Good Show Bill

INTERVIEW WITH HALBERT FILLINGER, M.D., ASSISSTANT MEDICAL EXAMINER FOR THE CITY OF PHILADELPHIA - 1/14/70

Roffman: I'd like to start off by asking you what experience you've had in bullet wounds from rifles.

Fillinger: Rifles? I guess maybe 150 to 200 cases.

Roffman: Have you ever been called on to testify in court about rifle wounds?

Fillinger: Yes.

Roffman: Would you say you have equal experience in military rifleX wounds or hunting rifleX wounds?

Fillinger: 2/3 hunting rifles, one third military rifles.

Roffman: Would you say then that you could give me your expert opinion on wounds from these kinds of rifles?

Fillinger: Somethimes I could.

Roffman: O.K. I'm going to show you a sketch(traced from page 24 of Curry book); it's a pretty vague sketch, but I was wondering if you could mark on this what would be the approximate location of the third tracheal ring.

Fillinger: No, you can't see adequately on this because of the collar.

Roffman: What would be the general area of this?

Fillinger: Generally, it's going to be about where the knot of the tie is.

Roffman: I see. And is it possible [illegible] at all for it to raise with the act of swallowing?

Fillinger: Yes: or speaking, or turning the head.

Roffman: Would it--could it [illegible] possibly raise sufficiently to be exposed over the top of the collar?

Fillinger: It's possible, and I don't know how tight the shirt fit either, which is also a possiblity. It may be--the shadow would seem to indicate the level of the thyroid prominance, or the so-called adams apple, and the tracheal ring, of course, would have to be below that, and that wouldn't leave very much room according to that particular sketch.

Roffman: Would you say then that it's a valid measurement point using the third tracheal ring?

Fillinger: I don't use it. It's an interior point, and when I'm describing a gunshot wound, first of all exteriorly, I take my [illegible] landmarks from other more permanant and readily [illegible] identified exterior points. Once I'm inside, I might say the third tracheal ring, but I usually list it from the inferior margin of the larynx, or the voice-box which is a well established margin. I designate the position

Roffman: On this sketch, would the general area of a wound, let's say, an inch--between an inch and an inch and a half above the supersternal notch be above or below the shirt collar?

Fillinger: Well, in that case, in that particular picture, as I envision that guy, it would probably be right on top of the margin of the collar. That's just a probability because you really can't tell.

Roffman: Suppose you were to see a wound in this general location, and it had the following characteristics: it was a very small, circular wound, about between 3 and 5mm. in diameter, and you learn from the doctor who [illegible] examined this wound while the patient was still alive but critically wounded that the wound was exuding blood very slowly. You also observe a small amount of [illegible] surrounding tissue damage around the wound. It's just a small punctate wound with no stellate lacerations. Could you evaluate its character on the basis of this information?

FILLINGER: Not from what you've just told me. I don't even know if that's a gunshot wound, for sure. But if you assume that number one, then you haven't described whether or not it has an abrasion cuff, and if so what color the abrasion cuff is. You haven't said anything at all about any powder residues.

ROFFMAN: There are no powder residues.

FILLINGER: No powder residues. O.K. The size of the wound can be anything from a high velocity small caliber projectile to a somewhat larger caliber, for example, such as a .38, which can produce a very small wound. It may be a .30 caliber, a .32, a .31 - there are all kinds of .28's - there are all kinds of calibers which can produce this in varying velocities. There are different types of projectiles which produce different appearing wounds. It also depends on the tension of the skin at the time the projectile strikes it. There are a number of factors. Without knowing more of these factors all you can say is that it's probably a gunshot wound and probably an entrance wound. Entrances and exits are very difficult to diagnose without seeing this.

ROFFMAN: Would the tissue damage surrounding the wound, immediately around - I've only had it described as tissue damage; I couldn't say definately whether it was a ring of abrasion - but does that ever appear with exit wounds, especially of high velocity projectiles?

FILLINGER: Yes, it can. Some types of tissue damage can appear around the exit wound and be quite misleading as to determine whether it's an entrance or an exit.

ROFFMAN: Does it have any bearing on whether the exit was caused by a high velocity missile or is that indeterminate?

FILLINGER: It depends again on the cite of the skin area, whether it's an area of -

ROFFMAN: Well this would be the trachea.

FILLINGER: I can't say.

ROFFMAN: Now, I'm going to show you a picture (CE. 850) - these are bullet holes that were produced in goatskin.

FILLINGER: Goatskin, by the way, is not a good medium. I have used it.

ROFFMAN: Oh really? Would you say either one of those more typifies the characteristics I described to you?

FILLINGER: Well, no - for lots of reasons. Number one, this skin still has some hair on it and the hair distorts the appearance of the wound. Also, this skin has been removed from the body of the animal. It is no longer under the elastic tension that it was at the time the wounds were produced. If these shots were fired through already removed skin, then again you loose the elastic tension and you loose the normal contracture and expansion of the skin area as the bullet strikes it. When the bullet strikes it, the skin stretches before it finally perforates, and if you don't have the situation exactly duplicated you can't draw valid conclusions from it setting examples. If you don't use animals whose skin has been properly prepared first before you shoot, it isn't of similar consistancy to human skin such as the inner aspect of the thigh of the pig, for example, which is one of the better ways to do it. There are some types of lamb, some positions on the lamb along the belly which are exceptionally good it if they're properly prepared. But goatskin such as this has been prepared, this is about as valuable as using rhinoceros skin. As far as I'm concerned, it is not worth the comparison.

ROFFMAN: Let's say you had communicated with the doctor who observed this patient before he died and the doctor, in going inot the depths of the wound - he performed a tracheotomy to assist breathing - he saw forthing blood and air in the superior upper mediastenum. What would this indicate?

FILLINGER: Well, if you have a leak between the normal respiratory tract leaking into the soft tissues of the superior mediastinum.

ROFFMAN: Could it be caused by a tracheal tear?

FILLINGER: Could be.

ROFFMAN: How about lung damage?

FILLINGER: Also possible but a little bit less ~~XX~~ likely because the lung is not directly associated with the mediastinum as far as air leaks are concerned. If it were lung damage I would expect a pneumo-thorax rather than superior mediastinum.

ROFFMAN: Could you mark for me on this sketch (front view of skeleton) here where the mediastinum would be?

FILLINGER: The mediastinum wouldn't show on that sketch at all. The mediastinum consists of the soft tissues right behind the breast bone and this is an area - for example, it contains the heart, the anterior mediastimal soft tissues, the posterior -

ROFFMAN: Would it be located right behind here?

FILLINGER: That's the superior area and it would extend on down below down to about here; down to about the level of the fourth rib.

ROFFMAN: This was the superior part of it.

FILLINGER: All right, if you're going to talk about superior mediastinum then you're up above and just about on the level with the supersternal notch.

ROFFMAN: And the right. The specification was ~~XXXXXX~~ superior right.

FILLINGER: All right. Then we have an area that would be just about the angle of the sternal - clavicular articulation, right there.

ROFFMAN: Right here?

FILLINGER: Yes: generally. Now that may be where he saw the bubbles but that doesn't necessarily imply that that is where the damage is.

ROFFMAN: But could it be indicative of either a tracheal, from a tracheal tear, or indicative of lung damage?

FILLINGER: I think not of lung damage. Tracheal or broncheal - not of lung.

ROFFMAN: What would it mean if X-rays of that area showed subcutaneous emphypema immediately above the apex of the right lung?

FILLINGER: Again, you only have an introduction of air inot the spft tissues and this does not have to come from a tear in the tracheal-bronchial tree. I t can come, for example, from a tracheostomy. Sometimes a tracheostomy produces subcutaneous emphysema.

ROFFMAN: Oh, really? So the presense of subcutaneous emphypema doesn't automatically mean lung damage?

FILLINGER: No, I would say that it does not mean lung damage. I would say that it doesn't automatically mean tracheal damage.

ROFFMAN: Let's say a bullet passes over the apex of the right lung and produces - it doesn't physically penetrate the pleural cavity, but it produces contusion to the tap of the right lung.

FILLINGER: No an infrequent incident: not al all uncommon.

ROFFMAN: Can that contusion also produce subcutaneous emphysema?

FILLINGER: No, because you have to have air from somehwere. Emphysema implies air entrapped in the tissues. Subcutaneous, and we're not even in a subcutaneous area now, though, we're in a sub-pleural area, and if you want to talk about subcutaneous, we have to get up under the skin and we have to have a source of air for that. Air doesn't ordinarily enter a gunshot wound of the skin. It isn't sucked in to any great extent at all unless it's a contact wound and some gasses then are blown into it. So that we are not going to have subcutaneous emphysema from a soft tissue shoulder wound which grazes the pleura, let's say, without actually penetrating it. This is not going to produce any kind of emphysema in there itself.

ROFFMAN: Suppose you had taken histological slides of this bruise at the top of the lung and found that it revealed disruption of the aveolar walls and recent hemorrhage into the aveoli. What are these changes consistant with? Is it really contusion or is that also a sign of subcutaneous emphysema?

FILLINGER: No, it has nothing to do with it at all. Again, we're not even subcutaneous, you see. Subcutaneous by definition means just below the skin of

the XXXXX body, and we're already inside the lung, and since the lung is already emphysemtuous to a certain extent, and depending on the extent of the emphysema, and actually now we're talking about a disease process,more or less, I presume, this can be pretty well magnified. But what you've just described was nothing more than just hemorrhage into the aveoli of the lung which is consistant with a bruise or any other type of cut.

ROFFMAN: Suppose you saw at the top of the right lung a 5cm. triangular bruise with its base pointed toward the back and its vertex pointed toward the' front of the neck. Would that be any indication at all of the direction of the missile which produced this?

FILLINGER: Absolutely,not, absolutely not.

ROFFMAN: Now referring to this same wound, the neck wound and the XXXXX area of XX damage inside the neck, let's say in going into this wound you found a great deal of hematoma and contusion to the muscles of the right side of the trachea and to the laryns and to the trachea in general plus a ragged tracheal tear at the third tracheal ring and a great deal of blood in the tissues in that area in addition to the frothing air that was observed by the doctor. What does all this damage indicate?

FILLINGER: Well, it indicates that some sort of foreign body has produced it all, but more you can't say. You can talk roughly about direction; you'd have to be ableto trace the tract, and this is very difficult to do on a live patient.

ROFFMAN: This is at the time of the autopsy.

FILLINGER: Then you trace the tract.

ROFFMAN: Is it at all significant that there was a great deal of blood in the soft tissues inside the neck to the right of the trachea and in back of the trachea yet the wound to the front neck is exuding blood bery slowly?

FILLINGER: No; it's a very small hole and the blood does not pump out of that hole.

ROFFMAN: But it's not specifically characteristic of entrance or exit?

FILLINGER: No,

ROFFMAN: I have one more set of circumstances to this information. Suppose that X-rays of this neck region - now, this would be only one anterior-posterior X-ray - showed severalsmall metallic fragments in the soft tissues which appeared to be localized to the right of the transverse process of the seventh cervical vertebra. What does this - does this add anything in relation to what we just discussed?

FILLINGER: I don't know. Except, it may make you wonder as to what type of projectile was actually used, number one. I would want to be sure that what I saw as radio-opaque fragments were in fact metallic fragments and not bone fragments.

ROFFMAN: Well I can - we'll have to assume for now that they are —

FILLINGER: Metallic fragments? It would tell me several things. I would be interested in looking at them very closely to see whether or not they were lead fragments or whether they represented hard metal from a jacket-jacketed bullet, and they XXX might also raise the question as to what the projectile struck which would cause it to fragment.

ROFFMAN: Is it possible for a projectile to fragment when it doesn't hit any bone, just soft tissue?

FILLINGER: Yes; some types of projectiles will fragment without hitting bone.

ROFFMAN: What kind of projectiles are these?

FILLINGER: Some soft-nosed, some hollow-points, some sporting rounds, and some military jacketed bullets will peel their jackets.

ROFFMAN: Can you specify what kind of XX military bullet will do this?

FILLINGER: Yes. 50 caliber will do it, some types of 50 caliber projectiles. Some types of 30-06_____ government ball ammunition will peel their jacket under certain circumstances.

ROFFMAN: Is it possibel for a copper jacketed bullet with a lead core to do this, 6.5mm military round?

FILLINGER: What type of a nose does it have?
ROFFMAN: Solid nose: it's full-jacketed.
FILLINGER: Yes, but the form of the nose is one important thing; the velocity is another.
ROFFMAN: 2,000 feet per second.
FILLINGER: Fired at 2,000 feet per second?
ROFFMAN: At a distance of about 150 feet.
FILLINGER: Well, XXX that's not really that much. What does the nose look like, rounded, pointed?
ROFFMAN: Blunt. I have a picture of it.
FILLINGER: Blunt? I think it's possible that it would break down and fragment.
ROFFMAN: It can without striking any bone?
FILLINGER: I think this is a possibility.
ROFFMAN: Is the trachea hard enough to cause such a fragmentation?
FILLINGER: It's not a matter of the hardness. It's a matter of the velocity striking a fixed object, and the impact may cause some fragmentation of the jacket.
ROFFMAN: If it does cause that type of fragmentation, will it leave any such evidence in the entrance would it produces?
FILLINGER: No.
ROFFMAN: Have you ever seen cases where this does happen?
FILLINGER: Yes.
ROFFMAN: Where a projectile--a military bullet--
FILLINGER: Yes. As a matter of fact, this is a principle with which the AR 15 and 16 are used in Vietnam. They use a small caliber high velocity bullet which frequently fragments, and X-ray studies, which I have not been in Vietnam but have seen X-ray studies in hospital cases brought back and on display at a recent A.M.A. meeting as a matter of fact showing fine fragmentation in chest and shoulder wounds I remember specifically of persons who had been struck with small fire, and the jackets from these bullets would break down on contact with the skin, and they were dispersed throughout the musculature of the thorax.
ROFFMAN: And these are small fragments, not chunks?
FILLINGER: These are small, tiny fragments, right.
ROFFMAN: It's interesting. Now referring to this sketch again (back view of skeleton), I'll give you another hypothetical situation. Suppose at an autopsy you have a man 6 foot 2, well muscularly built, on his stomach with his head facing generally forward, and you see a wound on this man's back in the upper shoulder area. Now, in measuring it you find that it's 14cm. below the right mastoid process, 15cm. from the right acromion XXX process, and 5cm. from the mid-dorsal line. Can you show me on this approximately where that wound would be located?
FILLINGER: What were your dimensions again? It's on the right? How far below the right mastoid process?
ROFFMAN: 14cm. 15cm. from the right acromion process, and 5cm. from the mid-dorsal line. Now, this is remembering that at the time the measurements are taken the patient is on his stomach with his head facing forwards
FILLINGER: Oh, then it's not valid.
ROFFMAN: It's not valid at all?
FILLINGER: No, because you can't take a measurement when a guy--he's laying on his stomach, you say? Oh, then it's allright.

It's going to be right about here. You say 5 from the vertebral midline, right? And 15 from over here so we're talking about one fourth the way from the acromioclavicular site, that's roughly--the acromion over here, make a little mark, and we're dropping down, what, 14 or 15 from the tip of the mastoid process which is right about there, so we're right about there.

ROFFMAN: Will the position produce a great amount of variation, the position ~~MXF~~ of the body?

FILLINGER: Sure.

ROFFMAN: So is it possible then that the man is in this position and the wound is measured to be those dimentions, but it actually falls let's say all the way down here, into the--

FILLINGER: I don't know how far down all the way down, but it could move as much as an inch or two. For example, you're measuring mastoid process which is a point behind the ear. Now, drop the chin of the patient, and you elevate it perhaps an inch, an inch and a half. Extend the neck and raise the chin, and you dropped it down perhaps another inch and a half, two inches. I don't know what the position of this guy's chin was when they measured from the mastoid process, and it's not generally a good landmark to measure from. I never use it. However, the lateral process, I do use the acromion-clavicular articulation, or the acromion, is a good point to measure from; the mid-vertebral line is a good line to measure from. The seventh cervical vertebra is readily palpable, and that's the one I usually use. That's a kind of a knot in the back of the neck which you can measure from the base of the skull if the head is known to be in an upright position, or from the iliac crest, or any other landmark which doesn't generally shift as much. Admittedly, persons who aren't used to locating places anatomically on the -- let's say topographically on the body may use something which they presume the body to be in a static position all the time, and then the body is moved and they loose their orientation.

ROFFMAN: Let's assume that this is an entrance wound you see in approximately that position, and just assume that there was no exit wound to the front of the body, and the body X-ray show the presense of no bullet in the cadaver. What could have happened to that bullet?

FILLINGER: Well, it could have fallen out of the entrance wound, which sometimes happens with a very low velocity projectile. It can fall out. Next thing that can happen is that the X-rays were not ~~XX~~ taken of the entire body, and it does happen that a projectile will land in a major vessel and be moved through the vascular tree to another portion of the body. For example, this projectile may go into the aorta, may not come out the other side, and may be moved to another portion of the body, and I've had this happen. I have seen a chest wound with the projectile in the knee, because it's pumped down into it. Now, I don't know whether total body X-rays were taken, but when I am looking for a bullet and I can't find it and I have an entrance with no exit, then I have total body X-rays or total flouroscophy which is what I use.

ROFFMAN: Now is it possible that if a bullet went inot the trachea and didn't exit from it that it could drop down inot the lung or some distance down inot the trachea?

FILLINGER: It could move down inot the trachea. This would show up, of course, in an X-ray.

ROFFMAN: And if it did go into the trachea, how far through the body could it have been displaced?

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FILLINGER: Well, it falls, of course, to the bottom of the trachea at which it reaches the and then it may slip on down into one of the major bronchi, most probably the one on the right because it happens to be a little lower, and it may move down as much, I suppose, as five or six inches, depending on the diameter of the projectile and the diameter of that particular guy's bronchus.

ROFFMAN: Are there any characteristics associated with entry wounds of a low velocity projectile?

FILLINGER: Yes, but they vary tremendously with the caliber and with the velocity and with the type of projectile and with clothing or what other the bullet may have passed through so that it's very difficult to catagorize generally low velocity wounds. They are generally a little neater and a little more symmetrical. They don't usually produce as extensive tissue damage at the entrance site, and their exits are often rather stellate but not particularly wide or long. Sometimes high velocity wounds will make these quite large exit wounds.

ROFFMAN: Could you specify for me what the velocity of a high velocity bullet is?

FILLINGER: As far as I'm concerned, anything moving more than 1,400, 1,500 feet per second is getting up into a fairly decent velocity. I would say anything over 2,000, 2,500 feet per second is getting into high velocity range. Consider the .45 automatic moves at 800 feet per second, and I count that as a quite low velocity, and some types of handguns moving at well up to the 2,000 feet per second, 1,800 feet per second range, these are relatively MXIM high velocity projectiles.

ROFFMAN: If you take samples from the periphery of a bullet wound, and under microscopic examination they show coagulation necrosis of the tissues, what does this mean about the bullet wound?

FILLINGER: This is the classic description by the inventor, Dr. Addleson, or the discoverer perhaps, which shows the phenominon generally described as the entrance of a gunshot wound, coagulation necrosis being produced by the heat of the projectile striking the skin.

ROFFMAN: So it would be characteristic of an entrance wound?

FILLINGER: As far as I'm concerned it's characteristic of an entrance wound.

ROFFMAN: Suppose in the slides you also saw fiber particles, assuming that the area struck was clothed at the time it was struck, would that be any indication at all of the velocity of the bullet?

FILLINGER: No.

ROFFMAN: Let's go back to the anterior neck now, the situation that I described there. Suppose also that the trachea was deviated to the left to a slight extent.

FILLINGER: You mean normally a slight deviation?

ROFFMAN: No, not normally. Could this be caused by the muscles on the right side of the trachea assuming--

FILLINGER: How long after death--how long before death was this?

ROFFMAN: The patient died 25 minutes after receiving his wounds.

FILLINGER: I think that's a little fast for swelling.

ROFFMAN: Even if there is this great amount of MXMX tissue damage there?

FILLINGER: Yes. Now the next thing I'd have to ask was did he really live for 25 minutes or was it 25 minutes before they pronounced him dead?

ROFFMAN: 25 minutes before they pronounced him dead.
FILLINGER: So he could have, in fact, been dead on arrival but they just didn't pronounce him dead because--
ROFFMAN: Well, his heart was still beating for sometime.
FILLINGER: Yes, but how long was sometime? 5 minutes, 10 minutes?
ROFFMAN: It might have been the full 25 minutes; it's hard to say.
FILLINGER: Well, when you get into it, it's difficult to speculate, but edyma usually doesn't come up for 15 or 20 minutes after--earliest--and it may take an hour more before it really gets describable.
ROFFMAN: If the trachea wasn't deviated naturally, what could produce such a deviation assuming that you have the tissue damage there that I described?
FILLINGER: Are you talking about traumatic disruption or natural disease? He may have goiter, for example, which would shift it to one side, or a tumor.
ROFFMAN: No, this is traumatic.
FILLINGER: Well, the only thing I could think of would be a massive hemorrhage in the soft tissues which might cause it to deviate a little, but realizing that the trachea is not a readily mobile structure, it doesn't just flip around. It's fairly well anchored and despite the considerable amount of hemorrhage, it's not going to be shifted very much to one side.
ROFFMAN: Can collapse of a lung produce this?
FILLINGER: Produce a deviation of the trachea? No.
ROFFMAN: So it can't be associated at all with lung damage?
FILLINGER: No, it can't be associated at all.
ROFFMAN: How about the force of a missile hitting the trachea?
FILLINGER: Would that cause it to deviate? Well, perhaps instantaneously for a moment just as one might punch the trachea and have it move to one side slightly but then return to its position because the connective tissues holding it are generally somewhat elastic, and they'll pull it right back into position.
ROFFMAN: Is it possible then that a slight deviation could just be natural?
FILLINGER: Yes: it is.
ROFFMAN: On this same drawing could you mark a location for me 2.5 cm. from the right of the midline and 100mm. above the external occipital protuberance?
FILLINGER: 100mm. above what?
ROFFMAN: The external occipital protuberance.
FILLINGER: Occipital protuberance?
ROFFMAN: Yes, I'm not sure of the pronumciation.
FILLINGER: Well, occiput is right here. Now if we're going to go 100mm. which is 10cm. or roughly 2 and a half inches--
ROFFMAN: I believe that's four inches.
FILLINGER: 100mm.? Well let's see, that's 10--you're right--yes--roughly 4 inches. 4 inches above this and what's the other dimention?
ROFFMAN: And 2.5cm. to the right of the midline.
FILLINGER: That's roughly one inch, so we want to come up to where the lambdoidal suture on the right is, perhaps or thereabouts.
ROFFMAN: And that's from the occipital protuberance?
FILLINGER: This is the occipital protuberance right here.
ROFFMAN: Could you mark that same location on this drawing for me?
FILLINGER: Yes, if I can find it. Well, now, not very well because we can't really show--here's the occipital protuberance right here, and, of course, it's difficult to measure from this side

one inch over. So in essense we're coming from the occipital protruberance up here to the lambda around here. I could only presume that it would be somewhere in this area here.

ROFFMAN: Let's assume that there's a wound there through the skin and through the skull, and the inner aspect of the skull exhibits bevelling or cratering. What does this mean about the wound there, assuming that it is a bullet wound?

FILLINGER: Generally, and only generally speaking, it ~~dX~~ indicates that the cratering or the inner bevelling is an entrance wound coming in. Cratering on the outer table, the outer surface, indicates exit coming out, but there is such a thing as a paradoxical gunshot wound, and I have personally seen some the them, and it depends on velocity, it depends on projectile, it depends on angle that it strikes the skull, and one can be embarrassingly fooled if you hadn't looked at enough of them, and are very cautious in your judgment.

ROFFMAN: Suppose on the skin wound there is an irregularly defined zone of abrasion around the wound.

FILLINGER: If it is in fact an abrasion ~~c~~uff it would be significant of an entrance wound.. It would add further weight to the initial observation.

ROFFMAN: Now furthermore, on an X-ray of the head you see a 6.5mm metallic fragment embedded in the skull on the outer and lower table of this entrance wound. What does that indicate?

FILLINGER: Outer, lower table--I'm not sure if I know the location. Is this projectile inside the skull itself?

ROFFMAN: There's fragments of it inside the skull, several fragments.

FILLINGER: Alright. Well, outer, lower table--the outer table--I don't know what lower table is-- the outer table, of course, is the outer layer of the calvarium.

ROFFMAN: I mean the lower side of the entrance wound.

FILLINGER: In the outer, lower side of the entrance wound? This is what an X-ray shows? Does it show it beneath the scalp?

ROFFMAN: Yes.

FILLINGER: But on the top of the calvarium, top of the skull, or is it already through the skull and in the--

ROFFMAN: No; it's embedded in the skull, in the outer table.

FILLINGER: Embedded <u>in</u> the skull? If it's embedded it's stuck in the skull itself. Is it stuck in the entrance hole?

ROFFMAN: Yes.

FILLINGER: It would seem to me it was relative low velocity.

ROFFMAN: Oh really?

FILLINGER: Sure, because you can put a .22 right through the skull with no problem. You can put a .38 through the skull and it will sometimes stick coming out--and stick in the skull coming out, but you don't very often see them stick going in. Now, on occasion we have had them flatten against the skull and not even go through and be peeled off like--they're flattened like a quarter, and the famous Lopenson murder trial here, Judy Lopenson was shot in the back of the head many times, but one of them flattened against the occipital protruberance.

ROFFMAN: Can this be done with a rifle wound, though, at a distance?

FILLINGER: I would think that it's unlikely.

ROFFMAN: At a distance of 250 feet?

FILLINGER: I think it is unlikely, and if it is a rifle, it's a relatively low velocity one. A 6.5mm., if you want to take that diameter for a minute, is a rather low velocity rifle cartridge. Generally - its military velocity. I have shot this weapon, hunted with it, and it's a poor weapon to use. It's an obsolete weapon militarily speaking.

ROFFMAN: There's a gaping wound on the right side of the head, and I was wondering if you could mark the margins of it for me if I gave you the descriptions of it the best that I can. Now it extends from the midline of the frontal bone anteriorly to the vicinity of the posterior margin of the parietal bone behind.

FILLINGER: That's from here, and the posterior margin of the parietal bone is over here.

ROFFMAN: And on top it goes about 25mm across to involve portions of the left parietal bone.

FILLINGER: It goes across the top of the skull, right?

ROFFMAN: Yes, and below it extends into the temporal bone.

FILLINGER: Temporal bone? The temporal bone, of course, comes up into here. So, in essense, we're talking about an area--down into the temporal bone I don't know how far, comes over into here, and crosses over the midline into the left side so that we have an egg-shaped head, let's say, or relatively egg-shaped, and we have our coronal suture coming across here, lambodal sture coming across here, and our saggital suture down the midline. That's sort of serrated there, more or less, and in essence we're saying from the midline of the frontal bone, we don't know how far frontal, coming over to the left of the midline here, coming back to the back margin of the parietal bone, and our parietal bone here and this is temporal here. We have it coming down into the temporal bone so we have a defect which is this big which I have never seen from a rifle wound including a contact rifle wound, anything like this, except a .303 British which is a very high velocity rifle. I had one case where it entered the forehead and blew out the whole back of the skull. Shotgun wounds, of course, will do this. Most rifle wounds do not blow out this much tissue. Now, if we're talking about just the areas of fragmentation of the bone, this can happen. Gunshot wounds can fragment pretty well under, but I don't know what he's talking about by defect, but this particular area, if this is just the margins or the limits of the fracture lines, that's possible. But if this area is completely blown away, I think this is unlikely with a 6.5.

ROFFMAN: I'll keep adding information here. Now, I'd like you to sketch some lacerations of the scalp on either one of these, whichever is more convenient. Could you indicate a lacération from the inferior temporo-parietal margin anteriorly--anterior to the right ear to a point slightly above the tragus?

FILLINGER: Well, th tragus is right here, and we're going to--from the inferior temporal parietal margin which is up here. Now, is this an oblique laceration, a longitudinal laceration, we don't know. In other words, does it go this way, or does it go straight up and down?

ROFFMAN: Well, the starting point-- that's the best description I can give you. Right inferior temporal parietal margin anterior to the right ear.

FILLINGER: All right, there.

ROFFMAN: And there's another one from the anterior parietal margin anteriorly on the forehead to about 4cm. above the right orbital ridge.

FILLINGER: 4cm.--let's see, rough 3/4 inch to the--what's the other dimention now--temporal parietal or frontal parietal?

ROFFMAN: This would be anterior parietal margin anteriorly on the forehead.

FILLINGER: I can only presume it would be something like this.

ROFFMAN: And now one from the margin of this main defect on the midline--one from the left margin of this main defect across the midline anterio-laterally for a distance of about 8cm.

FILLINGER: I'd have to come over here, but we don't know if that's frontal parietal, occipital parietal--

ROFFMAN: I think by left margin it might mean the left when considered from the head viewed on the side.

FILLINGER: No. "The left margin of the defect"--was that the way it was worded? Well, he already said that some of the margin of the defect came across the midline, and he says now it begins from the left margin and crosses the midline. So anyway, it's going to have to go over here. Now, we don't know whether it goes back here or up here, because this description is not clear.

ROFFMAN: Now, there"s another one from the same starting point, which, of course, isn't clear, that goes postero-laterally for a distance of about 10cm.

FILLINGER: 5 inches down to here let's say.

ROFFMAN: So if they both originate from the same starting--

FILLINGER: We're going to have to draw them--fuse them over here somewhere and bring them into here which is not a very good drawing.

ROFFMAN: Just generally.

FILLINGER: Yes: right.

ROFFMAN: Now furthermore, in the parietal section of the skull you see half of a wound. The other half is obscured because of the missing skull, and it's about 3cm. in diameter, and it exhibits bevelling on the outer table of the skull, and you're brought a frafment of ~~X~~ skull during the autopsy, which has the other half of this wound on it, and X-rays of that fragment show small metallic fragments embedded in the sides of the wound which also shows the bevelling on the outer aspect of the skull. Can you draw any inferences from that?

FILLINGER: All right. Well, you're certainly always skeptical of seeing small fragments by X-ray. If you do, and it often happens, one thinks not of a jecketed bullet, which doesn't usually leave little fragments in bone that are seen by X-ray, just an X-ray shot, where this usually--makes one invariably think of a lead projectile with no jecket leaving those fragments.

ROFFMAN: Would that be consistant with the fragment we saw in the entrance hole in the back of the skull?

FILLINGER: I don't know how big a hole that was.

ROFFMAN: 6 by 15mm. with its long axis corresponding with the long axis of the skull.

FILLINGER: It could.

ROFFMAN: Or isn't that particular fragment specifically characteristic of--

FILLINGER: It's not specifically characteristic of anything.

ROFFMAN: Now could you mark--there's many, many fragments in the head. Now, some of these are relatively large, about over 1mm. in size and they're just scattered at random throughout the brain. No, there's also some very, very tiny, extremely minute metallic fragments which are located anteriorly and superiorly in the head, and in addition to that, there's an 8 by 45mm. path of very finely divided fragments which begins anterior to the ~~XXXXXX~~ coronal suture and immediately below the badly fragmented frontal and parietal bones. Could you show me what that path would look like?

FILLINGER: Well, you just said where it begins. It's anterior to the coronal suture which is right here--this is your coronal suture--so it's in front of here.

ROFFMAN: It says it begins immediately below the badly fragmented frontal and parietal bones.

FILLINGER: So we'll assume that maybe right here, this is the area of fracturing. So it would begin right in here.

ROFFMAN: And it extends off in the general direction of the entrance wound in the back of the skull for a distance of 45mm.

FILLINGER: That's a little bit incongruous, isn't it, because 45mm. is 4.5cm., which is roughly -- which is less than 2 inches.

ROFFMAN: It just extends in that general direction.

FILLINGER: I see, for a distance of approximately 2 inches and then no more.

ROFFMAN: It's about 8mm wide, path of finely divided fragments.

FILLINGER: These are thought to be metallic rather than bony?

ROFFMAN: Oh, it's metallic, yes.

FILLINGER: It is metallic?

ROFFMAN: Yes, what would this path indicate?

FILLINGER: It shows to me that the projectile, whatever it is, is shedding metal fragments. This, again, does not at all sound consistant with a jacketed bullet.

ROFFMAN: Does it give any indication of the direction of the bullet?

FILLINGER: You'd have to have a 3 dimensional--or at least a 2 dimensional X-ray to be able to say the direction of the bullet.

ROFFMAN: Now remembering that there is this 3cm. exit wound to the parietal bone, which is located at the crown of the head in the midline abut, does this path of fragments hold any more singificance becausek apparently it would be separated from the exit wound, this one exit wound at least.

FILLINGER: Well, it shows to me that there may, number one, be a separation of the projectile into multiple fragments, that it may have struck the skull, shattering it and blowing it away and [illegible] rebounding. If at the terminal end of this fragment path there is no projectile, then I'm very skeptical about what that path really is.

ROFFMAN: Could it possibly be due to another bullet entering the skull at approximately that location?

FILLINGER: Where did it go?

ROFFMAN: To blow out part of this area.

FILLINGER: Well, you have to find either where--if you're going to have a tract of particles through the brain and it's going to be a bullet tract, then you have to either see or show where the bullilet exited or find the bullet, and from this description this tract of particles goes into an area of the brain the terminal end of which there is not exit wound. This would lead, according to that description, down into the frontal area fo the brain, and there is no exit there in the front [illegible] of the skull.

ROFFMAN: Suppose at the tract there was a 7 by 2mm. lead fragment.

FILLINGER: It could possibly the fragment sheered off of the main projectile.

ROFFMAN: These finely divided fragments, can they come from a military round?

FILLINGER: Could be.

ROFFMAN: Are they characteristic of that?

FILLINGER: No.

ROFFMAN: Have you ever seen them from that?

FILLINGER: Yes.

ROFFMAN: Now, the skull is extensively fractured, with many, many complete fracture lines some of which extend into the base of the skull to involve the right fossa--the anterior right fossa and the middle fossa in the midline. What does the presence of these fractures [illegible] indicate, in the fossa?

FILLINGER: Just a shattering, a series of fractures of a high velocity projectile of some type, probably if not [illegible] high velocity, certainly a great impact.

ROFFMAN: But they're not specifically characteristic of a part of the head struck?

FILLINGER: No.

HOFFMAN: There's also a good deal of fracture to the left mid-temple region plus a fracture through the floor of the globe of the right eye, and the vomer is crushed. Does this pattern of damage add anything?

FILLINGER: No, except to say that again there is a tremendous amount of force applied to the skull to produce all these fractures.

HOFFMAN: Is this consistant with the idea you expressed to me before about the metal fragments being embedded in the exit wound?

FILLINGER: No: well, to a certain extent it may be except that I wouldn't have expected them to be embedded, but again this would depend on the type of projectile involved. You certainly, from this description, have a considerable shattering of the skull.

HOFFMAN: It's very--extremely shattered. The contours are coupletely distorted.

FILLINGER: Right. This has been pretty well fragmented as a matter of fact, and again it speaks for some sort of a high velocity round, and, of course, as the projectile is disintegrating, a certain amount of kinetic energy is lost in this and may be absorbed by the impact area producing even more shattering. The theory, of course, of some of the types of projectiles used, they do break down, or they flatten out causing a greater dissipation of kinetic energy and more damage as they do this.

HOFFMAN: Now, of course, there is a great deal of underlying brain damage associated with this wound, and the damage consists mainly of a front ot back laceration of the right hemisphere, a parasaggital laceration in the form of a canal approximately 5 or 6cm. deep with most of the "roof" of the canal missing. The chief loss of brain substance is in the panetal lobe. There's also a wide laceration of the corpus collosum from the genu to the tail. What does such a laceration indicate?

FILLINGER: Nothing specific except it's characteristic of a bullet tract.

HOFFMAN: Oh really? Is it possible that that's merely contre-coup damage?

FILLINGER: No.

HOFFMAN: That's directly associated with the passage of a missile. Would the--would such a laceration mean that the missile was travelling toward the left side of the skull ir is that--

FILLINGER: No, you can't say because I don't know where it terminates. If the laceration is parasaggital and confined to the right hemisphere, then one can't say if it's going to the left or not. I don't know what angle it was found parasaggital.

[illegible]: This is a secondary laceration probably. As the brain tears, and it is, of course, very soft, tears may extend down into the soft tissue areas, down to the deeper protions of the brain better said, and they don't particularly indicate the direction of the plane of travel.

HOFFMAN: Now, speaking in terms of contre-coup damage, there is a good deal of subarachnoid hemorrhage over the left inferior frontal and temporal regions with minor loss of cortex. What does this tell about the thrust of the bullet?

FILLINGER: There's sub-araohnoid hemorrhages over where?

HOFFMAN: Over the left inferior temporal and frontal regions.

FILLINGER: Nothing.

HOFFMAN: Nothing?

FILLINGER: It says only that the force of the brain in a coup, and not a contre-coup, is being driven forward, and the same thing would hold true if the person had fallen on their face, for example. If he fell on his back, and we saw hemorrhages like that, we might expect to call it contre-coup or the opposite strike. With all the wounds you've described and the entrance wound in the of the skull, these are the result of the brain being driven toward the front of the skull and being bruised. On the left side it doesn't say anything more than that the brain has also been banged over to the left side by the impact of the projectile.

ROFFMAN: Suppose you--superiorly you saw a good deal of sub-arachnoid hemorrhage to the frontal lobe and to the left parietal lobe.

FILLINGER: You've got hemorrhage where? Frontal lobe and left parietal lobe, and this is sub-arachnoid or is it hemorrhage in the brain itself?

ROFFMAN: Sub-arachnoid.

FILLINGER: Sub-arachnoid. It again is just characteristic of the contre-coup injury, the brain being driven forward, bumping on the edges from the velocity from back to front.

ROFFMAN: But not specifically left to right?

FILLINGER: To a certain extent I'm sure it's going to have to move to the left because it's entrapped in its bony cage and this is the general force.

ROFFMAN: Well, you have this--the entrance wound--

FILLINGER: On the right side and the exit wound on the right side, and, of course, you have a partition down the middle called the falx cerebri which is a membrane which separates part of the hemispheres and there's a certain amount of pressure which can be transmitted through this, of course, and the brain will shift from one side to the other, and it isn't going to say very much more about the whole situtation except to strengthen your opinion that the back was the entrance wound and the brain was naturally, as the bullet passes through it, going to be driven somewhat to the left as well as to the right. It has to expand somewhere.

ROFFMAN: So you would expect to see that type of damage then?

FILLINGER: One could expect to see it, but you don't always see it.

ROFFMAN: Would you say that it is possible for--I'll give you a hypothetical situation. You have a full jecketed military missile, copper alloy jacketed with a lead core fired at approximately 2,000 feet per second from a distance of about 250 feet striking the head at the entrance wound that we postulated. Do you think it could produce that damage that we saw?

[illegible] oneck what that velocity really is. It's certainly possible that this can produce this kind of wound but--let's get our velocities here. It isn't even listed here. 6.5, right? It isn't even available. RWS makes it. Muzzle velocity at 2,180 at 100 yards 1,930 and the energy in foot pounds drops very markedly at 100 yards from 1,690 at the muzzle down to 1,315. That's for one type of load. There are some more hotter loads, and there are some much hotter loads. There's one muzzle velocity that goes up to 3,020, and some of them go up to 3,950 which I consider high velocity. It's a medium velocity from what you've given me. I think that it's possible that these wounds could be produced by this particular round, but I would be a little skeptical of the break-down of the projectile itself.

ROFFMAN: Would you say that the break down is more consistant with let's say a hunting round?

FILLINGER: Yes, than a military round, I would say, of course, but it could come from a military round.

ROFFMAN: Do you think from the information I've given you about the head wounds that you could definately rule out the possibility of let's say another bullet, a hunting type bullet, even the kind used in varmint hunting, striking the right front of the head and exploding on impact?

FILLINGER: Well, you can't absolutely rule it out because you don't have all the skin. From what you've told me and from the position of the tract displayed in X-ray, from the position of the bullet groove in the brain--

ROFFMAN: This an an extremely wide laceration. I don't even know if you would specifically call it a groove.

FILLINGER: Well, we don't have anything that is intersecting this. We don't have another wound that's intersecting this that produces an inconsistant pattern. It's unlikely that you're going to have them coming in 180 degrees, one going in one groove and one following the opposite direction but the same pattern. There's nothing here that suggests there's a second round at all.

ROFFMAN: Even with the major loss of brain substance in the parietal lobe?

FILLINGER: No.

ROFFMAN: Could you say though that it absolutely rules it out?

FILLINGER: Pretty much because you see, if you have one round fired, and it shatters the skull, then you've lost the resiliance and the resistance to the projectile. So the second projectile, from whatever angle, is going to have much less resistance to strike, and the probability of it either being recovered or at least leaving a tell-tale position is much greater because you don't have the skull to shatter and blow apart and be destroyed.

ROFFMAN: Suppose that it struck a portion of the skull that wasn't involved?

FILLINGER: Then you'd certainly have an entrance wound all through that skull.

ROFFMAN: Even if this was let's say--are you familiar with varmint caliber bullets?

FILLINGER: Yes.

ROFFMAN: Would this produce an even entrance hole if it struck something as hard as the skull?

FILLINGER: Yes. It produces a general--not necessarily an even entrance hole. But it would produce a hole, and, you may hit strikes an area which is uninvolved by our major round, and we're going to have another hoel, and you don't have any other hole here.

ROFFMAN: How big a hole would you expect to find?

FILLINGER: Depends on the caliber.

ROFFMAN: Let's say a .22 caliber.

FILLINGER: Varmint rifle? It produces a hole that can be anywhere from 5mm up to a couple centimeters.

ROFFMAN: Could this become part--let's say it was close enough to the area of damage here that it become part of that.

FILLINGER: Then you're going to have, number one, an awful lot more brain damage because it hasn't suffered much damage going through the skull. When a small caliber high velocity projectile strikes the brain, it produces a good deal of damage. That's part of the way they're designed, and producing all this damage, you're going to have another tract through the soft tissues of the brain

which we've never had described.

ROFFMAN: Do these varmint caliber bullets exhibit explosive effects when they strike something as hard as the skull?

FILLINGER: They can.

ROFFMAN: Could this have a tendency to blow out evidence of damage that it created first?

FILLINGER: No: it would magnify it.

ROFFMAN: Is it difficult to completely investigate these type of high velocity bullet wounds to the head at an autopsy?

FILLINGER: Yes. You have to have a lot of experience, and I've seen quite a few of them.

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ROFFMAN: Do you think it's possible that if the pathologist who was performing the autopsy was not a forensic pathologist, that he could have missed traces of another bullet striking the head?

FILLINGER: Well, it's always possible but what he's described-- from his description, even though he may not know what he's describing, he has described apparently as thoroughly as he can, and I don't know what he's missed. Now anyone can miss anything, really. It's certainly open to question. Assuming that he described everything he saw, then he has described one gunshot wound. Whether he knows what he is describing or not is something else, of course.

ROFFMAN: I'd like to ask you some things about X-rays now. Do X-rays portray what they've --the image on them as the actual size of the image that was taken?

FILLINGER: No.

ROFFMAN: What is the amount of variation?

FILLINGER: It depends on where the depth of focus is set. For example, if the depth of focus of the X-ray is set to pick up a structure in the middle of the body, then interceeding structures, for example, would beat different magnification than the point of focus. So will a structure which may be on past the point of focus be at a different magnification, and no one can speculate with any degree of accuracy about the calibers of perjectiles in X-rays-- the duplication of them. This has been demonstrated around here pretty thoroughly.

ROFFMAN: Then would you say it's impossible to take an accurate measurement on an X-ray, let's say of a location of a wound?

FILLINGER: What you have to have is something else in that X-ray at the same plane to use as a measuring stick. For example, if the wound is near a structure which you already know about the size of or you can measure the size of, then you can extend from that--interpolate from that--and get an approximation of the size of the structureethat you've X-rayed.

ROFFMAN: I'll add a little more detail to that. Let's say on a body--we'll use the entrance wound to the head-- let's say on the body you measure the distance from that wound to the midline of the head to be 2.5cm., and you take an anterior-posterior X-ray of the head, and on the X-ray the distance from the midline to the wound is 2.5cm., and then on the X-ray you measure the distance from the occipital protuberance to the wound and find that it's 100mm. Would your 100mm. measurement be valid then?

FILLINGER: Probably would because you're talking about the same plane. Now, this would not be valid for measuring a fragment shown on the X-ray unless the fragment were on the same plane as the surface of the skull that you X-rayed.

ROFFMAN: Is it possible that certain substances of which bullets are made will not show on X-ray?

FILLINGER: I don't know of any bullet that's made of anything except some of the plastic rounds--experimental rounds--that would leave at best only a shadow.

ROFFMAN: Let's say a copper jacket from a bullet.

FILLINGER: Sure.

ROFFMAN: It would show. Is it possible that bone could mask metal fragments?

FILLINGER: A metal fragment can be behind a bone. If the X-rays are not very carefully taken it might to the untrained eye not be observed, but to a trained observer, carefully taken X-rays, it would be because there(s a difference in density between the metal and the bone.

ROFFMAN: Will this vary with different kinds of metal, let's say between lead and copper?

FILLINGER: Not that much. Between metal and bone it will vary because some bones are more dense than others.

ROFFMAN: How about the spine?

FILLINGER: It's more dense but not as dense as metal.

ROFFMAN: I'd like to go back to what we discussed about the neck wounds. I must profess much curiosity with them, and I'm awfully puzzled by what they indicate. You have that back wound which is an entrance wound. The histological slides of it did show coagulation necrosis, and there was a well defined zone of abrasion around it. It was a very regular smooth wound, and you also have that wound to the front of the neck which was smaller than the wound to the back of the neck plus all the damage inside that I described. Now, at the autopsy, efforts to probe this wound were futile beyond about an inch.

FILLINGER: That'd always a poor thing to do anyway.

ROFFMAN: Of course, the tract wasn't dissected. Now, is it possible that a bullet could have entered that point and gone through the neck, just the soft tissues of the neck, and exited through the front of the neck?

FILLINGER: Yes.

ROFFMAN: Is the relative size of the holes--the wound in the back with the marginal abrasion would be approximately 10 by 7mm., and the wound in the front with the "tissue damage," because I can't specifically describe it as marginal abrasion, would be anywhere from 4 to 6mm, in diameter.

[illegible] but then again the question come, when was the wound in front measured?

ROFFMAN: The wound in front was measured approximately 15 to 20 minutes after receiving it.

FILLINGER: Now what I'm thinking of was the wound in front distorted by any certain proceedure?

ROFFMAN: Not when it was first measured.

FILLINGER: It was measured. Then if it was first measured then it would have to have been measured while--before the surgeons started work on it. I would question the validity of the measurement in this particular instance because I don't think anybody is taking accurate measurements of wound when you're trying to save somebody's life.

ROFFMAN: But it's generally extremely small punctate wound.

PILLINGER: Well, I would certainly wonder whether the wound that you're looking at and calling an exit wound is in fact the exit wound of the projectile or whether it's a secondary missile, fragment of the bullet that's being blown out.

ROFFMAN: Does this have any more significance with the fact that there were metal fragments in the neck?

PILLINGER: Right.

ROFFMAN: Do you think that several samll metallic fragments, and that's the best description I can give you, would account for the major part of the missile?

PILLINGER: Can't tell. You'd have to weigh them.

ROFFMAN: Can any inferences be drawn at all from the information I gave you?

PILLINGER: No, only that it has fragmented which would make me very suspicious of where it all went.

ROFFMAN: Is it possible that 2 bullets entered the neck region, one from behind and one from in front?

PILLINGER: You have to demonstrate 2 tracts and another exit somewhere.

ROFFMAN: Well, this is assuming that neither one exited.

PILLINGER: Well, if you have enough projectiles dispersed around in the course of 2 tracts, one could presume this, but you're going to have to have something to make it break up, and a military projectile, of course, is a pretty good sized projectile, but it usually doesn't totally disintegrate. A major portion of it is almost invariably found somewhere. It may fragment but you'll have a core which will usually be recovered somewhere.

ROFFMAN: A core of a bullet will be recovered?

PILLINGER: Either that or it goes on out.

ROFFMAN: Is it al all possible that the wound in back could be an exit wound?

PILLINGER: With the coagulation necrosis I don't think that that is much of a possibility.

ROFFMAN: These are pictures from a movie film taken of President Kennedy's assassination. One is immediately before he was struck in the head, and the bottom one is as he was being struck in the head. From the damage that you see occurring there, can you tell anything about the type of wounds that he's receiving?

PILLINGER: No.

ROFFMAN: On the [illegible] of danger

PILLINGER: Well, the bottom picture, of course, might suggest that that's head injury. It's difficult to really place his head in that flash of red. I can only presume that this is the major distruction ot the right side of the skull, and more you can't say from that. From the top picture, it would indicate that he's leaning to one side probably having been struck by another projectile. He's not assuming a normal position as I would expect. The second would suggest that the second round fired was probably the head shot--- very accurately fired.

ROFFMAN: Let's assmue also--in fact I can show you pictures not as clear as this--as he's struck in the head, in the frame there-- between those two frames he's driven forward about 2 inches and immediately--

PILLINGER: Driven or fallen?

ROFFMAN: Driven.

FILLINGER: He is driven forward?
ROFFMAN: Yes.
FILLINGER: Why is he--how do we know that he is driven?
ROFFMAN: If you observe the film, in the frame immediately preceeding this ~~HXX~~ he's in that leaning over position, and as the bullet strikes his head--as you see that explosion--he's moved forward to about 2 inches, a little bit over 2 inches.
FILLINGER: I don't think you could measure it, but go ahead.
ROFFMAN: Well, it has been measured in relation to fixed points on the car.
FILLINGER: You can measure 2 inches from a distance ~~XXXXXXX~~ where that film was shot, maybe 30 feet from the car. I think your points of triangulation are going to be pretty dog-gone tight.
ROFFMAN: This is the sequence of frames. If you see the film in motion, you'll see that after he juts forward for that one instant, he immediately, in fact in the next frame after this, here, he immediately snaps backwards. It's very violent the backward movement.
FILLINGER: Well, you're talking about some very distorted things. You're talking about his movements. You've also have to realize that the car is moving with a certain velocity as well.
ROFFMAN: Well, the car was mvoing at a steady rate so it wasn't actually accelerating.
FILLINGER: Now, what about the motion of the camera operator?
ROFFMAN: The camera operator moves--
FILLINGER: He's panning, but we don't know how steady his hand is, so that any slight movement he makes, even breathing, will produce a distortion.
ROFFMAN: Yes, but I think really--it's a shame you can't see the film because it--
FILLINGER: I have seen it.
ROFFMAN: Oh, you have? When did you see it?
FILLINGER: In Washington.
ROFFMAN: Have you gone into this at all? I'm surprized to hear that.
FILLINGER: Why?
ROFFMAN: I wasn't aware that you had.
FILLINGER: Oh yes, it's been pretty broadly discussed among forensic pathologists, and there's quite an article, you know in our Journal of Forensic Sciences. It's been really hacked to pieces by Cyril Wecht who wrote quite a long dissertation on it. Several of the firearms experts have been at it. The bullets from this case have been brought here to Philadelphia for examination. They were examined here by an expert who was flown in from Chicago.
[illegible] you agree that the fil[illegible] moving backwards?
FILLINGER: That wasn't the impression that I got. I'll admit that there's motion there, and I have heard this discussed, and I don't think--in my own mind it's not conclusively shown that he is, in fact, impelled forward and then repelled backwards. There seems to be motion there, but I think that just the sheer blurring of the contour of the body in the shot with the blood around the head, for example, would preclude me saying that he has moved one way or the other to that extent.
ROFFMAN: Assuming that--I guess you'll have to take this hypothetically- that he does jut forward for that instance and then is thrown forcebly backwards in a very violent motion. Do you think that this could suggest the possibility of 2 shots striking him in that instance?

FILLINGER: It could suggest it, but I see nothing to sustain it. Realizing that persons who are shot, even head shots, are not necessarily moved that much by the impact of the projectile. You'll see this in combat. I was in World War II, and I've seen a pretty fair share of number of people get shot, and some rounds will displace the body depending on where the bullet strikes, but I have seen fellows get shot and you didn't even know they were hit. It didn't even look like they had moved.

ROFFMAN: You have a pretty good picture of the damage done to the head.

FILLINGER: Right, and he has quite a bit of damage on the head. This impact of this projectile might well--I'm sure wouldn't displace his head. But whether it displaces his whole body forward, I would be quite a bit in doubt. The head sits on kind of a loose pedestal, and the head may move, but that doesn't mean it's going to impel the whole body. They head may have moved but those films don't show anything about the fim at all.

ROFFMAN: Is it possible--now, here's something interesting. There was also a 3cm. area of bruising located on the supersternal notch. Is it possible that his head was driven so far down when it was struck from the rear that it hit the chest in this area strong enough that the chim bruised it?

FILLINGER: I don't think so.

ROFFMAN: Could it possibly snap forwards as far as it can go and then snap backwards as a sort of a contre-coup movement?

FILLINGER: Could it have done so? I don't know why it would. There's SNEEKKING nothing to elastic the head back, but the head may have swung forward as it was struck. It's quite possible, but there's nothing to indicate that it was snapped back. There is no reason for it to snap back. The musculature is not a taughtly drawn rope that would snap it backwards. It wouldn't snap backwards. I don't think that's an explanation at all.

ROFFMAN: How about pivoting of the head?

FILLINGER: From side to side? Well, again, we have balancing muscles, and because the muscle is pulled in one direction, that doesn't mean that the other muscle has to pull it right back.

ROFFMAN: Oh, yes. I understand that.

FILLINGER: I don't t think that it would.

ROFFMAN: How about the force that occured when the--from the explosion out of the right side of the head. Would the force of that explosion itself be enough to propel the head to the left?

FILLINGER: Well, realizing that we're talking about forces--we're talking about the bullet striking the head, and that is the movement of force. What blows out of the head is a very small componant force compared to what hit the head. What hit the head is where the major kinetic energy is expended, and the head may be driven forward. What's blown out of the side of the head is nothing more, more or less, than the exit, and it's resisting against air, and that's not blowing back. That's not an explosive force per se; that's only a rupture of soft tissue, and that's not an explosive force occurring in there that's going to drive the head to one side.

ROFFMAN: Here's something interesting. About 10 minutes after the assassination, some pieces of brain matter were found about 120 feet in front of the President--in front of the position he was when he was shot in the head, and if you examine the film--it doesn't include it in here--but that matter was there immediately after the head shot. In other words, it wasn't carried there after the assassination. Do you think that brain matter could be driven that far ahead from a shot?

FILLINGER: I wouldn't think so.

ROFFMAN: Would it need something more firm in it to propel it?

FILLINGER: I would think so.

ROFFMAN: Could it be either bullet or bone?

FILLINGER: No.

ROFFMAN: How would you explain it getting there, then?

FILLINGER: I can't. I don't know what the wind was doing that day.

ROFFMAN: It was blowing in the opposite direction.

FILLINGER: Even all the more reason why not. I could show you some close-up gunshots wounds of the head, and we have them here, with a larger caliber, very short distance, and the brain was blown at the most maybe 20 feet, at the most.

ROFFMAN: If it was--let's say it was brain matter attached to a piece of skull or that contained a bullet fragment, would that have the ballistic properties to carry it that far?

FILLINGER: Well, it might carry it, but afterall, what is it going to hang on to? Brain is pretty soft and mushy, and it's got to hang on to a piece of bone not only flying through the air but buffeting a wind EX in the opposite direction. I don't know how big these fragments were but I'd be very skeptical.

ROFFMAN: They were about the size of half a fist.

FILLINGER: Half a fist? That's a hell of a big piece of bone.

ROFFMAN: No, this is brain, [redacted] chunks of brain matter.

FILLINGER: I think the measurements might be a little off.

ROFFMAN: I'm just basing this on pictures that I've seen of it.

FILLINGER: I would say the measurements are off. When you consider that much brain which is pretty good sized soft glob sailing through the air. Not at 100 feet, and that's a long ways to go. I can't even throw a brain that far.

ROFFMAN: I'm very interested that you've studied this to a certain extent.

FILLINGER: Why? It's a natural thing.

ROFFMAN: As an expert, I would be interested in your opinions on what you've seen so far.

FILLINGER: It's difficult to give them because some of the information that I have I can't exclude out of my decision, and some the information I have can't be made public.

ROFFMAN: Oh really?

FILLINGER: Yes. So I can only say that it's a very complex case and that I am not totally satisfied with the results, but I can't say any more than that.

ROFFMAN: Can you tell me where you were given information XXX that you can't divulge?

FILLINGER: No.

ROFFMAN: Have you seen the autopsy material?

FILLINGER: Material?

ROFFMAN: Yes.

FILLINGER: I have seen some reports.

ROFFMAN: But you haven't seen the photographs and X-rays?

FILLINGER: I have seen some pictures.

ROFFMAN: Of President Kennedy?

FILLINGER: No, not of him, of some of the material.

ROFFMAN: Have you read the report of Dr. Humes?

FILLINGER: Of who?

ROFFMAN: Dr. Humes.

FILLINGER: No. I've only read--officially, I've only read the published reports.

ROFFMAN: You mean the Warren Report?

FILLINGER: Right.

ROFFMAN: Are you aware of the Clark Panel, the panel who examined the X-ray material?

FILLINGER: (nod yes)

ROFFMAN: Have you read their report?

FILLINGER: Only that which is published. I said for XX publication and for general knowledge, the only that I can say I have read is (interruption for about 5 minutes)

ROFFMAN: The reports of the Clark Panel have been made public. In fact, I have copies of them. So that's a disclosure that I can assure you you don't have to worry about. Ramsey Clark released it on the eve of the trial to get the autopsy photographs for the New Orleans trial. Have you compared the report of the Clark Panel to the report that was published by the Warren Report as the official autopsy report?

FILLINGER: No.

ROFFMAN: Are you familiar with the single bullet theory?

FILLINGER: Now which theory--you mean the single bullet through the neck, second bullet through the head theory where this is the one that goes through and hits, Con---what's his name?

ROFFMAN: Connally. Well, the theory specifically is that this one bullet from the type of rifle that I specified went through the President's neck, and you have the picture of damage, and then went into Governor Connally, through his chest hitting his fifth rib and shattering 10cm. of it, through his right wrist fracturing--causing a complete fracture of the right radius, and into his left femur depositing about a 3mm. fragment into the body of the femur. Have you seen the bullet that's alleged to have this?

FILLINGER: I've seen pictures of it.

ROFFMAN: You haven't seen the actual bullet?

FILLINGER: No.

ROFFMAN: Do you think this is possible?

FILLINGER: I think it's very unlikely.

ROFFMAN: Have you ever seen a bullet, this type of bullet, hit a bone and not show any evidence at all of having hit a bone where its lands and grooves are completely intact?

FILLINGER: Yes.

ROFFMAN: I'll have to compound that to where it's alleged to have hit at least 3 bones.

FILLINGER: Well, number one, I haven't seen that many 6.5 wounds, and, of the ones I have seen, they are some of them produced by different types of projectiles. So I can't really say, but I think it is unlikely that a jacketed projectile is going to hit 3 bones and not be damaged. One bone, it's quite possible that the lands and grooves to the naked eye, let me emphasize that--

ROFFMAN: This is even to microscopic examination.

FILLINGER: Well, microscopic examination-- I don't know that the report really says that. It doesn't say what king of damage it is.

ROFFMAN: This is in the testimony of ballistics expert Robert Frazier. He testified that under microscopic examination, the lands and grooves were not distorted at all except for a slight dent in the base of the bullet which did not actually disrupt the lands and grooves, it only moved them slightly.

FILLINGER: Well, this is unlikely. It's very unlikely, as a matter of fact, Even our own ballistics people here don't get that kind of good luck.

I was going to look to see where I've got my copy--You've seen Cyril Wecht's dissertation on this thing, right?

ROFFMAN: In Six Seconds in Dallas?

FILLINGER: No: this is the one he wrote for the Academy.

ROFFMAN: I'm not sure if I have unless it's a reprint. I know that Dr. Wecht was very critical of the Warren Report.

FILLINGER: Of some portions of it. There are some portions of the Warren report which are absolutely fantastic, absolutely fantastic.

ROFFMAN: Which are they?

FILLINGER: The questioned documents. They did an absolutely fantastic job.

(tape cut for about 5 minutes)

ROFFMAN: It's a very interesting point that Dr. Wecht makes about controlling the pathologists.

FILLINGER: The government controls everything it does.

ROFFMAN: So, in other words, if the pathologists found something that they as forensic pathologists had the duty to report as part of a complete autopsy report, and the government did not want that released, they have the power to--

FILLINGER: Well, this holds true in any kind of case. For example, I may do an autopsy for a state- New Jersey, and my findings are priviledged and available only to the state authorities. Now, the defense counsil can't come in and ask me for them unless the state releases them. Newspapersreporters don't have them available to them at all, and the same thing holds true here. A civilian pathologist in a hospital might be less inclined to respect the condifentiality concerning a medical-legal case, and, of course, one of this magnitude even more so. The pressures would be just tremendous on him. At least the military gave them some control over the security of the information available. As a matter of fact, it was such tight control that some of the material is never going to be seen for a long time. It's tucked away for 100 years or more or so over in the Archives.

ROFFMAN: This is mostly documents. The autppsy material supposedly will be available to experts--non-government experts--in 1971, and there's still efforts being made now to get them.

FILLINGER: Well, what autopsy material is there still left? How much of it's already been destroyed? His notes were certainly destroyed.

ROFFMAN: The thing is, Humes' notes were not destroyed. Humes' original autopsy draft was destroyed. He specified before the Commission that what he burned was a draft of the autopsy that he wrote on Sunday morning.

FILLINGER: Why did he burn that?

ROFFMAN: We don't know. The Commission didn't ask him.

FILLINGER: That's right. They didn't. Do you know who asked him the questions?

ROFFMAN: Specter.

FILLINGER: Right. You'd have to go over and talk to Specter about it.

ROFFMAN: I did.

FILLINGER: What did he say?

ROFFMAN: He couldn't tell me.

FILLINGER: He couldn't tell you?

ROFFMAN: No.

FILLINGER: Did he want to tellyou, orhe didn't know the answer?

ROFFMAN: I don't know. Mr. Specter seemed pretty evasive. I was pretty baffled by the interview that I had with him, because I came there with many, many doubts, and I left there with twice as much. But the sets of notes which were made during the autopsy are still in existence.

FILLINGER: I don't know that anybody's ever really established that, have they?

ROFFMAN: They were supposedly introduced into the record. but they don't appear in any of the Commission exhibits.

FILLINGER: That is right; they don't. Makes you wonder whether they were really those notes. What about the notes of the FBI men? He took notes. His notes didn't jibe with the pathologist's notes. Where are those notes?

ROFFMAN: I know. I'm sure a search has been made of the Archives but--

FILLINGER: Oh, they wouldn't be in there because everybody knows what went into the Archives.

ROFFMAN: But there's still--there's classified things in the Archives and there's things that are misproperly filed. You'd be amazed at the things that have turned up in the wrong files.

FILLINGER: In the Archives about Kennedyes?

ROFFMAN: Of course, I can't--

FILLINGER: I don't think it's about Kennedy stuff, maybe it is, but I would think that's all in one packet. I've been through the Archives quite a bit.

ROFFMAN: Oh, there's--I think there's something like 3,000 cubic feet of documents on Kennedy.

FILLINGER: Well, that's not so big.

ROFFMAN: There's a fantastic amount. The organization is supposedly attrocious on this part.

FILLINGER: Well, I can see where it's going to take a good many years to have it all properly catalogued with all the little fragments and papers, but the critical material on him can't encompass more than maybe, you know 2 dozen file cabinets or 3 dozen file cabinets. The actual critical--

ROFFMAN: I mean it's misfiled.

FILLINGER: Is it misfiled or they just don't want to make it available or anything?

ROFFMAN: I don't know.

FILLINGER: (referring to Wecht's article in the Journal of Forensic Sciences) There's some more comments here. "Two of the three pathologists who performed the autopsy were not forensic pathologists." That's, of course, Commander Humes and Commander Boswell, and Colonel Pierre Finck was called in, and he (Wecht) states that "he is a well trained and very competant forensic pathologist." I can only say that Colonel Finck's training has been almost exclusively military. He's been with the AFIP which means that he is not out on the scene investigating at first hand freshly shot bodies. He is reviewing material submitted to him by other pathologists, and that his expertise lies in this area, and that he is not an expert, practical, homicide type of forensic pathologist. He has a lot of military experience with some types of military calibers. His forensic training is essentially military training.

ROFFMAN: What bearing do you think this all has on the autopsy itself, though?

FILLINGER: Oh, I think number one that we're not only seeing descriptions of things, which anyone can draw conclusions from, but we're also seeing conclusions drawn from the descriptions, and one can only cahllange the conclusions.

ROFFMAN: Isn't it possible, though, that these men, because they weren't specifically trained for this job, could have missed observations that would be significant and therefore did not record them?

FILLINGER: It's a matter for speculation, and I wouldn't speculate on it.

ROFFMAN: I'll give you an example because it's something that's not secret, it's something that has been released, and it's something which I view as considerably important. Commander Humes testified before the Warren Commission explicitly that he and the radiologist reviewed the X-rays of the President's neck and that there was no metallic fragments in there. Now, the Clark Panel saw those X-rays, and they write in their report as plain as day that there are several metallic fragments in the neck.

FILLINGER: My first question would be when did Commander Humes and the radiologist review the X-rays?

ROFFMAN: During the autopsy.

FILLINGER: Well, then it's very understandable that they wouldn't see them because it's a wet reading, and wet readings frequently do not show very fine detail.

ROFFMAN: So they could have missed them, then?

FILLINGER: Could have missed them very easily. I've had it happen many, many times in practice where the radiologist says "I don't see a fracture here, but it's a wet reading; we'll see how it looks tomorrow when it's all dry," and then you'll pick up a hairline fracture.

ROFFMAN: How about things like radio-opaque material like metallic ffragments?

FILLINGER: If it's obscured behind a bony structure maybe skull--

ROFFMAN: In this case it wasn't.

FILLINGER: Well, then I can't explain it.

ROFFMAN: You see, things like that are very distressing about the autopsy because you wonder just how much we've been told, how much we can know about the President's wounds--

FILLINGER: As a matter of fact, what you've just told me doesn't bear up here with this Warren Report commentary. Now, it says "The X-rays and body photographs were made by pathologists (Document #23), turned over to a Secret Service agent immediately after they were taken presumably by the pathologist. Although they may have seen the developed X-rays and films later did not have them in their possession at the time of theft testimony (note Document 24)."

ROFFMAN: Commander Humes testified before the Commission that they did examine them during the autopsy. The pictures were not developed, but the X-rays were, and they were used during the autopsy.

FILLINGER: It says "The films and pictures were not presented to the Warren Commission."

ROFFMAN: They're not in the Warren Commission's evidence, no.

FILLINGER: Right, "and it has been stated that they were destroyed."

ROFFMAN: I don't know whether it's possible or not. Now, the Panel Report is an examination of this material, and, I might add, not all of it.

FILLINGER: Obviously, because some of it's destroyed. How would they know?

ROFFMAN: Not the pictures and X-rays.

FILLINGER: That's waht it says here. "The films and pictures"-- "It has been stated that they were destroyed. It is not clear who destroyed them or when and where they were destroyed."

ROFFMAN: You'll see in the inventory of the materials when it was turned over to the Archives that some of the rolls were over-exposed to the extent that they didn't bear pictures.

FILLINGER: Well, obviously because--one of the reasons probably would be because they were taken by the persons who weren't experts if they were taken by the pathologists.

ROFFMAN: They were taken by a medical photographers

FILLINGER: This doesn't say that at all. This may be just a compendium or a summary.

ROFFMAN: If you read Dr. Humes' testimony you'll see that they were taken by a medial photographer.

FILLINGER: And that he did the developing? Now, who did the developing?

ROFFMAN: They were turned over the the Secret Service undeveloped. The X-rays were developed, though.

FILLINGER: Well, there the answer is.

ROFFMAN: There's another point, too. Commander Humes testified before the Commission that he could ascertain no traces of the anterior neck wound on the tracheotomy incision, and it's written as plain as day in the Warren Report that the tracheotomy incision completely obscured any traces of the anterior neck wound.

FILLINGER: Well, my next question is has anyone who said that ever seen a neck wound with a tracheotomy in it?

ROFFMAN: I don't know. Have you?

FILLINGER: Yes.

ROFFMAN: What does it look like?

FILLINGER: Well, it varies from wound to wound. I could show you 100 wounds and everyone is different.

ROFFMAN: Will it obliterate the wound?

FILLINGER: It could. Again, were they looking for it?

ROFFMAN: According to the official story, they were because they were supposedly seriously entertaining a path through the neck which they could not probe and which they did not dissect--

FILLINGER: Well, there you've just said, of course, the most critical thing of the whole autopsy.

ROFFMAN: That they didn't dissect?

FILLINGER: Didn't dissect the tract, and you have to dissect a tract.

ROFFMAN: They said that they were puzzled because there was no wound there.

FILLINGER: Well, you have to dissect the tract to find it, right?

ROFFMAN: But they thing is the Panel saw these pictures, and they say there is a wound there. They say that there is a tracheotomy incision with a wound on top of it.

FILLINGER: How can they tell that from pictures?

ROFFMAN: This is what they write in their report.

FILLINGER: And who on the panel made the conclusion? No one who was a pathologist or a forensic pathologist.

ROFFMAN: This is written in the Panel Report.

FILLINGER: Then none of them are experts in ~~KHS~~ this field.

ROFFMAN: The panel doctors--one of them was Russell Fisher. Is he an expert?

FILLINGER: Yes: he's a forensic pathologist, right.

ROFFMAN: And Russell Morgan.

FILLINGER: He's not.

ROFFMAN: Alan Moritz

FILLINGER: He is, but he hasn't done an autopsy for maybe 20 years.

ROFFMAN: And--the radiologist was Russell Morgan, and William Carnes.

FILLINGER: Who?

ROFFMAN: William Carnes.

FILLINGER: Never heard of him. Where's he?

[redacted]

ROFFMAN: Now he's at the University of California.

FILLINGER: C-A-R-N-E-S? I don't think he's a forensic pathologist. (Checking the list of members of Academy of Forensic Sciences).

ROFFMAN: They write in their report--

FILLINGER: He's not a forensic pathologist. He's not even a member of the Forensic Academy. So the only guy of those four you've mentioned is Russ Fisher and Moritz, and, as I say, Moritz did his last medical-legal autppsy 15 years or so--before I started training for legal medicine.

ROFFMAN: This is one of the reports released by Ramsey Clark of the Panel.

FILLINGER: Yes, I know. Why was Ramsey Clark's panel even convined?

ROFFMAN: That I do not know.

FILLINGER: It's an interesting political ploy. Now, why was the autopsy report so thoroughly censored?

ROFFMAN: You mean before it was issued by the Warren Report?

FILLINGER: Well, yes: long before that, before it was released by the President's physician.

ROFFMAN: How do you mean?

FILLINGER: There are lots of items in that autopsy report that aren't there from when Humes first dictated them.

ROFFMAN: Such as?

FILLINGER: The description of the adrenals.

ROFFMAN: How do we know that he actually dictated that?

FILLINGER: He's a pathologist, and every pathologist <u>always</u> dictates adrenals. Why would he describe the head? Because there is a head. The President was known to have adrenal disease. It was a very critical part in the whole autopsy protocol.

ROFFMAN: Couldn't that be considered a touchy point?

FILLINGER: Sure, it's a touchy point. It's every bit as touchy as the gunshot wounds.

ROFFMAN: What else is there omitted?

FILLINGER: That's one of the main things. There's not a very good description of the coronary arteries.

ROFFMAN: What would the lack of description of the coronary arteries indicate?

FILLINGER: Sloppy work or doctoring the report, and I think the report has been altered in several cases in several areas.

ROFFMAN: You do think the report has been altered?

FILLINGER: And so does everybody else. So does he. So does anybody-- any pathologist who's examined the autopsy protocol knows that it's been fiddled with and probably by several people.

ROFFMAN: I'm surprised to hear you say that as an expert. I have reason to suspect it, of course--

FILLINGER: Well, it's--Wecht says it in his report, too. Everybody's picked it up right away because everybody was looking for it, and everbody wondered why it went through the President's physician and then came out apparently changed. That general assumption has been played with by more than one person.

ROFFMAN: Suppose Humes was ordered by his superior officer not to include that in the final draft?

FILLINGER: That's quite possible. Suppose he was ordered by his superior officer not to include or to include certain other things which might or might not fit the theory that was propounded by the government?

ROFFMAN: I can tell you--it's partially condifentail--but Colonel Finck has admitted that they were ordered to insert the owrd "presumably" in the autopsy report in reference to the wounds. What does this do to their report?

FILLINGER: I think it encourages them to be a little more cautious in their pronouncements because of their lack of experience. Was Colonel Finck' very cooperative?

ROFFMAN: How do you mean?

FILLINGER: Did he answer all your questions?

ROFFMAN; Oh, I haven't talked to Colonel Finck.

FILLINGER: Oh, why don't you go down and talk to him?

ROFFMAN: Would he talk to me?

FILLINGER: I don't know. You can call him and ask him. He's not a hard guy to talk to.

ROFFMAN: I would like to.

FILLINGER: Yeah. He's down in Washington or was a few months ago when I saw him last. Sure. Go down and talk to him or talk to his superiors.

ROFFMNA: I f I can't, I know someone who would.

FILLINGER: I don't know how much he'll tell you because, of course, he's still in the military, and, of course, he's been sworn. He can't reveal certain items.

ROFFMAN: Well, Colonel Finck testified in the New Orleans trial of Clay Shaw, and his testimony was very guarded. He would only say certain things, and some of the things he did say certainly lead me to be very suspicous, even more suspicious than I was before.

FILLINGER: Suspicous of what?

ROFFMAN: The autppsy proceedings and the autopsy report and the integrity of the entire thing.

FILLINGER: Well, everybody has known this. It's not really a big secret. Anybody who;s done any studying of thw whole repott things the whole thing is a big ha-ha.

ROFFMAN: A big what?

FILLINGER: A big ha-ha.

ROFFMAN: If you talk to Arlen Specter, you'd get the opposite impression.

FILLINGER: Well, naturally, becuase he's the guy that put it together, and who wants to see their own cake smashed? And he was given an order, and you have to realize one thing too: out of all those people on the Warren Commission and all the people who were involved in this whole investigation, only one guy did the work. That was Specter. He did the whole damned thing from top

to bottom. He's naturally been friven right out of his skull. He had certain guidelines he had to follow, and he put the whole thing together. When there were ixteen, ixteen lawyers of all kinds of fame, and he at that time was an unknown young guy, and all the famous ones reniged and didn't contribute at all, and this whole God-damned report from top to bottom was put together by him. He did all the interrogating, all the questioning, the assembling of all the facts.

ROFFMAN: You mean in this area of--

FILLINGER: In the whole thing. Not only the medical--the medical thing is just a small facet of the whole operation.

ROFFMAN: Well, Specter didn't question every witness.

FILLINGER: Most of them he did. When you go through the Report, if you'll check the question and answer slots, you'll find that he did most of the questioning of witnesses. Oswald's widow.

ROFFMAN: Well she was also examined by Assistant [redacted] Council Rankin.

FILLINGER: Right. A few others came in. Some of the members of the board asked her a few questions. She got off very lightly. Very interestinly, no one in the whole investigation was ever interviewed by a psychiatrist. They didn't find out anything about his behavior [redacted] patterns.

ROFFMAN: Who, Oswald's?

FILLINGER: Yes.

ROFFMAN: Do you have any views on Oswald's innocence or guilt?

FILLINGER: No.

ROFFMAN: Have you read any material pertinant to this that wasn't--apart from the Warren Report, let's say the works of some of the critics, notably Harold Weisberg?

FILLINGER: I've read several books that were put out. I don't know if anybody has any more or less to say--a whole lot of interesting little facets, you know, the chain of death that's followed the case and so on, but I don't draw any conclusions except it's very interesting.

ROFFMAN: Would you say then from all this, especially what you know, that we should rely on what the official autopsy report says?

FILLINGER: No.

ROFFMAN: That there is considerable room for doubt?

FILLINGER: I think there is. I don't doubt--from the facts presented, they're all consistant with what is put forward as a theory. But knowing that some of it's been [redacted] fiddled with, then the whole thing becomes suspect. If you tell one lie, it makes you a liar no matter whatever else you [redacted] may say, and they have changed it to a little bit, and I don't know what else they changed. There really isn't any reason to change anything.

ROFFMAN: Is this a common thing in the military?

FILLINGER: I've only had 13 years service. I don't know. The military thinks and works different than anyone else. They have their own ends to meet, and most civilians have no way of appreciating this. The military has a prime, major mission, and they're sworn to accomplish that mission. [redacted] Sometimes, accomplishing this mission is a very difficult thing for a civilian mind to comprehend, and if they say that you are to take that hill, and civilians don't want to go--they know they're all going to get killed, and they want to run it democratically and say "Who's going to go?" That's not the question. It will be taken, and everybody will give up, and that's it. The overall objective is the overwhelming thing, and this is difficult for a civilian mind to appreciate. They have been given orders by the Vice President or the President to perform the autopsy, I think realizing that nobody was really in command at that [redacted] time.

(two hour break)

ROFFMAN: I asked you if it was possible that the slits in the front of the President's collar were cut in the efforts to cut his tie.

FILLINGER: Yes: I think it's possible.

ROFFMAN: Could that happen without cutting his neck?

FILLINGER: (nod yes.)

ROFFMAN: Now, if there was a bullet wound to the front of the neck and it was incised in a tracheotomy. Now Perry has told interviewers that he makes a transverse trachetoomy incision for cosmetic purposes, and he did it unthinkingly with the President. A very clean transverse incision about 7cm. long through this wound, and Humes and Finck said that they couldn't see the wound on this. Now, what the Panel writes is--

FILLINGER: Which [illegible] panel is this now?

ROFFMAN: The Clark Panel, with Fisher on it. They say "At the cite of and above the tracheotomy incision in the front of the neck there can be identified the upper half of the circumference of circular cutaneous wound the appearance of which is characteristic of that of the exit of a bullet."

FILLINGER: That's a very, very bold statement. I wouldn't say characteristic. I [illegible] might say consistant with, but they're already reading something subjectively into it [illegible] that may or may not have really been.

ROFFMAN: They are saying that the wound was visible unless you challange what they are saying. Another doctor at Parkland also testified that, after the operation was over, that he could see the wound there except that it was a little larger [illegible] than what the others had described probably because it expanded when the tention was released. Do you think it's conceivable though that these people would have missed it?

FILLINGER: (nod yes);

ROFFMAN: Suppose there was a ring of abrasion around it?

FILLINGER: I'm sure none of them really knew what to look for. I mean, I could interview every doctor in the city of Philadelphia, and you [illegible] won't find 10 who know what an abrasion ring is.

ROFFMAN: Really? Younalso mentioned that the professional people [illegible] really think there's no question about the fact that the autopsy report isn't a thorough one, and that [illegible] the people weren't qualified. Do you want to make some kind of statement for that?

FILLINGER: Well, this appears in all the journals. It's appeared in the Academy of Forensic Sciences, and it's been pretty well discussed pro and con that the autopsy report is not a good forensic autopsy. It's incomplete. While the observations in it are fairly good, nobody really knows what they are seeing. Their descriptive terms are not forensically descriptive terms generally, and the fact that wounds weren't idssected, a very glaring example of it being a less than desirable, less than adequate [illegible] autopsy report. Anyone who is proported to be an expert and who turns out a [illegible] less than expert piece of work is bound to have his reputation somewhat discredited.

ROFFMAN: What did you say was Colonel Finck's reaction to allthis when he's confronted with it?

FILLINGER: Well, he's-- I don't know what his personal reaction would be because I haven't observed him at that--but I know that he is certainly very disturbed, and I don't know how he rationalizes around it. He's in the horns of a dolemma. On one hand he is in there as an expert, and on the other hand he's stuck with what he did.

ROFFMAN: You had mentioned to me before something about--you saying that you couldn't tell me all the materials that you had examined. Were these made available to you by the General Services Administration?

FILLINGER: No.

ROFFMAN: It was on a personal basis?

FILLINGER: (nod yes).

ROFFMAN: Do you know if there are any other autopsy notes in existance?
FILLINGER: As of now?
ROFFMAN: Yes.
FILLINGER: I don't know.
ROFFMAN: But you can't comment on the material that was shown to you?
FILLINGER: No.
ROFFMAN: Can you tell me who showed it to you?
FILLINGER: No.

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ROFFMAN: I think the thing that confuses me the most now is the business with the head wounds--with that one exit wound.

FILLINGER: It's like an awful lot of cases that I dig up around here or that I see dug up. Once it's been goofed up, you can't put Humpty-Dumpty back together again, and once the wounds are disturbed, you can't restore them and make them look like they did before.

ROFFMAN: That's another thing, incidently. Colonel Finck didn't arrive at the autopsy unitl after the brain was removed.

FILLINGER: That puts him, of course, at a decided disadvantage.

ROFFMAN: What could he tell about the head wound?

FILLINGER: Very little, if anything.

ROFFMAN: It's very--I think, of course you may disagree with me, and this is a matter of photographic interpretation, but I think the fim brings up the possibility that he was -- since he could have been thrown backwards, that he was struck by another bullet, and I'm sure, especially with the type of head wound that he received, that was on his head, that it would take a very, an extremely qualified man to evaluate the wounds that were present there, and Finck, the only person with even near the competance to evaluate these, didn't see it until after the brain was removed, and the xx scalp peeled back, and the bone chipped away.

FILLINGER: Sure. As a matter of fact, it's no secret at all that following the Kennedy autopsy, Colonel Finck was sent MX to Vietnam and was stationed there for over a year, and his job was to analyzw gunshot wounds. So after the horse is stolen, the barn gets locked, which kind of put him in a bad spot. It's sort of like sending him to college after you've lost your first patient.

I don't know where you're going to go with all your material. I think it's an interesting exercise, and some aspects of it are very fascinating, but you're stuck with a solution that you're not going to be able to find because the pieces are lost. It's like trying to put together a jigsaw puzzle, and all the parts aren't there.

ROFFMAN: Suppose you were--suppose all the autopsy material was to be made available to you, photos, X-rays?

FILLINGER: I don't think it would still give you the answer because those who are observing it aren't accurately recording it, and they don't know what they're saying. They're children speaking a foreign language.

ROFFMAN: I mean if you actually saw the photographs and X-rays?

FILLINGER: Oh, I would have to see the body first. That's the thing that makes the difference. X-rays and photographs, you know--you could sit there and look at photographs with me all day long,and I can show MX you some you'd think were exit wounds, and they're entrance wounds and vice-versa because photographs are just a small piece of the action, and a wound may have all the classic characteristics MX of an entrance wound, and you'd just swear it was an entrance wound but when you dissect the body and examine it, you find that it isn't at all. Or if you roll him over, what looked like a beautiful entrance wound on one side is surpassed by an even better entrance wound on the other side, and there's

a tract between the two, then you have your choice. When you say to the cops, "What ~~XX~~ happened to this guy? Oh, he was sitting and was shot right throuhg the chair , and we got the path of the bullet that's still sticking in the wall." ~~XXX~~ And you know where you are. You ~~XXX~~ can say "Gee, I thought for sure that' one on the chest was an entrance wound, and it looks just so beautifully like one," and it turns out ~~XX~~ that it isn't at all. And the more times you get ~~XX~~ tripped up, the more conservative you are about what you see and what you say.

I think that all the stuff that's been hashed over the whole thing, the big fallicy and the reason why it's never going to go any farther is the material that is now available, either unofficially and secretly or openly, is still not sufficient to draw a proper conclusion. If the whole case could be observed minutely and re-done from start to finish, it would still be a very complex case. There's no getting around it. If everything was optimum, it would be very complex because of the multiplicity of injuries and persons and the moving of all these peop'e at the same time. It's not a, you know, Bessy and Joe type shooting at all, and it's a very complex one. If everything were known, it would be a puzzler even for experts, and the fact that there's an awful lot that isn't known or is improperly documented just throws the whole thing,and you just might as well say, "Whew." You really find yourself just sort of academically grinding yourself into a mortar and pestel type situation where you're not really getting anywhere because you're--I think it's a frustrating thing to go into because you're continually bumping up against and encountering incomplete and inaccurate things. There's no way of straightening them out. And so, given faulty materials, your conclusions can't be really concrete, and without concrete conlusions, you know, you're just flexing your muscles, but you're not punching anybody.

END OF INTERVIEW