

Sir, will you stand and raise your right hand to be sworn.

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

Mr. GRODEN. I do.

Chairman STOKES. Thank you. You may be seated.

TESTIMONY OF ROBERT GRODEN

Chairman STOKES. The Chair recognizes Mr. Mickey Goldsmith, counsel for the committee.

Mr. GOLDSMITH. Mr. Groden, would you please state your name and occupation for the record?

Mr. GRODEN. Robert Groden, photo-optics technician.

Mr. GOLDSMITH. Mr. Groden, would you move the mike closer to you. Thank you.

Now, Mr. Groden, in your capacity as a consultant to this committee, what has been your major responsibility?

Mr. GRODEN. My major responsibility was to present to the committee those issues dealing with photographic evidence that it was felt could be scientifically addressed, perhaps improved upon as the knowledge of the critics has lasted through these years and perhaps give new information relating to those particular photographs and films.

Mr. GOLDSMITH. Mr. Groden, to what extent, if any, has the information you have been giving to this committee been limited to those issues that you personally thought to have merit?

Mr. GRODEN. No, all of the issues to which I felt there was merit, I was given freedom to address, but also, additional issues which, perhaps, were not of my belief but certainly were raised by credible critics as well.

Mr. GOLDSMITH. So basically, then, you saw your responsibilities as a consultant to advise the committee generally, and not just with regard to those issues with which you had worked; is that correct?

Mr. GRODEN. That's correct, sir.

Mr. GOLDSMITH. Have you had an opportunity to express your opinion about these issues to the committee?

Mr. GRODEN. Very freely, yes.

Mr. GOLDSMITH. In what way did you express these opinions, sir?

Mr. GRODEN. I have been invited down to address the scientific panels of the committee, the staff members, the committee itself on at least a dozen or more occasions.

Mr. GOLDSMITH. And specifically, have you had contact with the committee's photography panel and medical panel?

Mr. GRODEN. Yes, I have.

Mr. GOLDSMITH. During the course of your contact with these scientific panels and with the committee staff, have the opinions that you had previously concerning the issues raised by the photographic evidence changed in any manner?

Mr. GRODEN. In various issues, they have changed quite drastically and in others, they have remained unchanged through the entire course.

Mr. GOLDSMITH. Has the committee asked you to present today your opinions about the issues raised by the photographic evidence?

Mr. GRODEN. Yes, they have.

Mr. GOLDSMITH. It is my understanding, Mr. Groden, that the committee has invited you here today to testify about the issues in general without specifically referring to your own personal opinion; is that correct?

Mr. GRODEN. That is correct.

Mr. GOLDSMITH. So, to emphasize that point for purposes of clarification, you will be testifying about the issues generally as they existed prior to the formation of this committee?

Mr. GRODEN. That is true. Any change of opinion that I have will not be reflected at this time.

Mr. GOLDSMITH. Mr. Groden, what general types of issues raised by the photographic evidence have been presented to the committee's scientific panels?

Mr. GRODEN. Again, the issues that were presented by myself to the panels were those which I felt could be addressed scientifically that perhaps further enhancement or research or anything of that nature might be able to give us a broader view or a more realistic view other than the limited resources we had at the time.

Mr. GOLDSMITH. Have you had occasion to discuss with the committee questions concerning the number, timing, and direction of the shots fired at the President?

Mr. GRODEN. Yes, I have.

Mr. GOLDSMITH. Have you also discussed with the committee staff issues raised by the photographic evidence pertaining to crowd photographs?

Mr. GRODEN. I have, as well; yes.

Mr. GOLDSMITH. Have questions pertaining to authentication of photographs been raised with the committee's scientific panels?

Mr. GRODEN. It has been a primary issue, yes.

Mr. GOLDSMITH. Turning now to the first of these areas, specifically the number, timing, and direction of the shots fired at the President, would you please state for the record your knowledge as to the Warren Commission's conclusions concerning the number, timing and direction of the shots?

Mr. GRODEN. The Warren Commission conclusions reflected three shots being fired; the timing being somewhere between 4.8 and 7.9 seconds, depending on which of the three shots missed. They concluded that three were fired, only two hit. If the first and third hit, then the total time-span would have been approximately 5.6 seconds. If either the first or the third missed, then the time would be conceivably greater, as long as perhaps 7.9 or greater than that.

Mr. GOLDSMITH. Am I correct in summarizing your testimony to be that the Warren Commission's conclusion was that the timing range of the shots was between 4.8 and 7.9 seconds, depending upon which shot missed?

Mr. GRODEN. Yes, sir; that's true.

Mr. GOLDSMITH. Now, what technical basis did the Warren Commission have for being able to determine the timing of the shots?

Mr. GRODEN. They used the Zapruder film which we are going to see in a little while, as a clock. The film was tested and the camera

was tested, and it was found it ran at an average running speed of 18.3 frames per second. Assuming that all of the shots came from behind, as the Commission did, and using this as a clock, it was determined this was the most accurate way to reconstruct the assassination.

Mr. GOLDSMITH. Fine. Now, you have indicated that the Warren Commission was unable to determine exactly the timing sequence of the shots and that was because the Warren Commission was unable to conclude which shot actually missed. In the Zapruder film itself, what is the time that elapses from the moment the President is first showing a reaction until the head shot?

Mr. GRODEN. The first noticeable reaction on the film occurs at the first frame where he reappears from behind the road sign which is Zapruder frame number 225. The head shot occurs at 313. The difference between the two frames would give the time-span of which the Warren Commission claimed it happened, which would be, indeed, 5.6 seconds.

Mr. GOLDSMITH. It is on that basis that the Warren Commission said that if either the first shot or the third shot missed, you would add approximately 2.3 seconds to the overall range; is that correct?

Mr. GRODEN. This is correct, because the mechanical minimum operating time for the rifle alleged to be used during the assassination was an absolute minimum of 2.3 seconds to fire a shot, cycle the rifle, that is pull back the bolt, automatically reinserting another bullet, closing the bolt and pulling the trigger again, without taking aim or anything else, the minimum firing time of 2.3 seconds, that's how they arrived at that figure.

Mr. GOLDSMITH. Fine. Now, Mr. Groden, what wounds, to your knowledge, did the Warren Commission attribute to the two bullets that hit the occupants of the limousine?

Mr. GRODEN. The second of the two bullets, which it was felt hit occupants of the limousine, was, of course, the fatal moment when the President's head explodes. The earlier shot striking anyone in the car, according to the Commission, first hit the President in the back passing through his body, exiting from his chest or the lower part of his neck.

The bullet then went on to hit Governor Connally in the right shoulder, exiting the right side of his chest, entering and exiting his right wrist and eventually burying itself in his left thigh.

Mr. GOLDSMITH. Is this the bullet that has become the source of what has been referred to as the "single bullet theory?"

Mr. GRODEN. Yes; indeed, it has.

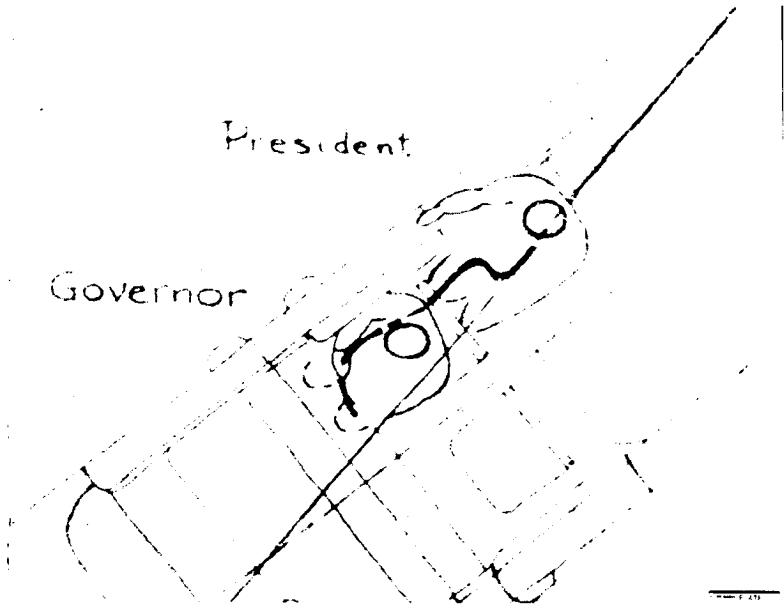
Mr. GOLDSMITH. In other words, one bullet passing through both the President and Governor Connally?

Mr. GRODEN. That is correct.

Mr. GOLDSMITH. Mr. Chairman, at this time, I would like to refer to JFK exhibit F-273. It has been marked as an exhibit and I would like to have it offered into the record.

Chairman STOKES. Without objection, it will be entered into the record at this point.

[The above referred to exhibit follows:]



JFK EXHIBIT F-273

Mr. GOLDSMITH. Prior to proceeding, Mr. Chairman, I would like to indicate for the record that the young lady sitting to Mr. Groden's left is Mrs. Chris Groden.

Chairman STOKES. The record may so show.

Mr. GOLDSMITH. Mr. Groden, examining exhibit F-273, would you please identify that for the record?

Mr. GRODEN. This is a chart depicting the relative positions of the two men, Governor Connally and President Kennedy at approximately the time where the Warren Commission established, in all probability, the first bullet struck.

It was drawn by a Warren Commission critic. And to the best of my knowledge, it is quite accurate.

Mr. GOLDSMITH. That chart, then, is based upon photographic evidence?

Mr. GRODEN. Indeed, it is. The Zapruder film, basically, except for the moment behind the road sign, showed the position of the two men through the entire shooting sequence.

Mr. GOLDSMITH. What was the Warren Commission's conclusion as to the time the first bullet struck President Kennedy?

Mr. GRODEN. They concluded, because of a large tree, a live oak tree growing between the window Oswald was alleged to have fired from and the point the President was in the car during the motorcade route, that no shot would have been fired before frame 210 because the view is obstructed by the tree. It can be seen very clearly from the Zapruder film that by the time the President re-emerges behind the sign at 224 to 225, that indeed he has already been hit and he is responding to the wound in a clutching motion.

Therefore, they deduced the first bullet hit between frames 210 and 224.

Mr. GOLDSMITH. Mr. Groden, what question about the single bullet theory is raised by this chart?

Mr. GRODEN. The basic problem with what the chart represents is the alinement of the two men, both on a horizontal and a vertical plane. If, indeed, the bullet—I am sorry, did I answer the question?

Mr. GOLDSMITH. That is fine.

Mr. GRODEN. I was going to suggest, the single-bullet theory that one bullet went on through both men would have to follow a flight path from that particular window, if Oswald was the assassin. Therefore, the bullet coming down, hitting the President in the back, exiting his throat, would have to have made some alteration in its flight path in order to hit Governor Connally at the angle in which it did indeed strike him. And it would seem the bullet would have had to make somewhat of a zig-zag type of situation; that is, the bullet going through the President perhaps doing something, illogically as it sounds, stopping in mid-air or being deflected somewhere along its route, hitting Governor Connally, going through his body, making a slight right-hand turn to hit him in the right wrist and then being deflected off the wrist almost 90 degrees to bury itself in his left thigh.

This is the single-bullet theory, not as presented, but at the time the shot was supposed to happen, from that entire sequence from 210 to 224, for that bullet to have done this particular amount of damage, it must have taken a similar flight path to what I just described.

Mr. GOLDSMITH. In summary, then you are suggesting according to this chart, which is based upon photographic evidence, the relative alinement of the two men in the vehicle was not consistent with the flight path of a single bullet?

Mr. GRODEN. It would seem so, yes, sir.

Mr. GOLDSMITH. Going beyond this chart, what questions, if any, about the single-bullet theory have been raised by the Zapruder film?

Mr. GRODEN. Outside of the alinement of the two men, basically, it is the timing of the shots or the reactions of the two men.

As mentioned before, when the President reemerges from behind the road sign, he does show definite signs of responding to a shot. Visually, at least, the Zapruder film shows no such evidence where Governor Connally is concerned.

Mr. GOLDSMITH. Can you explain at this time in what way the single-bullet theory is relevant to the Warren Commission's conclusion that the President was shot by a single gunman?

Mr. GRODEN. Very simply, I would say it is this: If the President were hit between 210 and 224, it was requiring a minimum firing time of 2.3 seconds or I believe it is 43 frames. That is, if the President were hit, let's say, at frame 210, Governor Connally could not have been hit by a separate bullet until 253. Also, if the President were not hit until 224, we would have to add 43 frames to that to the point where Governor Connally would be hit.

However, the Governor shows a very marked reaction by frame 237 to 238, which is only 1.8 seconds away, too soon for another shot to have been fired.

Mr. GOLDSMITH. To clarify your testimony, I believe you said that if the President had been hit by frame 210 and based upon the 18.3 seconds standard, or 18.3 frames per second standard, and the fact that the rifle needed 2.3 seconds to be discharged, according to your testimony, you said the Governor could not have been hit by a separate bullet until frame——

Mr. GRODEN. 253.

Mr. GOLDSMITH. 253. But really, what you meant, I think, is he couldn't have been hit by a separate bullet fired by the same gunman.

Mr. GRODEN. That is correct. I am sorry if I didn't make that clear. Assuming a single gunman using that particular weapon, the one attributed to belong to Lee Harvey Oswald.

Mr. GOLDSMITH. Now we are about to view the Zapruder film. I would like you to explain to the committee whether any special techniques have been applied to this film for the purpose of improving its quality.

Mr. GRODEN. Two techniques have been involved. The first that you will see is merely a straight runthrough of the film. No special techniques have been involved in this except to color-correct it slightly.

Right after that, we will be viewing a special version of the film which has been slowed down and it has been subjected to a technique called rotoscoping. That is, each frame is shot individually, repositioning the men in the car to eliminate the shakiness of the hand-held camera. This is done by using an optical printer, centering the point of interest, in this particular case the President and Governor Connally, so that they fill the frame eliminating all of the excess material on the film so we can simply follow their movements, their reaction times in relationship to each other and to the car and the surrounding scenery.

Mr. GOLDSMITH. As we view this film, what particular points should we be looking for?

Mr. GRODEN. In the first runthrough, we will be getting a logical feeling for the film. It will be going slower than live speed so it is easier for anyone viewing it to, indeed, get the feeling and the visual response that was on the film.

During the second runthrough, we will see various aspects of the film in highlighted detail. What we should be looking for is as the President reemerges from behind the sign, that immediately upon reemergence, his arms go up in a clutching, protective motion toward his throat; not actually grabbing his throat, but much of a defensive-type attitude.

Then, momentarily after that, there is a slight forward motion and push to the President downward and forward and then a few frames after that, we will see Governor Connally's right shoulder buckle sharply, his cheeks will puff out and his hair will become immediately disheveled, all in one frame. I believe we will be showing that twice, one after the other, so that if it goes by too quickly the first time, it will be seen again.

Mr. GOLDSMITH. Fine, now before the film is viewed, Mr. Chairman, I would like to state for the record that this film is copyrighted. The copyright date is 1967 and the owner of the copyright is LMH, Inc. The film has been marked for identification as JFK F-148.

I have also been requested to state that the film does show the head wound to the President very vividly and for this reason, viewing is not advised for persons who will be particularly sensitive to this type of violence.

Can we please show the film at this time.

Mr. GRODEN. May I also, before we do show it, suggest that the TV cameras who will be filming it allow a black border at the bottom because a great deal of the action happens at the extreme bottom of the frame and much of it might be lost.

Mr. GOLDSMITH. Thank you, Mr. Groden.

[Showing of Zapruder film.]

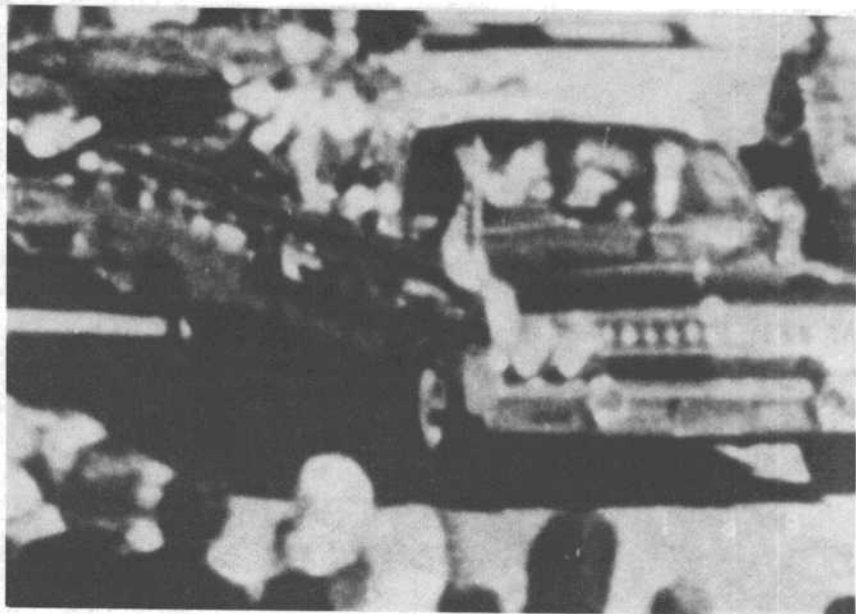
Mr. GOLDSMITH. Lights, please.

Mr. Chairman, may we have JFK exhibits F-209 through F-247, F-249 through F-265, F-272, and F-274, which are enlargements of selected frames of the film just shown, entered into the record?

Mr. PREYER. Without objection, they may be entered.

[The exhibits referred to follow:]

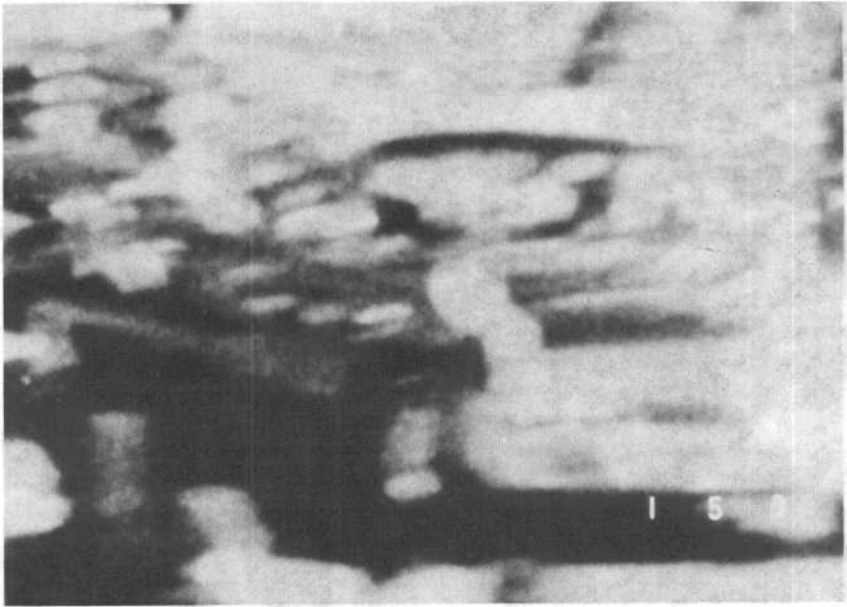
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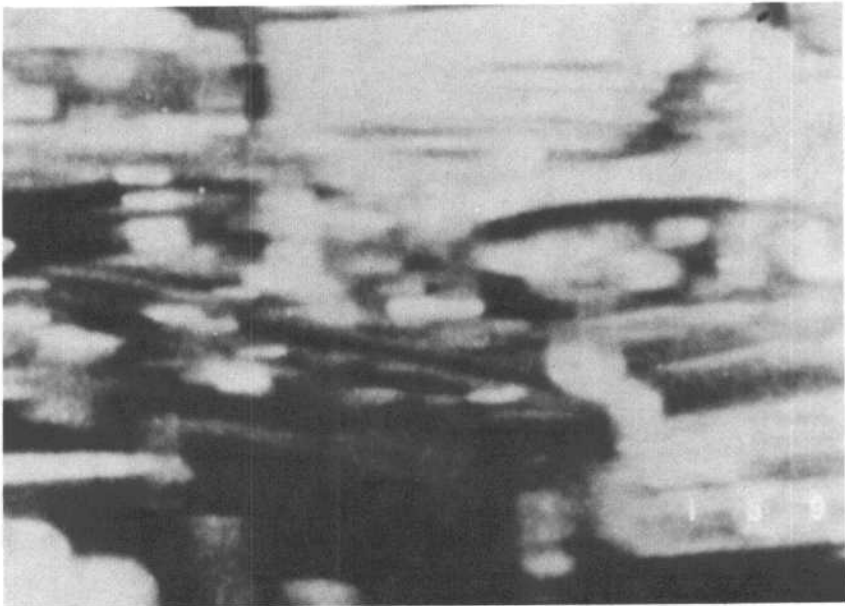
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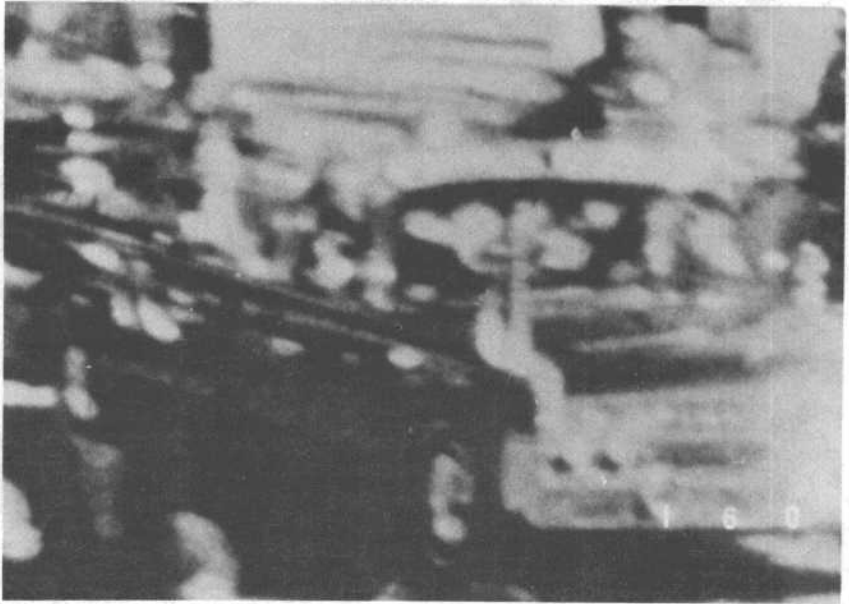
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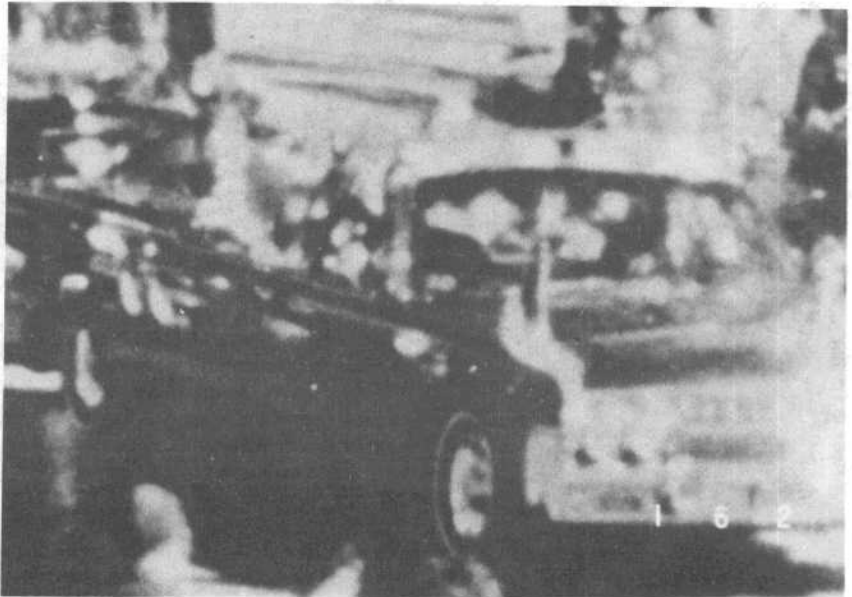
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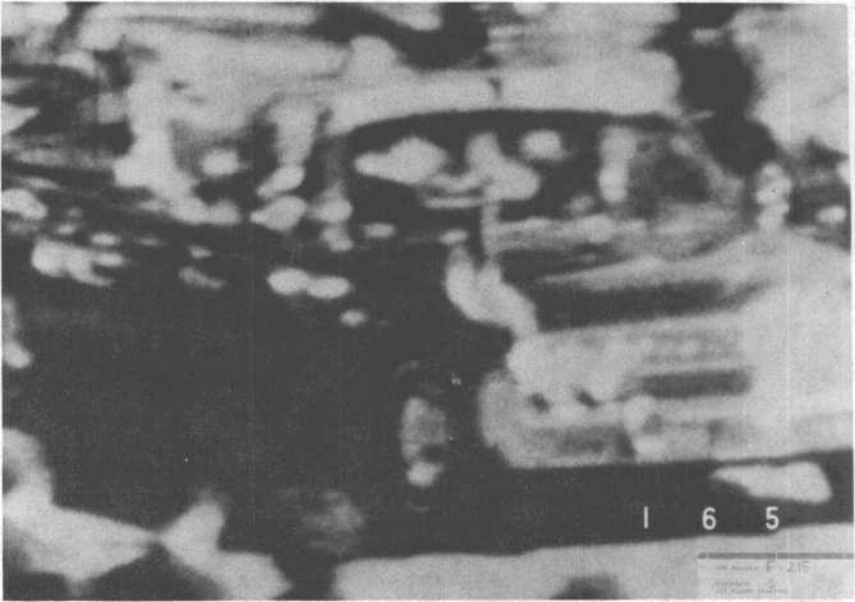
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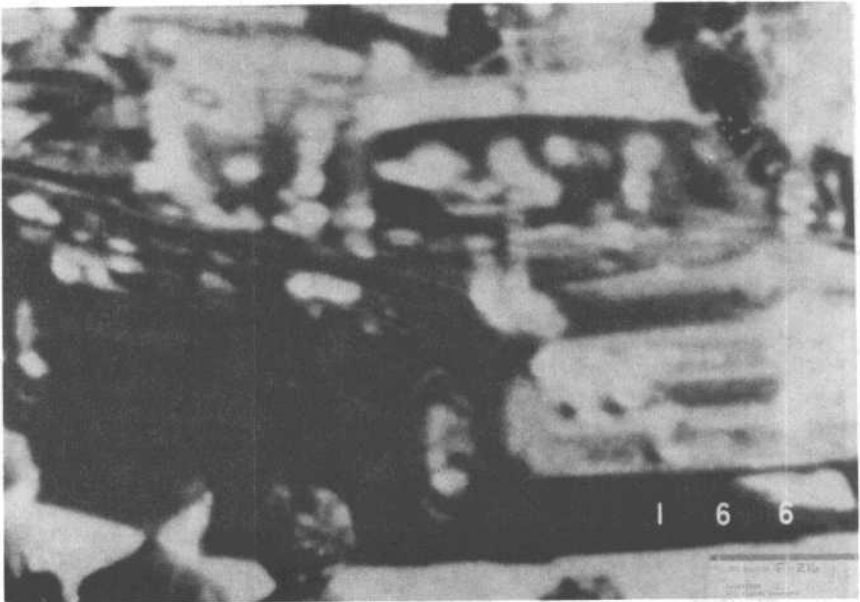
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JFK EXHIBIT F-215



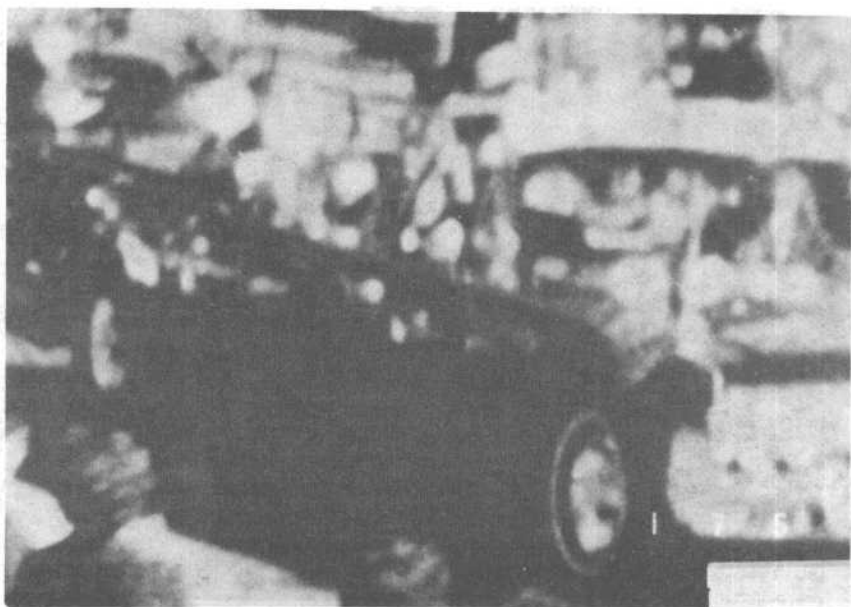
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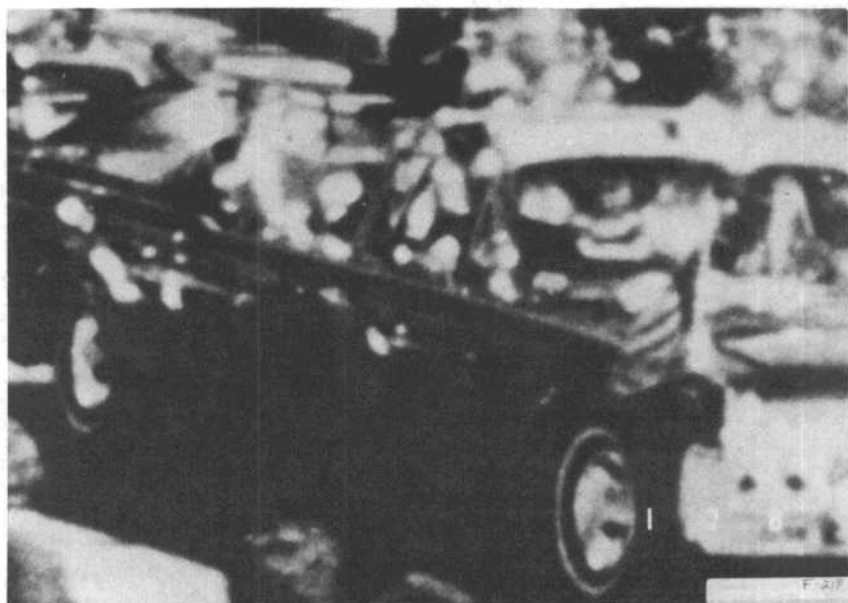
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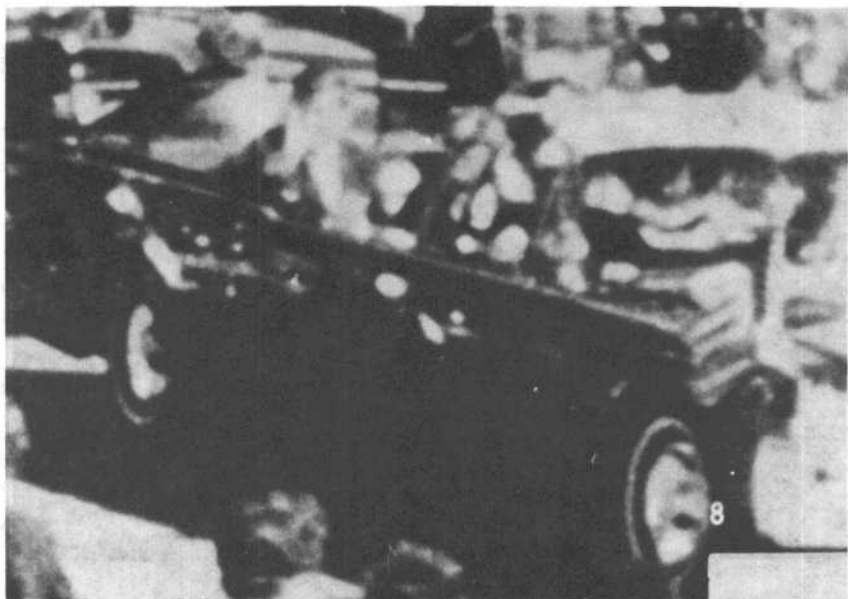
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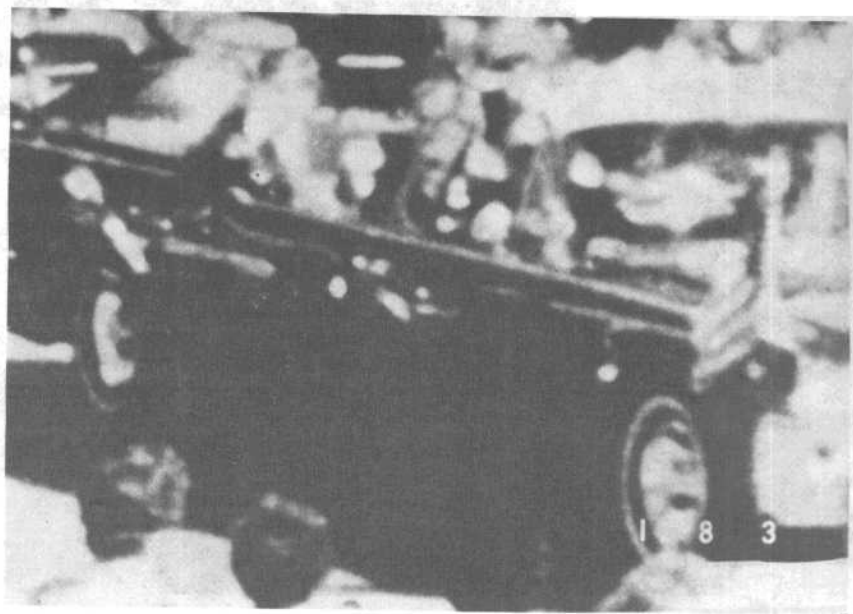
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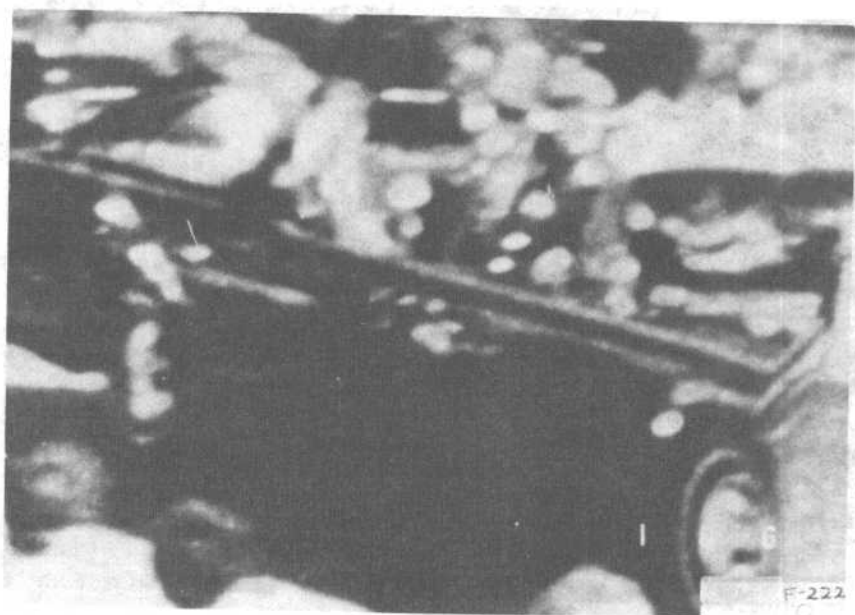
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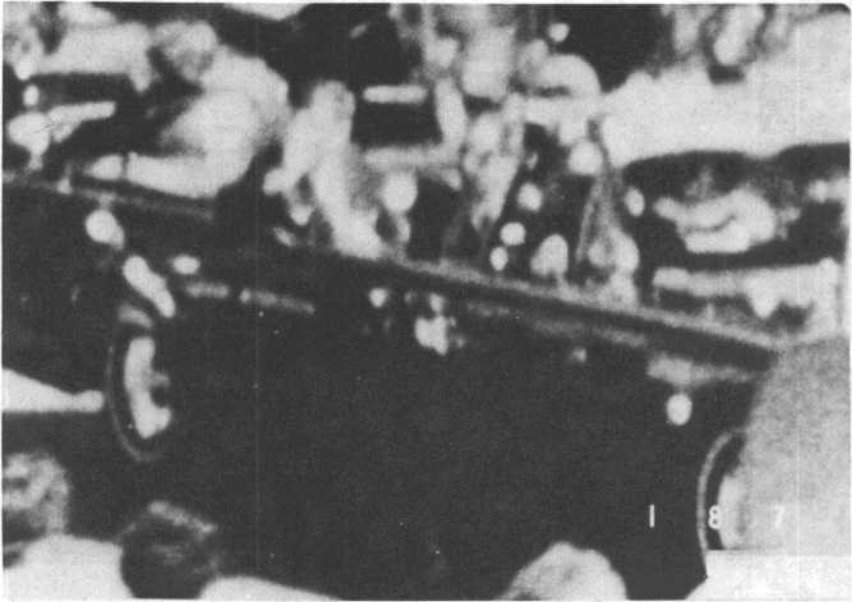
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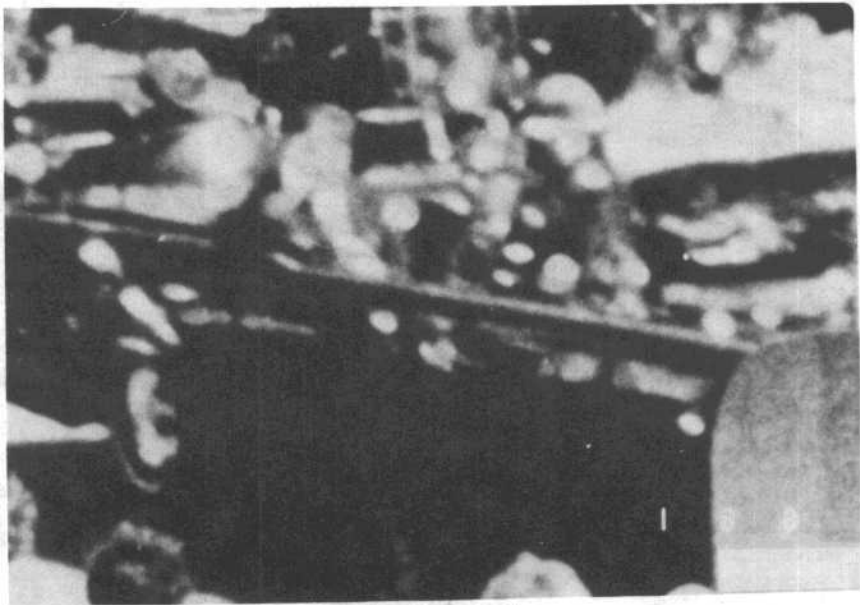
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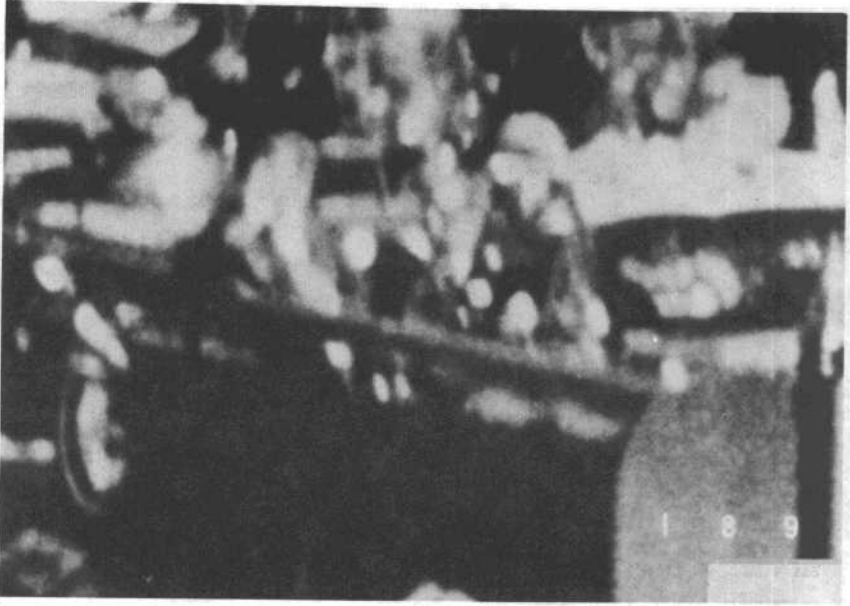
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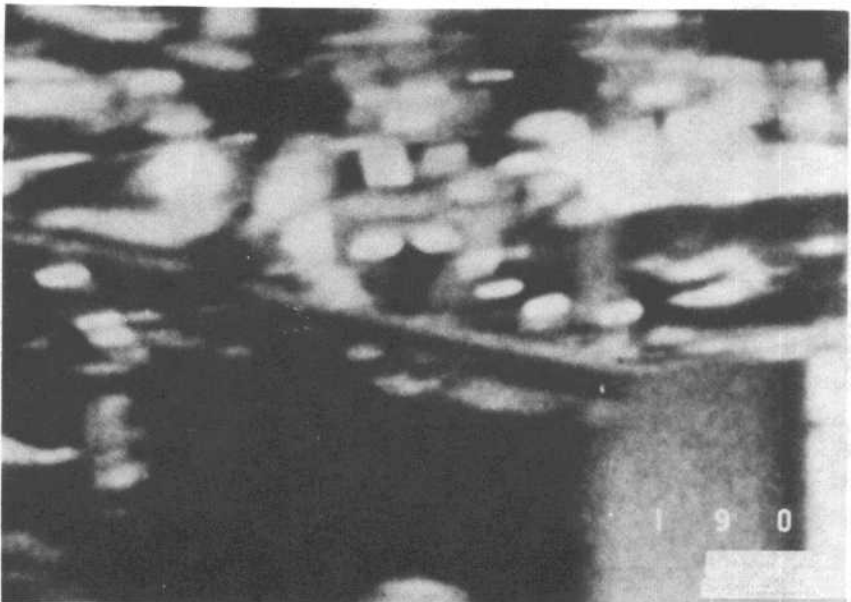
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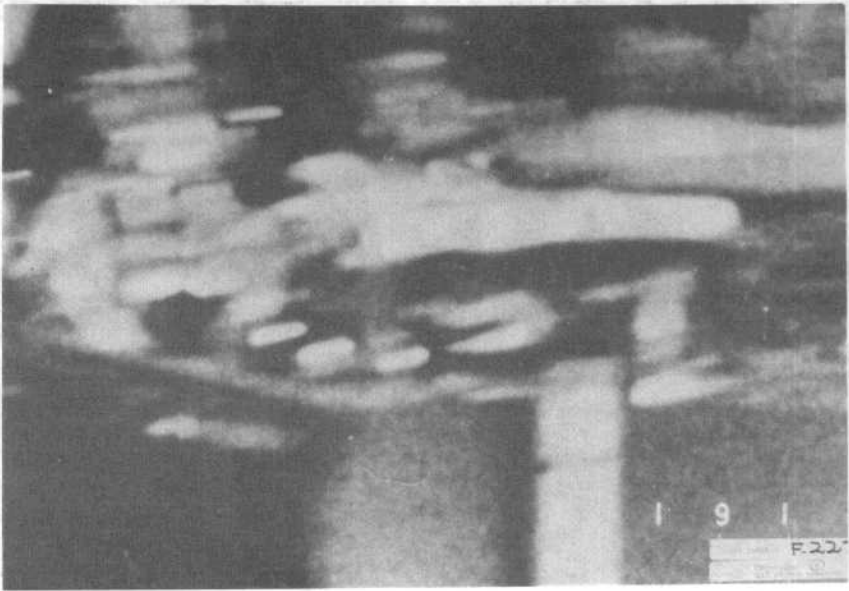
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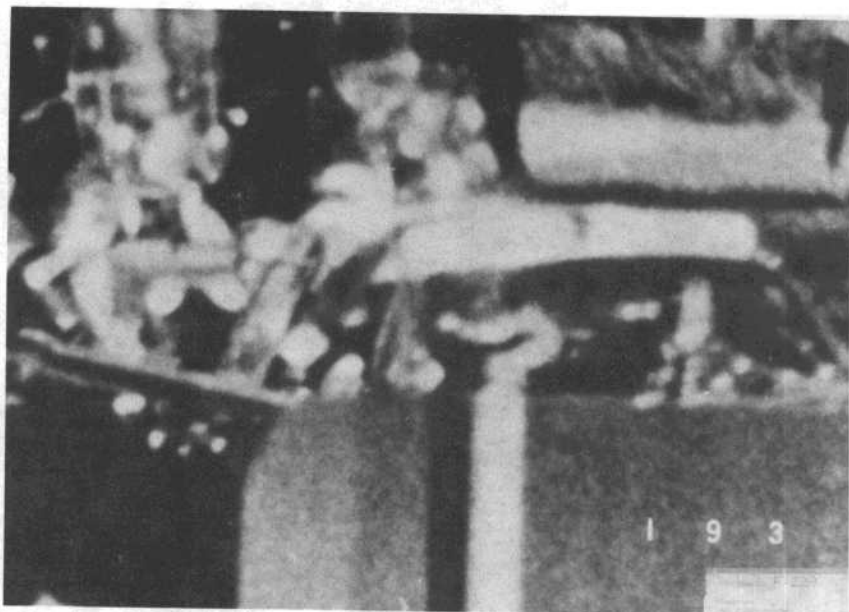
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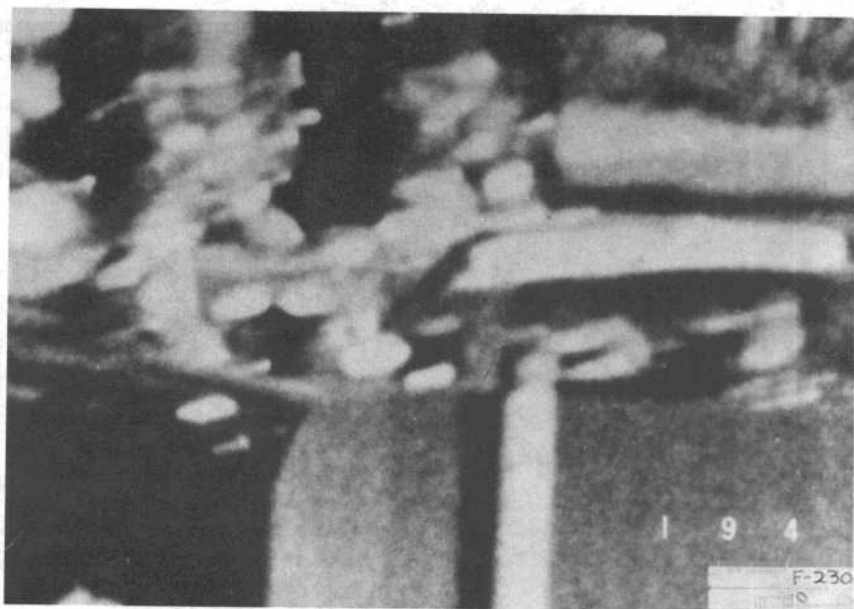
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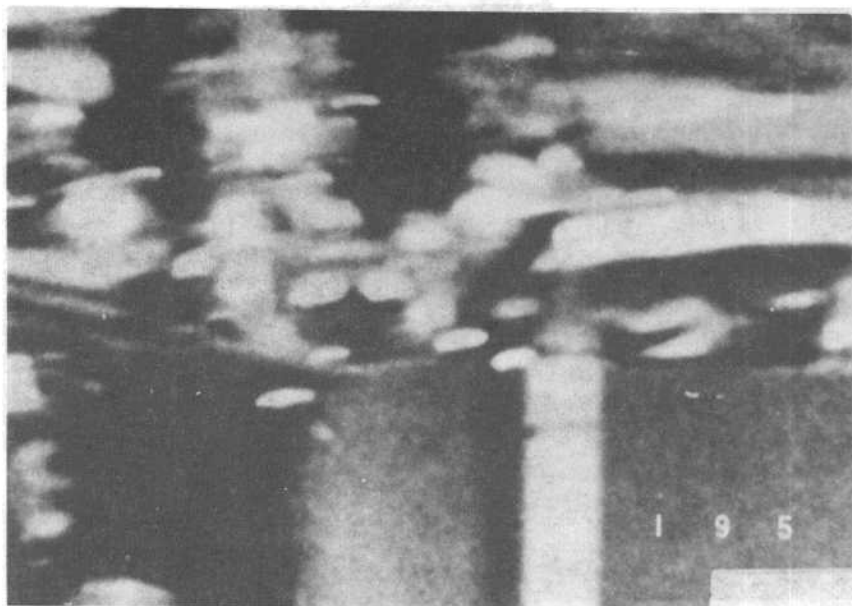
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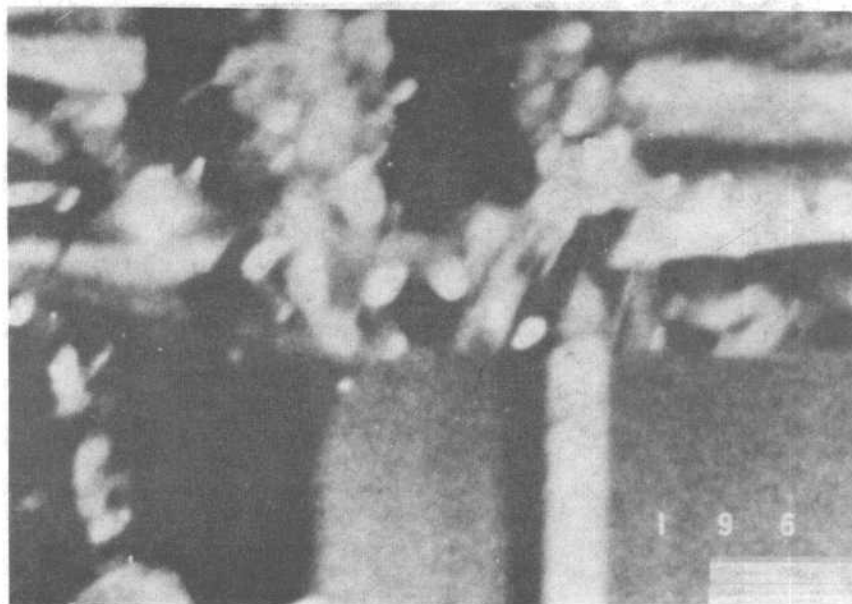
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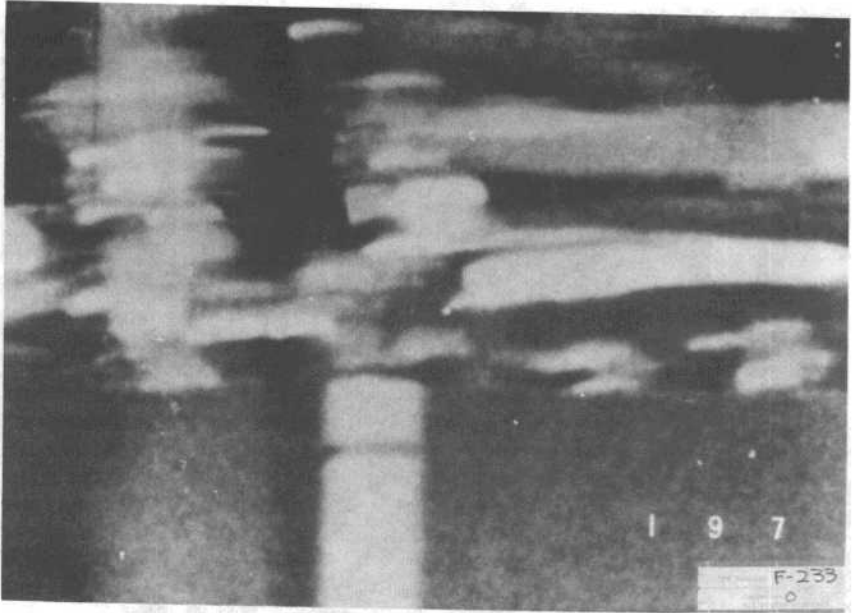
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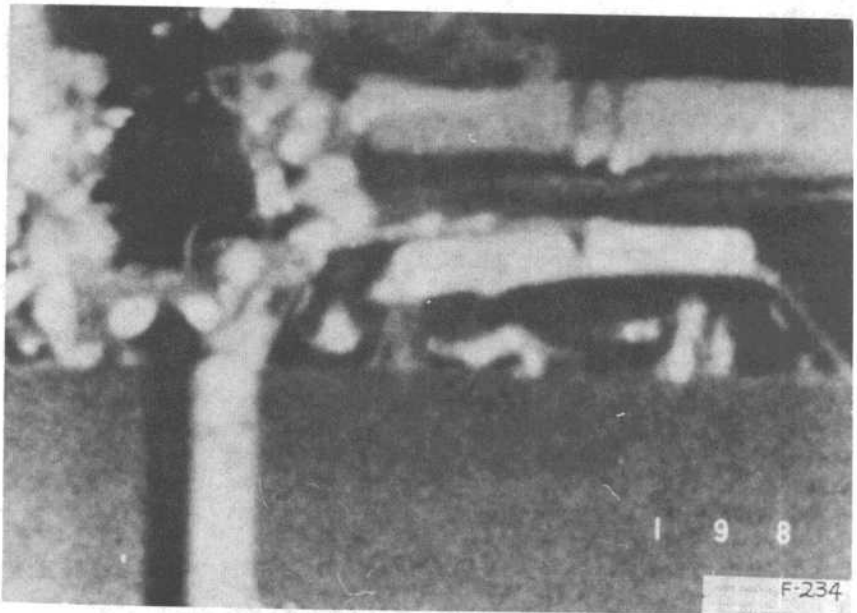
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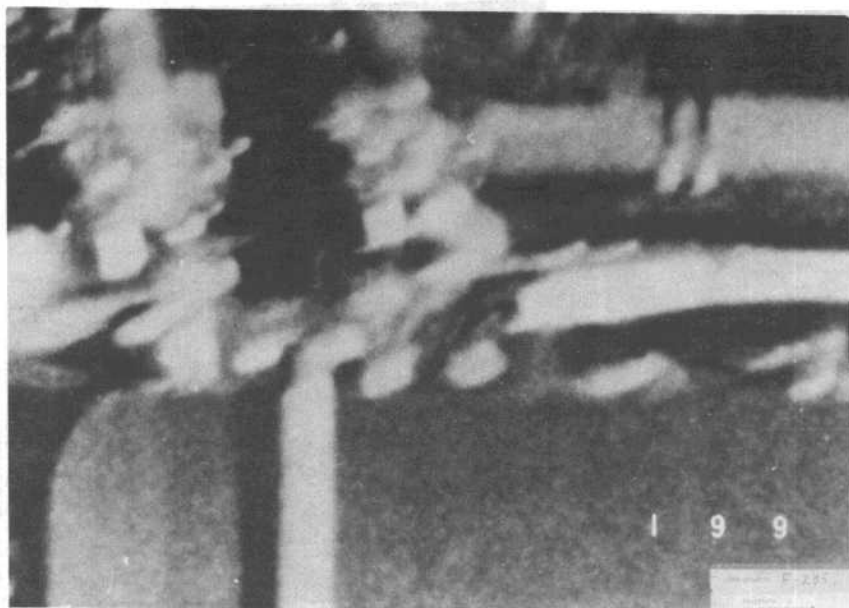
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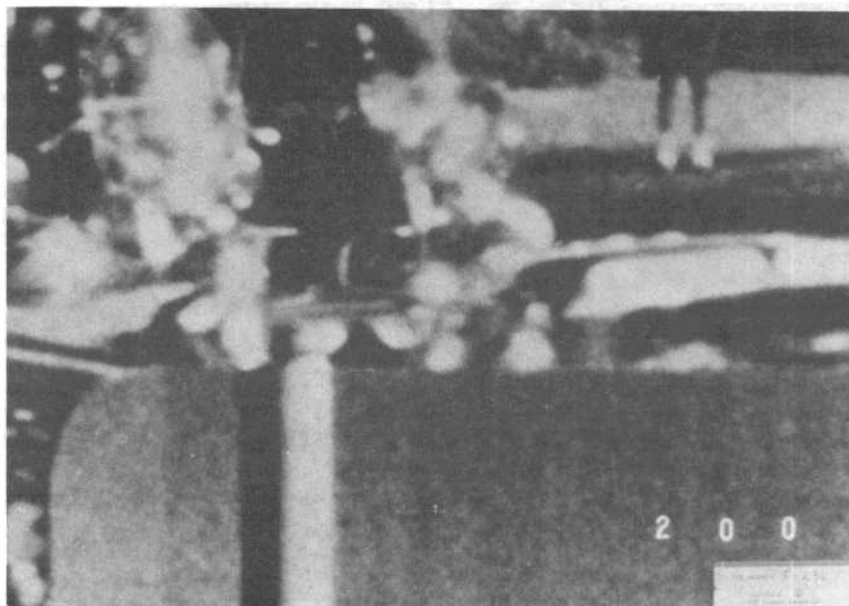
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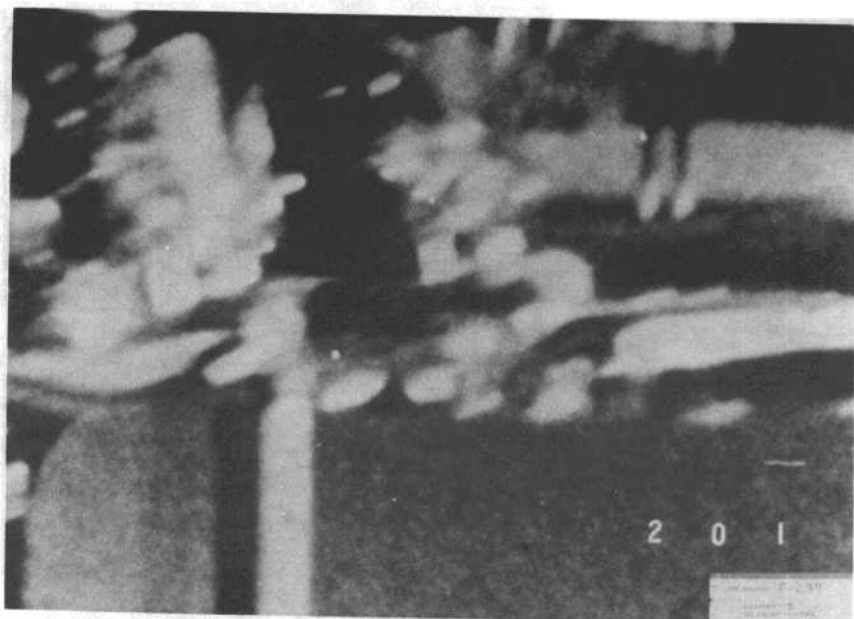
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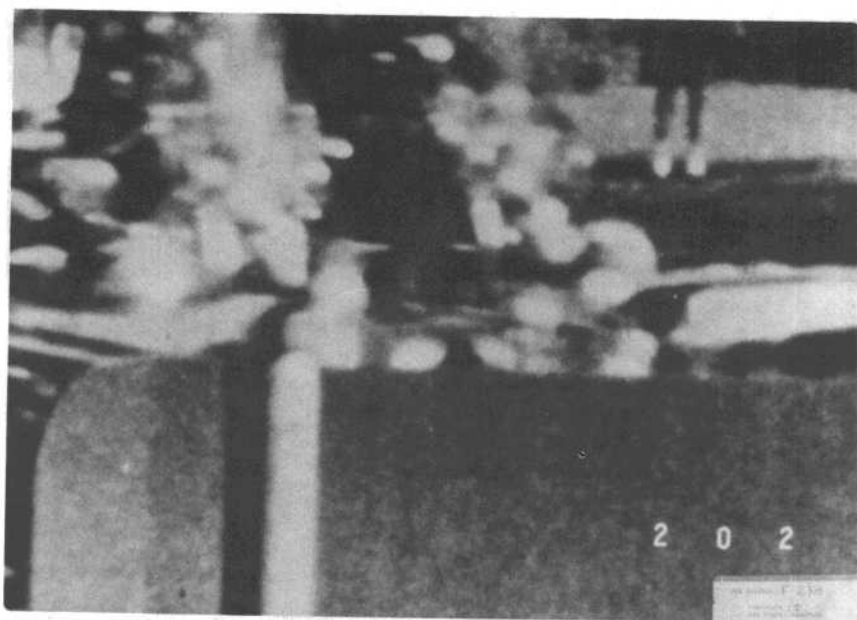
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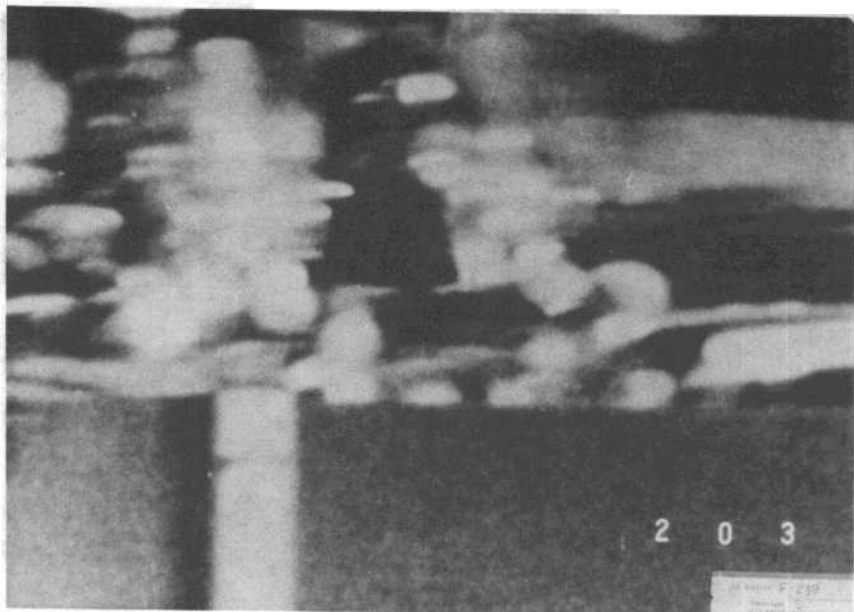
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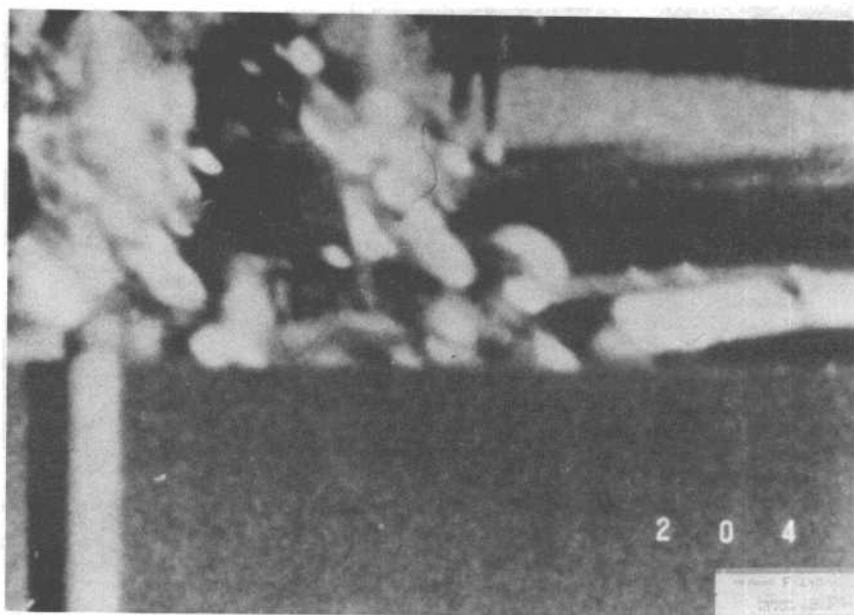
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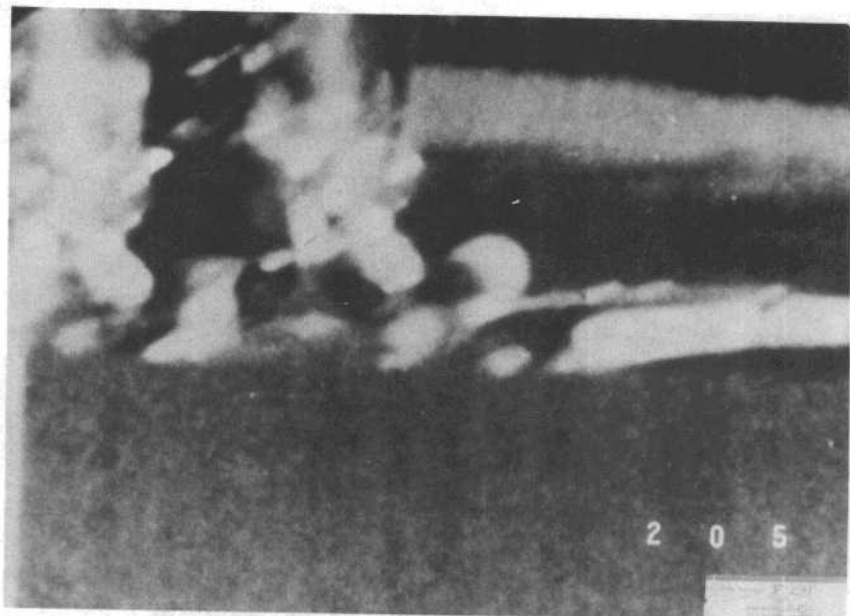
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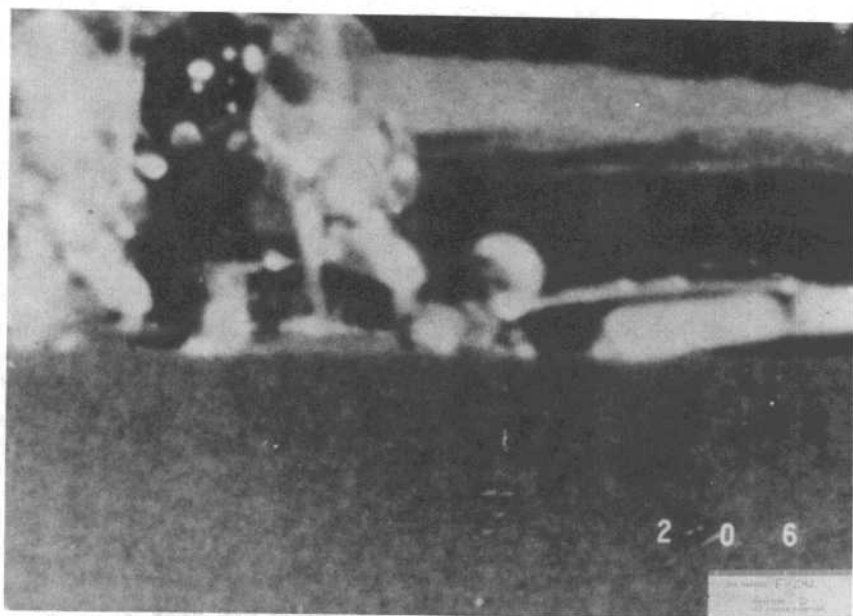
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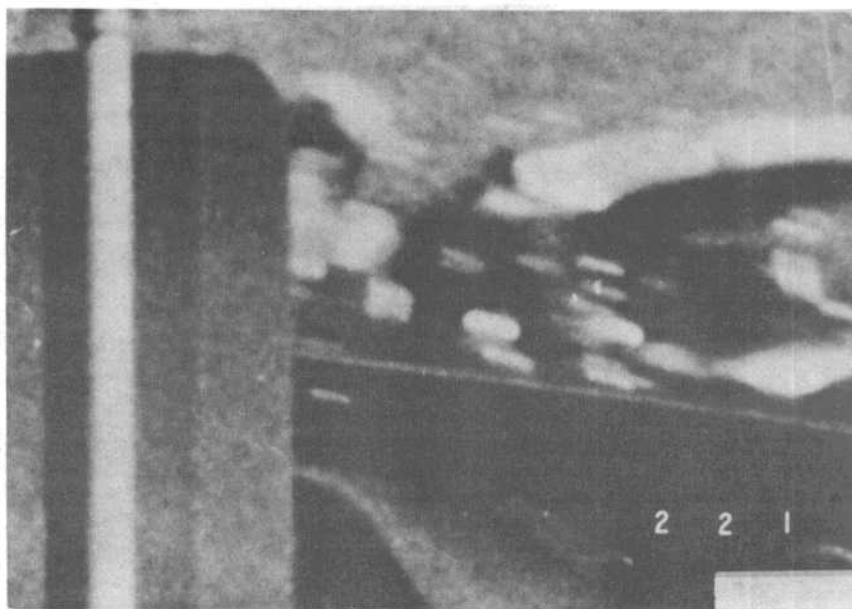
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JFK EXHIBIT F-242



JFK EXHIBIT F-243



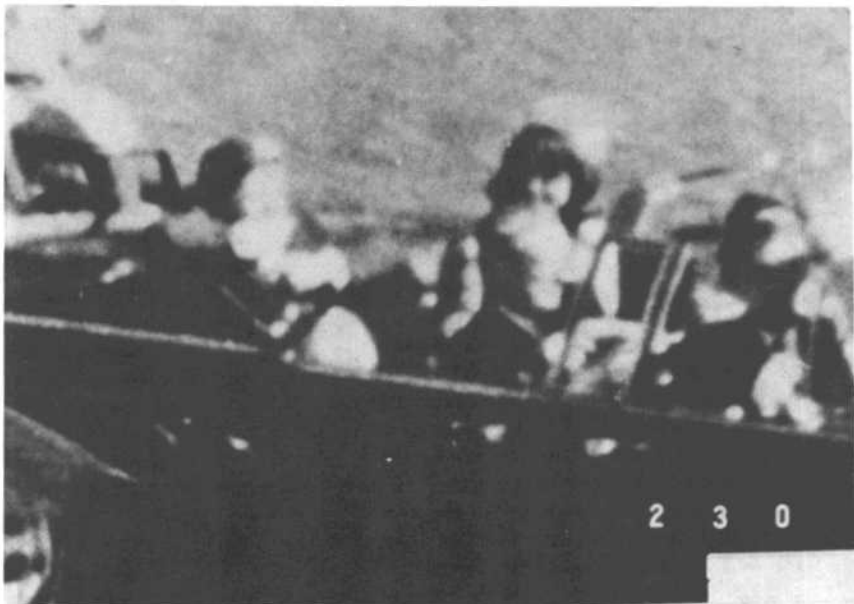
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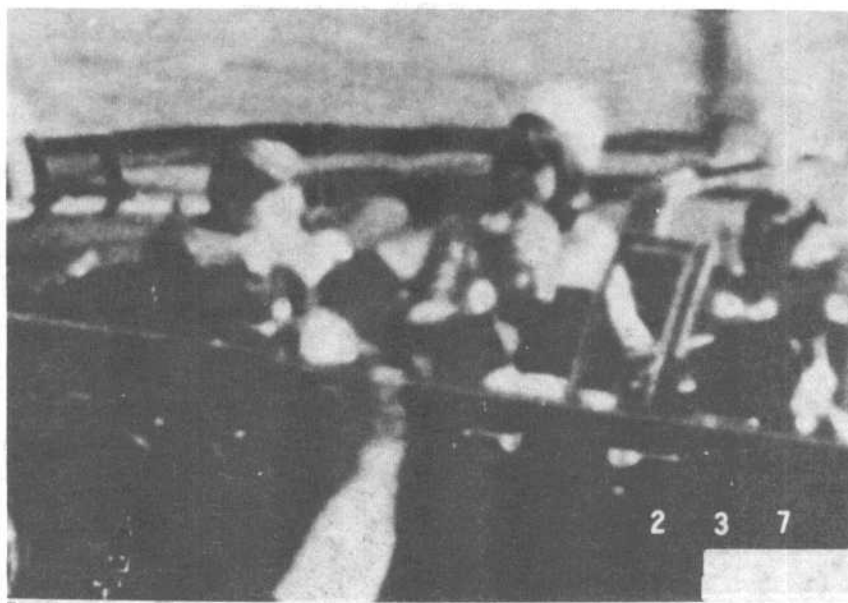
JFK EXHIBIT F-244



JFK EXHIBIT F-245



JFK EXHIBIT F-246



JFK EXHIBIT F-247



JFK EXHIBIT F-249



JFK EXHIBIT F-250



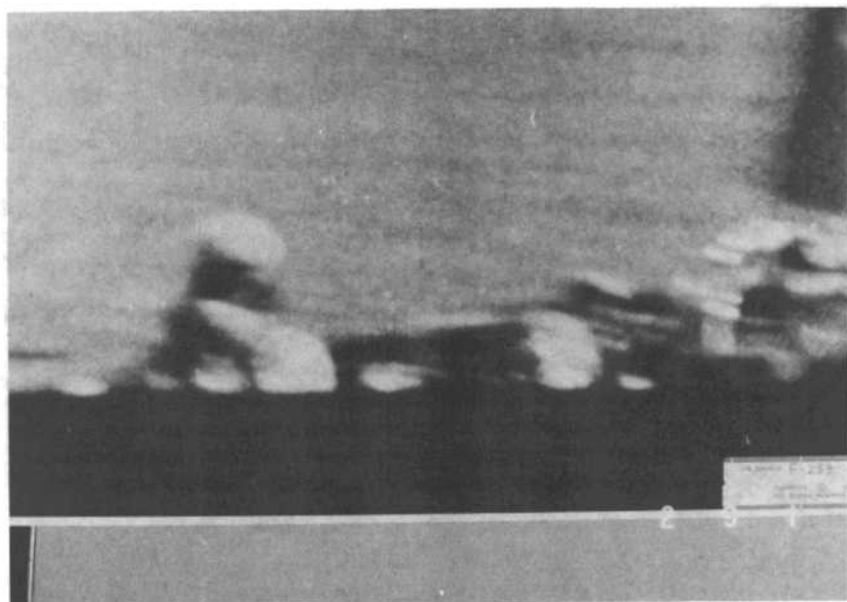
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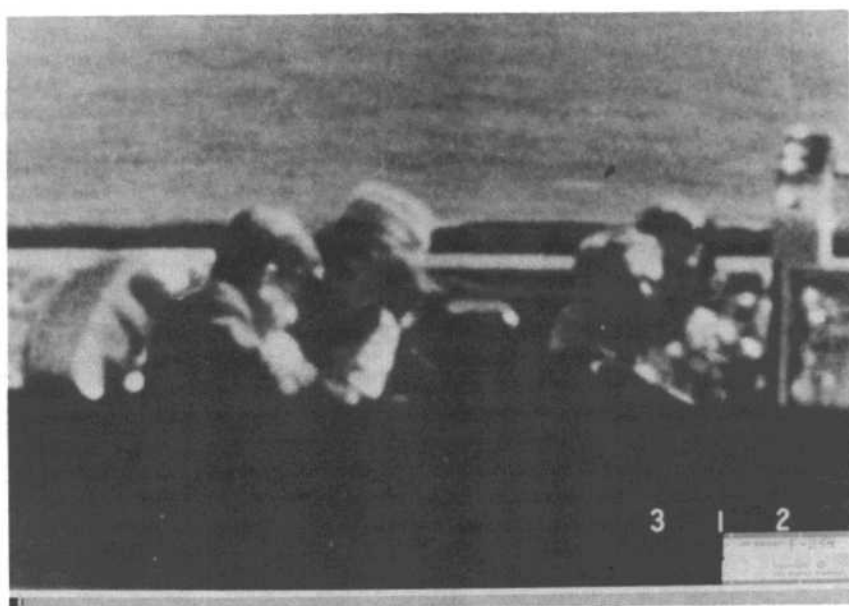
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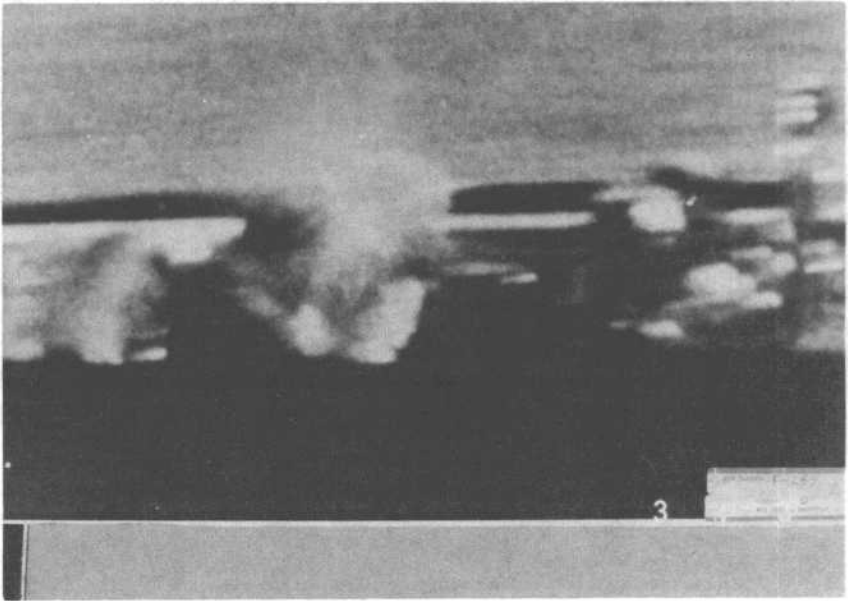
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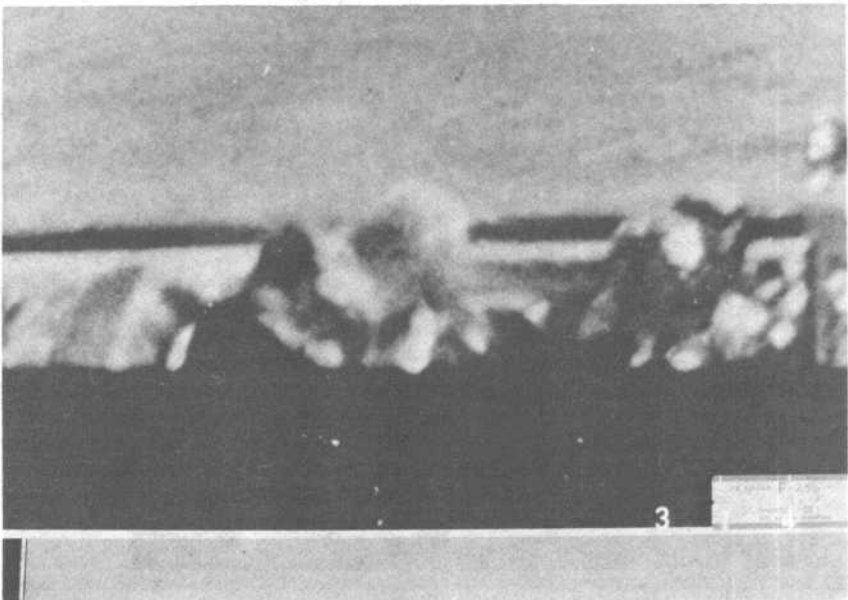
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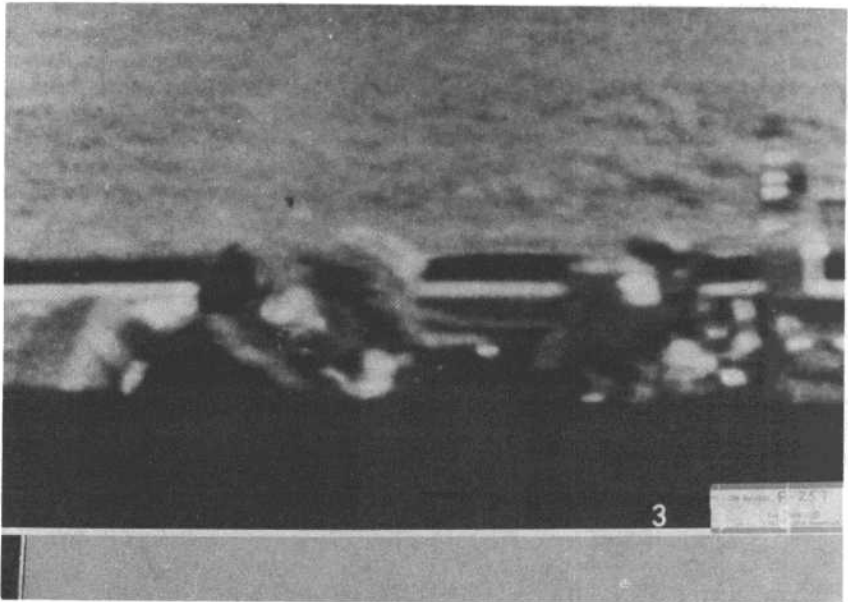
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JFK EXHIBIT F-256



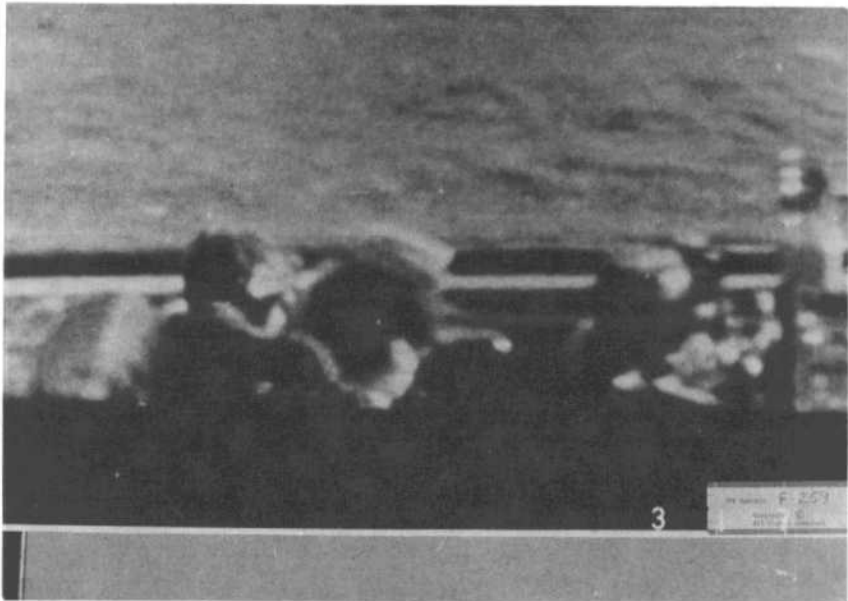
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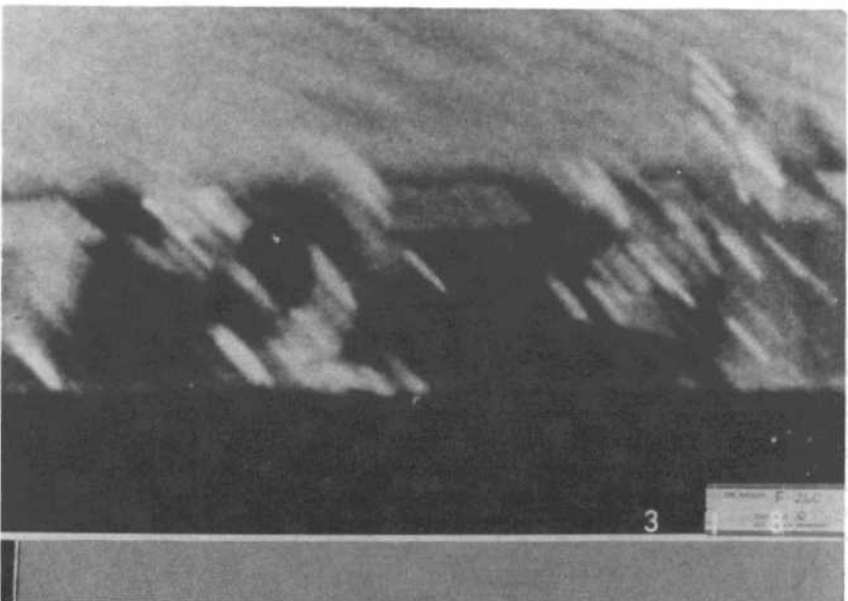
JFK EXHIBIT F-258



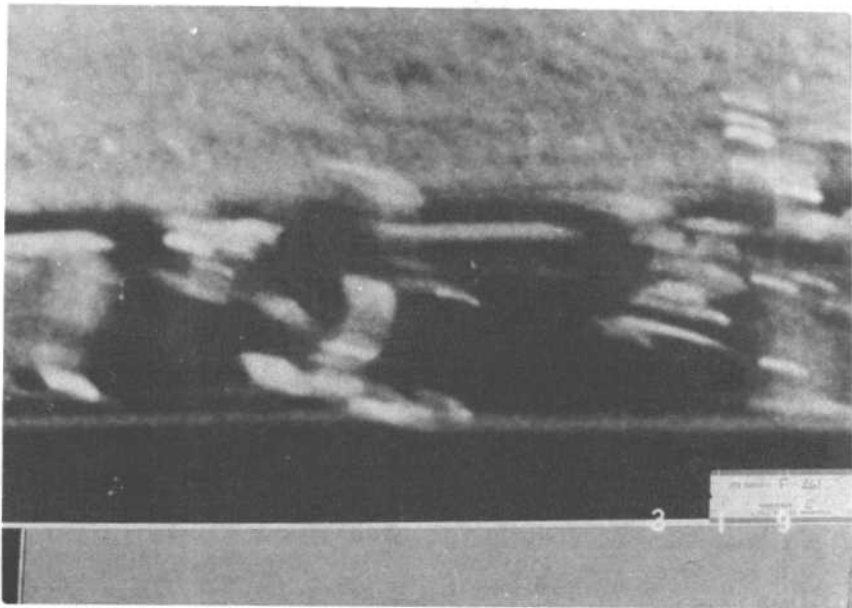
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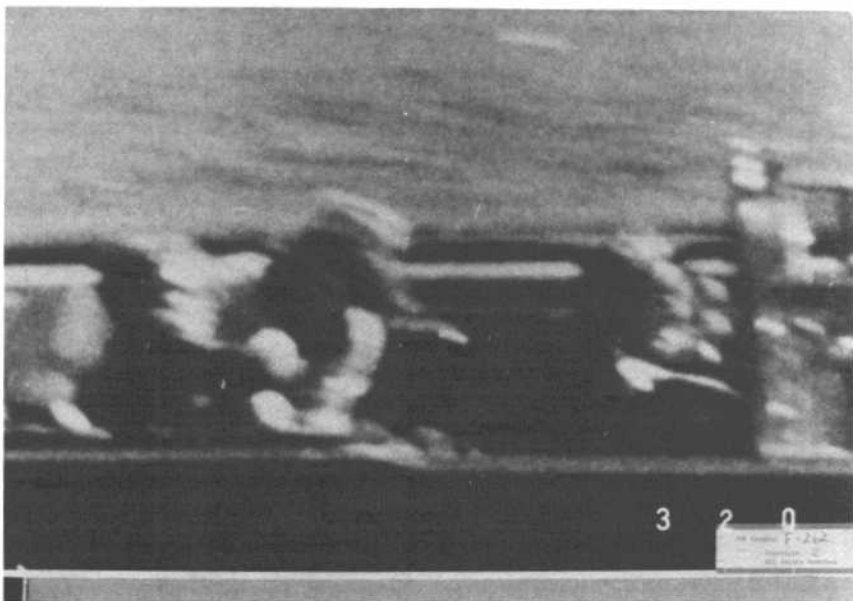
JFK EXHIBIT F-260



JFK EXHIBIT F-261



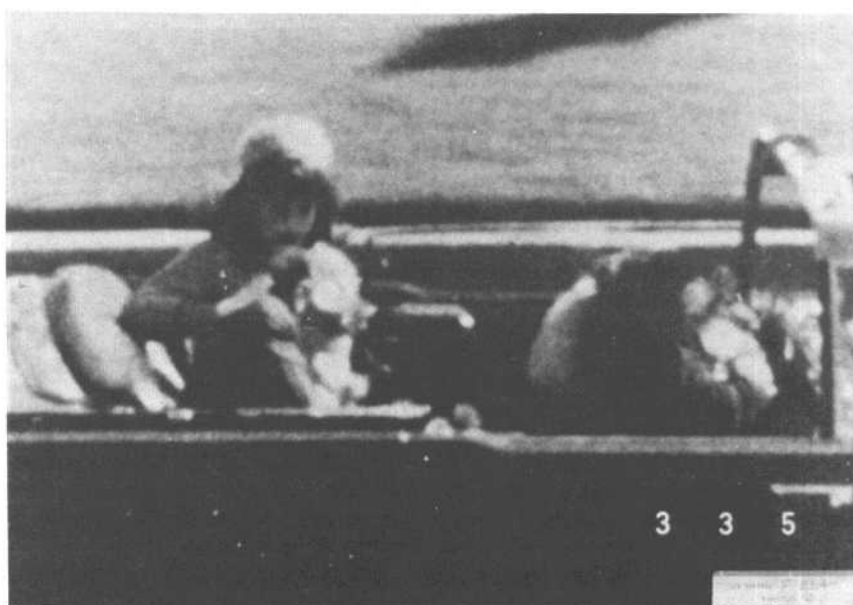
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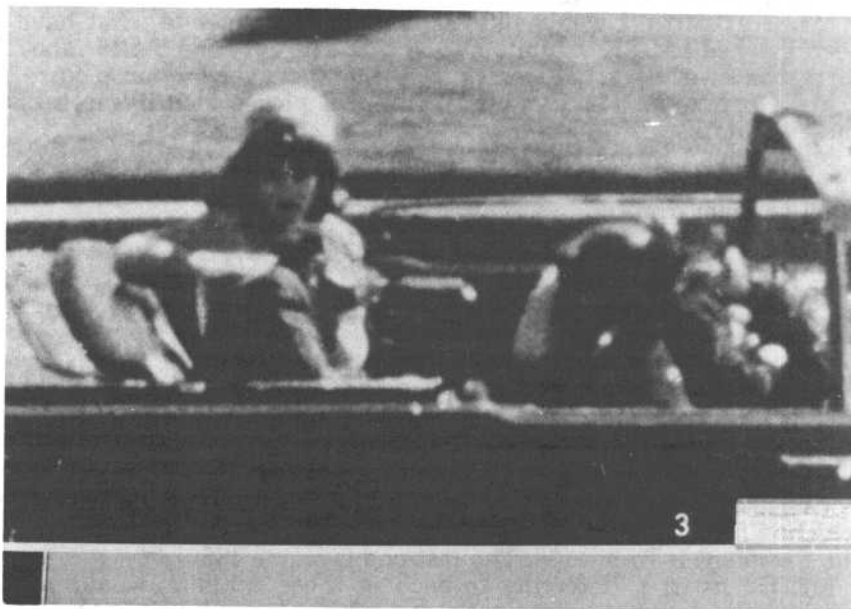
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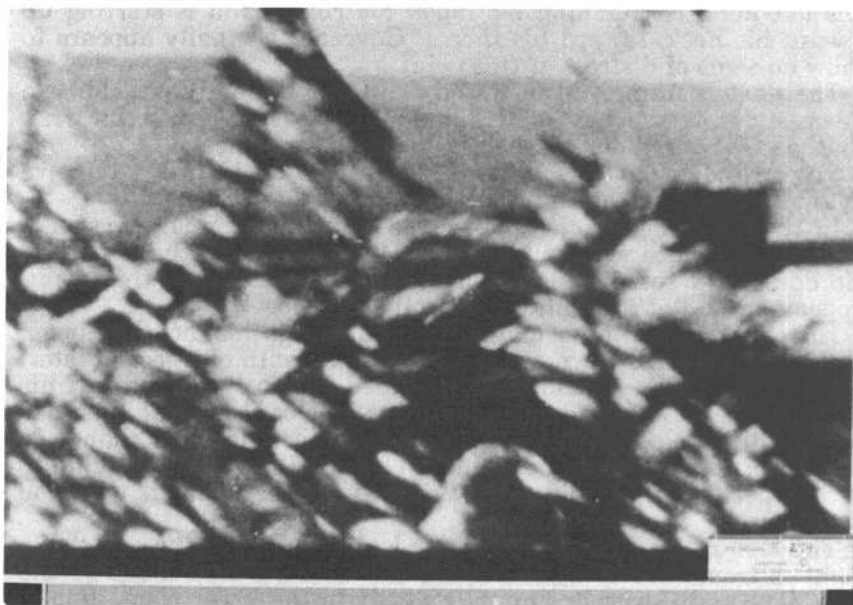
JFK EXHIBIT F-264



JFK EXHIBIT F-265



JFK EXHIBIT F-274



Mr. GOLDSMITH. Mr. Groden, has this film been the subject of extensive photo analysis by the committee's scientific panels?

Mr. GRODEN. Yes, it has.

Mr. GOLDSMITH. I would like, at this time, to refer to what have been marked as JFK exhibits F-244, 245, 246, 247, and F-249. They correspond with selected frames from the Zapruder motion picture.

Mr. GOLDSMITH. Mr. Groden, would you please identify each of these exhibits?

Mr. GRODEN. From the left, the first exhibit is Zapruder frame 225. Do you want me to describe them or do you want me to identify them first?

Mr. GOLDSMITH. Please identify them first.

Mr. GRODEN. It will be 225, 230, 237, 238, and 274.

Mr. GOLDSMITH. Before you proceed, how were the frames numbered? In other words, the numbering sequence, what is it based upon?

Mr. GRODEN. The sequence that is commonly used in dealing with the frames of this film relate to a count that was done on the original film for the Warren Commission and for the FBI analysis, starting with the first frame in which any of the motorcade appears.

There is a segment of film before the President's car appears which is frame 1, that's where that begins. The first frame showing the President is frame 133. The last one is frame 486.

Mr. GOLDSMITH. Referring to each of these exhibits, would you please indicate what points each one raises about the single bullet theory?

Mr. GRODEN. From the left at frame 225, this is the first frame where we see the President reemerging from behind the road sign. His left hand is clutching his lapel, his right hand is starting up toward his neck, toward his throat. Governor Connally appears to show no signs of distress at this point.

The next is frame 230 in which Governor Connally is holding a Texas-style Stetson hat in his hand. That wrist again is the wrist that was shattered during the assassination sequence.

The President, at this time, has his arms up in this protective motion I described before toward his throat.

In the next one, frame 237, we see Governor Connally responding, or so it appears visually anyway, to the sound of the first shot. He does show some signs of distress. His shoulder, at this point, appears quite flat in relationship to the ground.

His cheeks are of a normal attitude, although his mouth is open, and his hair is still down and flat. One-eighteenth of a second later, or frame 238, his shoulder has buckled violently downward, his cheeks have now puffed out, his mouth is closed and his hair has become disheveled. This is the only such detectible rapid change in the Governor in this entire sequence of the film that I was able to detect, perhaps indicating that this may be the moment when he was struck.

The last of the five frames we are looking at here, the one of the right is frame 274 and in this, we are about to lose much of the President and Governor Connally's body to the lower frame line of the film, but we can see Governor Connally's right wrist, the one that was shattered, the distal radius bone, which was shattered.

We see the white cuff of the sleeve and we see that he is indeed still holding the rim of the hat in his hand.

Again, this is about 2½ seconds after the point the President has first shown his reaction in frame 225.

Mr. GOLDSMITH. Thank you, Mr. Groden.

Turning now to the question of the direction of the bullets, what questions does the Zapruder film raise about the Warren Commission's conclusion that all three shots were fired at the President from behind?

Mr. GRODEN. Dealing with various interpretations of the film, there is very little raised as to the direction in most portions of the film, except that at the moment of the head shot. At the moment of the head shot, we see the President thrown violently backward to the rear and to his left which would seemingly indicate a shot from the right front, from the area of the grassy knoll. The grassy knoll is mentioned here because a great many witnesses felt that at least one of the shots came from that area.

The film shows the President going to the rear and the left on a direct axis from this point, therefore, many people have concluded that what we may be seeing is the result of a shot from the right front, striking the President in the head.

Mr. GOLDSMITH. We are about to review the film a second time. At what point in the film specifically should the viewer be looking for the backward motion to the left by the President?

Mr. GRODEN. It is in the later portion of the film. The President and the Governor will have received their nonfatal wounds, all of the nonfatal wounds inflicted that day. There will be a traveling time which will run, considering the slow-down speed that we will see here, of about 8 seconds.

In actual time, it is 5.6 seconds in actual running time. The President will have just passed a light pole and then several witnesses, including a lady in a red dress—I am sorry, a red coat. Her name is Jean Hill. She is a witness as she was standing there. As soon as we see the red coat go by, we will count maybe two seconds or a second and a half in actual running time.

The President's head will seemingly explode and then we will see the violent reaction of the President being thrown to the rear. It will be on the left side of the screen.

Mr. GOLDSMITH. Mr. Groden, this time when we show the film, I would like to ask you if you would be so kind as to narrate the film for the committee.

Mr. GRODEN. I shall indeed.

Mr. GOLDSMITH. Thank you. Can we have the lights, please. [Showing of film.]

Mr. GRODEN. This is the lead portion of the film. The President waving to the crowd and we see the road sign as he approaches it; disappears behind the sign and upon reemergence, we see his response and then Governor Connally's shoulder buckling. There's the light pole, the witnesses, and then the fatal shots now throwing him to the rear, or at least to the time when he moves toward the rear.

Mrs. Kennedy, in a shock reaction, climbing out on the rear deck of the car and the car now begins to speed up and heads down to

the triple underpass on the Stemmons Freeway and to Parkland Hospital in an attempt to save the President's life.

We are going to view the rotoscope version at this point, which will steady the image that we almost lost before.

The President wiping a lock of hair off his forehead; he turns from his left to his right, looking toward us and Governor Connally turns as well. The President waves; the road sign; reemergence from the sign the President, now the shoulder buckle of Governor Connally, and we notice his wrist and then we lose them at the bottom frame line and the fatal head shots at the moment throwing the President to the rear.

I should describe that perhaps not as the fatal head shot or shots, but rather, the impact on the President's head would probably be a more accurate statement at this point.

We will view it one more time.

The President is looking to his left and he turns to his right, looking toward us, then will begin to wave; the road sign; reemergence from the sign, and we see the President thrown slightly forward; Governor Connally still holding the hat in his hand and now the fatal head shot or the impact on the President's head throwing him to the rear; and Mrs. Kennedy's response, climbing on the rear deck lid of the car.

Mr. GOLDSMITH. Thank you. Can we have the lights now?

Mr. Groden, was the President's backward motion apparent from the reprint of the frames from the Zapruder film in the Warren Commission report?

Mr. GRODEN. No; it wasn't apparent at all from the reprint.

Mr. GOLDSMITH. What is the reason for that, sir?

Mr. GRODEN. The reason for that is in volume 18 of the Warren Commission appendix volumes, on pages 70 and 71, the frames, including the head shot and immediately following, are printed; they are labeled top to bottom and then left to right, 313, 314, 315, and 316. This is not, in fact, what we have here.

We have 313, 315, 314, then 316. A reversal of the two frames following the shot to the President's head.

Mr. GOLDSMITH. Do you know when this reversal was first discovered?

Mr. GRODEN. It was discovered sometime after the Warren volumes were printed and it was not an issue for the Warren Commission, itself. It was discovered by a critic of the Warren report. And I believe the comment was made officially and the answer was that it was an inadvertent reversal of frames.

The effect of this reversal of frames, however, would make it appear as though the President was thrown forward for two frames after the shot, quite markedly forward when, in fact, the reverse was the case.

Mr. GOLDSMITH. Mr. Groden, do you know whether there is any photographic evidence that bears upon the Warren Commission's conclusion that Lee Harvey Oswald fired at the President from the Texas School Book Depository?

Mr. GRODEN. I am sorry, could you repeat the question?

Mr. GOLDSMITH. Certainly. Is there any photographic evidence that touches upon the Warren Commission's conclusion that

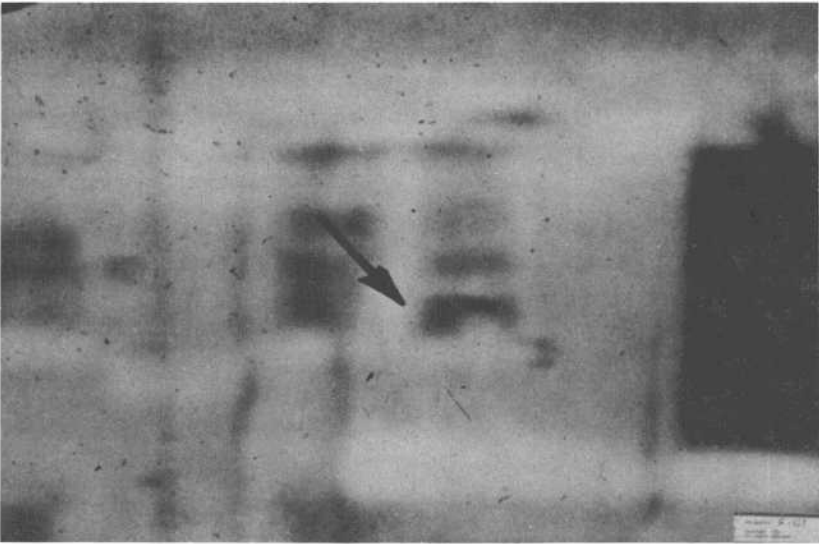
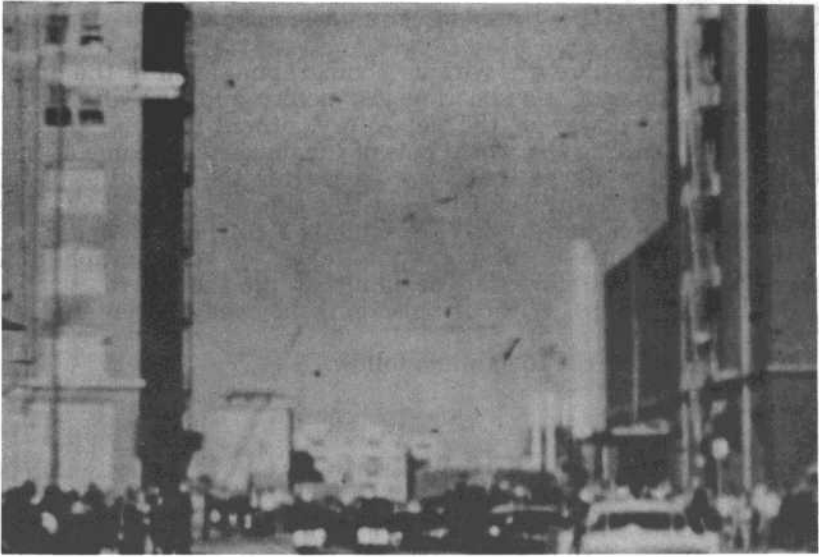
Oswald fired at the President from the school book depository building?

Mr. GRODEN. There are various photographs taken of the depository at the time of the shooting just before and just after. Some showing the doorway of the depository, others showing the windows, some showing the whole face of the depository. Some of these were among the issues that were raised for the scientific panels.

Mr. GOLDSMITH. Mr. Chairman, at this time, I would like to refer to what has been marked as JFK exhibits F-121, F-122, and F-123. They are blowups of photographs taken by photographers in Dealey Plaza and I move they be admitted into the record.

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

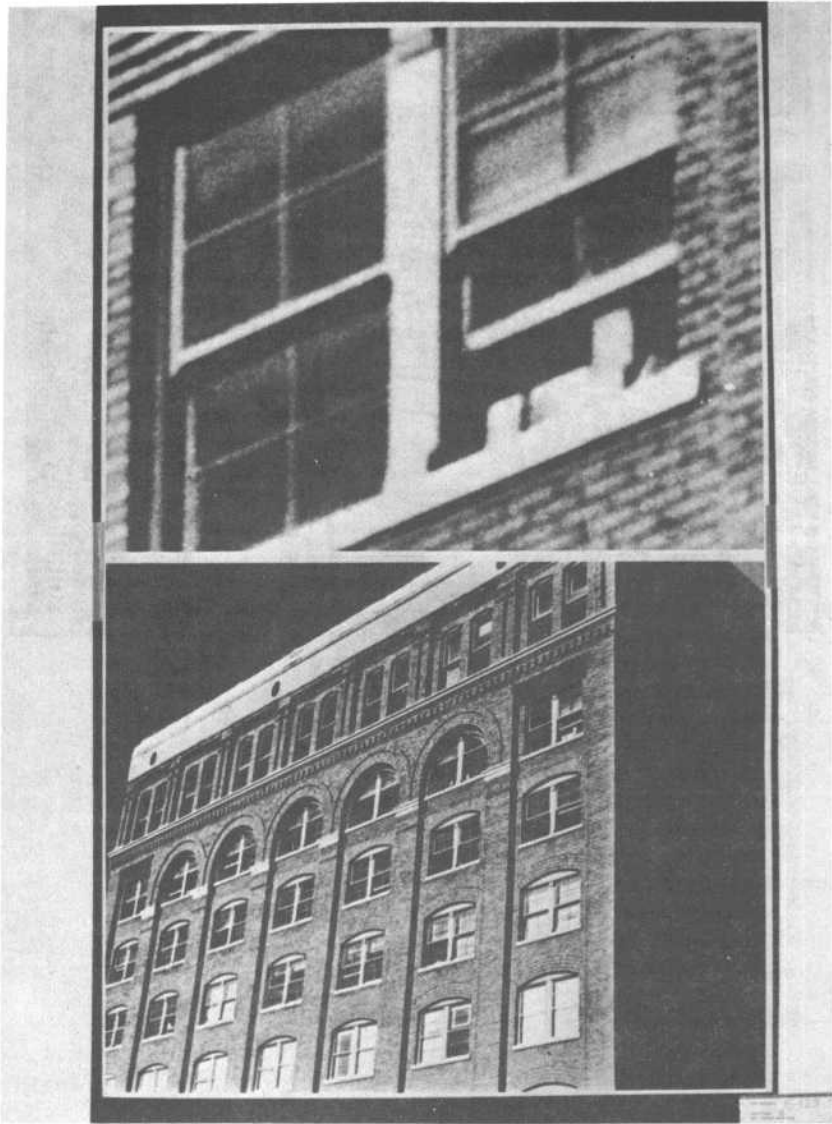
[The above referred to exhibits follow:]



JFK EXHIBIT F-121



JFK Exhibit F-122



JFK EXHIBIT F-123

Mr. GOLDSMITH. Thank you.

Mr. Groden, would you please identify each of these exhibits?

Mr. GRODEN. The exhibit on the left, on the top part of the left photograph, is a motion picture frame, one single frame taken from the film by Robert Hughes. Just as the President's car was about to turn off of Houston Street on to Elm.

On the bottom is a blowup of the window which was supposed to have been the window used by the assassin during the shooting which will begin within seconds of this frame being taken.

The photograph in the center was taken by a man named Tom Dillard, who is a professional photographer; it is a newspaper photograph and it shows the entire wall of the depository; this section which we see here is somewhat cropped to highlight the window, again, the same window the assassin was supposed to have used.

It was taken an estimated 3 seconds after the final shot was fired, but that is probably a loose figure. Within seconds would be a more accurate statement.

The final photograph, the one on the right, on the bottom, was a very similar photograph taken by an Army intelligence man by the name of Powell, who was standing diagonally across the corners of Houston and Elm looking up. He took this photograph somewhere between 30 seconds and several minutes after the assassination. I am not clear as to the actual time.

On the top, we see a blowup of the window in question, which is the easternmost window on the south wall of the sixth floor of the Texas School Book Depository.

Mr. GOLDSMITH. Mr. Groden, do any of these exhibits show a clear image of Lee Harvey Oswald in the sixth floor window?

Mr. GRODEN. They do not. The photographs, as we see them here, do not show a clear image of anybody.

Mr. GOLDSMITH. For what purpose did you bring these photographs to the attention of the committee?

Mr. GRODEN. In the case of the Hughes film on the left, when the film is viewed in motion, it is clearly evident that at least the appearance of movement is within the window which Oswald is said to have used. There is also movement in the next set of windows.

I felt that perhaps enhancement of this particular film and relevant frames of this entire sequence might show a comparison indicating movement within both windows and perhaps that it could be clarified enough or enhanced enough, we might be able to pick out something such as the color of a shirt or clothing.

I would not think that it would be clear enough to show anything in the way of features of an individual's face.

The one in the middle, the other photograph, could conceivably, since it was taken seconds after the shot was fired, could conceivably, from this angle, show some detail of someone still in that window in what was described as the sniper's nest, if, indeed, that's what it was.

Again, I felt, given scientific analysis which had not been done before, to my knowledge, that if there were an image back there in the shadows, it could be enhanced to the degree of bringing out such an image and it might show, due to the clarity of this particular photograph, if it was or was not Lee Harvey Oswald.

In the final photograph, the one on the right, it had been charged that that shape, that whitish shape we see in the window, could very well be the face and/or head or portion of the body of the assassin.

Therefore, I felt that with what was available to the public at that time, which was a very fuzzy black and white still, we might be able to determine whether that shape was or was not an assassin or someone in that window.

Mr. GOLDSMITH. To your knowledge, Mr. Groden, did the Warren Commission ever have the opportunity to do any sophisticated photoenhancement work on these materials?

Mr. GRODEN. I would say they did not. There is absolutely nothing in the record indicating that they did on these specific photographs.

Chairman STOKES. Excuse me just a moment. I understand members of the committee are having some difficulty understanding you. Since your head is sort of turned away from your mike, could you pull your mike up closer?

Mr. GRODEN. Is that better?

Chairman STOKES. That is much better. Thank you.

Mr. GRODEN. Do you want me to repeat what I just said?

Chairman STOKES. Would you, please?

Mr. GRODEN. Certainly. The question—would you repeat the question?

Mr. GOLDSMITH. My question was whether the Warren Commission had occasion to conduct any photoenhancement work on these materials.

Mr. GRODEN. And my answer to the question was, to the best of my knowledge, they did not and there is no indication in the record, they ever did.

Mr. GOLDSMITH. I would like, at this point, Mr. Groden, to turn to another area of Dealey Plaza, other than the Texas School Book Depository. I would like to ask you whether there is any photographic evidence that bears upon the Warren Commission's conclusion that there were no other gunmen in Dealey Plaza other than Lee Harvey Oswald?

Mr. GRODEN. Do you have a specific exhibit?

Mr. GOLDSMITH. Certainly. I will be glad to show you some exhibits.

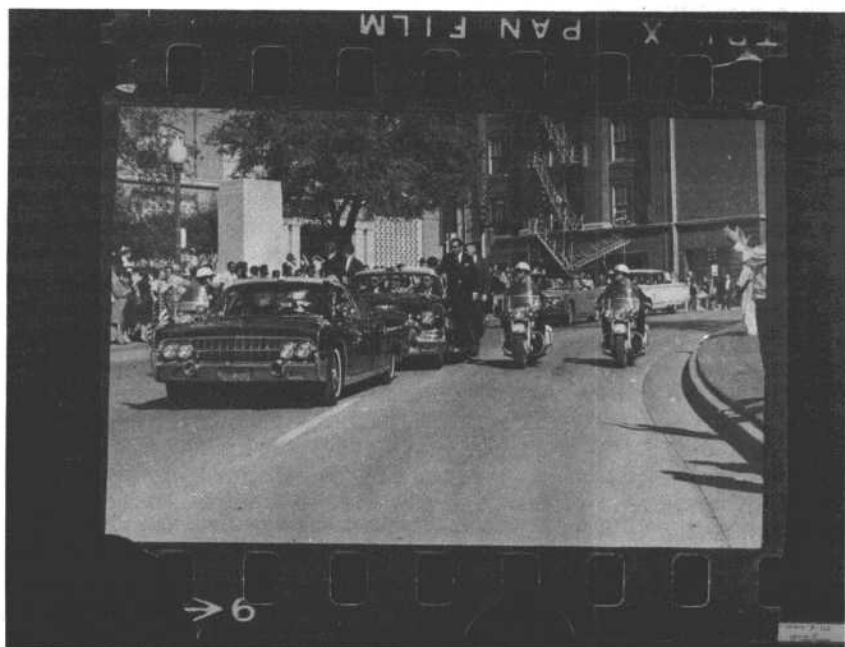
Mr. Chairman, at this time, I would like to refer to what has been marked as JFK exhibits F-126, F-128, F-129, F-155, F-267, and F-274. We are going to be looking at exhibits F-126 and F-128 right now.

I ask that all of the exhibits that I just referred to be admitted into the record.

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

[JFK exhibit F-274 was entered previously.]

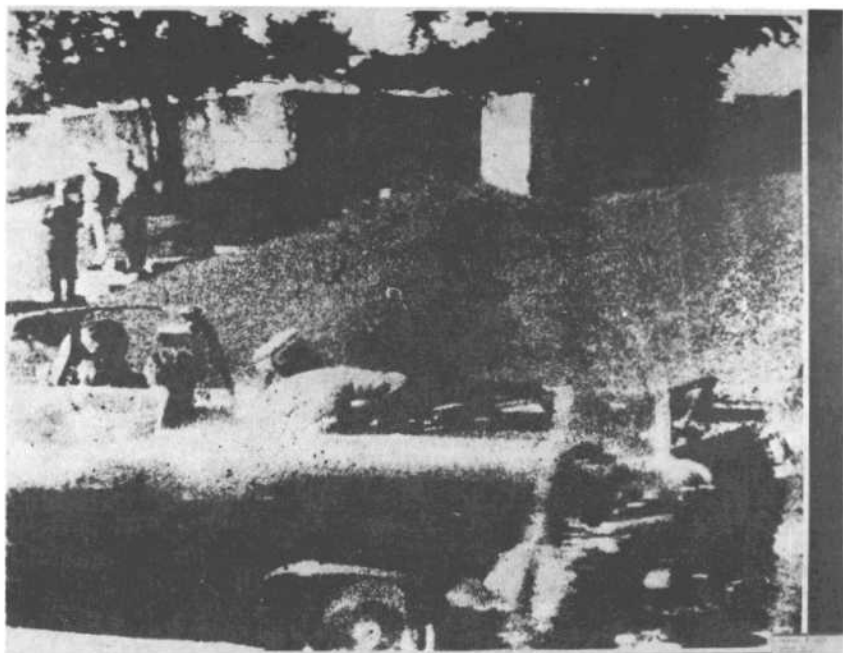
[The above referred to exhibits follow:]



JFK EXHIBIT F-126



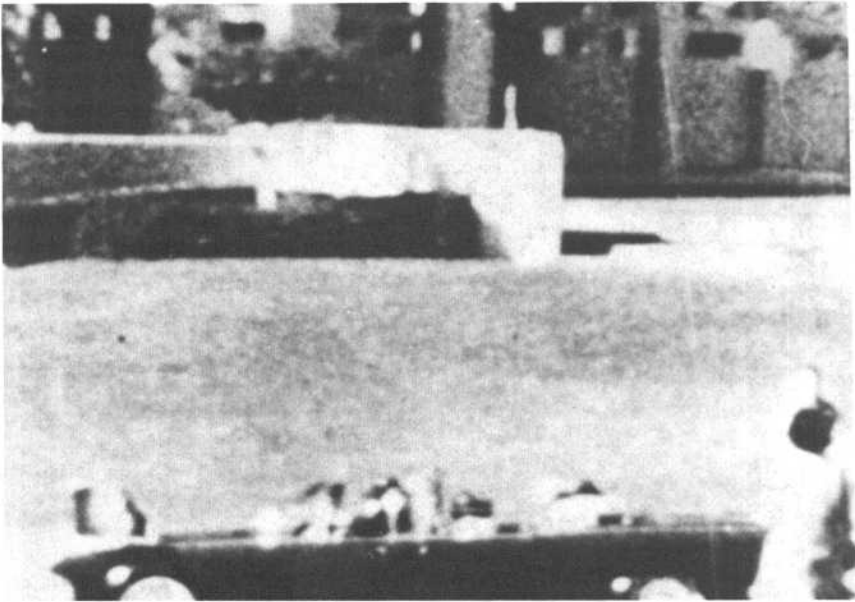
JFK EXHIBIT F-128



JFK EXHIBIT F-129



JFK EXHIBIT F-155



JFK EXHIBIT F-267

Mr. GOLDSMITH. I would also like to indicate for the record that Mr. Groden is going to be asked to discuss a series of exhibits. However, they are only a sample of the photographs that have been made available to this committee.

Mr. Groden, would you please identify these two exhibits?

Mr. GRODEN. These two exhibits are photographs taken from the same negative. A professional photographer for the Associated Press, James Altgens, took a series of five photographs, numbered 2, 3, 4, 5, 6, 7, and 8. There were seven photographs, I believe. This is negative No. 6, or the fifth in the sequence. On the photograph we see the entire photograph, including the sprocket holes of the film, and the borders of the entire image; and on the right, we see an extreme blowup of an area that includes the fire escape on what at the time was known as the Dallas Textile Building, and it shows a fire escape, and there is a man sitting on the fire escape, it is a black man with a white shirt on and dark trousers, and directly below him is an open window of a broom closet.

There is a shape coming out of the bottom of that window diagonally, from upper right to bottom left. It is difficult. A little bit further down, down and a little to the left, down a little farther. There we go. That is the image, and the question that has been raised by various critics of the Warren report was this a rifle or some weapon being projected through the window, and one of the reasons for asking this question is the shape does not appear later on in other photographs and the man who is sitting on the fire escape appears to be in some form of distress in relationship to other photographs which show him sitting on that fire escape just moments earlier.

Mr. GOLDSMITH. Thank you.

At this time, I would like to have the witness make reference to JFK exhibits F-129 and F-155.

Mr. Groden, would you identify these exhibits and then indicate what issues they posed to the committee's photographic evidence panel?

Mr. GRODEN. The photograph on the left is a print from a polaroid photograph taken by a witness named Mary Moorman. This is the second of two photographs which she took that day. It was taken the moment of the explosion of the President's head, or a fraction of a second after that. In the foreground, we see the Presidential limousine, Mrs. Kennedy is the lightish area there, and the President is right next to her.

In the foreground on the right we see part of the image of the flanking motorcycles. In the background, we see the area that has become known as the grassy knoll. On the left, at the top of the grassy knoll over three bystanders we see the stockade fence, on the top of the knoll which borders a parking lot, and on the left, from the center to the left we see, a little more to the right, there we go, from here to the right edge of the particular print we see a cement retaining wall, which is the front border of a set of steps.

The three witnesses in the background, Emmett Hudson, and two others, that are on the left, are standing on the steps that lead up behind that wall. On the right, we see a photograph taken by Phillip Willis, it is his fifth photograph, and it was taken at about the time of the first shot, and in the background we see the same information that we see in the other photograph, the Moorman photograph on the left.

Of course, here we see more of the limousine and more of Dealey Plaza in general.

Mr. GOLDSMITH. Now, specifically, what issue is raised by these photographs?

Mr. GRODEN. Behind the corner of that retaining wall, a little bit more to the left, there we go, at this point on the Moorman photograph, and at the end of the wall in the same position, right there, in the Willis photograph, there is a figure. This figure was standing in line almost to the degree in relationship to the rearward motion of the President's head. The figure is on the grassy knoll, has never been identified, at least to my knowledge, as to identity of this figure, and after the assassination, there is some testimony in the record as to this figure running away to the west or to the north and being chased by other witnesses.

The possibility that this could be a gunman on the grassy knoll is the reason why I raised the issue in the first place. There is somebody there. The question is, who was he and what was he doing there, and I felt that sufficient photoanalysis of these and other photographs of the same person on the knoll, there are some half dozen, at least, might give some clue as to his identity so he could be questioned in this matter.

Mr. GOLDSMITH. Thank you.

At this time, I would like to make reference to JFK exhibits F-267 and F-274. Again, Mr. Groden, I would ask you to identify these photographs and indicate what issues they raise.

Mr. GRODEN. The photograph on the right is the 413th frame of the Zapruder film. It may be difficult to see because the bottom of

the easel is covering up part of it. But in the foreground of this photograph is a head, the head of somebody. This photograph, what we are seeing here, is a cropping of the fullframe. At the bottom of the frame we see branches of a tree, and leaves of a tree. Through the tree and 54 feet away from Zapruder camera is this head shape at the bottom of the photograph. The man is not in or anywhere near the tree.

I would like to state that for the record. That at the end of the retaining wall, 54 feet away, I believe this to be the same man who appeared in the Moorman and Willis photographs that we just viewed a few moments ago.

Coming from the figure of the head, there appears to be a straight object, from the lower right, by the head, heading upward and to the left to about that point, not quite that far, a little bit farther down, down—right there no down along that line on the same axis. There seems to be a shape that resembles a rifle. It could be a rifle, it could be a branch of a tree, it could be a broomstick handle, it is unclear as to what it is.

And I felt that perhaps enhancement of this photograph might give some clue as to whether or not there is someone there with a rifle.

Mr. GOLDSMITH. Mr. Groden, before you proceed, can you explain what effect there is in the quality of the photograph when it is enlarged from a standard size to the size of an exhibit?

Mr. GRODEN. Well, the first obvious thing that happens is the grain of the film is enlarged along with the image and, therefore, it gets fuzzier and fuzzier. It also tends to build up contrast with generations, and the finer areas tend to either overshadow or be washed out.

For instance, at the diagonal shape going upward to the left, at the tip of it there is a somewhat larger appendage, just above that line, yet it seems to close in around it. The skin tones of the bottom of the neck and the ear of this man tend to change slightly in enlargement.

Mr. GOLDSMITH. Does enlarging a photograph make it easier or more difficult to look for detail?

Mr. GRODEN. Far more difficult. This is just representative of the fact there was an issue raised in relationship to this specific frame, which is one of 18 consecutive frames. It is the clearest of the 18 consecutive frames showing this figure or the back of a man's head.

Mr. GOLDSMITH. I understand. Would you now refer to the exhibit on the left, and again Mr. Groden, I would ask you to speak up somewhat.

Mr. GRODEN. OK. This is a frame from the film taken by Orville Nix. It corresponds to the 313th frame of the Zapruder film, or the moment of impact on the President's head.

In the background, in the center, we see Abraham Zapruder and his Secretary, Marian Sitzman, as they are taking the film from the other side of the street, and on the extreme left, by the cement wall of a structure which we call a cupola, is what appears to be a man in a classic military firing position.

The film itself is of poor quality, the camera was not an expensive one, and the lens was not particularly sharp. The figure is there, does appear to be in motion, and in a later sequence of the

film seems to have disappeared. I felt that perhaps the allegation of whether this is or is not a gunman on the grassy knoll might be addressed scientifically by the photographic panel.

Mr. GOLDSMITH. Thank you.

Again, Mr. Groden, I would like to ask you, have any of the exhibits which have just been reviewed, to your knowledge, been subjected to sophisticated photo-enhancement techniques?

Mr. GRODEN. Prior to this time, I do not believe so, at least to the best of my knowledge.

Mr. GOLDSMITH. Mr. Groden, what issues presented to the committee's scientific panels have been raised by the various photographs depicting the crowd in Dealey Plaza at the time of the assassination and shortly thereafter?

Mr. GRODEN. Basically, the two major issues deal with possible co-conspirators or other unidentified witnesses that may be identified now, that is No. 1, and No. 2 is a possible alibi for Lee Harvey Oswald.

Mr. GOLDSMITH. I am sorry, I did not hear your second answer.

Mr. GRODEN. A possible alibi for Lee Harvey Oswald, that is, if he were viewed on the first floor, or in a crowd downstairs at the time of the shooting, he could not have been upstairs on the sixth floor firing at the same time.

Mr. GOLDSMITH. I understand, and we will get into that in more detail in a moment.

You made reference a moment ago to questions pertaining to conspiracy. What types of questions related to conspiracy were raised by the photographic evidence?

Mr. GRODEN. Well, the two major issues were relating to a man who has become known as the umbrella man, and one dealing with a character by the name of, or I should say a person by the name of Joseph Milteer. Photographic evidence has been presented in the past, through the last few years, dealing with these individuals asking questions but giving no answers, and I felt that perhaps enhancement of these photographs for anthropological examination or just photo-enhancement itself might give us a clue, positive or negative, relating to these individuals and a few others.

Mr. GOLDSMITH. At this time I would ask that what has been marked as JFK F-130 be shown to the witness, and, Mr. Chairman, I ask that this exhibit be entered into the record.

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

Mr. GOLDSMITH. Thank you.

[The above referred to exhibit JFK F-130, follows:]



JFK EXHIBIT F-130

Mr. GOLDSMITH. Mr. Groden, I would ask you to identify this exhibit and then to indicate what questions this exhibit raises about the individual whom you refer to as the umbrella man?

Mr. GRODEN. Basically, I would say there are two issues raised here. No. 1 is what he was doing during the assassination, and another one being what he did immediately following the assassination. The lower left hand area is a frame from the Zapruder film, and that area which is highlighted in red but has the arrow pointing to it is the open umbrella of the umbrella man, which is why he has been called that. He was an unidentified witness.

At the time of the assassination that man and the man that we see on the right hand side of the same photograph with his arm raised in a wave, the same photograph, on the lower left. There we go. The man raising his hand who appears to have been with the umbrella man, they were standing next to each other and as the President's car went by, the man we call the umbrella man opened his umbrella and raised it as the President went by, pumped it in the air and turned it in a clockwise manner. This is very evident in the Zapruder film.

The photographs on the top indicate that immediately following the assassination, within seconds of the assassination, he closed up the umbrella and while other people were running away or dropping to the ground or paying attention to the motorcade his reac-

tion always seemed to be quite contrary to the others. While others were dropping to the ground or running away he stood there quite at peace with himself, or at least photographically it appears that way, and he stood there.

He stayed there for quite some time and eventually sat down on the curb as we see in the lower right hand portion of the exhibit, and he is sitting down. You can't see it now, there is a photographer in the way, but there is a man sitting next to him with white socks on. This is the same man who is waving in the Zapruder frame. They sat there for some time talking to each other with the umbrella on the sidewalk next to the umbrella man.

Mr. GOLDSMITH. Was the Warren Commission, Mr. Groden, ever able to identify this individual?

Mr. GRODEN. This man and the information around him was not made an issue until several years after the Warren Commission report was issued. They had no reason to look into this particular area.

Mr. GOLDSMITH. You made reference earlier to an individual named Milteer who you said may have been a co-conspirator. Would you explain to the committee who this individual Milteer was and what basis there was for regarding him as a possible conspirator against JFK?

Mr. GRODEN. Joseph Adams Milteer was an ultra right winger, a member of the National States Rights Party, Ku Klux Klan, and various other right wing organizations. Some 2 weeks before the assassination of President Kennedy an undercover agent, undercover informant for the FBI and Miami police named William Somerset, tape recorded a conversation between himself and Milteer. In this conversation, Milteer said the plans were in the works for the assassination of President Kennedy. It would be done using a high-powered rifle from an office building, the rifle would be broken down, taken into the building, used for the assassination, broken down and removed from the building, and that a patsy would be picked up by the police very soon after the fact to throw the police off and satisfy the public.

Now this was 2 weeks before the assassination of President Kennedy. The tapes were made available to law enforcement organizations, including the Miami police and FBI, so the verification that it was a genuine tape before the fact can be proven.

The day of the assassination Milteer made a long distance phone call from Dallas to the same informant, who by the way obviously he didn't know was an informant, but who had been a boyhood friend, Somerset. He called him and said you won't see your friend Kennedy in Miami again, and ended the conversation quite abruptly, and, of course, the President was shot in Dallas that day.

The day following the assassination, in Miami, no, I believe it was Jacksonville, in Florida, Milteer met with Somerset and said, see, it went according to plan. I have the exact testimony. I don't think it is necessary at this point.

Mr. GOLDSMITH. No, it is not necessary for you to summarize the exact testimony.

Mr. GRODEN. He said it happened just as I said it would, I wasn't doing any guessing.

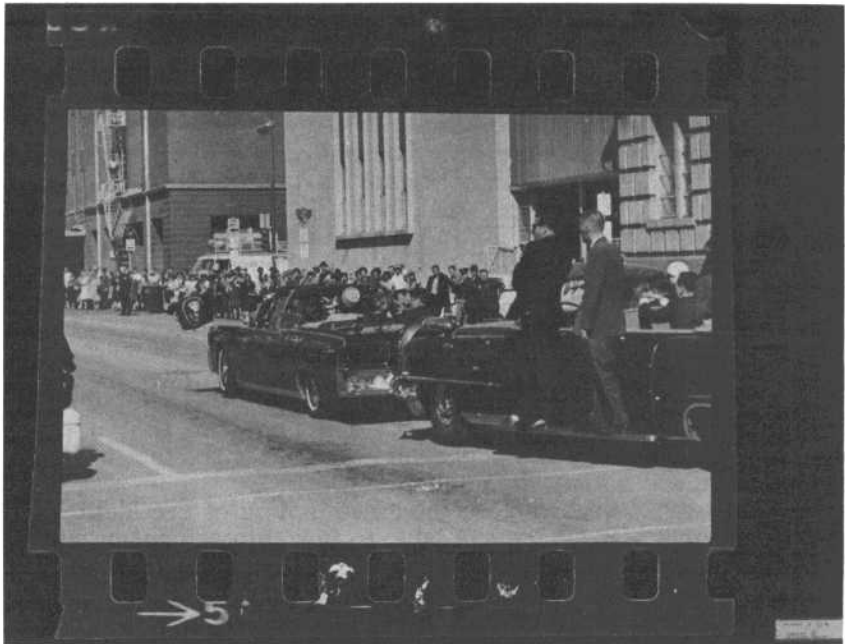
If, indeed, the whole story is true, and much of the evidence might tend to show that it is—if indeed Milteer was in Dallas, it could be assumed that he was in Dealey Plaza that day, viewing the assassination. A photograph taken by James Altgens, the man who took the photographs we saw before showing the first escape, the photograph before that one shows the crowd lining the east side of Houston Street, and in that crowd is a man who bears a very, very close resemblance to Joseph Milteer.

Mr. GOLDSMITH. We are going to take a look at that photograph, Mr. Groden. At this time I would like to refer to JFK exhibits F-124 and F-125.

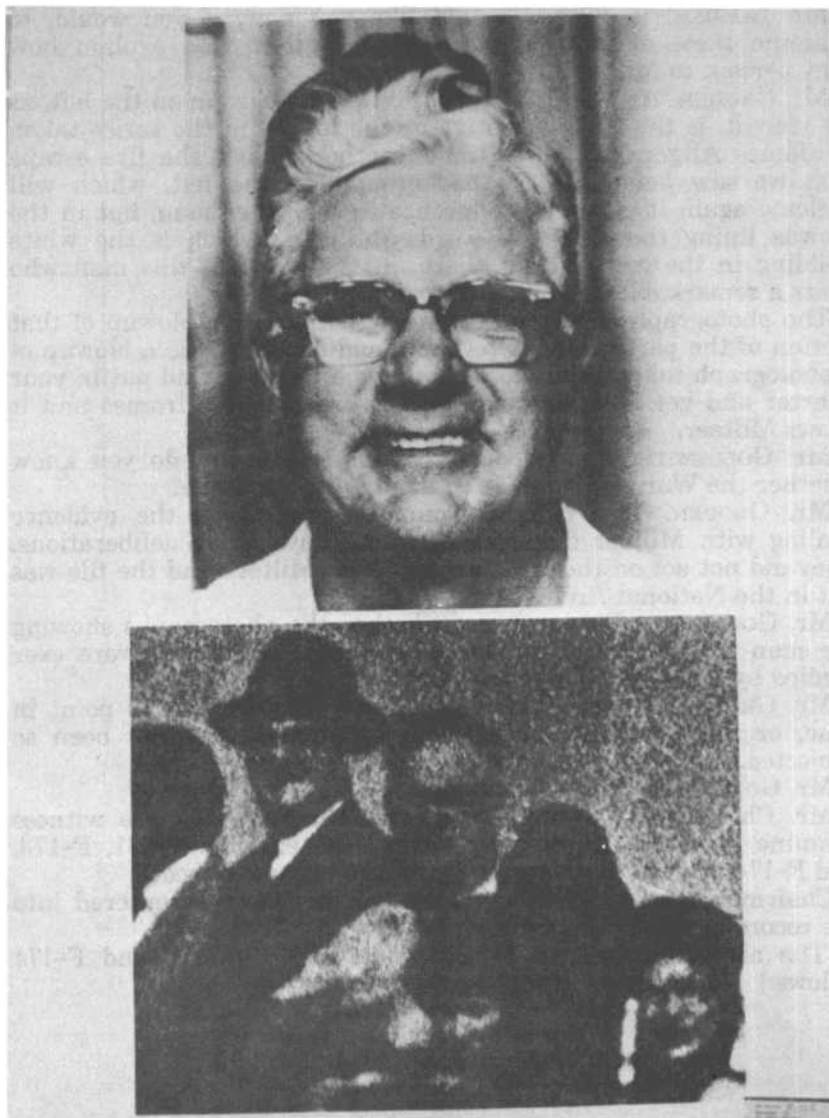
Mr. Chairman, I ask that these exhibits be entered into the record.

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

[The above referred to JFK exhibits F-124 and F-125 follow:]



JFK EXHIBIT F-124



JFK EXHIBIT F-125

Mr. GOLDSMITH. Before I ask you to discuss these photographs, Mr. Groden, I would like to clarify something. You made reference to one tape recorded statement made by Milteer and to two other conversations as well. In total, how many of the conversations were tape recorded, to your knowledge?

Mr. GRODEN. To my knowledge, only the initial conversation that included the threat was actually tape recorded, the rest was the testimony or the reports, FBI or Miami police reports, of William Somerset relating to his subsequent meetings with Milteer.

Mr. GOLDSMITH. Fine, I would like you now, if you would, to examine these exhibits, identify them, rather, and explain how they pertain to Milteer.

Mr. GRODEN. As I described before, the photograph on the left, as we view it, is the No. 5 negative or the fourth in the series taken by James Altgens. It shows, among other things, the fire escape that we saw before in the background on the left, which will indicate again it is a cross reference to the other man, but in the crowds lining the County Records Building, which is the white building in the center right there, in the crowd is this man who bears a remarkable resemblance to Joseph Milteer.

The photograph on the right, on the bottom, is a blowup of that section of the particular photograph, and on the top is a blowup of a photograph taken in a photo booth, where you go and put in your quarter and get four pictures. This is one of those frames and it shows Milteer.

Mr. GOLDSMITH. Mr. Groden, to your knowledge, do you know whether the Warren Commission dealt with this issue?

Mr. GRODEN. The Warren Commission received the evidence dealing with Milteer during the closing days of its deliberations. They did not act on the information about Milteer and the file was put in the National Archives.

Mr. GOLDSMITH. Do you know whether the photographs showing the man in the crowd and the photograph of Milteer were ever studied by forensic anthropologists?

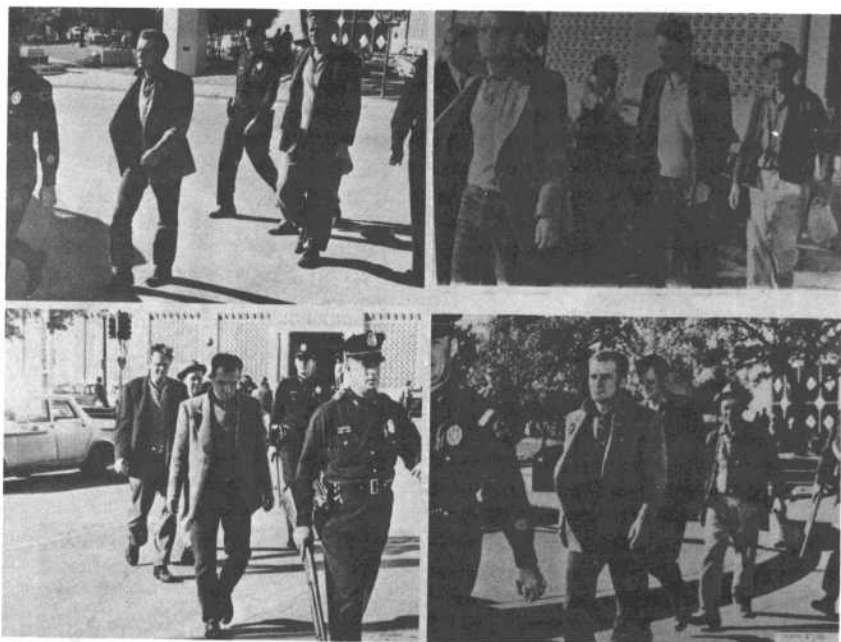
Mr. GRODEN. To the best of my knowledge, up to this point in time, or until the life of this committee, they had not been so subjected.

Mr. GOLDSMITH. Thank you.

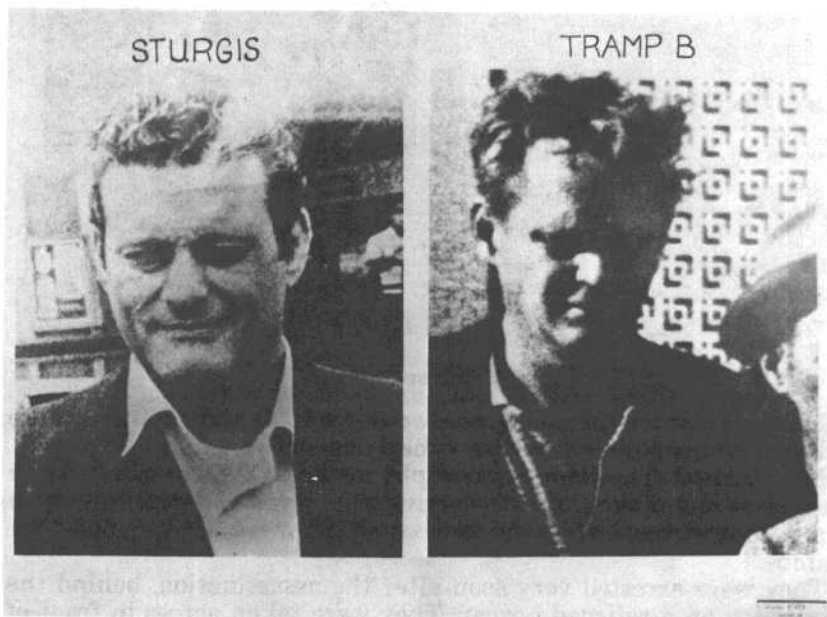
Mr. Chairman, I would like at this time to have the witness examine what have been marked as JFK exhibits F-131, F-173, and F-174. I move that they be introduced into the record.

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

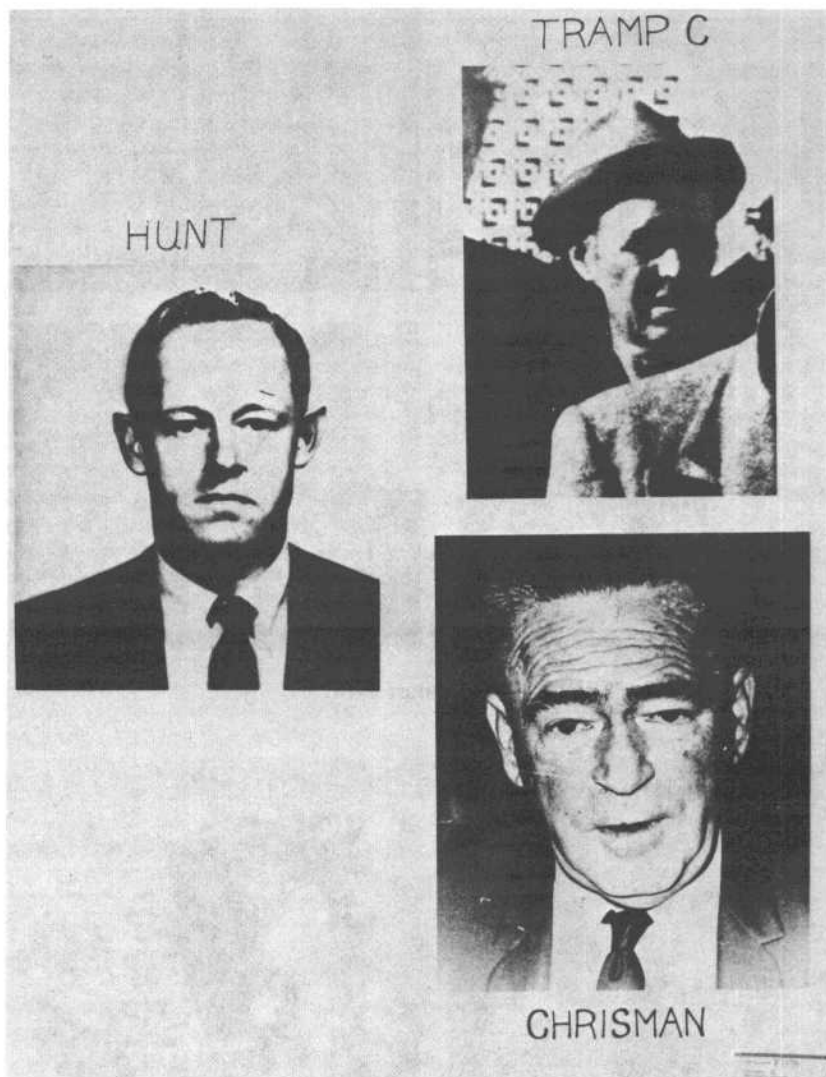
[The above referred to JFK exhibits F-131, F-173 and F-174 follows:]



JFK EXHIBIT F-131



JFK EXHIBIT F-173



JFK EXHIBIT F-174

Mr. GOLDSMITH. Mr. Groden, would you please identify these exhibits and explain what issues they raise?

Mr. GRODEN. The four photographs in the exhibit on the left are four of seven photographs depicting the arrest or detainment of three individuals which have become known as in quote "the tramps."

They were arrested very soon after the assassination, behind the depository on a railroad boxcar. They were taken across in front of the depository, diagonally across Elm and Houston, toward Main and the jail. These people have become a tremendous issue in the last couple of years because there is no record of the arrest. They

were picked up in relationship to the assassination but no records were kept of the arrests. There were no official photographs of them, no fingerprints or identification were ever taken or made.

The two exhibits, the one in the center and the one on the right, I believe would represent attempts to identify these people. The allegations were made sometime around 1976 that the taller of the three tramps could very well be Frank Sturgis of Watergate fame and that the shorter of the three, the shortest of the three, might be E. Howard Hunt, again of Watergate fame.

This opinion was certainly not shared by all of the critics but the issue was put forward, thereby creating the need to try to identify these people, which probably should have been done anyway, and it had not been.

The man on the left in the center exhibit is Frank Sturgis. The man on the right is the tall tramp. In the photograph, the exhibit on the right, the short tramp is at the top. E. Howard Hunt is on the left and the man on the bottom is a man named Fred Lee Crissman, who is another ultra right winger, a member of the Minuteman. He has become a prime suspect for critics of the report as a candidate to be the short tramp.

I might also add this brings up a point which I didn't mention before, and I probably should have.

Mr. GOLDSMITH. Please do.

Mr. GRODEN. Mr. Milteer, the man we have just mentioned, died in 1974 at the age of 72, after a freak accident, where a Coleman heating stove exploded. He was hospitalized for a while and then some weeks afterward dies, and the explosion of the stove was given to be the cause of death.

Crissman died prior to this point in time. I am unclear as to when, but he is no longer alive either.

Chairman STOKES. We are still having some difficulty hearing you, if you will pull that mike up a little closer.

Mr. MCKINNEY. I couldn't hear about the explosion.

Mr. GRODEN. I am sorry. The issue that I was speaking about at the time was the death of Milteer. He had a Coleman heating stove and there was an explosion and he suffered burns on his legs, and this was attributed to be the cause of death.

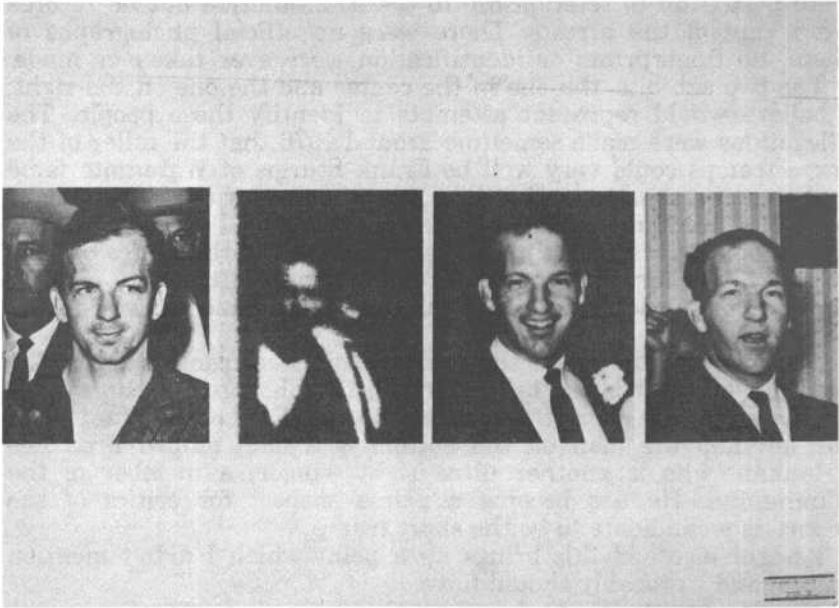
Mr. GOLDSMITH. Mr. Groden, you made reference earlier to photographic evidence that you indicated gave rise to the possibility of an alibi defense for Lee Harvey Oswald. Which photograph were you referring to?

Mr. GRODEN. For that we have to go back to the exhibit we had before, the No. 6 negative of the Altgens series.

Mr. GOLDSMITH. At this time I would request that the witness be given an opportunity to take a look at JFK exhibit F-126 and what has been marked as JFK F-127. JFK F-126 has already been admitted into the record. Mr. Chairman, I request that JFK F-127 now be admitted into the record.

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

[The above referred to JFK exhibit F-127 follows:]



JFK EXHIBIT F-127

Mr. GOLDSMITH. Mr. Groden, referring to these exhibits, would you identify what they are and discuss how they relate to a possible alibi defense for Lee Harvey Oswald?

Mr. GRODEN. The exhibit on the left is again the full frame photograph taken by James Altgens. It shows in the foreground the Presidential limousine, Secret Service followup car, and the flanking motorcycles that were just to the rear, to the right and the left of the President's limousine.

In the background is the front and top and bottom two stories of the Texas School Book Depository, including the doorway. Within that doorway is the figure of a man, which is the second figure from the left in the exhibit on the right.

A great deal of the issue as to whether Oswald was involved in a conspiracy or whether he was involved at all to kill the President, or if indeed as a lone assassin whether he pulled the trigger, has related to this particular photograph.

The man in the photograph bears a striking resemblance to Lee Harvey Oswald. Again, that would be the second from the left. Lee Harvey Oswald, of course, is the man on the extreme left. The two photographs on the right are Billy Nolan Lovelady, a coworker in the depository, who bore a very, very strong resemblance to Lee Harvey Oswald.

Very soon after the actual assassination of the President, this photograph was discovered and the man in the doorway was seen, and the question that was initially raised, was this Lee Harvey Oswald? If it was him on the first floor, it could not be him firing from the sixth floor.

The FBI went back and investigated and established this was Billy Nolan Lovelady. The question still persisted, however,

through the years because the clothing on the photograph as we view it does not match the clothing that the FBI said Lovelady was wearing that day, which would be a short sleeved broad red and white striped shirt. The man in the doorway appears to be wearing a tweed or plaid type of design which more closely resembles the over shirt worn by Oswald that day.

Mr. GOLDSMITH. Mr. Groden, taking a look at the exhibit on the left, is it possible to correlate that with the Zapruder film?

Mr. GRODEN. This photograph was taken at the approximate midline of the shooting sequence about frame 255 of the Zapruder film, give or take a few frames.

Mr. GOLDSMITH. Excuse me, I am sorry, is the President showing a reaction?

Mr. GRODEN. The President has been struck, his arms are already in the clutching motion, Mrs. Kennedy's left white gloved hand is attempting to aid her husband. By now she must be aware something is wrong and she is trying to assist and see what is happening or grasp the situation. I would assume that is about what we are seeing.

Governor Connally had turned back into his wife's arms and is now looking over his shoulder after he has turned. So the two men by this point have been struck.

Mr. GOLDSMITH. To your knowledge, Mr. Groden, prior to 1978, have these photographs and others showing Oswald and Lovelady, been examined by any forensic anthropologists?

Mr. GRODEN. To the best of my knowledge; they have not.

Mr. GOLDSMITH. Mr. Groden, have you had an opportunity to examine the pictures of Lee Harvey Oswald that were taken from his home in Dallas that show him holding a rifle in one hand and a socialist newspaper in another hand?

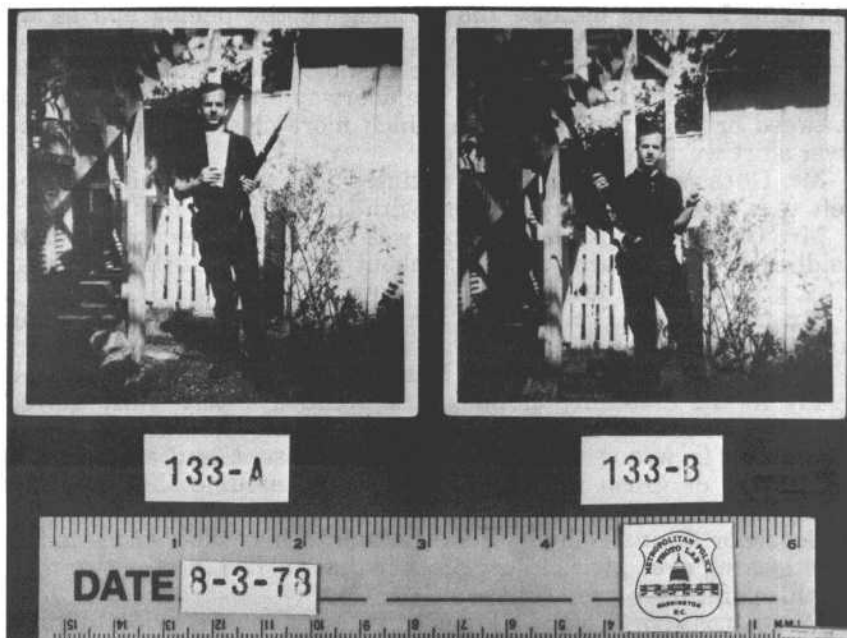
Mr. GRODEN. Yes, I have. I have examined them quite closely.

Mr. GOLDSMITH. At this time I would ask that the witness be given an opportunity to examine JFK exhibit F-179.

Mr. Chairman, I move that this exhibit be entered into the record.

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

[The above referred to JFK exhibit F-179 follows:]



JFK EXHIBIT F-179

Mr. GOLDSMITH. Mr. Groden. Would you please identify this exhibit?

Mr. GRODEN. This exhibit displays two photographs found in Oswald's garage, the garage owned by Mrs. Ruth Paine, where Mrs. Oswald was staying in Irving, Tex. They were found after the assassination, and they depict a man holding a rifle, wearing a pistol on his right hip, and holding two Socialist newspapers, the Militant and the Daily Worker. The face on the photograph would seem to be that of Lee Harvey Oswald.

Mr. GOLDSMITH. What question has been raised about these particular photographs?

Mr. GRODEN. The first question raised about one of these photographs, the photograph on the left, which is identified as 133-A, were shown to Lee Harvey Oswald the afternoon of the assassination. Or let me clarify that. It may be the afternoon of the assassination or it may have been the next day. For the moment I am not clear on that. He was shown the photograph and he said this photograph is a fake. He said I know how this is done, it is my face but not my body, I could show you how it is done. He never got the opportunity to do so.

But the issue was raised at that point were these photographs genuine or not.

Mr. GOLDSMITH. How did the Warren Commission deal with this issue.

Mr. GRODEN. The Warren Commission had their investigative arm, the FBI, examine the photographs and run some tests on them, including testing the camera to which these photographs were supposed to have been taken. The conclusion was that the

photograph was almost definitely taken with Oswald's camera, an Imperial Reflex, and that although they could not prove that the photographs were genuine, it seemed to them in all likelihood that they were indeed genuine.

In other words, they could find no definite signs of fakery in the photographs.

Mr. GOLDSMITH. Fine. At this point, I would ask that the witness be given an opportunity to refer to what has been marked as JFK exhibit F-270.

Mr. GRODEN. I might also add that the Dallas police at the time of the discovery of these two photographs, also found one negative. The one that would belong or coincide with F-133-B.

Mr. GOLDSMITH. This negative was examined by the FBI?

Mr. GRODEN. Yes, it was.

Mr. GOLDSMITH. Mr. Chairman, I request that JFK exhibit F-270 be entered into the record.

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

[The above referred JFK exhibit F-270 follows:]



JFK EXHIBIT F-270

Mr. GOLDSMITH. And, Mr. Groden, referring to both of these exhibits, I would ask you at this point to explain on what basis the Warren Commission's conclusion regarding the exhibit on the left, specifically the conclusion that the photographs are authentic, has been criticized?

Mr. GRODEN. There have been a lot of issues raised about these photographs through the years by the critics of the Warren report.

For instance, among them, the most credible of the arguments are the size ratio between the length of the rifle, which is now in the Archives and in relationship to the height of the man in the photographs. Indeed, the height of the man in one photograph in relationship to one in the other, there seems to be a 4 or 5 inch disparity in height between the two photographs. A different falling of shadows, for instance. In one photograph the head tilts to a different angle yet the relationship of the shadow under the nose to the mouth does not change with the shadows in the rest of the picture, as it should, but rather stays in relationship to the angle of the face.

More than any other issues, I think, however, relate to what Oswald had said, that is, that his face had been pasted on another person's body, and through the years much study has indicated that there is evidence of a line, a crop or paste line through the center of Oswald's chin, occurring at that point. It starts at one edge of the head, of the neck, and goes on to the other, and there seems to be a slight misalignment of the neckline as it travels downward from the head toward the shoulders on both sides of the head. This occurs only on F-133A, as viewed here.

On F-133B, it is not sufficiently sharp to see this type of a line. There again seem to be problems with that photograph as well, but the main issue that we are dealing with here is what appears to be a paste line through Oswald's chin.

Mr. GOLDSMITH. Have any other questions been raised about the chin itself?

Mr. GRODEN. This is very well demonstrated by the exhibit on the right. Oswald in the arrest photograph that we see on the left had a pointed chin with a cleft in it, and a not particularly muscular neck. The man on the right however, seems to have a squarish chin, without a cleft, and a slightly more muscular neck.

Even taking into consideration the difference in the angle the photograph may have been taken, there does seem to be quite a difference in the two chins.

Mr. GOLDSMITH. Turning to another aspect of this photograph, Mr. Groden, what finding, if any, did the Warren Commission make concerning the rifle that Oswald is shown holding in these picture?

Mr. GRODEN. Although they could not verify completely or be 100 percent sure the rifle in that photograph was the one that was found in the depository, they did use it as part of their conclusion that Oswald did indeed own that rifle. They said in all likelihood it was the same, it bore the same general configuration, but there were no sufficient identifying marks that would be peculiar to that particular rifle over any other of the same product run.

Mr. GOLDSMITH. So are you saying then that the Warren Commission was unable to make a positive identification of the rifle but, nevertheless, concluded generally that this was the rifle that Oswald used for the assassination?

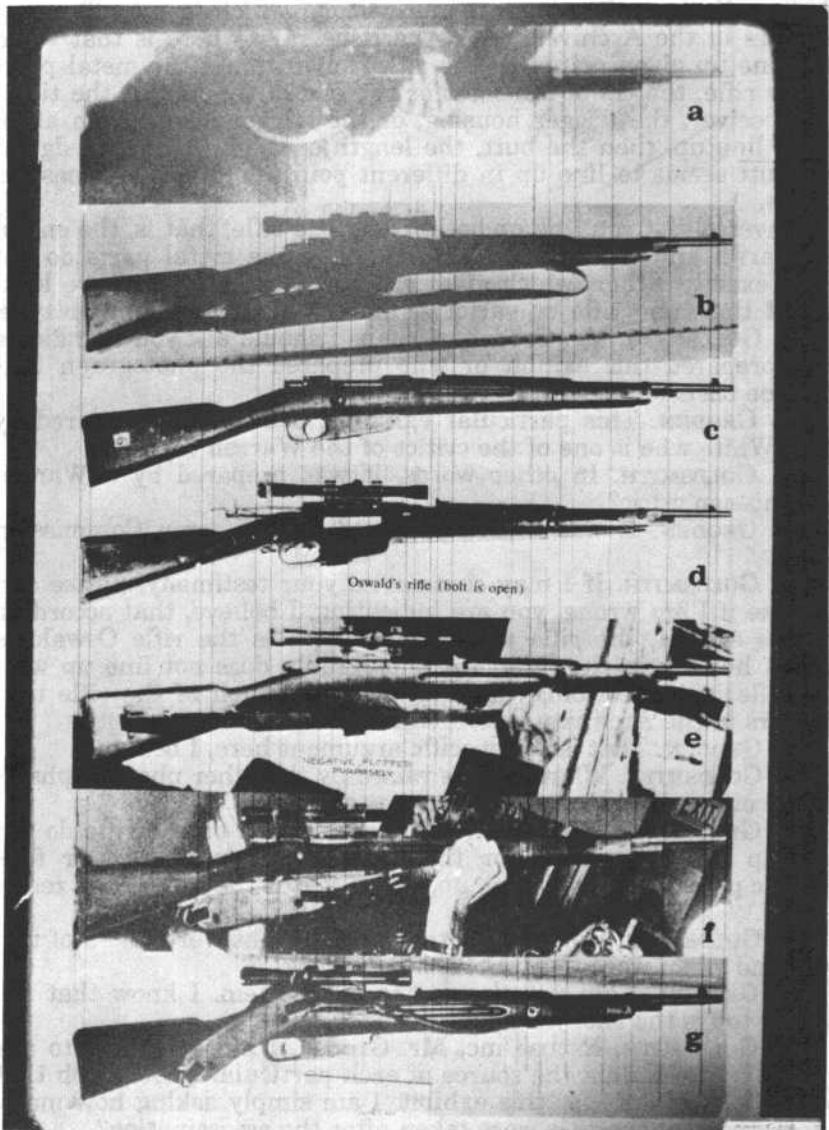
Mr. GRODEN. That is correct.

Mr. GOLDSMITH. At this time I would request that the witness be given an opportunity to examine JFK F-208.

Mr. Chairman, I ask that this exhibit be introduced into the record.

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

[The above referred to JFK exhibit F-208 follows:]



JFK EXHIBIT F-208

Mr. GOLDSMITH. Mr. Groden, referring to this exhibit, would you explain on what basis the Warren Commission's conclusion concerning the rifle has been questioned?

Mr. GRODEN. The major question relating to this rifle starts with a fact that there were several reports of different rifles being found and the comparison, the photographic comparison of the various

photographs of the rifle which is in question, the Mannlicher-Carcano C-2766, starting with the photograph on top, which is one of the backyard photographs, as we see here, 133-A, going through various other photographs and stages of photography dealing with that particular rifle, down to the bottom, which is the rifle as it appears in the Archives today, the issue raised here is that when you line up given points on the rifle, for instance, the metal parts of the rifle, the tip of the sight or the end of the barrel, the tip of the receiver, the trigger housing, or the trigger itself, when all of those line up, then the butt, the length of the butt or the edge of the butt seems to line up in different points to different measurements.

Conversely, if you line up both tips of the rifle, that is, the end of the barrel and the end of the stock, then the metal parts do not align exactly either, which gives rise to the question, are we looking at the same rifle or various different rifles of a similar type.

Mr. GOLDSMITH. Mr. Groden, perhaps I should ask you to indicate who prepared this exhibit or who prepared the photograph that was the basis for this exhibit?

Mr. GRODEN. This particular exhibit I believe was prepared by Jack White who is one of the critics of the Warren report.

Mr. GOLDSMITH. In other words, it was prepared by a Warren Commission critic?

Mr. GRODEN. It was indeed prepared by a Warren Commission critic.

Mr. GOLDSMITH. If I may summarize your testimony, please correct me if I am wrong, you are indicating, I believe, that according to this exhibit, the rifle at the top, which is the rifle Oswald is shown holding in the backyard photograph, does not line up with the rifle in the bottom, which is the photograph of the rifle that appears in the Archives, is that correct?

Mr. GRODEN. That is the specific argument here, I believe.

Mr. GOLDSMITH. What issue is raised by the other photographs or by the other rifles that appear in that exhibit?

Mr. GRODEN. Simply that the different points on the rifle do not line up with either one or the other. There are three or four specific points that don't line up, which if it is the same rifle, really should.

Mr. GOLDSMITH. How many other photographs were taken of this rifle and when were they taken, if you know?

Mr. GRODEN. I am not clear as to all of them. I know that the one on top is the backyard photograph.

Mr. GOLDSMITH. Excuse me, Mr. Groden, I am not going to ask you to try to explain the source of each particular photograph that served as the basis for this exhibit. I am simply asking how many photographs of the rifle were taken after the assassination?

Mr. GRODEN. I would say countless, countless photographs. I don't know exactly how many.

Mr. GOLDSMITH. And were some of those photographs used as the basis for this exhibit?

Mr. GRODEN. Yes, they were. I see some as the rifle was removed from the depository, which were some of the first photographs we saw of them, or that we have of them, some of the earliest ones,

some in the police station, probably, but it is during various stages and from different sources.

Mr. GOLDSMITH. Now, examining the exhibit, is your testimony that the rifle as shown there also fails to line up consistently?

Mr. GRODEN. Quite frankly they do seem to have a problem lining up. They don't seem to line up exactly.

Mr. GOLDSMITH. Was there ever any question about how many rifles were discovered in Dealey Plaza?

Mr. GRODEN. Yes, there was. Initially, the first report was that—one of the first reports was that a rifle was found on the roof and the specific rifle we are talking about now was originally described as a Mauser of a different caliber.

That is what gave rise to the question initially and then there is the question of the length of the rifle that Oswald was supposed to have ordered and the length of the one that is in the Archives at this point. So the question has been raised several times for various different reasons, and for that reason, I think that this is a very valid test to check the analysis out.

Mr. GOLDSMITH. Fine, now other than the backyard photographs of Oswald, to your knowledge, what other photographs pertaining to this case itself, to the Kennedy assassination case, have been questioned with regard to their authenticity?

Mr. GRODEN. Some of the photographs dealing with Lee Harvey Oswald earlier on in his life have become recently under fire as to whether or not they are genuine or not. An issue has been raised whether the Lee Harvey Oswald that was alleged to have shot the President and was arrested in Dallas was eventually shot by Jack Ruby was the Lee Harvey Oswald of history, the one who had been Lee Harvey Oswald up until going to the Soviet Union.

Mr. GOLDSMITH. Has any question been raised about the Kennedy autopsy photographs?

Mr. GRODEN. The autopsy photographs also came into a great deal of challenge by the Warren Commission critics in that the reports dealing with the autopsy photographs from different groups going into the Archives to view them gave such markedly different results, at least verbal results, as described in relationship to each other and to the medical personnel at Parkland Hospital who seem to describe totally different wounds than those seen in the photographs described.

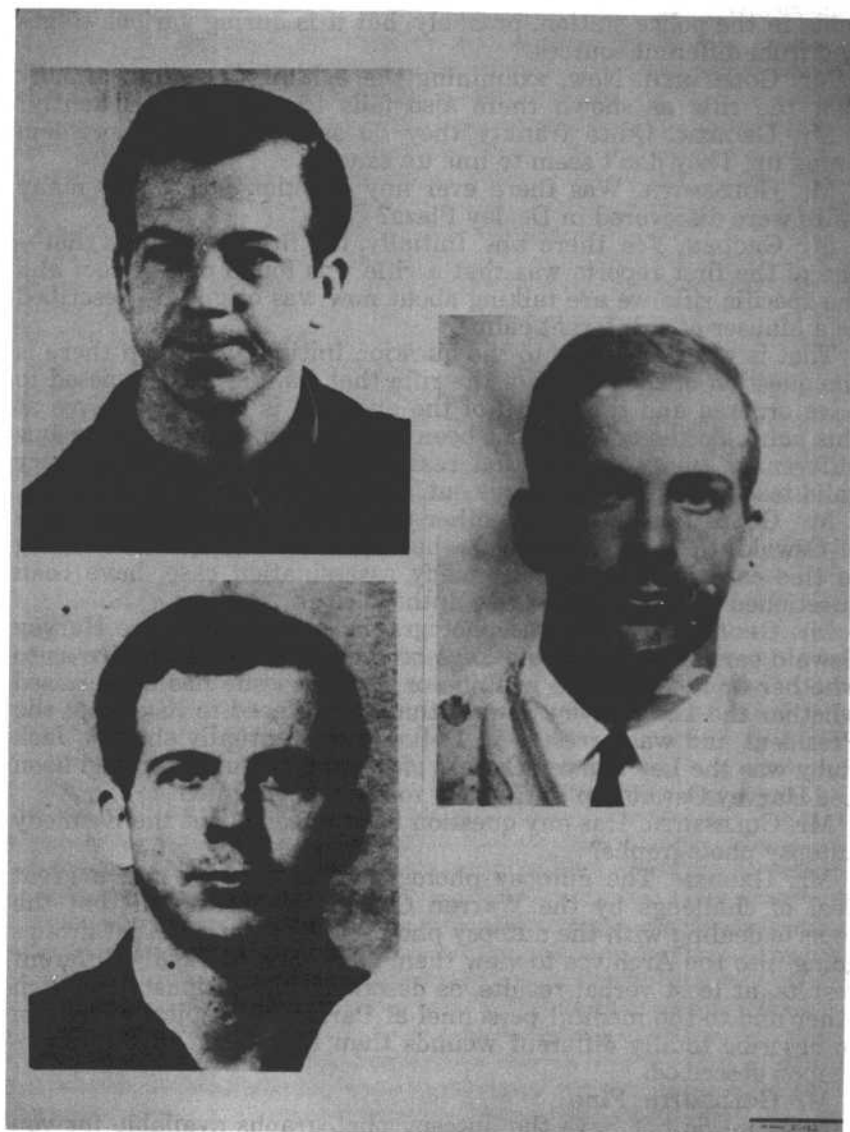
Mr. GOLDSMITH. Fine.

Now, we do not have the autopsy photographs available for you to examine, Mr. Groden, at least not today. You have made reference earlier to photographs of Oswald taken of him while he was in the Soviet Union, and at this time I would like you to refer to what has been marked as JFK exhibits F-132 and F-166.

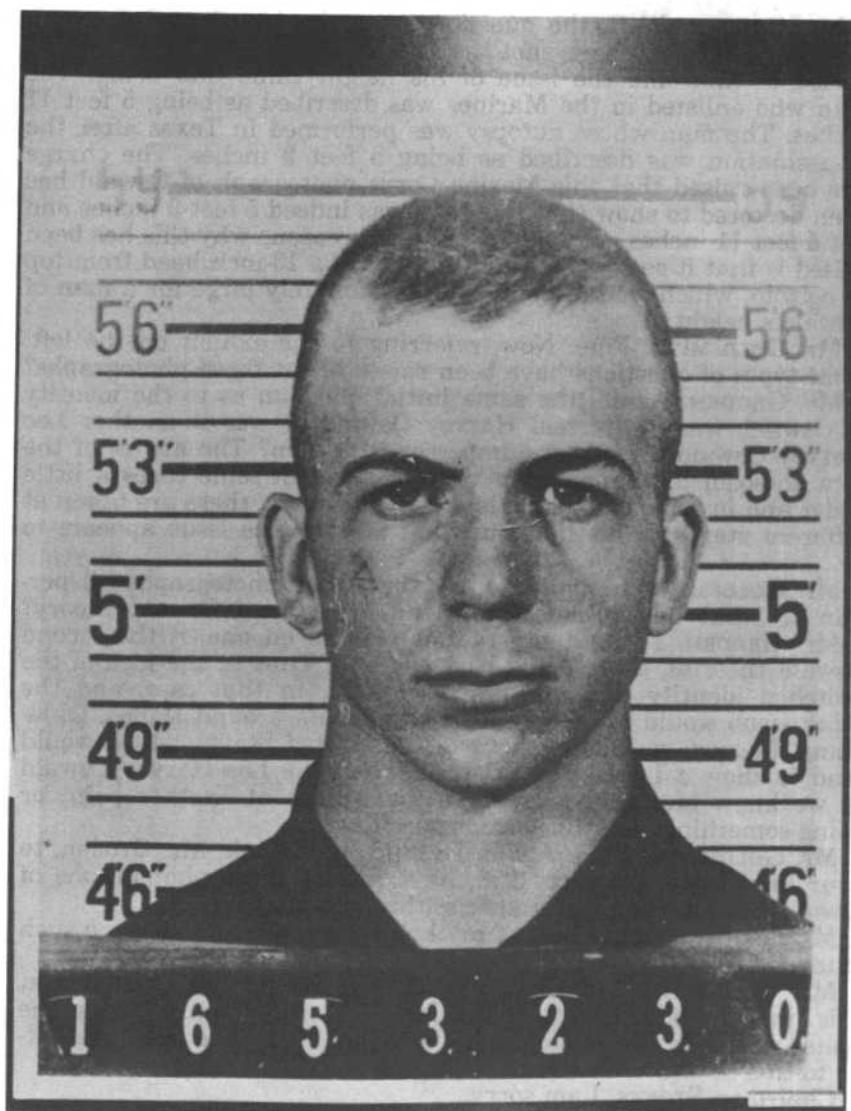
I ask, Mr. Chairman, that these exhibits be entered into the record.

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

[The above referred to JFK exhibits F-132 and F-166 follow:]



JFK EXHIBIT F-132



JFK EXHIBIT F-166

Mr. GOLDSMITH. Would you identify these exhibits and explain what issue they raise?

Mr. GRODEN. The exhibit on the left shows three separate photographs taken at different times of either a or the Lee Harvey Oswald. The photograph on the right, the exhibit on the right, represents the Marine photograph showing Oswald and allegedly his height.

Mr. GOLDSMITH. What issue is raised by that photograph, Mr. Groden?

Mr. GRODEN. Well, the question as to the identity of the man who was alleged to have shot the President has been raised over a period of time and the issue of his height came into being. The man who enlisted in the Marines was described as being 5 feet 11 inches. The man whose autopsy was performed in Texas after the assassination was described as being 5 feet 9 inches. The charge has been raised that this Marine Corps photograph of Oswald has been doctored to show that this man was indeed 5 feet 9 inches and not 5 feet 11 inches, and one of the main reasons why this has been raised is that it seems to show a man with a 13-inch head from top to bottom, which would seem disproportionately large for a man of Oswald's height.

Mr. GOLDSMITH. Fine. Now, referring to the exhibit on the left, what types of questions have been raised about these photographs?

Mr. GRODEN. Again, the same initial question as to the identity of Oswald, was it the real Harvey Oswald or was it another Lee Harvey Oswald or someone impersonating him? The angles of the face do seem to change from time to time, in some cases a little wider and in some cases a little taller. Of course, these are taken at different stages in his life. But, that is what the issue appears to be.

Mr. GOLDSMITH. Is it fair to say that these photographs all pertain to what has become known as the second Oswald theory?

Mr. GRODEN. I would say that it reflects on one of the second Oswald theories, there being basically two. That is, the idea of the switched identity or an imposter Oswald, in that case, and the other issue would relate to various incidents around Dallas, Oklahoma, Mexico, various portions of the United States, which would tend to show a Lee Harvey Oswald when the Lee Harvey Oswald as we know him would appear to have been at another point or doing something else at the same specific time.

Mr. GOLDSMITH. Fine. Again, I would like to ask, Mr. Groden, to your knowledge, prior to 1978, have any of these photographs of Oswald been studied by forensic anthropologists?

Mr. GRODEN. To the best of my knowledge, no; I know of no such study.

Mr. GOLDSMITH. Mr. Chairman, I have no further questions at this time. I would like to thank Mr. Groden for summarizing the issues raised by the photographic evidence that have been presented to this committee's scientific panels.

Chairman STOKES. I am sorry.

Mr. GOLDSMITH. I simply indicated, Mr. Chairman, I have no further questions at this time.

Chairman STOKES. The Chair recognizes the gentleman from North Carolina, Mr. Preyer.

Mr. PREYER. Thank you, Mr. Chairman.

I gather, Mr. Groden, that what you have been doing for us is outlining issues which have been raised in the critical community by various photographs?

Mr. GRODEN. Yes, sir, indeed those which could be addressed by the medical or photographic panels.

Mr. PREYER. And you are not attempting to answer those for us this afternoon?

Mr. GRODEN. Not this afternoon; no, sir.

Mr. PREYER. So this is a stay tuned next week part of the program today.

I won't go into the answers to those tantilizing questions but will await further news on that.

I did just want to ask you one question. From the Zapruder film and your analysis of that, is it your opinion that the first shot that hit President Kennedy also hit Governor Connally? I wasn't quite clear on your description of that.

Mr. GRODEN. It would appear photographically that analysis of the film would show that the two men were struck by at least two if not more separate nonfatal shots prior to the head shot.

Mr. PREYER. Would you say that again, each man was hit by at least two shots?

Mr. GRODEN. No, more than the single bullet was involved in the actual nonfatal wounding of both men. It would, at least my analysis of the film through the years would tend to show that.

Mr. PREYER. But you are not giving your opinion as to whether the shot which hit President Kennedy in the throat, the first shot, whether that was the shot that hit Governor Connally or not?

Mr. GRODEN. I do not believe that they are the same bullet. I severely question that particular conclusion.

Mr. PREYER. Thank you, Mr. Chairman.

Chairman STOKES. Time of the gentleman has expired.

The Chair recognizes the gentleman from Ohio, Mr. Devine.

Mr. DEVINE. Mr. Groden, in your photographic analysis of the Zapruder film—let me backtrack a moment—were you here in the room this morning when Governor Connally testified?

Mr. GRODEN. Yes, sir, I was.

Mr. DEVINE. My recollection of the Governor's testimony was that when he heard the first of what he described as two shots fired, that he turned slightly to his right to glance but did not observe the President, he turned back at which time when he attempted to turn to the left, at which time he didn't hear the shot but was hit by a bullet.

Now, if I correctly witnessed the Zapruder film a moment ago, I believe it showed Governor Connally turned to his right and was virtually facing the President after the first shot.

Would you say that is a correct analysis or incorrect?

Mr. GRODEN. I would say, sir, that it is very definitely accurate analysis and you have seen something that is extremely important; yes, it is true.

Mr. DEVINE. My next question would be this. As Governor Connally turned back toward the front, do you recall from you photographic analysis at what position his head was at the time he was struck by a bullet when, I think you said, his cheeks and his hair indicated he was being hit? Was he faced forward or more to the left or do you recall?

Mr. GRODEN. Well sir, to answer that question I would like to go back very quickly to Governor Connally's testimony before the Warren Commission, which was that he had turned to the right, could not see far enough to see the President, started to turn back toward the left, to turn to the left, which is I believe what he repeated this morning, and as he, according to the Warren Commission testimony, he turned a little bit left, as he got a little bit

left of center, that was the point where he was struck by the bullet, which would line up with about 236 to 238, which is what we saw just now with the exhibits.

Mr. DEVINE. Was that confirmed by your analysis of the Zapruder film?

Mr. GRODEN. Yes, it was, sir.

Mr. DEVINE. When Governor Connally's recollection is that he heard one shot fired, turned back, did not hear the shot that hit him, but heard a third shot, is that consistent with your analysis of the Zapruder film? Of course, there is not a sound track.

Mr. GRODEN. No, there isn't. As to whether that is consistent or not would be a matter of interpretation and a little bit of guesswork. The only thing I could say is that, where the guesswork is concerned is if Governor Connally, upon being hit, went into an immediate state of shock, where for the moment he did not hear the sound of the bullet that hit him, this could account for him not hearing the second shot. Again, this is purely interpretive. I certainly don't want to present that as fact, but it could possibly be a reason why he didn't hear the second shot.

Mr. DEVINE. I am totally confident that Governor Connally's testimony was based on his best recollection of the situation as it occurred nearly 15 years ago.

Thank you, sir.

Mr. GRODEN. Thank you, sir.

Chairman STOKES. The Chair recognizes the gentleman from the District of Columbia, Mr. Fauntroy.

Mr. FAUNTROY. Thank you, Mr. Chairman.

Mr. Groden, I would just like to ask a couple of questions based on your knowledge as a photo-optical technician. The first relates to the photographs of the book depository, alleged to have been taken around the time the shots were fired. Would a camera pick up a smoke puff from a rifle?

Mr. GRODEN. It could, sir, if the light hit it a specific way, where the light was reflecting off of the smoke; yes. If it were coming so that the light were passing through it it might not. It is conceivable that it would show. I can cause as a definite type of perhaps future exhibit to answer that question.

During the 1967 CBS reconstruction of the crime, which there are an awful lot of problems with, as far as the critics are concerned, but when they showed the rifle, a Carcano rifle being fired from the depository window, there was a great deal of smoke in evidence on the film. If you would want to see the degree to which smoke could be photographed in this specific sense, that might be a very good place to go to to view such an exhibit.

Mr. FAUNTROY. I guess then my question is, why, on the photographs which we saw, was there no smoke, if in fact the pictures were taken at about the time the firing began?

Mr. GRODEN. Well, sir, I can only answer that by saying in two of the photographs there appear to be smoke and in one there almost definitely is. The Moorman photograph that we viewed, the enlargement from the Polaroid there is, what definitely appears to be a large puff of smoke within, well within 1 second after the President's been struck in the head. There does appear to be such evidence.

Mr. FAUNTROY. Are you familiar with the picture that suggests a puff of smoke from the grassy knoll?

Mr. GRODEN. This is what I was referring to.

Mr. FAUNTROY. Yes. Give us an explanation of how that could be photographed and how, at least, I could not see any puffs around the window?

Mr. GRODEN. OK. If I may, just to digress for a moment. The first question of the puff of smoke came from the witnesses on the overpass that looked in that direction, the area of the grassy knoll as the shots were being fired and saw what appeared to them to be a puff of smoke.

The reason why you could not see it here is this was a somewhat wide angle situation. I am preparing, if I may get back to what Mr. Preyer said a moment ago about possibly a future appearance—I am preparing an exhibit dealing with a very clear enlargement of the specific area where this man who appears in the Zapruder film, the Willis film and the Moorman photographic film, where he was standing, where there does appear to be a very clear puff of smoke.

Now, it may not be a puff of smoke. It may be an illusion. But, it does appear to be such a puff of smoke.

Mr. FAUNTROY. Given the angle from which the Zapruder film was taken and the suggestion that perhaps it was a figure of a man as the camera panned past what seemed to be some shrubbery?

Mr. GRODEN. Yes, sir.

Mr. FAUNTROY. Where would that man have been standing?

Mr. GRODEN. That man would have been standing in the same position where the man was in the Willis photograph and Moorman photograph, within the crux of the concrete retaining wall, that low retaining wall.

Is it appropriate to recall an exhibit?

Chairman STOKES. Sure.

Mr. GRODEN. The Willis photograph.

Mr. GOLDSMITH. That is numbers F-155 and F-129, Willis and Moorman, and number F-274.

Mr. GRODEN. In fairness to the Warren Commission report dealing with this specific figure that we are talking about here, the issue was never raised to them. This is a figure which did appear, we knew it appeared in Willis and Moorman and the rest, and the question was did he appear in any of the motion pictures, and the question became, does he appear in the Zapruder film and another researcher of the assassination and myself both spent a great deal of time searching and scanning the film to try to find if there was anybody there, and it became very, very time consuming because we didn't know exactly what we were looking for.

The direction is not particularly clear in the Zapruder film, initially because there are no specific reference points except for in the background that pole behind the running man that we viewed on the right. The man at the end of the retaining wall on the Willis photograph, right there, and right there at the end, a little bit smaller than that, than was just indicated in that area there, the same man in the same position, you can see Zapruder on the Willis photograph standing at that point.

Directly in front of him and slightly lower in the tree in question, it is a pyracantha and 54 feet away and through we pick up

the image at the end of the wall of the man who does appear in the Zapruder film. At least this is my analysis of it.

Mr. FAUNTROY. Thank you.

Chairman STOKES. The time of the gentleman has expired.

The Chair recognizes the gentleman from Connecticut, Mr. Dodd.

Mr. DODD. Thank you, Mr. Chairman.

Mr. Groden, I really don't have any specific questions for you other than to thank you for your help and to, as I understand it, reiterate what I understood your testimony is this afternoon.

You are identifying through photographic evidence those areas of controversy that have been raised by critics of the Warren Commission report.

Is that a fair assessment of what you are doing here?

Mr. GRODEN. I would say that is a very fair assessment of it, those which I felt could be addressed. There are other questions about this, but they could not be rectified or enlightened upon, in my opinion. I was able—I must say I was not restrained by the committee and I was able to express all of my opinions from the very beginning on through.

Mr. DODD. I only ask this because I am curious, I am not sure myself, not being that familiar with your background. You are a photooptical technician. I presume you have studied that or do you have a degree, or is there some formal course work or is that something you acquired through normal work?

Mr. GRODEN. Basically it starts as on the job type of training. It is something that someone who goes to school to learn to try to do, say, through RIT or the Kodak Institute or any specific—

Mr. DODD. What I was getting at here is, as part of that training, you don't have any specific expertise in ballistics, fire arms, or forensic pathology?

Mr. GRODEN. No, sir, not at all.

Mr. DODD. Thank you very much.

Thank you, Mr. Chairman.

Chairman STOKES. The time of the gentleman has expired. I would just like to say for the benefit of both the members of the committee and the audience or the viewers, that the gentleman who appears here today, Mr. Groden, appears here in his capacity as a genuine critic, and the sole purpose of receiving his testimony is to raise the various issues that have been raised relative to photographs by the various critics of the critical community.

In subsequent days in these hearings, this committee will produce the technical experts who will answer the types of questions that have been raised here today through one of the members of the critical community. So, I caution that his testimony is to be received for that purpose only.

The Chair recognizes the gentleman from Connecticut, Mr. McKinney.

Mr. MCKINNEY. I have no questions, Mr. Chairman. I would just like to thank the witness for putting forth, as clearly as he has, the critical questions that have been raised over the years.

Chairman STOKES. The time of the gentleman has expired.

The Chair recognizes the gentleman from Tennessee, Mr. Ford.

Mr. FORD. Thank you, Mr. Chairman.

In light of what you said, I have only one question. When Mrs. Kennedy crawled out of the limousine on the back of the trunk, do we have a photo of what she picked up at that time? Have you seen a photo of what she picked up from the trunk of the car?

Mr. GRODEN. This is a very, very touchy issue, sir. You are one of the few people who, viewing this—I assume this is not the first time you have seen this film, but, very few people catch the fact she does indeed appear to be picking something up. I specifically did not mention what I thought that to be, but from her testimony, which includes the fact she has no recollection of ever climbing out on the trunk in the first place, it would appear that she picked up a piece of skull that had been blown to the rear or a piece of brain matter, or something that had been blown backward from the impact of the shot.

She does appear to reach out, brace herself with her left hand, reach out with her right hand, pick something up and take it back into the car. One of the initial interpretations of the film was that the Secret Service agent, Clint Hill, reached her and pushed her back into the car. He doesn't do that. She climbs back by herself. He barely touches her forearm. So, it would seem as though she had some specific purpose to climb out, pick something up and bring it back, which may be relevant to dealing with the direction from which the shot may have come.

Mr. FORD. Do you recall a photograph of her picking anything up off the trunk?

Mr. GRODEN. There is one. The No. 7 Altgens photograph, No. 7, which is the sixth one of the series. I state it that way because the numbers on the individual negatives, there is no No. 1, so I state it that way for clarity, shows her picking something up cupped in her hand, but what it is, we cannot see from the photograph.

Mr. FORD. Thank you, Mr. Chairman.

Chairman STOKES. The time of the gentleman has expired. The Chair recognizes the gentleman from Indiana, Mr. Fithian.

Mr. FITHIAN. I only have one question, Mr. Groden. This morning Mrs. Connally was very clear in her testimony about what she perceived each of the three shots as having done; the first one going through the President's neck, the second one hitting Governor Connally, and the third one exploding the President's head.

In your hours of analyzing photographs, do you have photographic evidence to either corroborate or refute that?

Mr. GRODEN. In my opinion, I would state that I find that to be a more accurate description of what the photographic evidence would tend to show happened than what has become known as the single-bullet theory.

Again, I want to express this is my opinion on it and it is subject to change.

I do believe that the President was, in all probability, was struck by an earlier bullet. From Governor Connally's very definite testimony as having heard the first shot, and had the reaction time to turn around and then turn back, that whether the President was hit by an earlier bullet or not, that there was one bullet fired before Governor Connally was hit.

I think there is very little question about that.

Mr. FITHIAN. Thank you.

Thank you, Mr. Chairman.

Chairman STOKES. The time of the gentleman has expired.

The Chair recognizes the gentleman from Michigan, Mr. Sawyer.

Mr. SAWYER. Yes, I only have one question. There has been a lot of testimony that we have heard, not just from you, but earlier in other sessions, about puffs of smoke, and I don't have any expertise in knowing what the photographic sensitivity of film is, but I do a lot of hunting myself, and I have seen a lot of guns fired with smokeless powder loads, and there is no discernible smoke to the human eye when you are watching one fired.

I wonder, have you ever done anything along that line to try to get pictures of smoke coming out of a modern rifle?

Mr. GRODEN. The only way I can answer that, and I think it is an excellent question, the only way I can answer that question is to say that I initially thought the idea of smoke on the knoll could not have happened for that very same argument, a modern rifle simply does not smoke.

However, the CBS report, although they didn't catch it themselves, shows the rifle being fired, as I recall, several dozen times, and every single time, there is a rather large puff of white smoke.

Mr. SAWYER. Yes, I don't know how they did that, but when you are firing a muzzle-loader or black powder rifle, which they haven't put out for a long, long time, way before the period of time we are talking about, the modern mode and smokeless loads, at least when you watch them fired, you can't see any smoke come out of them.

Mr. GRODEN. Again, that was my argument originally, too. I thought that there was no chance of it. Yet, this specific visual testing showed in every single case, not just an occasional case, that there was a tremendous amount of smoke. As a possible explanation, I certainly do not want to represent myself as anything close to an expert on it, is that it is my recollection that the ammunition made for that specific weapon ceased sometime around the late 1940's. I could be wrong about that. So, it would not be "modern ammunition" per se, unless they were handloaded. I would have no knowledge of this.

Mr. SAWYER. I am sure way before that, they stopped using black powder even in Carcanos.

Mr. GRODEN. I am sure, too. The only answer I can give to you, the only time I have seen a Carcano fired physically was in a CBS testing and it did, indeed, show a great deal of smoke.

Mr. SAWYER. I have nothing further.

Thank you, Mr. Chairman.

Chairman STOKES. The time of the gentleman has expired.

The Chair recognizes the gentleman from Pennsylvania, Mr. Edgar.

Mr. EDGAR. Thank you, Mr. Chairman.

Mr. Chairman, I don't have any specific questions of the witness today. As I listened this afternoon and looked at the pictures and photographic evidence, there were number of issues that were raised in my mind. It occurred to me some people listening and watching and perhaps some here today, will get a little bit confused about what we have seen and witnessed this afternoon. I think that it would be accurately described as a shopping list of issues and that in the next few days and weeks, I hope that we can

examine the issues relating to the autopsy and the acoustics and the trajectory and the other issues which I know are going to be laid out and give us an opportunity to accurately come back to each of these photographs and each of the exhibits that have been introduced today, and come up with some resolution to some of the theories and issues which have been raised.

I appreciate our witness coming and sharing the shopping list. I don't think that we have resolved many of the issues or should we take the time at this time, in my opinion, to go into all of the analysis of each of these pictures.

Chairman STOKES. Will the gentleman yield?

Mr. EDGAR. I yield to the chairman.

Chairman STOKES. I think that the gentleman precisely states the case. As I attempted to say earlier, so that those who are following the evidence being produced to our committee might better understand it, we are merely, at this time, trying to lay the groundwork so that when the other technical experts testify, they will be in a much better position to be able to understand their testimony having had the critical issues pointed up at this time.

Mr. EDGAR. I withhold my questions until that time.

Chairman STOKES. I thank the gentleman.

Mr. Goldsmith, do you have anything further?

Mr. GOLDSMITH. No, Mr. Chairman. Thank you.

Chairman STOKES. Mr. Groden, under the rules of our committee, every witness testifying before this committee at the conclusion of his testimony is to be given 5 minutes in which he may make any statement, either explaining or amplifying or in any way, expanding upon the testimony he has given before this committee.

On behalf of the committee, I extend to you, at this time, that period of time in the event that you so desire.

Mr. GRODEN. Thank you, sir.

May I have one moment, please?

Chairman STOKES. Certainly.

Mr. GRODEN. Mr. Stokes, everybody present, the first thing I want to do is to thank you for the opportunity for my being here to present some of the issues as I see them, those specific issues which we felt could be best addressed by the scientific panels.

Mr. Preyer before suggested that perhaps I might be coming back in the future to raise other issues or present further viewpoints. I would hope so and request so.

Back in January 1975 when my wife Chris and I decided that we would release the films and visuals dealing with the assassination to the public, they came to the attention of Congressman Thomas Downing of Virginia, now retired, who felt there were enough questions here to warrant such a committee and the legislation was initially introduced, and I commend him for his foresight.

What I have done here is present some of the issues as they were and as I felt about them when this all began. Some of these issues, in my mind, have changed. Some of the case which I presented here, I never felt were issues in the first place, but other credible critics did believe so.

Some of them, which I believed at the time, I no longer believe, and I would request at the committee's convenience, if the time is going to be available, to come back and discuss the new findings

and the feelings as they are today and the additional issues which were not raised before the panels to be dealt with scientifically.

Other than that, again, I thank you and wish you well with the investigation.

Chairman STOKES. Mr. Groden, we certainly want to thank you for your appearance here today and for the very articulate way in which you have pointed up some of the issues that have been raised in the critical community. You certainly have been of value to this committee over a period of time.

We want to thank you for your appearance here today. Thank you very much.

Mr. GRODEN. Thank you.

Chairman STOKES. There being nothing further, the committee is adjourned until 9 a.m. tomorrow morning.

[Whereupon, at 4:20 p.m., the committee recessed, to reconvene at 9 a.m., Thursday, September 7, 1978.]