ADDENDUM I

Interviews conducted by the House Select Committee on Assassinations staff and/or the medical consultants with: Dr. J. Thornton Boswell, Dr. C. James Carrico, Dr. Norman Chase, Dr. James J. Humes, Dr. Marion T. Jenkins, Dr. John K. Lattimer, Dr. Malcolm O. Perry, Dr. Jack Reynolds, Dr. William B. Seaman, Dr. Robert R. Shaw, and Dr. George T. Shires.

Not included: Dr. Pierre A. Finck and Dr. John H. Ebersole were deposed by the select committee on March 11, 1978.

INTERVIEW OF DRS. JAMES J. HUMES AND J. THORNTON BOSWELL BY THE FORENSIC PATHOLOGY PANEL, SUBPANEL OF DOCTORS HAD NOT REVIEWED THE AUTOPSY MATERIALS PREVIOUSLY

NATIONAL ARCHIVES

SEPTEMBER 16, 1977.

Physicians present were: Dr. Coe, Dr. Davis, Dr. Baden, Dr. Humes, Dr. Boswell, Dr. Petty, Dr. Rose, Dr. Levine, Dr. Loquvam, and Dr. Angel.

Staff members present were: Gary Cornwell, Kenneth Klein, Andy Purdy, Jim Conzelman, Lillian Johnson, and Chellie Mason.

L. JOHNSON. First, I'd like to ask everyone to state their name clearly, distinctly as possible for the record please.

G. CORNWELL. Well, just for her purposes, do you want to tell her what your names are—she doesn't know all of you—so that she can make a record of who's asking, or whatever, so that we would have the names.

Dr. BADEN. The principal speakers would be Dr. Petty, Dr. Humes, and Dr. Boswell; you have those. I think anybody else who talks will identify themselves to you and to the doctors.

G. CORNWELL. And, the man who just spoke to you is Dr. Michael Baden. The only statement that I wish to make in advance is that Dr. Humes and Dr. Boswell have come here voluntarily, not by subpena, and simply because the other doctors thought there was some information that might be of assistance to them in their deliberations. We have decided that because of that fact, that it was the doctors' request that they come, and Dr. Humes and Dr. Boswell have come voluntarily, the staff will ask no questions, and you all just proceed as you see fit.

Dr. HUMES. I'd like to comment that we're pleased to be here and I for one welcome the investigation and I hope that it will ultimately, through all facets of it, erase the doubts that exist in the public's mind, the minds of Congress and others. Any help we can give, we are delighted to do so.

G. CORNWELL. Thank you very much, and I'm sure that's not only the staff's but all the doctors here sentiments exactly.

Dr. BADEN. I would just like to thank Dr. Humes and Dr. Boswell for coming here on such short notice to help in our interpretations.

Dr. PETTY. I'll use your last names so that it will come out right in the record rather than your first name, Dr. Humes, we, all of us here, are forensic pathologists, and we've all been faced with the same problems you were faced with on the night of the autopsy; we know perfectly well what pressures you were under, and this is in no way critical of anything that was done; we're only interested in certain information which we hope you have stored up in your association tracks and will be able to give us to help unravel some of the mystery and mystique that surrounded this thing. First of all, let me start with the question that was on the lips of everyone here and that is, did you or didn't you look at the adrenals?

Dr. HUMES. I would ask, you—did that bear, or does that bear, on your investigation of the event that took place that night?

Dr. PETTY. No; all we were wondering was—we noticed that that was noticeably absent from the autopsy report.

Dr. HUMES. Since I don't think it bore directly on the death of the President, I'd prefer not to discuss it with you doctor.

Dr. PETTY. All right. Fine. If you prefer not to, that's fine with me. We were just curious because normally we examine adrenals in the general course that the autopsy, as we undertake it. OK, so——

Dr. HUMES. I'd only comment for you that I have strong personal reasons and certain other obligations that suggest to me that it might not be preferable.

Dr. PETTY. All right. Second, did you ever see a piece of bone which was picked up apparently at the site of the assassination, retained for some period of time, and then submitted to the FBI?

Dr. HUMES. No; the only extra piece of bone brought to us then—that was contained in the casket that brought the President to us—was a piece of bone that was brought to us later on that evening; and the time, as you imagine, I wouldn't wish to guess, but I would have guessed it was midnight or 1 o'clock in the morning, Jay, something like that.

Dr. PETTY. And there are X-rays of that?

Dr. HUMES. Yes.

Dr. PETTY. We have X-rays of that; I think there are three fragments of bone actually, one large and two small.

Dr. HUMES. Those were the only other fragments I've ever seen.

Dr. PETTY. Well, we have photographs of a piece of bone that was retrieved from Dealey Plaza—is that the name of it——

Dr. HUMES. Yes.

Dr. PETTY. By a premedical student, as I understand it, a fellow by the name of Harper; it was retained for some time and then eventually found its way into the chain of evidence, and what I think the basic question is that we are asking—could this showing photographs—and this is a 1 to 1 photograph—could this have been missing from President Kennedy's skull or not?

Dr. HUMES. In my opinion it could because there was far insufficient bone to close the calvarium area. In fact, we spent many hours using rubber dam and other artificial materials to do that.

Dr. PETTY. Yes, this photograph that we're showing you is a color photograph of a fragment allegedly recovered by a Mr. Harper at the site of the assassination, and it contains a ruler in it, and it's a 1 to 1 color photograph of the fragment. The fragment is no longer available as we understand it.

Dr. HUMES. I comment further, Dr. Petty, that it's approximately the size, I would think, if you would compare it, with the photographs of that, larger than other fragments that were brought to us.

Dr. PETTY. I don't know how much distortion there is in this X-ray of the larger of the fragments that was brought to you.

Dr. HUMES. We are looking at X-ray No. 4 which is of three bony fragments, and our comment is that the color photograph that you show us of a fragment we did not see sort of approximates in size the fragments that were represented that evening, and to further restate, there were sufficient fragments missing that that fragment could have been.

Dr. PETTY. So even though this fragment picked up by Harper, measuring some 2½ inches in greatest dimension, even that fragment could have been put into the vacant areas in the scalp area as you've reconstructed it.

Dr. HUMES. Correct.

Dr. PETTY. Well, that's the major question I think that we wanted to have answered at this time. The second question or questions, series of questions, revolve about these photographs here which are Nos. 44 and 45. There may be a clearer one than this—was the clearer one in black and white? These are the color photographs, Nos. 44 and 45, and this area which I'm pointing to with my finger here seems to be an area which is almost semicircular in shape and appears to have beveling to the outside of the skull. Now, what we really want to know is where was this located, and in order to give you a chance to show it, where would this be on this skull here that I'm showing you?

K. KLEIN. Doctor, the photograph that you are referring to is what number?

Dr. PETTY. Nos. 44 and 45.

K. KLEIN. The particular one you're talking about now is?

Dr. PETTY. 44.

K. KLEIN. 44.

Dr. PETTY. And this is shown more clearly on the black and white photographs Nos. 17 and 18, probably best in No. 17, and I'm putting my finger on the same spot.

Dr. HUMES. Well, to the best of my recollection, and I regret that these photographs are so poorly marked, this was in the right parietal region approximately here.

Dr. PETTY. Could it have been forward of the suture line—what do you call it?

Dr. BADEN. Coronal.

Dr. PETTY. Could it have been anterior to the coronal suture line? Now these are our major questions on this.

Dr. HUMES. To state what the problem was, the basic problem was, as we reflected the scalp, various fragments of bone, some fell into the cranial cavity, some came to the table, some adhered to dura and so forth, that it was in—that it was on the right side, that it was parietal frontal, there's no question. Now, to tell you was it anterior to the coronal suture or not, I can't tell you unless that's a coronal suture in that photograph.

Dr. PETTY. Well, we would think perhaps this gap on photograph 26, this gap that is tending down toward the President's right ear—this V-shape directed toward the President's right ear—is the same as this V-shape gap——

Dr. BOSWELL. I believe it is.

Dr. PETTY. On your black and white No. 18.

Dr. BOSWELL. The scalp was so torn and lacerated that we never had to do any dissection there. The scalp was just laid over, and I believe that this is the scalp laying over here. as I interpret this; this is the shoulder down here.

Dr. PETTY. Cheek and shoulder.

Dr. BOSWELL. Yeah, and, that this is just laid down, like so, without having done any dissection or anything.

Dr. PETTY. So this would be the right temporal area?

Dr. BOSWELL. Now whether this was prior to or after removal of the brain tissue, I don't know.

Dr. HUMES. It would be after.

Dr. BOSWELL. I'm not sure that we haven't—that the head isn't back in such manner. I think that is probably taken just to show the magnitude of the wound.

Dr. PETTY. Yes, you're talking about color photograph No. 44 now. Well then, if I may ask one further question along this line, you will note on color photograph No. 26, just ahead of this V-shaped notch, there is a hank of hair which obscures everything, and the question that I'd like to propose now is, is that hank of hair obscuring this externally beveled portion of bone that we see in black and white No. 18?

Dr. HUMES. All I could tell you is that it could, Dr. Petty. It could have because these obviously in time were taken—these black and white photographs, both 18, were taken temporally that evening at a later hour than was this color photograph No. 26, in this case.

Dr. BOSWELL. These two are essentially identical though.

Dr. PETTY. Which two, would you just identify them for the——

Dr. BOSWELL. No. 44 color and No. 17 black and white. These are almost identical, and I would assume that one was taken with one camera and then the other one with another camera at the same time.

Dr. HUMES. What? The color negative may have been developed, may have been printed black and white, Jay. Looks more like that to me.

Dr. BOSWELL. Might have been. So they may be actually the same photograph.

Dr. HUMES. I think they are.

Dr. PETTY. That was the major question that we had because we're trying to establish if we can identify the point of outshoot of one or both of the fragments to the best of our analysis.

Dr. HUMES. One or both of what fragments?

Dr. BADEN. The bullet fragments.

Dr. PETTY. To the best of our analysis, we could not place which side of the coronal suture line—we couldn't place whether this is on the anterior side of the coronal suture or whether it's on the posterior side of it.

Dr. BADEN. The X-ray you took of the fragment that you received does show a suture line on it, so that's helpful in——

Dr. HUMES. Yeah. See, we felt that this area. this one semi-circular area on X-ray No. 4, quite likely was at least in part the other side of a circle; that was our interpretation of this fragment, and I don't think even that would have been quite complete.

Dr. PETTY. Well, we were wondering if maybe the new fragment which was picked up by Harper might make that circle complete somewhere if it's possible. Now, we don't know where this fragment is at this point.

Dr. HUMES. I don't see anything with quite the circumferential margins of these other——

Dr. PETTY. I am showing you now—I don't know if these photographs are marked, are they? This is a black and white enlarged photograph of Harper's fragment labeled number No. 9 or No. 6—I can't tell you which it is.

Dr. BADEN. It's No. 9.

Dr. PETTY. Probably No. 9. And this would be the internal surface of the fragment, and then on the other photograph which is the external surface, we were just wondering if this could help put a periphery or help complete the periphery of the gap there?

Dr. HUMES. Caused by the missile egressing the coronal wall?

Dr. PETTY. That is correct.

Dr. HUMES. I don't think so. I don't think any of the borders of this fragment to me would coincide with this type of a wound of exit.

Dr. PETTY. I see what you're driving at.

Dr. HUMES. One could almost imagine it to be elliptical, slightly elliptical or circular or which ever way. Might be hard to put any of the margins of this fragment there.

Dr. BADEN. How about the lateral skull film with regard to the location of that? Is that not helpful to you?

Dr. BOSWELL. It is somewhat helpful, yes. You want to throw that one up?

Dr. BADEN. While you are looking at that and for the record, Dr. Boswell, when you had discussed No. 44 color, the stenographer wanted to get down whether you said that the shoulder and cheek were visible in the photograph?

Dr. BOSWELL. Yes, shoulder and cheek.

Dr. DAVIS. Well, you can see why we say that the fragment that you show us could have helped to close the wound and still have room for more.

Dr. PETTY. I'm now looking at No. 2, X-ray No. 2. Is this the point of entrance that I'm pointing to?

Dr. HUMES. No.

Dr. PETTY. This is not?

Drs. HUMES and BOSWELL. No.

Dr. PETTY. Where is the point of entrance? That doesn't show?

Dr. HUMES. It doesn't show. Below the external occipital protuberance.

Dr. PETTY. It's below it?

Dr. HUMES. Right.

Dr. PETTY. Not above it?

Dr. BOSWELL. No. It's to the right and inferior to the external occipital protuberance.

Dr. PETTY. O.K. All right. Let me show you then color photograph No. 42, which then is the——

Dr. HUMES. Precisely coincides with that wound on the scalp.

K. KLEIN. Could you describe that point that you just made?

Dr. HUMES. That's an elliptical wound of the scalp which we described in our protocol. I'm quite confident. And it's just to the right and below by a centimeter and maybe a centimeter to the right and maybe 2 centimeters below the midpoint of the external occipital protuberance. And when the scalp was reflected from there, there was virtually an identical wound in the occipital bone.

K. KLEIN. And what number photograph is that?

Dr. HUMES. Forty-two.

K. KLEIN. Forty-two.

Dr. PETTY. Then this is the entrance wound. The one down by the margin of the hair in the back?

Dr. HUMES. Yes, sir.

Dr. PETTY. Then this ruler that is held in the photograph is simply to establish a scale and no more?

Dr. HUMES. Exactly.

Dr. PETTY. It is not intended to represent the ruler starting for something?

Dr. HUMES. No way, no way.

Dr. PETTY. What is this opposite—oh, it must be, I can't read it—but up close to the tip of the ruler, there you are two centimeters down.

Dr. BOSWELL. It's the posterior-inferior margin of the lacerated scalp.

Dr. PETTY. That's the posterior-inferior margin of the lacerated scalp?

Dr. BOSWELL. It tore right down to that point. And then we just folded that back and this back and an interior flap forward and that exposed almost the entire—I guess we did have to dissect a little bit to get to——

Dr. HUMES. To get to this entrance, right?

Dr. BOSWELL. But not much, because this bone was all gone and actually the smaller fragment fit this piece down here—there was a hole here, only half of which was present in the bone that was intact, and this small piece then fit right on there and the beveling on those was on the interior surface.

Dr. PETTY. Then was this below the tentorium or above the tentorium on the inside? Do you recall?

Dr. HUMES. Everything was so disrupted, I'm not sure.

Dr. BOSWELL. Well, the dura was completely—as you can see here—was completely destroyed practically, and I don't think there were any markings that were really very adequate to see where it was related to the tentorium. I don't see a picture.

Dr. PETTY. It happens to be on 42, a fine line going to—is that fine line going to the area you identify as the——

Dr. HUMES. That's an artifact of some kind.

Dr. PETTY. Fine.

Dr. HUMES. Right there (pointing to photograph No. 42).

Dr. PETTY. Now, if it goes in at the point indicated below the external occipital protuberance, then it is going to go in about at the tentorium.

Dr. HUMES. At the tentorium, I'm saying, Dr. Petty. Approximately, but you see——

Dr. BADEN. I think the record should reflect that Dr. Angel just arrived and is being greeted.

Dr. COE. Dr. Humes, looking at photograph No. 46, I am curious to know whether this destruction you feel is a postmortem artifact in removing the brain, or was part of this, was caused by the bullet you think perhaps? You have a junction between the cerebellum and the——

Dr. HUMES. No; well, I think it was partly caused by the bullet.

Dr. COE. It was?

Dr. HUMES. It was great—it was a tearing type of disruption that basically had to go back to our description. The corpus collosum was torn, was it not Jay? And the midbrain was virtually torn from the pons.

Dr. COE. Thank you all.

Dr. HUMES. Now don't misinterpret me that the missile necessarily passed through there because it was a great——

Dr. COE. But it must have come fairly close in there.

Dr. HUMES. Could have, yeah.

Dr. PETTY. Mark from the point of view where it entered.

Dr. HUMES. Yes, sir.

Dr. BADEN. Pursuing the question Dr. Coe has been asking, I am looking at photograph No. 50 of the brain, the dorsum of the brain. Question has arisen relative to a purple object in the right frontal cerebral region as being a foreign object. Do you have any thoughts you can give us about that object? And here is No. 46, which is the undersurface of that same area.

Dr. HUMES. I strongly suspect that this foreign object is something that was placed on the table in an attempt to elevate this portion of the brain so it wouldn't be as much out of focus. I think you're looking at a defect in brain substance because, you know, if you try and take a picture with a surgical specimen or what have you, and different portions of it are at different levels—I think we made an attempt. That certainly was not present in the brain, and I interpret that we took some object that was immediately available in the room and placed it under the brain in an attempt to bring the right cerebral hemisphere somewhat closer in level to the left for the photograph.

Dr. BADEN. You are completely satisfied—and Dr. Boswell—that there was no foreign object in this area?

Dr. HUMES. Absolutely, unequivocally, without question.

Dr. BOSWELL. Yes.

Dr. PETTY. Dr. Angel, we have two photographs here representing what appears to be a skull fragment which was recovered by one Harper at Dealey Plaza some little time after the assassination took place. We would like very much to have your expertise in identifying where this particular fragment of skull might have arisen, that is, what part of the head bone it came from?

Dr. ANGEL. Well, it's clearly parietal bone, side left or right is not so easy. You can see one, two, or three markings for meningeal vessels on the inner surface. This is the same——

Dr. PETTY. This is the same thing blown up there, both sides are shown.

Dr. ANGEL. Shown very clearly, as well as some blood vessels entering—the damage on the outside looks as though there's still some perifernium the hairing on the outside, but I'm not really sure about that, it's got a ragged edge there. I don't think I can say anything really much sharper than that; my feeling is that it was on the outside and that it's—oh—around here.

Dr. PETTY. Around where?

Dr. ANGEL. Around this area here, below the parietal bone and directly above the sagittal suture. I, at first I could see marks of sagittal suture here, but I don't think that's it.

Dr. BADEN. We also have the negatives from which these were made.

Dr. ANGEL. Well, excuse me—it doesn't seem to show on the inside. I'm puzzled.

Dr. PETTY. Now, they want us to record which photographs you're examining again. And these once again for the record are photographs of the segment or fragment of bone picked up by Harper at Dealey Plaza.

Dr. BADEN. Right, and photograph Nos. 13 and 8 and the two color prints are being examined by Dr. Angel at this time.

Dr. ANGEL. Are you sure that's suture edge there?

Dr. BOSWELL. Yes. We're not sure; we ask for your advice.

Dr. DAVIS. That's why you're here, sir.

Dr. BADEN. Would you like to see the kodachromes?

Dr. ANGEL. I'm not sure that isn't simply a broken edge.

Dr. BADEN. I'm sorry we don't have a better way of viewing them.

Dr. HUMES. There's an X-ray view box, Dr. Angel; might help.

Dr. ANGEL. No; I don't think those things are going to help. See, I don't think you can have this be the coronal suture because then you would certainly have the entry of a branch of the meningeal artery, some remnant of that tree going up there along it. And I thought these were intermediate posterior branches of middle meningeal going up the side of the parietal here—I would have interpreted the piece as fitting here and I would have looked here for a trace of lambdoid suture. Now this inner surface is broken away. Perhaps that could be the very edge of the coronal suture on the right, but of course I don't know what damage the skull showed and whether this has to be—but I'm not supposed to know this.

Dr. BADEN. No, Dr. Angel; feel free to discuss this with Dr. Humes who did the autopsy. He'd be delighted to——

Dr. ANGEL. Is there a defect on the right that this would fit into?

Dr. HUMES. Good, Dr. Angel. Yes.

Dr. COE. Yeah. There's a picture right there in color that would show you the extent of the——

Dr. HUMES. Could you put that lateral view of the skull up again for Dr. Angel's benefit? Dr. Angel, there was a massive defect of the skull from the right, and there was a portion of the right parental-temporal bone still attached to the skull. Where is the picture? Here—at one margin—and later on in the evening——

Dr. PETTY. Let me identify this for everybody here. This is color photograph No. 44.

Dr. HUMES. There was what we interpreted to be an exit wound, in the location to which I point. The bone that would correspond and complete that circle or ellipse, that might have been made by that exit wound, was missing at the time we began the examination. Later on that evening, several hours into the evening, we were presented with another fragment of bone, not the one that you are examining now, and that fragment had a corresponding semicircular defect which almost completed this, what we interpreted to be an exit wound, but not quite. And we never had the privilege of examining the fragments or photographs of this fragment that you now examined until this afternoon, and I was unaware of its existence until about 3 weeks ago.

Dr. PETTY. This is a fragment that arrived quite a while later in a Nieman-Marcus box.

Dr. HUMES. It never arrived to our knowledge. Dr. Angel, I draw your attention to the view box where you get some comprehension of the size of the defect.

Dr. BOSWELL. These are all slightly different views, slightly different. They are all different pictures, so that I'm not sure.

Dr. ANGEL. No; I don't think—don't know if that makes any major difference——

Dr. PETTY. Dr. Angel, let me show you also this X-ray film of the three fragments that were separate and detached from the body which had been X-rayed here. One of these three fragments—the larger of the three—is the one that apparently helped complete a portion of an outshoot wound, is that correct, Dr. Humes?

Dr. HUMES. That was our opinion, Dr. Petty.

Dr. PETTY. You may want to put these together and have this up here too. One further question, Dr. Angel. There seems to be a suture line here on this larger of the three fragments.

Dr. ANGEL. Yes; that seems to be quite clear.

Dr. PETTY. Could that be the coronal suture?

Dr. ANGEL. I would have guessed that it might be. Again, I don't see any meningeal vessel markings, but if this exit wound is here and the coronal suture is going up like that, that's conceivable.

Dr. PETTY. Well, I think the question that we all have is whether this is anterior to the coronal suture or posterior to it.

Dr. ANGEL. Oh, there was damage that far forward?

Dr. PETTY. I believe so. I think the damage is quite apparent here in the lateral view of the skull by X-ray.

Dr. ANGEL. Yes, that's right.

Dr. BADEN. And also on X-ray No. 1, the anterior-posterior view, right side.

Dr. ANGEL. Right. Well, this then could be frontal perfectly well. It doesn't show the meningeal markings, and that's what made me unhappy about it being, well—photo makes more sense—in that case the exit wound must be not very far above the right or near the right pterion, I would think.

Dr. BADEN. For the record, Dr. Angel you're viewing photographs Nos. 8 and 13 of bone and X-rays Nos. 1, 3, and 6 at the X-ray view box.

Dr. ANGEL. Now, that seems to have a little portion of that circle on it and the rest of that circle on this photograph.

Dr. PETTY. No. 44. Dr. Humes could probably tell more where that is than I can. This is the right cheek as I understand it, is that correct, Dr. Humes? And this then is the right shoulder and the flap turned back at the time of the autopsy?

Dr. HUMES. Yeah.

Dr. ANGEL. Well, this must be well forward then on the frontal bone, I was interpreting it as being—this itself as being near the pterion.

Dr. BADEN. Yet here is the gap.

Dr. HUMES. That is not frontal bone where that semicircle is—it's either temporal or parietal bone, Dr. Angel.

Dr. ANGEL. I don't see how it can be. That's what it looks like to me.

Dr. HUMES. That's exactly what it is.

Dr. ANGEL. In that case, I'm puzzled by the missing bone here and the angles. Is this to be placed more like this? Now this piece could fit on here and the parietal piece could fit behind that, this piece could.

Dr. PETTY. The Harper piece could be fitted posterior and slightly lateral is that what you're saying?

Dr. ANGEL. This is what I'm saying, yes, perhaps.

Dr. PETTY. Now, this is photograph No. 26, and it seems to show the pieces more as they were first viewed and to orient this photograph and the photograph No. 44.

Dr. BOSWELL. It's hard to do, Dr. Petty

Dr PETTY. It's hard to do. But this is more or less what you're looking at, isn't it?

Dr. ANGEL. I think so, yes. I thought perhaps this was a little more tilted.

Dr. PETTY. Well, perhaps like that

Dr. HUMES. Negative, I don't think that's true.

Dr. ANGEL. What's bothering me is what part of the flesh is that?

Dr. PETTY. That's the cheek, the right cheek.

Dr. ANGEL. If that's the right cheek then it can't be—has to be more or less.

Dr. PETTY. Yeah.

Dr. ANGEL. It's really hard to be sure, square this with the X-ray which shows so much bone lost in this right frontal area.

Dr. PETTY. Well, I think there may be more bone apparently lost than is actually lost in the X-rays. We don't know when those X-rays were taken. Dr. Humes, do you by chance know at what phase of the autopsy the X-rays were taken? Were these taken before the brain was removed or after?

Dr. HUMES. Yes. All of the X-rays were taken before any manipulations were performed.

Dr. BOSWELL. Some of the bone fragments though, are partially extruded, as we see in X-ray No 1.

Dr. HUMES. Some of them were adhered to partially torn scalp.

Dr. BOSWELL. Which accounts for some of the missing bone.

Dr. ANGEL. It's hard to do that—jigsaw puzzle—that's all I can say. I was looking somewhere here for a temporal line, and I can't see any clear indication of it. And that should be running up like that, and so it's hard for me to put these two——

Dr. PETTY. We believe that in photograph No. 44 the V-shaped notch here is the same as the V-shaped notch that you see in photograph No. 26. This then would give you the angle at which these two photographs should correspond and that would seem to fit pretty well.

Dr. ANGEL. So, in that case this exit wound is really in the frontal—its in front of that notch there—it's in the frontal, see what I mean, it would have to be about here.

Dr. PETTY. Would that suture line help at all?

Dr. ANGEL. Yes, this—if that's as it looks, like the piece of frontal bone that fitted here like that, and the wound is about here, that would fit.

Dr. BADEN. Now, would this be below the hairline, because this appears above the hairline?

Dr. ANGEL. It would have to be above the hairline.

Dr. BADEN. At this point?

Dr. ANGEL. Uh-huh. In that case this fragment here of parietal could very easily fit back here, looks like there's another fragment in here. See what I mean.

Dr. PETTY. Well, it's terribly fragmented, and we can't really reconstruct it.

Dr. BOSWELL. No, you can't recall—that's perhaps this piece of parietal, that sharp edge there could conceivably have fitted on here behind this fragment—looks as though it's the front part, front lower part, anterior-interior portion of the right parietal.

Dr. ANGEL. I would interpret this as being, originally, as being roughly the middle of the right parietal, and I still think so.

Dr. PETTY. Our ultimate question is, do you think this could well be part of the skull of the late President, referring now to the Harper piece?

Dr. ANGEL. Yes.

Dr. PETTY. And you think it would fit also, don't you, Dr. Humes?

Dr. HUMES. Yes. I have great difficulty in orientation of Nos. 44 and 45, Dr. Petty, and I share your problem, and I'd like to spend some time with it, but I have great difficulty.

Dr. ANGEL. So do I. I wish the hair were not obscuring that notch because I think that's where it has to be. If that V is the same as this, it has to be somewhere around here.

Dr. BADEN. The hairline would be where the skull fragment is missing?

Dr. ANGEL. It's not too—that would be just about at the hairline or just above it—and then in front of the temporal line, which I couldn't see. that was what was bothering me. And I couldn't see any temporal line here, and if the temporal is—if this is really the forehead, this scalp directed down as it ordinarily would be, then that makes sense.

Dr. PETTY. I believe it is the forehead, and the scalp is reflected down.

Dr. ANGEL. Yeah. I think that makes sense.

Dr. PETTY. Dr. Humes, would you buy that here is the scalp of photograph No. 44 and reflected down over the face? Right here?

Dr. HUMES. Yes.

Dr. PETTY. And that this then really could very well be the frontal portion?

Dr. HUMES. Right. Now I'm much happier. I will buy that completely. That's where that was.

Dr. PETTY. OK. well—this makes more sense to me.

Dr. HUMES. We reflected the scalp here. This is the exit wound where I thought it was. This is the back of his head here. This is the back of his shoulder.

Dr. PETTY. These two are lined up just about right now. See. this notch is pointing in the same direction here. and this would be in the frontal area and anterior to the coronal suture in all probability.

Dr. HUMES. Right.

Dr. PETTY. Do you see that. Dr. Davis? That this then would be in the frontal bone and anterior to the coronal suture?

Dr. DAVIS. Which I think is consistent with the X-rays. the lateral films. and fits in with our interpretation.

Dr. PETTY. Now, may I ask you one other question on this X-ray, Dr. Humes. Here is a view taken, I assume, with the radiation point above the face and the film behind the back of the head.

Dr. HUMES. Not being a radiologist, I presume that.

Dr. PETTY. If that's true, then the least distorted and least fuzzy portion of the radiopaque materials would be closest to the film, and we would assume then that this peculiar semilunar object with the sharp edges would be close to the film and therefore represent the piece that was seen in the lateral view——

Dr. HUMES. Up by the eyebrow.

Dr. PETTY. No. Up by the—in the back of the skull.

Dr. BADEN. Could you state the numbers of the two X-rays that you're talking about?

Dr. PETTY. Yeah. I'm sorry, I keep forgetting these numbers. We're looking at roentgenogram Nos. 1 and 2. The first is an anterior-posterior view of the head, the second is a lateral view, and we're trying to establish whether this particular sharp-edged radiopaque defect is close to the back of the skull or close to the front of the skull.

Dr. HUMES. I can't be sure I see it in the lateral at all, do you? Do you see it?

Dr. BOSWELL. Yes, right here.

Dr. PETTY. Were these fragments that we see recovered at all?

Dr. BOSWELL. No; they were not.

Dr. PETTY. I can understand why they weren't.

Dr. BOSWELL. I think there were three or four tiny little pieces, and I think those are here in the Archives.

Dr. HUMES. The X-ray, as you know, doesn't tell me how large that was or what its bulk or mass was. Most of the fragments that we recovered were grains of sand-type fragments.

Dr. BOSWELL. Yeah, millimeter or so.

Dr. HUMES. I don't recall them of that size.

Dr. PETTY. So that placing the outshoot wound in the right frontal bone toward the coronal suture is probably about where it was.

Dr. HUMES. Uh-huh.

Dr. PETTY. Joe Davis, you have questions, I think, about the inshoot area, don't you?

Dr. DAVIS. Well, in terms of the inshoot, my impression when I first looked at these films was that the inshoot was higher, and I equated that with the lesion in photograph, I believe it was No. 26, color photograph—well, it's 43—and I interpreted—which one is this?

Dr. BADEN. This is No. 42.

Dr. PETTY. We were wondering if that had been the inshoot.

Dr. HUMES. No, no, That's no wound.

Dr. DAVIS. Because in No. 42 I interpreted that as a wound, and the other, lower down in the neck, as just being a contaminant, a piece of brain tissue.

Dr. HUMES. No, that was a wound, and the wound on the skull precisely coincided with it.

Dr. DAVIS. Now it was a tunnel——

Dr. HUMES. Yeah, tunnel for a way.

Dr. BOSWELL. Yeah, it's longer than it is wide, and tunneled along and actually under here, and then at the actual bone defect was above the——

Dr. HUMES. And this photograph No. 45, I am quite convinced, is an attempt to demonstrate that wound, and not a very successful one I'm afraid, because I can't for sure pick it out. This, I believe, was taken looking down at the inside—looking close to the posterior cranial fossa.

Dr. BOSWELL. And what we see here is a lot of red and fragments of bone.

Dr. COE. Dr. Humes and Dr. Boswell, have you discussed these photographs with the other pathologists who have previously gone over this with you?

Dr. HUMES. I have not.

Dr. BOSWELL. I went over the photographs with Humes.

Dr. COE. Because at least there's already one of them right—I had the impression that they apparently thought—I was just curious as to——

Dr. HUMES. Our written description clearly, I think, indicates that point right there.

Dr. COE. But they describe, some of them, the entrance they feel being 10 centimeters above the occipital proturberance.

Dr. PETTY. Well, there have been all sorts of changes from the original—I mean, right and left and up and down.

Dr. COE. No. That's why I was interested in whether they had discussed it with the pathologists or whether the pathologists had been interpreting entirely from the photographs when they made the statement.

Dr. PETTY. So, on photograph No. 42, then, down right at the hairline, right at almost in the midline, is the inshoot wound, and this photograph is not taken with the inshoot wound centered in the photograph, but rather the posterior extension of the scalp tear is the subject of the photograph.

Dr. HUMES. Again, to be sure that it was related to the gentleman's head rather than focusing specifically on a wound, no I don't think we took the photograph specifically at that site, do you, Jay?

Dr. BOSWELL. No.

Dr. PETTY. And, you say, Dr. Boswell, that the bullet entered the skin and that the wound in the skull was a little above that.

Dr. BOSWELL. Right.

Dr. PETTY. Because apparently the bullet had tunneled a little under the skin and then that corresponds with the diagram that I saw which showed a point on the back of the body, the diagram with an arrow pointing upward and slightly to the left.

Dr. HUMES. You caught—I don't know what you are referring to.

Dr. BADEN. Could I interrupt 1 second? Dr. Angel has to go at this point, but in summary, you are pointing to the skull. The X-rays and the photographs and the X-ray of fragments of bone that was taken by Dr. Humes during the autopsy would indicate that the exit perforation is where?

Dr. ANGEL. Along in here I think, above the temporal line, and that triangular fragment I think would fit from—just short of the fragment down to the edge of the exit perforation and then across this way, fitting in as sort of a triangle in the upper part of the frontal—so I think that's the best fit that I could estimate from seeing the X-rays.

Dr. BADEN. And this would place the exit gunshot wound just anterior and almost incorporated into the lateral aspect of the coronal suture line.

Dr. ANGEL. A little in front of it, yes.

Dr. BADEN. Then it's slightly in front of and just superior to the temporal bone.

Dr. ANGEL. Apparently above the hairline. His hairline was fairly low; he wasn't getting bald like me. So, I think an exit wound about there would fit, then, the fragment that you have.

Dr. BADEN. Just anterior to the coronal suture line?

Dr. ANGEL. Just anterior to the coronal suture line, yes. Well above pterion, far above pterion near the point where the temporal line crosses the coronal suture.

Dr. BADEN. Do you have a name for it?

Dr. ANGEL. Stephanion.

Dr. BADEN. I think we should also record that Dr. Angel graciously came over at a moment's notice to help us with these interpretations, and we're most grateful.

Dr. ANGEL. Thank you very much, doctor.

Dr. PETTY. Dr. Boswell, this is the diagram that I was referring to a moment ago where the point of——

K. KLEIN. Could you identify in some way what it is?

Dr. PETTY. The face sheet of Dr. Humes' protocol.

K. KLEIN. OK.

Dr. PETTY. Which shows an inshoot wound on the back of the head and the arrow pointing upward and to the left—that just meant up.

Dr. BOSWELL. That just meant up. It wasn't intended to indicate direction or anything.

Dr. PETTY. And, do you know what this word is? It says "ragged," and the reproduction has lost something here. The next word I can't make out.

Dr. BOSWELL. I'm sorry, I can't either.

Dr. PETTY. OK, thank you very much.

Dr. COE. Dr. Boswell, was it the Clark commission or the Rockefeller commission?

Dr. BOSWELL. The physicians that you spoke with remember? Clark.

Dr. BADEN. Dr. Fisher and Dr. Moritz?

Dr. BOSWELL. Yes, right.

Dr. BADEN. At the break perhaps they can review the original notes and that will——

Dr. BOSWELL. "Ragged slanting" is what it says.

Dr. BADEN. And then we'll discuss that after the break.

[Coffee break.]

Dr. BADEN [continuing after the coffee break]. We were just discussing the original fact sheet document. Dr. Boswell, would you just explain what you wrote and what other people wrote on the front and back of that page?

Dr. BOSWELL. The weights of the organ are not written by me. Everything else on here is mine. All of the notes on the diagrams are mine, and this diagram on the back is mine, this and this.

Dr. BADEN. Could you explain the diagram on the back?

Dr. BOSWELL. Well, this was an attempt to illustrate the magnitude of the wound again. And as you can see it's 10 centimeters from right to left, 17 centimeters from posterior to anterior. This was a piece of 10 centimeter bone that was fractured off of the skull and was attached to the under surface of the skull. There were fragments attached to the skull or to the scalp and all the three major flaps. I guess the—I'm not sure in retrospect what I meant by that.

Dr. PETTY. May I ask you, Dr. Boswell, if this diagram depicts in anyway the same V-shaped notch that we saw on some of the color photographs, namely, and I have in hand, No. 27 here. Would this notch be the same as the notch that we see that points more or less toward the right ear?

Dr. BOSWELL. I believe so. And what this is meant to depict at this point, I don't know.

Dr. PETTY. Well, having gone through a lot of smashed skulls—injuries—I know precisely what you're grappling with.

Dr. HUMES. I think this—I would interpret this fracture through the floor of the orbit——

Dr. PETTY. Of the orbital cavity.

Dr. HUMES. Right. It was an explosion-type fracture.

Dr. PETTY. We also had a question about photograph number—is this 10 or is this 12?

Dr. BADEN. Twelve.

Dr. PETTY. This is the wound, right upper thoracic wall posterior. Is this small fragment of dark staining material simply blood?

Dr. BOSWELL. Blood, uh-huh.

Dr. PETTY. It's the one that's perhaps 4 or 5 centimeters below and to the left of the wound itself?

Dr. BOSWELL. Yeah. There was no damage there at all.

Dr. PETTY. Yes. This is the other photograph which is horribly blurred for reasons unapparent—this is photograph No 41—these two show the right anterior aspect of the head, neck and chest of the late President, and there is a notch which we see; it's very blurred and it really doesn't seem to be so much of a notch as a semicircular defect in the central portion of the—the inferior margin of this gaping wound. Is that what was considered to be a partial bullet wound?

Dr. BOSWELL. Of exit, yes. That was what we ultimately concluded, yes.

Dr. PETTY. The reason I specifically bring this up is that somebody somewhere along the line has changed this from the lower margin to upper margin, and we just couldn't see that.

Dr. HUMES. You see, Dr. Perry informed us that he went right through that wound to make his tracheostomy.

Dr. BADEN. We're talking about also photographs Nos. 13 and 14. Did—in further discussing the exit perforation through the tracheotomy, did you have occasion to explore in the neck area beyond what is in the protocol, beyond what the description was? As to what was injured?

Dr. HUMES. Well, the trachea, I think we described the irregular or jagged wound of the trachea, and then we described a contusion in the apex of the lung and the inferior surface of the dome of the right pleural cavity, and that's one photograph that we were distressed not to find when we first went through and catalogued these photographs, because I distinctly recall going to great lengths to try and get the interior upper portion of the right thorax illuminated—you know the technical difficulties with that, getting the camera positioned and so forth, and what happened to that film, I don't know. There were a couple of films that apparently had been exposed to light or whatever and then not developed, but we never saw that photograph.

Dr. BADEN. From the time you first examined them, that particular photograph was never seen?

Dr. HUMES. Never available to us, but we thought it coincided very neatly with the path that ultimately we felt that that missile took.

Dr. BADEN. Continuing with the path. There is present in the X-rays some opaque material to the right of the lower cervical spine which has been interpreted as being tiny bullet or bone fragments. Would the track, as you recall, be consistent with the missile striking a transverse process?

Dr. HUMES. Well, I must confess that we didn't make that interpretation at the time. I'm familiar with the writings of Dr. John Lattimer and of some reprints of his articles, and I'd have to go back and restudy it the way he has done. But as you can see from the point of entrance, it wasn't that far lateral. It could conceivably have nicked a—the edge of a transverse process.

Dr. PETTY. Now, it was tending further to the left as it went?

Dr. HUMES. Why sure, because it came out in the midline.

Dr. BADEN. Just for the record, you say it could have nicked?

Dr. HUMES. It could. I don't know.

Dr. PETTY. Can I go back to another interpretation which is very important to this committee? I don't really mean to belabor the point, but we need to be certain, as certain as we can be—and I'm showing you now photograph No. 15, and here, to put it in the record, is the posterior hairline or margin of the hair of the late President, and there, near the midline, and just a centimeter or two above the hairline, is an area that you refer to as the inshoot wound.

Dr. HUMES. Yes, sir.

Dr. PETTY. Also, on this same photograph is a ruler, and approximately 2 centimeters or so down the ruler and just to the right of it is a second apparent area of defect, and this has been enlarged and is shown to you in an enlargement, I guess No. 16, which shows you, right opposite the 1 centimeter mark on the ruler, this defect, or what appears to be a defect. I don't see the connection with the lacerated margin of the scalp anywhere.

Dr. BADEN. And No. 15 shows an enlargement of the lower area that's suggestive of an inshoot to you.

Dr. PETTY. And what we're trying to do is to satisfy ourselves that the bullet actually came in near the margin of the hair and not near the tip of the ruler as is shown in photograph No. 16.

Dr. HUMES. This is an enlargement from that other photograph, right?

Dr. HUMES. Dr. Boswell offered the interpretation that it might be an extension of a scalp wound. I don't share his opinion about that. I don't know what that is. No. 1, I can assure you that as we reflected the scalp to get to this point, there was no defect corresponding to this in the skull at any point. I don't know what that is. It could be to me clotted blood. I don't, I just don't know what it is, but it certainly was not any wound of entrance.

Dr. DAVIS. May I interject. I think perhaps it's time now for some correlations. We have here black and white copies of Zapruder film frames Nos. 311, 312, and 313. That's 313 at the moment when the head actually exploded, 311 and 312 being the position of the head immediately prior. We have these photographs here, and we have the lateral X-rays, X-ray No. 2. I think perhaps what we can consider is the problem of the tangential striking bullet which enters the head, tunnels—and that's already been testified to, and it seems reasonable—strikes the bone tangentially, fragments, and then one part of a fragment can skip out through the scalp again, which may explain this wound we see here in enlargement No. 16. Now the evidence for that on X-ray would be a trial of radiopaque spots which, with a magnifying lens, we can see in X-ray film No. 2 extending in an upward direction from the region of the external occipital protuberance, with the upper portion of this in an area where there's a large defect in the posterior parietal bone. Now, there is radiopaque material, some of which appears to be even exterior, at least in this view, with continuation of radiopaque fragments in the vertex part of the interior of the head, and also continues straight ahead, and I think there's some more down here in the mid-posterior area. So I think all of us who have done a fair number of investigations like this are well aware that a bullet can split into fragments and one fragment can be deflected outward, another fragment can be deflected inward and slightly upward, and even a third fragment can go straight. There's all sorts of things can happen with bullets when they strike in this manner. I think I can see radiopaque trails going up which could reconcile the testimony and opinion of Dr. Humes that this ma-

terial, this brain material, represents the loss of brain from the entrance site; and also it reconciles with his statement and also with Dr. Boswell's statement that there was tunneling; and I think it also fits in with Zapruder frames 311 and 312 immediately before 313, where the head explodes. in which in 311 and in 312 we see the President sitting, his chin is down, and it's hard to say which way the head is turned in this because these are black and white photographs and they are enlargements and they are slightly blurred. But it would be consistent, then, with the bullet striking, and we all recognize that this is fairly thick condensed bone, and that in itself, would add to the propensity for a split bullet. So I'm advancing that as an investigative hypothesis for investigative opinion, for discussion at this time, to see if we can arrive at a consensus.

Dr. HUMES. I would like to comment further, from our point of view, that these enlargements which you have shown us now of these other photographs is the first time I have seen these enlargements; I have not seen them before.

Dr. DAVIS. These were just made up 2 or 3 days ago. Two days ago.

Dr. PETTY. May I make a comment on what you just said, Dr. Davis. The problem, as I see it, is that this may be in fact a tunneling situation, with the bullet scooting along the skull here or somewhere, and not entering the skull down below. Is that what you're saying now?

Dr. DAVIS. What I'm saying—what I'm inferring: in the absence of photographs and specific measurements, we could only conjecture as to how long the tunneling is, but I would envision this as a tunneling first and then entry into the skull.

Dr. LOQUVAM. Gentlemen, may I say something?

Dr. DAVIS. Yes.

Dr. LOQUVAM. I don't think this discussion belongs in this record.

Dr. PETTY. All right.

Dr. HUMES. I agree.

Dr. LOQUVAM. We have no business recording this. This is for us to decide between ourselves; I don't think this belongs on this record.

Dr. PETTY. Well, we have to say something about our feeling as to why we're so interested in that one particular area.

Dr. HUMES. Could I make a comment that I think would be helpful to you, and you can throw out anything I say or whatever? But I feel obligated to make a certain interjection at this point, having heard this theory which I hadn't heard from the committee because I didn't pay that much attention quite frankly. Our attention was obviously directed to what we understood and thought to be clearly a wound of entrance. If such a fragment were to have detached itself from the main mass of the missile, it would have to be a relatively small fragment because the size of the defect in the skull which approximated this point was almost identical with the size of the defect in the skin. Do you follow that line of reasoning?

Dr. PETTY. Yes, that makes sense. I mean, I've seen the same thing.

Dr. DAVIS. I've seen the same thing—bothers me a bit—part of that casing comes off.

Dr. COE. The reason we are so interested in this, Dr. Humes, is because other pathologists have interpreted the——

Dr. LOQUVAM. I don't think this belongs in the damn record.

Dr. HUMES. Well, it probably doesn't.

Dr. LOQUVAM. You guys are nuts. You guys are nuts writing this stuff. It doesn't belong in that damn record.

Dr. BADEN. I think the only purpose of its being in the record is to explain to Dr. Humes what——

Dr. LOQUVAM. Why not turn off the record and explain to him and then go back and talk again.

Dr. BADEN. Well, our problem is not to get our opinions. but to get his opinions.

Dr. LOQUVAM. All right then, keep our opinions off. Here's Charles and Joe talking like mad in the damn record, and it doesn't belong in it. Sorry.

Dr. BADEN. Dr. Humes, realizing our concerns, if there is anything that you or Dr. Boswell can say that can help clarify any further the entrance wound and track of the bullet in the head. we would be most appreciative.

Dr. HUMES. I think we're at a distinct disadvantage because, as I said, when we cataloged the photographs and numbered them, and spent half a day or day to do it, I'll confess to possibly even overlooking the area to which you gentlemen, and apparently someone else, has directed attention. I would not attempt to make an interpretation of what it represents because I can't at this point.

Dr. DAVIS. But at the time of the autopsy there was no defect in the scalp other than where the bone was gone.

Dr. HUMES. Right.

Dr. BADEN. When you say defect, you're talking about a defect of the wound of entry?

Dr. DAVIS. Right.

Dr. BOSWELL. Now, I'm sure that our record describes the tunneling of that wound of entry pretty well, at least as to length and distance beneath skin, doesn't it? I can't recall the description, but I'm sure it is there.

Dr. HUMES. I'm looking for the color photograph that coincides with No. 15—which one is it?

Dr. BADEN. 42 is one.

Dr. HUMES. Yeah. Whether this "defect" is a "defect", in my mind, I'm not sure. I'm not sure it's not some clotted blood that's lying on the scalp.

Dr. BADEN. What we're trying to do is to have your best opinions and recollections to deal with.

Dr. HUMES. Right.

Dr. BADEN. Now, and much of this goes toward the head wound and also the neck wound, is there anything further about the wound of the back that exits the neck that you can recall independently relative to what isn't in the record, as when you described the trachea. Do you remember anything about the carotid arteries or the carotid sheath area?

Dr. HUMES. It had to have passed medial to the right carotid bundle.

Dr. BADEN. Medial. And was there a lot of hemorrhage in that area?

Dr. HUMES. There was moderate hemorrhage in the soft tissues.

Dr. BADEN. In the area of the trachea and that side of the neck?

Dr. HUMES. Right.

Dr. BADEN. George, is there anything further you'd like to add?

Dr. LOQUVAM. No, I've said my piece.

Dr. HUMES. Show me by photograph where the external occipital protuberance is?

Dr. DAVIS. I can't show you where it is on this photograph to my satisfaction.

Dr. PETTY. Well, the thing that we found——

Dr. HUMES. Let me have the written notes to be sure that it's not in the transcription.

Dr. BADEN. Here's the written notes.

Dr. BOSWELL. May I have these, what we're working with, OK? This is on page 4——

Dr. HUMES. These are medical wounds——

Dr. PETTY. Comes after missile wounds, considerable amount of missile wounds, then you get it.

Dr. BOSWELL. Situated in the posteris scalp approximately 2 centimeters laterally to the right, is that what it says?

Dr. PETTY. That's right.

Dr. HUMES. Laterally to the right and slightly above the external occipital protuberance is a lacerated wound which I describe for your identification. You may wish to go back and look and add some corrections and whatever to this note.

There's another fact of this. Having completed the examination, others might be interested in this——

Dr. BADEN. Yes. We're in session, Joe.

Dr. HUMES. Having completed the examination and remaining to assist the morticians in the preparation of the body, we did not leave the autopsy room until 5:30 or 6 in the morning. It was clearly obvious that a committee could not write the report. I had another commitment for that morning, a little later, a religious commitment with one of my children. And so I went home and took care of that, slept for several hours until about 6 in the evening of the day after, and then sat down and wrote the report that's sitting before you now, myself, my own version of it, without any input other than the discussions that we thought that we had had, Dr. Boswell, Dr. Finck and myself. I then returned that morning and looked at what I had written—now wait, I'm a day ahead of myself—Saturday morning we discussed——

Dr. BOSWELL. Saturday morning we got together and we called Dallas.

Dr. HUMES. We called Dallas. See, we were at a loss because we hadn't appreciated the exit wound in the neck, we had been—I have to go back a little bit, I think for your edification. There were four times as many people in the room

most of the time as there are in this room at this moment, including the physician to the President, the Surgeon General of the Navy, the Commanding Officer of the Naval Medical Center, the Commanding Officer of the Naval Medical School, the Army, Navy, and Air Force aides to the President of the United States at one time or another, the Secret Service, the FBI and countless nondescript people who were unknown to me. Mistake No. 1. So, there was considerable confusion. So we went home. I took care of this obligation that I had. To refresh my mind, we met together around noon on Saturday, 11 in the morning, perhaps 10:30, something like that and——

Dr. BADEN. Now this is the day after?

Dr. HUMES. The day after, within 6 or 8 hours of having completed the examination, assisting Waller's and so forth for the preparation of the President's remains. We got together and discussed our problem. We said we've got to talk to the people in Dallas. We should have talked to them the night before, but there was no way we could get out of the room. You'd have to understand that situation, that hysterical situation that existed. How we kept our wits about us as well as we did is amazing to me. I don't know how we managed to do it as poorly or as well as we did under the circumstances. So I called Dr. Perry. Took me a little while to reach him. We had a very nice conversation on the phone in which he described a missile wound, what he interpreted as a missile wound, in the midline of the neck through which he had created a very quick emergency, as you can see from the photographs, tracheotomy incision. In effect destroying its value to us and obscuring it very gorgeously for us. Well, of course, the minute he said that to me, lights went on, and we said ah, we have some place for our missile to have gone. And then, of course, I asked him, much to my amazement, had he or any other physician in attendance upon the President, examined the back of the patient, his neck, or his shoulder. They said no, the patient had never been moved from his back while they were administering to him. So, the confusion that existed from some of his comments and the comments of other standby people in the emergency room in Dallas had been in the news media and elsewhere, so that added to the confusion. So, following that, and that discussion, and we having a meeting of minds as to generally what was necessary to be accomplished, and being informed by the various people in authority that our gross report should be delivered to the White House physician no later than Sunday evening, the next day, 24 hours later, or not quite 24 hours later. Not having slept for about 48 hours, I went home and rested from noon until 8 or 10 that evening, Saturday evening, and then I sat down in front of other notes on which I had made minor comments, handwritten notes.

I wrote the report which is present here. Now we also have here—and since it's in the record I want to comment about it—some comments that I destroyed, some notes related to this, by burning in the fireplace of my home, and that is true. However, nothing that was destroyed is not present in this write-up. Now, why did I do that? It's interesting, and I've not spoken of this in public. Not too long before this, I had had the experience of serving as an escort officer for some foreign physicians from foreign navies, who were being entertained and given a course of instruction in the United States. We had 20 or 30 of these chaps, and they used to come through every year or two, and I often was escort officer for them. They spent 5 weeks in Washington or 5 weeks in the field, then we went various places. We went to submarine bases and Marine Corps installations and naval training centers to teach them how physicians function in the American Navy. One of the places to which I happened to take them—and we tried to teach them a little Americana—I took them to Greenfield Village, which, as many of you know, Henry Ford set up adjacent to his former home in suburban Detroit, Dearborn. And in that location is a courthouse in which President Lincoln used to hold forth when he was riding the circuit, and these men were very impressed with that, and they knew who President Lincoln was and were impressed with his courthouse and many other things in Greenfield Village. But what I was amazed to find there, because I personally did not know it was there until I made that visit, was the chair in which President Lincoln sat when he was assassinated.

Somehow or other they got that chair out of Ford's Theatre, and Henry Ford got it into Greenfield Village, and it's sitting in this courthouse. Now the back of that chair is stained with a dark substance, and there's much discussion to this day as to whether that stain represents the blood of the deceased

President or whether it is Macassar. I don't know if you all remember what Macassar is. When people our age were young and you'd visit your grandmother, on the back of the sofa there were lovely lace doilies in the homes of many people. And if you recall what I'm speaking of—they were on the sofas and reclining chairs—and those lace doilies bear the name antimacassar. You could go to a store in this country and buy an antimacassar. They don't exist any more. And Macassar was a hair dressing that gentlemen wore in those days to keep their hair in place. And these officers were appalled that the American people would wish to have an object stained with the blood of the President on public display. And I was—it kind of bothered me a little bit—it still does, to this day. And here I was, now in the possession of a number of pieces of paper, some of which unavoidably, and in the confusion which I described to you earlier, were stained in part with the blood of our deceased President. And I knew that I would give the record over to some person or persons in authority, and I felt that these pieces of paper were inappropriate to be turned over to anyone, and it was for that reason and for that reason only, that, having transcribed those notes onto the pieces of paper that are before you, I destroyed those pieces of paper. I think I'd do the same thing tomorrow if I had a similar problem, because I felt they would fall into the hands of some sensation seeker.

Dr. BADEN. Is everything you had on the notes recorded in the holographic document before you, which is kept in the Archives, that you wrote at that time?

Dr. HUMES. Correct. Now, there are corrections and comments and changes of language in here. I think I'd have to go through them and with care to see if some of them are substantive or not substantive, and they are a result of meeting with Dr. Boswell and Dr. Finck on Sunday afternoon in the Naval Medical Center and going over them together. This document then was signed by all three of us, whereas in the part before some minor changes were made—maybe they—some of them sounded like we'd expressed an opinion, and we thought maybe that wasn't what should be done.

But in any event, this document then was signed by all three of us and, parenthetically in the middle of this preparation, other naval officers were not—no one was telling us anything. We did this strictly on our own. But in an adjacent room and awaiting the results of our efforts were other senior naval officers watching the television. And it was at that point, of course, that Mr. Oswald was assassinated or shot, and, in fact, we interrupted our work to try and figure out what that meant to us. So, in any event then, this document was typed up under my immediate supervision by a woman, secretary to the Commanding Officer at the Naval Medical Center, and I personally hand-carried the written document to the office of the White House physician about 6 on Sunday evening.

Dr. ROSE. Could the record reflect that Mr. Oswald's preliminary documents, also at a much later time, Mr. Ruby's documents, the preliminary ones, were similarly taken care of——

Dr. HUMES. I don't wish to apologize because I don't think that an apology is necessary, but I'd like for this document, for the record, to reflect exactly what happened, some place, as it did.

Dr. BOSWELL. As to the previous comment, I have frequently redrawn diagrams that might have gotten a spot of blood on them.

Dr. HUMES. Now, I didn't redraw Jay's, and don't ask me why, because it was, I guess it was because I didn't have another piece of paper and I didn't want to sit down and reproduce a drawing.

Dr. ROSE. Doctor, I apologize for doing it in the case of Mr. Oswald.

Dr. BADEN. Let the record note that the previous speaker, Dr. Rose, did perform the autopsies on Mr. Oswald and Mr. Ruby.

Dr. HUMES. OK. Now, the reason that we were referring to these photographs was some discussion between Dr. Petty and myself as to the verbalized location of the wound, what we interpreted as the wound of entrance, and my problem is that these are, to my recollection, my interpretation of what I saw. The problem that we have now, I think, in the photographs at least in part, may or may not explain the situation totally to everybody's satisfaction. The photographs do not clearly demonstrate where the external occipital protuberance is, and that's the only comment I could make Chuck about that. I feel, by looking at this photograph, that the wound was in fact below the external occipital protuberance and certainly no worse than lateral to it.

Dr. PETTY. Well, we have some interesting information in the form of the photographs of the brain, and if this wound were way low, we would wonder at the intact nature, not only on the cerebellum, but also on the posterior aspects of the occipital lobes, such as are shown in Figure 21. Here the cerebellum is intact, as well as the occipital lobes, and this has concerned us right down the line as to where precisely the inshoot wound was, and this is why we found ourselves in a quandary, and one of the reasons that we very much wanted to have you come down today.

Dr. HUMES. The photographs unfortunately are not three-dimensional, and that's part of the difficulty, I think.

Dr. DAVIS. Early, I was asking Dr. Boswell if he had had an opportunity at some previous time to meet with a group of pathologists such as ourselves. Forensic pathologists, and go over the photographs and all of this material together, to more or less get a consensus. And, correct me if I'm wrong, Dr. Boswell, it is your impression that this opportunity had never been previously afforded to yourself. How about you, Dr. Humes? Have you had this opportunity in the past?

Dr. HUMES. Absolutely not.

Dr. DAVIS. All right, so, basically, this is the first time that the original people who were there at the autopsy and saw things with their own eyes, wrote reports, have ever had an opportunity to sit down and view these pictures in the company of other pathologists. Now, there have been previously other forensic pathologists.

Dr. COE. That's why I asked if Dr. Boswell had a chance to talk with the Clark Commission pathologist.

Dr. BOSWELL. Well, I was here with him merely to identify photographs and X-rays and whatever other material they went over, and I did answer as many questions as I could, but there was no discussion at that time as to their opinions; they formulated those after I was away.

Dr. DAVIS. So basically, then, there has never been any free association of ideas, a jelling of ideas and clarification of small points that might be interpreted differently from one person to another. So this apparently is the first time a group has got together and sat down and hashed over the case as we so frequently do in our everyday practice.

Dr. PETTY. Dr. Boswell, you and I also were talking during the period when the machine was not actively recording, and you said something that interested me tremendously. May I hear from page 4 of the autopsy report. "Situated in the posterior scalp approximately 2.5 centimeters laterally to the right and slightly above the external-occipital protuberance, is a lacerated wound measuring 15 by 6 millimeters, and I believe you said that the 15 millimeter dimension represented, as you described it, tunneling of the bullet, and that's what you mean by tunneling?

Dr. BOSWELL. Yes.

Dr. BADEN. Now, continuing with that description that Dr. Humes wrote down, this handwritten report that you described, that particular measurement Dr. Petty referred to, is not indicated on the face sheet, whereas the wound in the shoulder is. Referring to the measurement of 2.5 centimeters laterally to the right and slightly above the external occipital protuberance—was that specific measurement present on your other notes that you utilized?

Dr. HUMES. Yes, sir.

Dr. BADEN. So that you did make that directly from notes taken at the time of the autopsy and then transcribed them?

Dr. HUMES. Right.

Dr. BADEN. Dr. Boswell, I think you may have covered this once before relative to the diagram that you made. The notation of the diagram on the front sheet shows an arrow going toward the left by the perforation near the external occipital protuberance. What does the arrow to the left mean?

Dr. BOSWELL. I think it was only meant to indicate "upward," not laterality at all.

Dr. BADEN. Not that it went to the left?

Dr. BOSWELL. Yes, right.

Dr. BADEN. Thank you.

Dr. LOQUVAM. Charles, would it be possible for Dr. Humes and Dr. Boswell to look at that picture executed to show the posterior cranial fossa? And if the two of them could possibly pick out the point of entrance—I know the picture is in poor focus——

K. KLEIN. Dr. Petty, when you locate the proper photographs could you repeat the question again, because I doubt that the machine would have picked it up.

Dr. PETTY. The question is, Could you, Dr. Humes, or Dr. Boswell, either one, from examination of the photograph purported to show the posterior cranial fossa locate the point of inshoot into the skull? Now we're looking at photograph No. 44.

Dr. BADEN. Is there a black and white of that?

Dr. DAVIS. I think there is; but I don't see it here.

Dr. HUMES. There is.

Dr. BOSWELL. Yes. What number is that?

Dr. HUMES. The black and white photograph is No. 17, the color is 44.

Dr. PETTY. Well, that not the one, I'm sorry. That's the exit wound. I want the one in the posterior cranial—could this be the one that you said earlier was looking down the posterior cranial fossa on the inside?

Dr. HUMES. That's the one right there.

K. KLEIN. And that's No. 45.

Dr. PETTY. Now, could you two possibly, thinking back 16 years, I know how difficult it is, but is there any way that you could show us where the entrance was in that wound?

Dr. BOSWELL. I don't believe it's depicted in that picture.

Dr. HUMES. How about here, Jay?

Dr. BOSWELL. Well, I don't believe so, because, as I recall, the bone was intact at that point. There was a shelf and then a little hole, came up on the side and then one of the smaller of the two fragments in that X-ray, when that arrived, we were able to fit that down there and complete the circumference of that bone wound.

Dr. HUMES. I don't remember that in that detail and I suspect—you see the background, there seems to be blue, with a blue towel placed beneath the head of the President, and I think that may be the wound right there.

Dr. PETTY. Can you orient this for us, Dr. Humes? I am a little confused on exactly—now is this picture oriented like that, or is it like this? Because if this is checked, this has to be posterior dorsal, so the wound has got to be somewhere where Dr. Humes has pointed, because the——

Dr. HUMES. But why would we go to the trouble of putting the ruler there, you see. This is reflected scalp.

Dr. PETTY. I think the biggest point in consideration here is that this is in focus here [pointing to upper scalp area in question] and this is not in focus here [pointing to lower area].

Dr. HUMES. Right.

Dr. PETTY. Therefore we must be looking specifically in that area.

Dr. DAVIS. Did the person who took the photographs ask you what to take or just took what he thought was——

Dr. HUMES. No no. He was directed.

Dr. BOSWELL. He was taking specific areas.

Dr. HUMES. A real problem.

Dr. BOSWELL. Yeah. I know.

Dr. HUMES. I don't think the photograph permits us to say with accuracy where it is. And recall again that we were not privileged to see these photographs until the date on the legend that comes with it, sometime in 1966.

Dr. BOSWELL. Three years.

Dr. PETTY. But the point of entry on the external surface of the body of the head is incidentally depicted in photograph 15 and shows near the margin of the photograph down toward the hairline of the President. And again here on No. 43 it shows the same thing.

Dr. HUMES. I object to your word "incidentally."

Dr. PETTY. Well, by that I mean it's not the subject of the center of the photographer's lens, it's way down toward——

Dr. HUMES. No, no. But you'd have greater difficulty localizing it, I submit to you, were it the same subject of the photographer's lens.

Dr. BADEN. That's true.

Dr. PETTY. I can understand that, sure.

Dr. BADEN. One of the considerations I had in looking at the film, Dr. Humes, relative to the interpretation I had, was that perhaps you were holding——

Dr. HUMES. Holding the scalp up, holding the head up.

Dr. BADEN. Holding the scalp and head up specifically so that the photographer could get that point.

Dr. HUMES. Not that point. That is not the case.

Dr. BADEN. That is not the case?

Dr. HUMES. Because I submit to you that, despite the fact that this upper point that has been the source of some discussion here this afternoon is excessively obvious in the color photograph, I almost defy you to find it in that magnification in the black and white.

Dr. BADEN. We're not trying to be argumentative. What we're trying to do is fully understand what you say and what you did.

Dr. HUMES. Nor I. Right. The gentleman was in the dorsal recumbent position on an autopsy table, not the greatest photographic position in the world, and we had to hold his head up. One of us is lifting the head, flexing the neck if you will, by holding the scalp, and to show the wound where it was in relation to the man's head.

Dr. BADEN. In reviewing this material earlier today, you made an ink notation on the skull that we have here, localizing the entrance perforation to the right of the external occipital protuberance—in reviewing the skull and marking at this time and having reviewing all of the films and incorporating our discussion, is that still a valid representation?

Dr. HUMES. Yes, I think so.

Dr. BADEN. Dr. Humes, this refers to the notation made on the skull. We are using it as an exhibit, and it is signed and initialed by you.

Dr. HUMES. I believe that that's a reasonable representation. I think that we were making an attempt, and, of course, we didn't have Polaroid in those days, like we might use now, to be sure that we had an image of what we wished, and its interesting how technology changes things. We were attempting in that photograph to demonstrate that wound, and I feel that we have failed to demonstrate the wound.

Dr. BADEN. Would it be fair to ask you Dr. Humes, if in the confusion that was put upon you, as you described earlier in doing the autopsy and taking photographs, it is mentioned in somebody's notes that at one point you had asked who was in charge in the autopsy room—whether that all has significance as to the extent of the autopsy. It has been interpreted that you were under certain directions prior to starting the autopsy.

Dr. HUMES. That was anecdotal. When we were informed that the President was going to be brought for an examination I put on a scrub suit and went to the vicinity of the morgue to await the arrival of the people accompanying the body. By this time, of course, it had become generally known, because when I left to come to the hospital I had no idea why I was even going over there, but by the time I speak of, it was on public radio and television, and crowds of people were gathering around the building in the vicinity of the loading dock adjacent to the autopsy room. There were beginning to arrive large numbers of people. And as I came out of the morgue in my scrub suit before the President's body arrived, there was a photographer, a press photographer roving around the corridors, and I didn't want to get in a personal altercation with him, so I walked out onto the loading dock where there was quite an accumulation of people, and I said, who's in charge here, and I meant of the crowd control as it were. And a gentleman standing no more than 3 yards from me informed me in a very loud voice that he was in charge. And I said who are you. And he said that he was the commanding general of the military district of Washington. I said fine, there's a photographer in there, and I don't think we'd like to have him present. And he dispatched, I think, a Marine captain to come and remove this person. I had no further conversation with this gentleman, nor did he direct me as to what I should or shouldn't do.

Dr. BADEN. All right. During the course of the autopsy, and this has been a point that has been raised before. Did you feel directly or indirectly that somebody else advised you as to what the extent of the autopsy should be. Perhaps as far as leaving marks on the body, or making incisions, or as Dr. Petty brought up in the beginning, whether to look at the adrenal glands or not?

Dr. HUMES. Yes. There was no question but we were being urged to expedite this examination as quickly as possible, that members of the President's family were in the building, that they had refused to leave the premises until the President's body was ready to be moved; and similar remarks of that vein, which we made every effort to put aside and approach this investigation in as scientific manner as we could. But did it harass us and cause difficulty, of course it did how could it not?

Dr. BOSWELL. I don't think it interfered with the manner in which we did the autopsy.

Dr. HUMES. I don't either.

Dr. BADEN. I ask you this question in a sense that all of us here have been in similar positions of a lesser magnitude, when for one reason or another, the family doesn't want an autopsy, a full autopsy or whatever, so we appreciate the situation.

Dr. HUMES. It was stress. The main purpose of the examination, and of course the main purpose that we understood of the examination, was what happened to the President, what killed the President of the United States.

Dr. BADEN. Would you feel that you established——

Dr. HUMES. We established.

Dr. BADEN. Now, for example, not exploring the wound from the back to the neck, that was not done. I mean, cutting it open completely, that wasn't done specifically. Was that because somebody said don't do it?

Dr. HUMES. Now wait a minute, that wound was excised.

Dr. BADEN. The back wound?

Dr. HUMES. Yes, sir. The back of the neck, and there are microscopic slides of that wound.

Dr. BADEN. I see. The skin was taken out. And then was it——

Dr. HUMES. It was probed.

Dr. BADEN. Was it opened up?

Dr. HUMES. It was not laid open.

Dr. BADEN. Now, that was your decision as opposed to somebody else's decision?

Dr. HUMES. Yes, it was mine.

Dr. BADEN. With everything else going on at the time?

Dr. HUMES. Yes. Our collective decisions, I suppose.

Dr. BOSWELL. We had exhibited the midportion of the track and the chest by that time, and demonstrated the contusion on the apex of the lung and subpleurally, and we had at that point two points of the would and then subsequently the wound of exit.

Dr. HUMES. Pretty good course.

Dr. BADEN. The track definitely did not go through the pulmonary tissue?

Dr. HUMES. Negative.

Dr. BOSWELL. No.

Dr. HUMES. There was a contusion of the dome of the right side of the thorax and a contusion, as Dr. Boswell said, a retropleural contusion, and it was a contusion of the upper lobe of the lung.

Dr. BADEN. Retroparietal pleura. Now, you bring up another issue in which you can be of great help to us, because you say the microscopic slides. We apparently, it appears, will not be able to see the microscopic slides. Certainly at this time they are not available to us. Is there anything you can tell us about the microscopic evaluation and examination?

Dr. HUMES. I can't think of anything that would materially change anybody's opinion. The wound was similar to other bullet wounds that I have seen in the skin, sort of a charring effect of the margins and nothing particularly remarkable.

Dr. BOSWELL. No particulate matter.

Dr. PETTY. Do you know whether there was foreign material or——

Dr. BOSWELL. I don't remember.

Dr. BADEN. Would looking at your microscopic description refresh your memory?

Dr. BOSWELL. Sure.

K. KLEIN. Could we perhaps take 5 minutes and change the tape and the doctor's can look at their descriptions?

Dr. BADEN. Starting the record again at this point with a new tape, Dr. Humes and Dr. Boswell were about to refer to the microscopic findings that they noted.

Dr. HUMES. Yes. We were asked specifically about the skin wounds and was there any foreign particulate material in either of the skin wounds, and we refreshed our minds by looking at the brief microscopic report we made, and described in that sections of both the occipital and upper right thoracic wounds that were examined. They were essentially similar, and the only foreign material described were several bone fragments at the margins of the wound and the scalp, so we did not describe foreign particulate material, and I therefore presume it was not present.

Dr. PETTY. Earl, did you have any questions or comments?

Dr. ROSE. No.

Dr. PETTY. John?

Dr. BADEN. Is there anything that perhaps we haven't covered that might be of pertinence to the group?

Dr. HUME. No, I'm distressed with the confusion and allegations of complicity in some plot that we may have been engaged in, which of course is totally ridiculous. We operated under great difficulty. We operated under difficulty in testifying before the Warren Commission, because at that juncture we had not photographs or the X-rays available to us. We worked with an artist, a young medical illustrator who worked for us at the Naval Medical School, and he made a couple of schematic diagrams which have been widely publicized and came reasonably close to describing what our interpretation was of the path of the missiles that struck the President. If you want to try and dissect those in great detail, you'd have to recall that we were doing it from memory and he was doing it thirdhanded, at very best, and he was quite a young person and quite capable, I think, for his years and his experience. He did a pretty good job. Our interview with the Warren Commission, however—I think it's detailed, I'm sure, in the volumes—was reasonably exhaustive, and we had no difficulty with questions that were asked and really have not had any official contact with anybody else officially reviewing this material in the intervening years. From our point of view and that of any pathologist who is saddled with this kind of a responsibility, the peripheral things as to whence cometh the missile and where it went and various other things and so-called single-bullet theory has been, in part, attributed to us, and that's not of our doing. Our descriptions are of the anatomic abnormalities that we found. It did not seem inconsistent to us if this bullet exited the anterior neck of the President, it had to go somewhere, and the person who was sitting in front of him was the Governor, and if it didn't hit him, I for the world have no idea where it went. Those kinds of things are peripheral, but we've been sort of involved, or our names have been involved, with those kinds of conjectures that we really can't make any definite opinion about or scientific opinion about.

Dr. BADEN. But in essence you said, as you indicated before, your main goal at the time you did the autopsy was to determine what happened to the President, and the bottom line for you then, as it is now, having reviewed everything and discussed everything, essentially two gunshot wounds from behind struck the President.

Dr. HUMES. Correct.

Dr. BADEN. Now, there may be, as we're going over the photographs and X-rays and all, some room for discussion about precise points, but you feel the essential findings are two gunshot wounds from behind and from above, I take it, or just from behind?

Dr. HUMES. I think behind is probably the most one can say from the anatomic findings.

Dr. BADEN. And, apart from the tremendous pressures—nonspecific pressures—to get the things done rapidly, you didn't feel any specific pressure—knowing what the request of the families are in situations like this—to be as quick and brief as possible. You didn't perceive any specific constraint on you by an individual as to what you should or shouldn't do as far as the autopsy goes?

Dr. HUMES. Not as it pertains to the injuries to the President.

Dr. BADEN. Well, as pertaining to the whole autopsy. This is one of the things I'm concerned with in viewing the autopsy protocol. There are many organs in addition to the adrenal glands, that you don't specifically describe. Was that of your own judgment and temperament and emotion, or, more specifically, possibly from another source?

Dr. BOSWELL. There were no constraints. Initially Admiral Burkley said that they had caught Oswald and that they needed the bullet to complete the case, and we were told initially that's what we should do, is to find the bullet. Following the X-rays we realized that that was not possible, that there was no bullet there, except fragments, and at that point, Jim and Admiral Burkley discussed it, and it was at that point that he agreed that we should continue and do a complete autopsy, which we then did.

Dr. HUMES. Right.

Dr. BOSWELL. And that was the only constraint during the course of the autopsy, and that was immaterial as it turned out.

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Dr. BADEN. I think it would be derelict for us not to afford you an opportunity to answer these questions, since this is the first discussion you're having among peers——

Dr. HUMES. No. It would be a mistake, it would be a mistake for anybody to interpret that any of this confusion under which we operated significantly interfered with our ability to make this examination, to take these photographs, to do the X-rays and so forth; no. Through the gigantic retrospectoscope, would one do everything exactly today as one did that evening, that's another question.

Dr. BADEN. But you did at some point consult with Admiral Burkley as to how far to go?

Dr. HUMES. Well, early on. His desire was, he's a physician, he's a family physician, he was the family physician to the President's family, his concerns were, I think, very understandable in light of the emotional attitude of the family. He was in hopes that the examination could achieve its goal in as expedient a manner as possible, which I think reasonably and accurately describes what he was——

Dr. PETTY. Does anybody have any other questions? I think we ought to, for the record, poll everyone.

Dr. BADEN. Yes. As we go around, this is the only opportunity Dr. Boswell and Dr. Humes have had to discuss this thing further, and we should make sure that there aren't any thoughts or issues that anyone has concerned that, in fairness to everybody concerned, haven't been discussed or have been left unclear. Dr. Earl Rose.

Dr. ROSE. No questions. Thank you very much.

Dr. BADEN. John Coe?

Dr. COE. No further questions. I'd also like to thank Dr. Humes and Dr. Boswell for appearing before us today.

Dr. BADEN. Dr. George Loquvam?

Dr. LOQUVAM. No questions except my sincere thanks to these two gentlemen.

Dr. BADEN. Dr. Davis?

Dr. DAVIS. No questions, but I again would like to thank them very much because I think that this has helped us and will probably help set the record straight in clarifying the issues that have been raised.

Dr. HUMES. I would at this juncture, if I might, interject one thing. It was reasonably easy to demonstrate, certainly verbally, if we didn't succeed in photographs, the wound of entrance in the posterior portion of the skull. It was not so easy to accurately locate the wound of exit because of the great disruption of the fragments and loss of tissue and bone in that area, so that we placed it a little behind or a little below or a little wherever in relation to what now we collectively may decide, after looking in a dispassionate, quiet manner, with X-rays and photographs and things that are available. I'm not a bit surprised, because X-rays No. 1 and No. 2 show you the massive defect, and it is kind of hard to pinpoint it in that massive defect. And these flaps were not firmly attached, they were bony fragments, floating around in the loose scalp.

Dr. PETTY. I have no further questions, but I think that we would have been remiss if we had not invited you to come down and give us a hand in trying to interpret the photographs. I think that any inquiry into photography, X-rays, and so forth ought to be accompanied with an on the level discussion between the people that were involved at the time and with the people that are reviewing, and I think this is just great to be able to establish some form of rapport which has been denied you, I might add, for some little time.

Dr. HUMES. Well, I would again comment for the record that we have acceded to any reasonable request from any responsible persons in this regard and have shunned any other types of discussion about this case. Well, I've gotten to know John Lattimer for other reasons. I know some of ~~the~~ things he's done, and I have had conversations with him. He's come and lectured and given a talk at our hospital, things of that nature, but as far as engaging in any other type of discussion, as you very well know Dr. Petty, we have not nor do we plan any such discussions we feel are inappropriate.

Dr. BADEN. Given this opportunity for all of us, is there anything further Dr. Humes or Dr. Boswell that you perhaps want to get into the record or that could be of assistance that we've left out? When 6 years from now we say, well, why didn't we discuss this or that, the record should be clear that you've been under our questioning now for 2 hours and 20 minutes.

Dr. HUMES. We're in no hurry, as I told Dr. Petty earlier, anything that would come up in the future after we leave that we can be helpful with, I would hope that you would provide us the opportunity to be of assistance.

Dr. BADEN. Dr. Boswell, anything?

Dr. BOSWELL. Nothing.

Dr. BADEN. One minor thing. Looking at the X-rays, there seem to be three of them that were taken after the body was eviscerated.

Dr. BADEN. Do you recall whether you took most of the X-rays prior to the autopsy?

Dr. HUMES. I can clarify that, because having not found a missile of any substance and having had experience in other locations, as anybody has, that bullets can do very strange things, we decided that we should take total X-rays of this gentleman to be certain that some bullet didn't travel down an extremity or go some other place. And it was at that juncture that we made the decision, because we've all had that disturbing experience to have a missile do some very strange things, so we probably had eviscerated the body before we took X-rays of the extremities for instance——

Dr. BADEN. Additional X-rays?

Dr. HUMES. Yes, whatever.

Dr. BADEN. I also want to thank you both tremendously, not only for being of help, but of being of instant help on such short notice.

K. KLEIN. And, finally, on behalf of the staff I also want to thank you both very, very much for coming down here.

[Note: The following was not transcribed.]

DR. BADEN. I definitely did ask Dr. Humes, following the transcription, whether any other post mortem X-rays were taken that he is aware of, other than those we showed him in possession of the Archives. He said definitely not, that these were the same X-rays of the President as he first saw them, and that he did not have X-rays taken of the peripheral part of the extremities, including the hands and feet.