would you state your full name, please, for the record?

Dr. SHIRES. George Thomas Shires.

Mr. SPECTER. And what is your profession, sir?

Dr. SHIRES. Professor of Surgery and Chairman of the Department of Surgery, University of Texas, Southwestern Medical School.

Mr. SPECTER. And you are a medical doctor by profession, I assume?

Dr. SHIRES. Yes; M.D.

Mr. SPECTER. Would you outline briefly your educational background?

Dr. SHIRES. Undergraduate education at the University of Texas in Austin, Tex.; graduate medical education at the University of Texas, Southwestern Medical School in Dallas; internship, Massachusetts Memorial Hospital in Boston, Mass.; surgical residency—Parkland Memorial Hospital in Dallas, Tex.; two tours of active duty in the United States Navy, first as research investigator at the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md.; second as Associate Surgeon, United States Naval Hospital Ship *Haven*—do you want staff positions?

Mr. SPECTER. Please, give me those, as well.