

letter indicates the mailing dates and the approximate dates when these publications were received in Dallas.

As I understand it, you did not take part in the investigation which led to that aspect of the letter which has been designated as Shaneyfelt Exhibit No. 22?

Mr. Shaneyfelt. That is correct. That investigation was done by Agents in our Dallas and other field offices.

Mr. Redlich. I would like to read into the record at this time the following paragraph from the letter which has been designated as Shaneyfelt Exhibit No. 22:

"It has been determined that the March 24, 1963 issue of 'The Worker' was mailed on March 21, 1963 by second class mail. It was also determined that the March 11, 1963 issue of 'The Militant' was mailed on March 7, 1963 by second class mail. Representatives of the U. S. Post Office in New York City have advised that the above newspapers transmitted by second class mail would take from six to seven days to arrive in Dallas, Texas under ordinary delivery conditions."

The record will show that during the course of her testimony Mrs. Marina Oswald identified Commission Exhibit No. 2 as a photograph which she believed to have been taken by her husband in connection with his planning for the attack on Major General Edwin A. Walker, which occurred on April 10, 1963.

The record will also show that investigation has established that Commission Exhibit No. 2 is a photograph of an

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alley running behind the house of General Walker through which cars are able to drive into the parking lot of a church adjacent to General Walker's house.

It has also been established in prior investigation that the driveway running off this alley to the left, as one looks at the photograph, is the driveway of General Walker's house.

Investigation has also established the approximate date on which this photograph was taken by reference to the construction work being performed on the large building appearing in the background of this photograph.

Mr. Shaneyfelt, the Commission asked the FBI to examine this photograph for the additional purpose of determining, if possible, the camera which was used to take the photograph.

Did you perform this investigation for the FBI?

Mr. Shaneyfelt. Yes, I did.

(Exhibit 23 (Shaneyfelt) was marked for identification.)

Mr. Redlich. I introduce into the record at this time an exhibit designated as Shaneyfelt Exhibit No. 23, consisting of two photographs, and I ask you to describe the photographs and the results of your investigation undertaken pursuant to the Commission's request.

Mr. Shaneyfelt. ^{Shaneyfelt} ~~Exhibit~~ Exhibit No. 23 consists of two photographs, A and B. Photograph A is an enlargement of Commission Exhibit No. 2 which is the photograph of the alley in back of the Walker residence.

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Photograph B on Shaneyfelt Exhibit No. 23 is an enlargement of a negative which has previously been designated as Commission Exhibit 752 that I personally exposed in the Duo Flex camera obtained from Oswald's possessions which has previously been designated as Commission Exhibit 750.

This examination was based on the shadowgraph of the picture area of the camera exposed on to the negative, ~~or resulting~~
~~print.~~

This shadowgraph shows the imperfections and nicks, etc., along the edges of the picture area of the camera that are individual and distinctive to that particular camera, and would not be duplicated in ^{any other} ~~every~~ camera of the same make and model.

Mr. Redlich. Before you proceed to the specific points of reference, Mr. Shaneyfelt, in your prior testimony you advised the Commission, that Commission Exhibit No. 133B, which is a photograph of Lee Harvey Oswald holding a rifle, but in a slightly different pose from Commission Exhibit No. 133A; that Commission Exhibit No. 133B was taken by the camera which has been designated as Commission Exhibit No. 750.

You made that identification based on an examination of the negative from which Commission Exhibit No. 133B was produced.

At that time you indicated that you could not make such an identification of the source of Commission Exhibit No. 133A because the negative had not been recovered.

I would like to ask you two questions: First, to the best

of your knowledge has there been any recovery made of the negative from which Commission Exhibit No. 133A was made?

Mr. Shaneyfelt. Not to my knowledge.

Mr. Redlich. The second question is, why are you able to make an identification of the origin of Commission Exhibit No. 2 which is not a negative but a print, whereas you are unable to make an identification of Commission Exhibit No. 133A which is also a print?

Mr. Shaneyfelt. Because the identification of the origin of the photograph or negative is based on the reproduction of the picture area of the camera or the opening in the back of the camera where the negative is exposed.

This appears as a shadowgraph on the negative, and is the basis for the identification.

If a print is made from the negative that shows this shadowgraph, then the print can be used as a basis for the identification.

In the case of Commission Exhibit 2, which is a print of the alley in the back of the Walker residence, this shadowgraph appears around three of the edges of this photograph and, therefore, it has been used for such a comparison.

Commission Exhibit 133A has been printed with a white border and the shadowgraph portion of the negative has been blocked out and does not appear on Commission Exhibit 133A. Therefore, it was not possible to associate it with any specific camera.

Mr. Redlich. Will you proceed now to indicate the points of reference which enabled you to make the identification concerning Commission Exhibit No. 2?

Mr. Shaneyfelt. Yes.

In ~~Commission Exhibit~~ of Shaneyfelt Exhibit No. 23, in photograph B, point No. 1 is ~~along the lower left hand~~, near the lower left hand corner of the picture, and shows a depression in the black ~~line~~^{edge} and a little point sticking out from the black ~~line~~^{edge} into the white area of the picture.

This is caused by an irregularity in the camera area where the film ~~lays~~^{lies} across the back portion of the camera. This characteristic, which is No. 1 on photograph B of Shaneyfelt Exhibit No. 23, appears in that same area which has been labeled No. 1 on photograph A of Shaneyfelt Exhibit No. 23.

It appears as a shallow depression and a little black point coming into the white area.

Farther along the right hand side of the picture centrally located between the top and the bottom, are points 2 and 3 in photographs A and B on Shaneyfelt Exhibit No. 23. These refer to two small notches in the black area where the white of the picture runs into the black line causing the appearance of two notches, one, the lower one, about twice the width of the upper one. This same characteristic is present in both photographs A and B.

Point No. 4 is an irregularity or a curve in the line on

the right edge of the photograph in both A and B of Shaneyfelt Exhibit No. 23.

Point No. 5 is a long shallow depression in the ~~black line~~, black edge, of the photographs A and B.

This point is located centrally on the right hand border, and has the same appearance in both of the photographs on Shaneyfelt Exhibit No. 23.

Point No 6 is a little black point that comes out into the white area of the picture, and this, I found, in the lower right hand corner of the photograph of the alley in back of the Walker house, which is photograph A on Exhibit No. 23, and is also present as point No. 6 in the photograph that I made from the camera which is photograph B of Shaneyfelt Exhibit No. 23.

Based on these characteristics, it is my opinion that, the photograph, which is Commission Exhibit No. 2, ~~was~~, is, a print of a negative that was exposed in the Duo Flex camera which is Commission Exhibit 750.

Mr. Redlich. Is the scientific method which you have used to make this identification sufficiently precise so that you are able to state that this negative was exposed in Commission Exhibit No. 750 to the exclusion of all other camera?

Mr. Shaneyfelt. Yes.

Mr. Redlich. Mr. Shaneyfelt, Commission Exhibit No. 150 is a shirt which has been described in testimony as the shirt worn by Lee Harvey Oswald at the time of his arrest on November

22, 1963.

The Commission has forwarded to the FBI two photographs which have been heretofore designated as Gerald L. Hill, Exhibit A, and Gerald L. Hill, Exhibit B, which have been identified by the photographer as having been taken under the marquee of the Texas Theater as Oswald was being removed from the theater on November 22.

Gerald L. Hill Exhibit A has been heretofore identified as having been taken at a point of time very close to the time that Gerald L. Hill Exhibit B was taken.

The Commission also forwarded to the FBI a photograph which has heretofore been designated as Yarborough Exhibit A which appeared in the Saturday Evening Post issue of December 14, 1963, page 26.

For purposes of identification, the photograph appearing in Yarborough Exhibit A has been designated as Commission Exhibit 1797 since Yarborough Exhibit A consists of the entire Saturday Evening Post article.

The Commission asked the Bureau to examine the three photographs, Commission Exhibit No. 1797, Gerald L. Hill Exhibit No. A, Gerald L. Hill Exhibit B, in order to determine whether the shirt worn by Lee Harvey Oswald in these photographs was in fact the same shirt which has heretofore been designated as Commission Exhibit No. 150.

Is that correct, Mr. Shaneyfelt? Did you perform the

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examination in connection with this request by the Commission?

Mr. Shaneyfelt. Yes, I did.

Mr. Redlich. In connection with that examination, the FBI furnished to the Commission an additional photograph of Lee Harvey Oswald.

Would you please describe that photograph in relation to any of the other photographs that we have furnished to the Bureau?

Mr. Shaneyfelt. Yes.

Commission Exhibit --

Mr. Redlich. I would like to add that the photograph which the Bureau furnished to the Commission has been designated as Commission Exhibit No. 1796.

Mr. Shaneyfelt. Commission Exhibit 1796 was furnished to the FBI by the photographer who took the picture that has been designated as Commission Exhibit No. 1797. The photographer stated that the photograph, Commission Exhibit 1796, was taken seconds before the photograph which is Commission Exhibit 1797.

Mr. Redlich. On the basis of the photographs in your possession, which you examined, would you please describe the nature of your investigation and the conclusions which you reached?

Mr. Shaneyfelt. Yes. I compared the shirt which is Commission Exhibit 150 with the shirt being worn by Oswald in Commission Exhibit 1796, and Commission Exhibit 1797.

(Exhibit 24 (Shaneyfelt) was marked for identification.)

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Mr. Redlich. And in connection with that comparison, you prepared a chart which you have here today and which has been designated as Shaneyfelt Exhibit No. 24, is that correct?

Mr. Shaneyfelt. That is correct.

Shaneyfelt Exhibit No. 24 contains four photographs lettered A, B, C and D.

Photograph A on Shaneyfelt Exhibit No. 24 is an enlargement of the shirt being worn by Oswald in Commission Exhibit 1796.

Photograph B is a photograph of the actual shirt, Commission Exhibit 150, being worn by an employee of the FBI laboratory. The photograph was made with the shirt in the same approximate position as ^{the shirt} being worn by Oswald in Commission Exhibit 1796.

Photograph C is an enlargement of the shirt being worn by Oswald in Commission Exhibit 1797.

And photograph D is a photograph made in the FBI laboratory of Commission Exhibit 150 being worn by a laboratory employee, and the photograph was made to show the shirt in the approximate position and contour of the shirt being worn by Oswald in Commission Exhibit 1797.

The comparison of the shirt being worn by Oswald in Commission's Exhibits 1796 and 1797, were made with the shirt itself, and it was found that ~~the photographs were~~ photograph A of Shaneyfelt Exhibit No. 24, shows at points that have been designated on this photograph A as one, two, three and

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four, ~~some~~ little bits of foreign deposits that are adhering to the shirt. These little specks of foreign material are present on the shirt now, and are shown in the photograph in the same relative positions or locations ~~in~~ at points numbered one, two, three and four in photograph B of Shaneyfelt Exhibit No. 24.

In addition, it ~~was~~^{was} found that in ~~the~~ photograph A, point 5 and point 6 ~~are~~^{that} two of the buttons ~~are~~^{are missing.} The second button ~~from~~^{down} the collar and the third button down from the collar are missing from the shirt in ~~the~~ photograph A of Shaneyfelt Exhibit No. 24. These buttons are also missing from the shirt and the torn condition of the area where the button has been pulled away or removed has the same configuration in both photographs A and B at points 5 and 6.

Point 7 indicates that the button on the shirt being worn by Oswald in the photograph A of Shaneyfelt Exhibit 24, is the same type and color and configuration as the button in the photograph B at point 7.

Points 8 and 9 refer to areas of the shirt in photograph A and photograph B, 8 being at the tip of the collar on the right side of the wearer, and ⁹ being the corner of the left pocket nearest to the buttons.

These two points indicate the similarity in pattern at those specific locations and show that the pattern of the fabric in both shirts at those points is identical. ^{Two} ~~the~~ shirts ~~are~~

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cut from the same fabric would not logically have an exact duplication of the pattern at cut or sewn edges of this type.

On photographs C and D on Shaneyfelt Exhibit No. 24 points 10, 11 and 12 again refer to the similarity in pattern ~~as~~ ^{along} ~~the~~ ^{shirt and} ~~edges~~ of the ~~shirt~~ ^{shirt} it would relate to the manner in which the material was cut from the original fabric.

Point 11, for instance, is two white lines of the same length in both photographs, and in the same location from the edge of the ~~shirt~~ ^{shirt}.

All of these points are of the same general type to show that the fabric design in a specific area close to an edge is identical.

Points 13 and 14 in photographs C and D of Shaneyfelt Exhibit No. 24 refer again to the torn areas where the buttons have been pulled from the shirt and show that they are similar in all their visible characteristics.

Based on these points it is my opinion that the shirt being worn by Oswald in Commission Exhibits No. 1796 and 1797, is the same shirt as Commission Exhibit 150.

Mr. Redlich. The record will show that Commission Exhibit 150 has a hole approximately one inch by two inches in the right elbow.

Is this hole visible in any of these photographs, Mr. Shaneyfelt?

Mr. Shaneyfelt. No, it is not.

Mr. Redlich. Referring to Shaneyfelt Exhibit No. 24, photograph D, does the right elbow of the shirt in this photograph ~~appear to contain a~~ appear to show a mark which might be a portion of that hole?

Mr. Shaneyfelt. Yes, it does.

Mr. Redlich. In your opinion, is it a portion of that hole?

Mr. Shaneyfelt. Yes, it is, because this is a photograph that I made of this shirt and I know it to be the same shirt.

Mr. Redlich. But why then does it not appear on photograph C which is the photograph of the shirt as it is being worn by Oswald?

Mr. Shaneyfelt. It doesn't show it in that photograph because the individual standing beside Oswald is ^{blocking} ~~blocking~~ off that portion of the elbow and in fact has his thumb over Oswald's arm, you can see the thumb on the right arm where the officer is holding Oswald's arm.

Mr. Redlich. The absence of the hole in the photographs designated as Shaneyfelt Exhibit No. 24 A and C and Commission Exhibit 1796 and 1797, does not in any way effect your identification of the shirt as being the same shirt which is Commission Exhibit No. 150?

Mr. Shaneyfelt. No, it does not.

Mr. Redlich. During the course of its investigation, the Commission received a series of slides taken by a Mr. Willis.

These slides show various pictures of the motorcade and have in a deposition of Mr. Willis been identified by him as having been taken on November 22, 1963.

Have you examined these slides, Mr. Shaneyfelt?

Mr. Shaneyfelt. Yes, I have.

Mr. Redlich. And of these slides, does anyone appear to be a slide taken at the time of the actual shooting?

Mr. Shaneyfelt. Yes. In the vicinity of that period of time, ~~approximate time~~.

Mr. Redlich. That slide has been processed by your laboratory and appears, does it not, in an exhibit which has been designated as Shaneyfelt Exhibit No. 25?

Mr. Shaneyfelt. That is correct?

(Exhibit 25 (Shaneyfelt) was marked for identification.)

Mr. Redlich. Are you able to identify that slide in terms of the number which it has been given in the Willis sequence of slides?

Mr. Shaneyfelt. Yes. This is the slide that Mr. Willis designated as No. 5.

Mr. Redlich. The Commission asked you to examine this slide with reference to its background and with reference to other photographs which you have examined of the motorcade at the time of the assassination, in order to determine the relationship of this slide to the shots which were fired at that time.

Did you personally conduct this examination?

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Mr. Shaneyfelt. Yes, I did.

Mr. Redlich. In connection with that you prepared the *photograph* and the diagram which have been designated as Shaneyfelt Exhibit No. 25?

Mr. Shaneyfelt. That is correct.

Mr. Redlich. Are you able to describe for us now the results of your investigation?

Mr. Shaneyfelt. Yes. Photograph A of Shaneyfelt Exhibit No. 25 is an enlarged color print made from the No. 5 slide of the Willis slides.

The photograph B is a copy of the plat map of the assassination area which was prepared for the Commission and has previously been designated as Commission Exhibit No. 882.

Point No. 1 in photograph A shows Mr. Zapruder in his position --

Mr. Redlich. The record will show that the reference to Mr. Zapruder is to Mr. Abraham Zapruder, who is an amateur photographer, who took the photographs which were used as the basis for the reenactment which was performed in Dallas by Agents of the Federal Bureau of Investigation, and Secret Service and attorneys for this Commission, is that correct, Mr. Shaneyfelt?

Mr. Shaneyfelt. That is correct.

Point 1 of photograph A shows Mr. Zapruder in his position from which he took his eight millimeter motion picture film of the assassination. Point 1 in the plat map shows again the

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point indicating Mr. Zapruder's position as related to other portions of the area.

Point No. 2 is the President riding in the Presidential limousine, which is on photograph A on Shaneyfelt Exhibit 25.

Point No. 3 is the Stemmons Freeway sign that is on the north side of Elm Street in the general area of the assassination. This is also designated as point 3 on the map which is photograph B of Shaneyfelt Exhibit No. 25.

In order to relate the photograph A of Shaneyfelt Exhibit No. 25 ~~to the frames and photographs in the~~ to the specific frames in the Zapruder motion picture film, I first determined ~~from~~ from correspondence, that Mr. Willis was standing along the south curb of Elm Street, approximately opposite the Texas School Book Depository Building.

By looking at the photograph A I find that from the camera angle of Mr. Willis a line drawn from Mr. Willis to Mr. Zapruder would go just to the right of the Stemmons Freeway sign which is point 3 in photograph A.

I drew a line from Mr. Zapruder's position with lavender pencil just past the freeway sign which is position 3 on photograph B over to the general area of the side of Elm Street where Mr. Willis is reported to have taken his pictures.

Mr. Redlich. And that line appears as the top line in Chart B of Shaneyfelt Exhibit No. 25, does it not?

Mr. Shaneyfelt. That is correct.

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I then noted in the photograph A of Shaneyfelt Exhibit No. 25, that a line from the ~~eye~~ eye of the camera-man, to the President, would pass the Stemmons Freeway sign somewhat farther away from the sign than the line to Mr. Zapruder, approximately three to four times a greater distance.

I drew a line from an area about that far from the sign to the area where Mr. Willis was reported to be standing and find that that line passes through a point designated on the map as frame 210 which relates to the frame number 210 of the Zapruder assassination films.

I then drew a green line from Mr. Zapruder's position to ~~the~~ President Kennedy, at frame 210, and find that that ~~sign passes that line~~ green line, ^{passes} ~~passes~~ directly through the Stemmons Freeway sign which is position 3 in photographs A and B on Shaneyfelt Exhibit No. 25.

Based on this, it is my opinion that photograph A of Shaneyfelt Exhibit No. 25 was taken in the vicinity of the time that frame 210 of the Zapruder picture was taken.

This is not an accurate determination because the exact location of Mr. Willis is unknown.

This would allow for some variation, but the time of the photograph A, as related to the Zapruder picture, would be generally during the period that the President was behind the signboard in the Zapruder films, which covers a range from ~~frame~~

frame frame
205 to 225.

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Mr. Redlich. The record will show that prior investigation has revealed that President Kennedy emerges from the sign at frame 225, and that he starts going behind the sign at approximately frame 205.

Prior investigation has also revealed that when viewed from the southeast corner window of the sixth floor, the President ^{emerges} ~~emerges~~ from the oak tree at approximately frame 210.

Mr. Willis has stated, Mr. Shaneyfelt, that he took this photograph almost at the instant that the President was hit by a shot which sounded to Mr. Willis as if it was the first shot that he heard.

On the basis of your examination of the Zapruder films, and your examination of the Willis photograph, would it be a correct statement that this photograph, the one appearing in Shaneyfelt Exhibit No. 25, was taken at approximately the same time as the shot which struck President Kennedy at the rear of the base of the neck?

Mr. Shaneyfelt. Yes, that would be a correct statement, to the best of our knowledge at this time.

Mr. Redlich. Returning for just a moment to Mr. Willis' location, would it not have been possible for you to fix his exact location by reference to two different fixed points in the background at different points in this picture?

Mr. Shaneyfelt. Yes, it would be possible having Mr. Willis' camera, to fix his location with some degree of accuracy by using

it at the specific location in Dallas, and ~~relating to~~
~~relating~~ various objects in the photograph to their location
as they appear in Photograph A of Exhibit No. 25.

Mr. Redlich. You are reasonably satisfied, however, that the
technique that you have used to fix his location is a reasonably
accurate one upon which you can base the conclusions which you
have stated today?

Mr. Shaneyfelt. Yes, yes. I feel that the exact establish-
ing of the position of Mr. Willis would not add a great deal of
additional accuracy to my present conclusions.

Mr. Redlich. Mr. Shaneyfelt, during the course of the Com-
mission's investigation we have had occasion to request the Bureau
to investigate whether any bullets or fragments of bullets struck
any of the street or curbing or other area around ^{Dealey} ~~Dealey~~ Plaza.

In connection with this investigation, the Commission asked
the Bureau to investigate a photograph taken by Mr. James Underwood
a newsman for KRLD-TV in Dallas, and a photograph taken by Mr.
Tom Dillard, a photographer for the Dallas Morning News. In con-
nection with this request the Commission received a communication
from the FBI dated July 17, 1964, which is now designated as
Shaneyfelt Exhibit No. 26.

(The document referred to was marked Shaneyfelt Exhibit No.
26 for identification.)

Mr. Redlich. Would you briefly summarize the results of the
investigation as of that time, Mr. Shaneyfelt.

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Mr. Shaneyfelt. Yes. The Commission requested that we conduct an investigation relative to reports that there was a mark or a nick on the south curb of Main Street in the assassination area, and that we attempt to locate it and make whatever tests could be made to determine whether or not a bullet could have struck the curb at that point.

The investigation was initiated by requesting our Dallas office to contact the photographers, James Underwood of KRLD-TV in Dallas, and Mr. Tom Dillard, a photographer for the Dallas Morning News, and ~~the~~ ^{to} use ^{the} ~~of~~ photographs previously made by these two photographers to attempt to locate this mark or nick on the curb on the south side of Main Street.

~~Commission Exhibit~~ ^{a report of} Shaneyfelt Exhibit No. 26 is the result of that initial search which resulted in failure to find the exact location of this mark or nick ~~along~~ the curb along the south side of Main Street ~~at~~ the assassination site.

Mr. Redlich. Following this letter, you yourself went down to Dallas in order to pursue this matter further, is that correct?

Mr. Shaneyfelt. That is correct.

(The document referred to was marked Shaneyfelt Exhibit No. 27 for identification.)

Mr. Redlich. I introduce into the record at this time Shaneyfelt Exhibit No. 27, which is a letter from Director Hoover to Mr. Rankin summarizing the results of this investigation.

(The documents referred to were marked Shaneyfelt Exhibits

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28, 29, 30, 31, 32, and 33 for identification.)

Mr. Redlich. I also introduce into the record Shaneyfelt Exhibits No. 28, 29, 30, 31, 32, and 33.

With reference to these exhibits, Mr. Shaneyfelt, I ask you to summarize at this time the results of your investigation into the existence of a mark on the curb, and if such a mark was found to exist, its location with reference to other photographs of which you have knowledge.

Mr. Shaneyfelt. Yes.

Using photographs made by Mr. Underwood and Mr. Dillard in November 1963, either the 22nd or 23rd, of this mark on the curb, I went to Dallas and was successful in locating a mark.

Shaneyfelt Exhibit No. 29 contains the photographs used to locate the mark on the curbing on the south side of Main Street at the assassination site.

Photograph No. 1 of this exhibit is the photograph of the mark made by Mr. Underwood, the red arrow indicating the mark on the curb.

Photograph No. 2 is the photograph made by Mr. Dillard of the mark on the curb, and the red arrow again designates the mark.

Photograph No. 3 of Shaneyfelt Exhibit No. 29 is a photograph that was made by Mr. Underwood by placing his camera on the mark and pointing it toward the Texas School Book Depository building, and he stated he did this so that the resulting photograph could be used to relocate this mark on the curb should it ever be

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necessary.

Mr. Redlich. I gather that without that photograph taken by Mr. Underwood it would have been extremely difficult, if not impossible, to have located this mark, is that correct?

Mr. Chaneyfelt. It would have been more difficult. Mr. Dillard's photograph actually contained some background that was of value, and we would have found it without this, but this made it much easier. ~~This mark~~, Photograph No. 3, which was made by Mr. Underwood, allowed us to go immediately within ~~a foot or~~ a foot to a foot and a half of, the actual mark.

Mr. Redlich. Continue.

Mr. Chaneyfelt. The photograph which has been marked as Shaneyfelt Exhibit No. 28, ^{is} the photograph that I made after having located the mark, ^{this} in effect duplicates the photograph made by Mr. Underwood, which is Photograph 3 of Chaneyfelt Exhibit No. 29 and, as can readily be seen in comparing these two photographs, the relationship of the light pole to the buildings on either side of it on the right side of the photograph, the relationship of the sign to the concrete abutment in the back of it ^{to} ~~on~~ the right edge of it, the relationship of the light posts ~~between~~ between the cameraman and the Texas School Book Depository building, and their relationship to the building in back of them, show that they are entirely consistent, and that the mark that was located is, in fact, the mark that was photographed by Mr. Underwood and Mr. Dillard.

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17 Photograph No. 30 or Chaneyfelt Exhibit No. 30, is a photograph approximately duplicating the photograph made by Mr. Dillard which is Chaneyfelt Exhibit No. 29,

→ Photograph No. 2. I, with a pencil, made a circle around the mark on the curb, and this pencil mark shows in Chaneyfelt Exhibit No. 30.

Chaneyfelt Exhibit No. 31 is a photograph taken from in front of the School Book Depository building looking down toward the triple underpass, showing in the center area of the picture two men in white shirts standing along the south curb of Main Street at the point where the ~~mark on the curb~~ mark on the curb was found.

Chaneyfelt Exhibit No. 32 is a photograph made from under the triple underpass looking past the point where the mark on the curb was located towards the Texas School Book Depository building which relates this area to the rest of the assassination site.

There is a marker that has been set up on the curb with an arrow pointing down, that is directly over the area where the mark is located on the south curb of Main Street.

The photograph, Chaneyfelt Exhibit No. 33, is a photograph made from the location of Mr. Abraham Zapruder who made motion pictures of the assassination on November 22, and this photograph was made having a man who can be seen standing in the center of the picture, placed in the center of Elm Street, along a straight line between the mark on the curb and the assassination window in

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the Texas School Book Depository building, the sixth floor.

The man is standing in that direct straight line between the assassination window and the mark on the curb, and the photograph then shows where the President in the Presidential limosine, would ~~be on~~ ^{have been on} Elm Street as related to the Zapruder films if a bullet going from the sixth floor window to the mark on the curb went directly over the President's head.

Mr. Redlich. Are you able to tell us the frame in Zapruder's sequence which would correspond to the position of the man standing on Elm Street in Chaneyfelt Exhibit No. 33?

Mr. Chaneyfelt. Yes. This would correspond to frame No. 410 in the Zapruder films. Of course, this, as stated, is based on the assumption that a bullet going from the window to the mark on the curbing went directly over the President's head. It would have occurred at approximately frame 410.

In relating this to other previously determined facts regarding the Zapruder films, this would be 97 frames after the frame 313, which is the frame of the Zapruder films that shows the shot that struck the President in the head. At 18.3 frames per second, this, 97 frames would, represent a lapse of time of 5.3 seconds between the shot to the President's head at frame 313, and any shot that would have occurred at frame 410, if such did occur.

Mr. Redlich. Now, with further reference to the relationship of this location to the Zapruder films, the Commission previously requested ~~that you~~ that the Bureau, advise us as to when Special

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Agent Hill & the Secret Service reached the Presidential car.

Can you tell us now the results of that investigation.

Mr. Chaneyfelt. Yes. I examined the Zapruder film and determined that Agent Hill first places his hand on the Presidential car at frame 343. This is approximately 1.6 seconds after the President is hit in the head at frame 313.

Special Agent Hill placed one foot on the bumper of the car at frame 368, which is approximately 3 seconds after frame 313. Agent Hill had both feet on the car at frame 381, which is approximately 3.7 seconds after frame 313.

Mr. Redlich. Going back now to frame 410 on the Zapruder film, which is the frame that would correspond to the location of a man appearing on Elm Street in Chaneyfelt Exhibit No. 33, can you tell us the location of Special Agent Hill and Mrs. Kennedy at frame 410.

Mr. Chaneyfelt. At frame 410 in the Zapruder films, Mrs. Kennedy has returned to the seat beside the President after having climbed out on the back deck ^{or} the ~~trunk~~ ^{trunk} lid, and Secret Service Agent Hill is in the process of climbing from the bumper into the back seat of the car and is about midway from the back bumper to the President, crawling across the ~~trunk~~ ^{trunk} lid.

Mr. Redlich. Is it correct to say, Mr. Chaneyfelt, that at frame 410 the principal target on the back of the Presidential limosine would have been Special Agent Hill and not any of the other occupants of the rear seat of the car?

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Mr. Shaneyfelt. I do not have an opinion on that, except my recollection of the frame, as I recall it, the Connallys are down in the car, and the President is down in the car to a point where he ~~probably~~ may not, be visible from the sixth floor window. Mrs. Kennedy would still be visible, and Agent Hill; Mrs. Kennedy and Agent Hill, as I recall, are the only ones readily visible or that are visible.

Mr. Redlich. Turning now, Mr. Shaneyfelt, to the curb mark itself, you have brought with you today the actual piece of curbing which contains the mark referred to in your testimony, is that correct?

Mr. Shaneyfelt. That is correct.

Mr. Redlich. That piece of curbing has been designated as Shaneyfelt Exhibit No. 34.

(The article referred to was marked Shaneyfelt Exhibit No. 34 for identification.)

Mr. Redlich. Were you present at the time this curbing was removed?

Mr. Shaneyfelt. Yes. It was removed under my supervision.

Mr. Redlich. Can you then describe the subsequent investigation that was conducted in connection with this curbing.

Mr. Shaneyfelt. Yes. The ~~section~~^{section} of curbing, Shaneyfelt Exhibit 34, was cut out from the curbing along the south side of Main Street in the assassination area. ~~There~~^{The} a mark on the curb having been located 23 feet, four inches from the abutment

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of the triple underpass. It was cut out under my supervision, and I personally returned it to the FBI laboratory. In the FBI laboratory it was examined for the presence of any foreign material.

Mr. Redlich. For the record, the results of this investigation have been summarized in a communication from Director Hoover to Mr. Rankin, dated August 12, 1964, and designated now as the Shaneyfelt Exhibit No. 27, is that correct, Mr. Shaneyfelt?

Mr. Shaneyfelt. That is correct.

Examination of the mark on the curbing in the laboratory resulted in the finding of foreign metal smears adhering to the curbing section within the area of the mark. These metal smears were spectographically determined to be essentially lead with a trace of antimony. No copper was found.

The lead could have originated from the lead core of a mutilated metal-jacketed bullet such as the type of bullet loaded into the 6.5 millimeter Mannlicher Carcano cartridges, or from some other source having the same composition.

The absence of copper precludes the possibility that the mark on the curbing section was made by an unutilated military full metal-jacketed bullet such as the bullet from Governor Connally's stretcher.

The damage to the curbing would have been much more extensive if a rifle bullet had struck the curbing without first having struck some other object. Therefore, this mark could not have been made by the first impact of a high velocity rifle bullet.

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2 Mr. Redlich. Based on your examination of the mark on the curb, can you tell us whether the mark which we have been referring to is a nick on the curb, that is, has a piece of the curb been chipped away, or is it instead a simple marking of lead?

Mr. Chaneyfelt. Yes. It is not a chip. There is no indication of any of the curbing having been removed, but rather it is a deposit of lead on the surface of the curbing that has given the appearance of a mark.

It was also established from a microscopic study of the curbing that the lead object that struck the curbing, that caused the mark, was moving in a general direction away from the Texas School Book Depository building.

Mr. Redlich. In connection with this investigation into the microscopic characteristics of the mark, a photograph was prepared which is designated as Chaneyfelt Exhibit No. 35. Will you describe that photograph?

(The photograph referred to was marked Chaneyfelt Exhibit No. 35 for identification.)

Mr. Chaneyfelt. Yes. Chaneyfelt Exhibit No. 35 is a color photograph that I made of the mark on the curbing, which is Chaneyfelt Exhibit No. 34. This is magnified about five times, and shows only the marked area. There is a red area in the lower left corner marked A which designates the point of initial impact, and the lead deposit is then sprayed out in a fan-like direction from that area.

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Mr. Redlich. Does point A in Shaneyfelt Exhibit No. 35 refer to or correspond to the portion of the marking which is visible in Shaneyfelt Exhibit No. 34?

Mr. Shaneyfelt. It refers to the lower right hand portion of that mark on Shaneyfelt Exhibit No. 34. It is this area here, and this area here. (indicating)

Mr. Redlich. Was Shaneyfelt Exhibit No. 35 the photograph on the basis of which the direction of the bullet fragment was determined?

Mr. Shaneyfelt. No. The direction was determined from an actual examination of the curbing itself rather than from the photograph. ~~Shaneyfelt Exhibit No. 35~~ Shaneyfelt Exhibit No. 35, was made primarily to show this lead deposit more clearly than Exhibit 34 shows it.

Mr. Redlich. I realize, Mr. Shaneyfelt, that the next question may be out of your area of specialization, and you may not be able to answer it. But are you able to tell us whether, if there had been copper deposits indicating a fully jacketed bullet, whether in the intervening period of time between the assassination and the time the curb stone was examined these copper deposits might have been removed by rain or erosion or any other natural causes?

Mr. Shaneyfelt. It is my understanding that there is no more reason for the copper to be removed than the lead to be removed, and as my observation of the mark itself, the lead deposits,

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that the effect of time on it was to add a layer of dirt and film over it which covered ^{it} ~~it~~ ~~rather than~~ -- more an adding on of dirt and other matter which covered it rather than a wearing away.

So based on ^{this} ~~this~~, although it is not possible to state whether or not copper was there initially and eroded away or washed away or wore away, it seems logical that copper would have no more reason to become worn away than lead.

Mr. Redlich. Previous investigation, Mr. Chaneyfelt, as well as the results of the re-enactment in Dallas, have led, as you know, to a tentative conclusion that if three shots were fired during the assassination sequence, that one of these three shots missed the occupants of the car.

Assuming that tentative conclusion to be a definite finding of fact for purposes of this question, are you able to tell us whether in your opinion, the location, the presence, of the lead marking on the curb, which has been designated as Chaneyfelt Exhibit No. 34, provides any basis for determining which of the three shots fired by the assassin missed the Presidential limousine.

Mr. Chaneyfelt. Based on the assumptions as stated, it is my opinion that the examination of the mark on the curb has furnished only limited further information in this regard because it is not possible to establish whether or not this mark on the curb could have been made from a fragment of the shot that hit the President in the head or a fragment of another shot that miss

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The very fact (at it can be considered ^{as} one of the possibilities ^{may suggest} ~~as~~ ^{a possibility of a third shot that missed.} ~~possibilities~~)

Mr. Redlich. How far from the President's position at frame 313 was the mark on the curb?

Mr. Shaneyfelt. I don't have that figure here at the present time. To the best of my recollection, it was approximately 250 feet from where the President would have been at frame 313 to the mark on the south side of Main Street which has been designated as Shaneyfelt Exhibit No. 34.

Mr. Redlich. I would like to designate at this time a number, Shaneyfelt Exhibit No. 36, which we will apply to a communication which I asked you to furnish to the Commission giving us the exact distance between the President's location ^{at} frame 313

~~Mr. Shaneyfelt. Right.~~

~~Mr. Redlich.~~ and the mark on the ^{curb} ~~curve~~, Shaneyfelt

Exhibit No. 34.

Mr. Shaneyfelt. ~~Right.~~ ^{Alright.}

(The article referred to was marked Shaneyfelt Exhibit No. 36 for identification.)

Mr. Redlich. Have you completed your answer to my question with regard to whether this information offers any basis upon which one can conclude which of the three shots missed?

Mr. Shaneyfelt. Yes, I believe I have. I have very little opinion regarding that.

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Mr. Redlich. Mr. Chaneyfelt, prior to our deposition you and I discussed the matters concerning which you were going to testify, and during the course of this deposition there were a few conversations which were not transcribed; is that correct?

Mr. Chaneyfelt. That is correct.

Mr. Redlich. Is all of your testimony which has been transcribed completely consistent with any information which you have provided in the off-the-record conversations?

Mr. Chaneyfelt. Yes.

Mr. Redlich. Is there any relevant material which you provided in any off-the-record conversations which has not been covered in the course of our record deposition?

Mr. Chaneyfelt. No.

Mr. Redlich. Is there anything concerning the matters to which you testified that you would like to add at the present time?

Mr. Chaneyfelt. No, I believe not.

Mr. Redlich. A copy of this deposition will be available for your review.

(Whereupon, at 1:10 o'clock p.m., the deposition was concluded)