

Dealey Plaza Deceptions: The Zapruder Film

by

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While working on my [article](#) about the forged autopsy photographs and the second autopsy of President John F. Kennedy, I occasionally took a look at the Zapruder film and other films and photographs taken at Dealey Plaza immediately before, during and after the assassination of President Kennedy on November 22, 1963. I was particularly interested in the Zapruder film, and looked at the complete film as well as the individual [frames](#) to some extent, comparing them with other images from the assassination scene. While doing so, I noticed some features in the film that didn't match with that which could be seen in other photographs from Dealey Plaza. However, I didn't have the opportunity to study the matter properly at that time, since I felt it was urgent to finish the article about the forged autopsy photographs and the second autopsy. So in that article I merely stated that: "Since the Secret Service and the FBI were involved in the conspiracy to kill President Kennedy, every piece of evidence from the assassination these agencies processed, must be looked upon with great suspicion. The other evidence may be just as falsified as the medical evidence presented in this article."

Having published my article about the forged medical evidence and the second autopsy on April 30, 2004, I began to take a closer look at the Zapruder film and other images from Dealey Plaza. I soon found out that the Zapruder film as well as several other photographs from the assassination scene were just as falsified as the autopsy photographs and x-rays of President Kennedy, but due to other obligations, it has taken several months to finish the present article about these falsifications.

The authenticity of the Zapruder film has been debated for many years. In September 2003 James H. Fetzer and co-authors published the book '[The Great Zapruder Film Hoax](#): Deceit & Deception in the Death of JFK' (Catfeet Press) about what they claimed to be alterations in the film. I have not read the book itself, but I have read some of the discussions on the Internet about the claims put forward in that book. As far as I can determine from these discussions, the authors have pointed out some anomalies in the film, which suggest editing, and one of the authors, John Costella, has even claimed that the complete film is a fabrication, in which other images were put together to produce the final product. However, these authors seem to have failed to discover all the major 'alterations' or inconsistencies in the film, which will be described in the present article.

My examinations have been based entirely on images available on the Internet, since I have not had access to any printed photographs. Some of the available images have not had as high a resolution as desirable, which has made it somewhat difficult to arrive at a conclusion about some details (and to make good illustrations for this article). The fact that I have never been to Dealey Plaza, Dallas, has also been

a disadvantage when examining the Zapruder film and other films and photographs from the assassination scene. The peculiar topography of Dealey Plaza, particularly the fact that Elm Street makes both a downhill and winding course through that area, makes it very difficult to interpret two-dimensional images taken from any point in Dealey Plaza showing the Presidential limousine travelling down that stretch of Elm Street. However, when analysing photographic images, the skill of the analyst is often much more important at arriving at a correct interpretation than the quality of the images themselves. Some people have an inherent skill to interpret photographic images (understanding perspective and seeing three dimensions from two-dimensional images) – others don't. Unfortunately, most of the photo 'analysis' in this case has been done by people from the latter category.

During my study, I have scrutinised thousands of images and compared what is depicted in the Zapruder film with that which is shown in other photographs. I have emphasised examining how the physical features of Dealey Plaza (topography, streets, trees, buildings etc.) as depicted in the Zapruder film, match the same features in real life as shown in other images and maps, assuming initially that the film was made from Zapruder's position on the pedestal. However, I have also compared whether the same people and actions are seen in the different images of the assassination.

First, I will describe the different discrepancies between the extant Zapruder film on the one hand, and other images and the topography of Dealey Plaza on the other hand, and then I will try to explain why these discrepancies are there, and discuss the implications of having a Zapruder film different from Zapruder's camera-original film. The discrepancies will be dealt with in roughly chronological order as they appear in the Zapruder film. Since the question of authenticity of the Zapruder film is intimately associated with the authenticity of other photographs from Dealey Plaza, several other photographs will also be discussed in the appropriate sections.

The Zapruder film discrepancies

The [history](#) of the Zapruder film has been described numerous times by different authors, and will not be repeated in detail here (see for instance: '[The History of the Zapruder Film](#)' by M. Shackelford, and '[Abraham Zapruder Film Chronology](#)' by The Sixth Floor Museum). As is well known, Mr. Abraham Zapruder, using his 8mm Bell & Howell camera, filmed the Presidential limousine as it proceeded down Elm Street from the intersection of Elm and Houston Streets toward the triple underpass. Mr. Zapruder was standing on a concrete pedestal of the North Pergola of Dealey Plaza together with his receptionist Marilyn Sitzman. From his elevated position on the north side of Elm Street, he had a good view of the entire route the motorcade was travelling through Dealey Plaza, i.e. from it turned right off Main Street onto Houston Street, and then turned left onto Elm Street and passed immediately in front of him going toward the triple underpass. On his original film, Zapruder reportedly captured the entire assassination of President Kennedy. The crucial question is whether the extant Zapruder film is identical to the film Zapruder recorded with his camera on November 22, 1963.

THE WHITE BUILDING ON ELM STREET

Frames Nos. 1-132 of the Zapruder film ([Z1-Z132](#)) show parts of four buildings along Elm Street to the east of the intersection of Elm and Houston Streets (Figure 1A) (note: when reference is being made to items visible in different Zapruder frames, the sprocket hole area of the frames is also included). On the south side of Elm (on the right-hand side of the frames as seen from Zapruder's position) is the northwest corner of the Dallas County Records Building, and on the north (left) side of Elm, we see the southeastern corner of a building known from its street address as 509 Elm Street. The 509 Elm Street building is lying immediately adjacent to the Dal-Tex building (501 Elm Street), which is on the northeastern corner of Elm and Houston, immediately across Houston Street from the Texas School Book

Depository Building (TSBD) at 411 Elm Street. Neither the Dal-Tex building nor the TSBD is visible in the Zapruder film.

Further to the east on Elm Street we see the corner of the Purse & Co. building (601 Elm Street), which is lying on the corner of Elm and [North Record Street](#). Finally, beyond the Purse & Co. building we see a fairly large part of the wall of a white building, which seems to have a brown, pitched roof. However, the brown roof-like area might also be the wall of a brown building behind the white building. From its relative position, this white building should be situated on the corner of Elm and North Market Streets. An increasingly smaller portion of the white wall of this building remains visible also in frames Z133-Z189.

The peculiar alignment of the white building caught my interest early on. I simply couldn't understand how a building supposedly situated on the northeast side of Elm Street could project that far into the street and have such a totally different alignment from the two other buildings visible on the north side of the street. Since Elm Street extends in a straight fashion eastwards from the intersection of Houston, one would expect that only the (southwest) corner of a building would be facing Zapruder, rather than a large section of its wall. Hence, I started examining other available photos of that area to see if there really was such a building on that part of Elm Street at the time of the assassination.

It turned out that few available photos taken at Dealey Plaza on November 22, 1963 showed Elm Street to the northeast of the intersection of Elm and Houston Streets. However, the film shot by Tina Towner, clearly shows this part of Elm Street. Tina Towner stood on the southwest corner of Elm and Houston Streets (Figure 1A), so from her position, she would have had roughly the same view eastwards up Elm Street as Zapruder had from his position. In the Towner film only a small white area is visible behind the Purse & Co. building, and this might be the corner or wall of a white building (Figure 1C-D). But this 'object' clearly has a totally different alignment from the white building depicted in the Zapruder film.

In the Towner film, the west wall of the Purse & Co. building is fairly dark as if covered by shadows (cast by the County Record Building across the street), whereas in the Zapruder film the west wall, as well as the east wall (facing Elm Street), of that building is brightly sun-lit. However, this difference might be related to differences between the films and/or cameras used. The western wall of the Purse & Co. building seem to be sun-lit in the Wiegman film taken a few minutes later, whereas the view of the southern wall is blocked by the corner of the Record Building. Thus, the major discrepancy between the Towner and Zapruder films is the presence or alignment of the white building, which shows that this building has been edited into the extant Zapruder frames.

The white building is also missing from a photograph reportedly taken by Mr. Flynn in the afternoon of November 22, which shows two agents examining a lunch sack on the bench on the Grassy knoll ('the bench photo'). However, the background showing Elm Street is not very clear in that photograph. Neither is a white building visible in the photographs taken by FBI from Zapruder's position during the re-enactment of the assassination for the Warren Commission on May 24, 1964 (see Commission Exhibits (CE) Nos. [888-890](#); Warren Commission Hearings and Exhibits, Volume 18, pages 86-87; hereafter abbreviated as WCH 18:86-87). Of course, the building could have been demolished in the intervening months, but I have not been able to ascertain whether that is the case.

The particular area in Elm Street where the white building is supposed to be situated according to the Zapruder film, is rather unclear in the FBI re-enactment photos, and the FBI may have done this deliberately, so no one would notice that the white building was missing. But it is also to be expected that an area that far away from the area in sharp focus on Elm Street near the photographer would be out of focus. Hence, the very fact that the white building in the Zapruder film is seen with the same sharpness as the buildings closer to the cameraman, strongly suggests that the white building has been edited into the frames, since one would expect that a building that far away from Zapruder's position (more than two

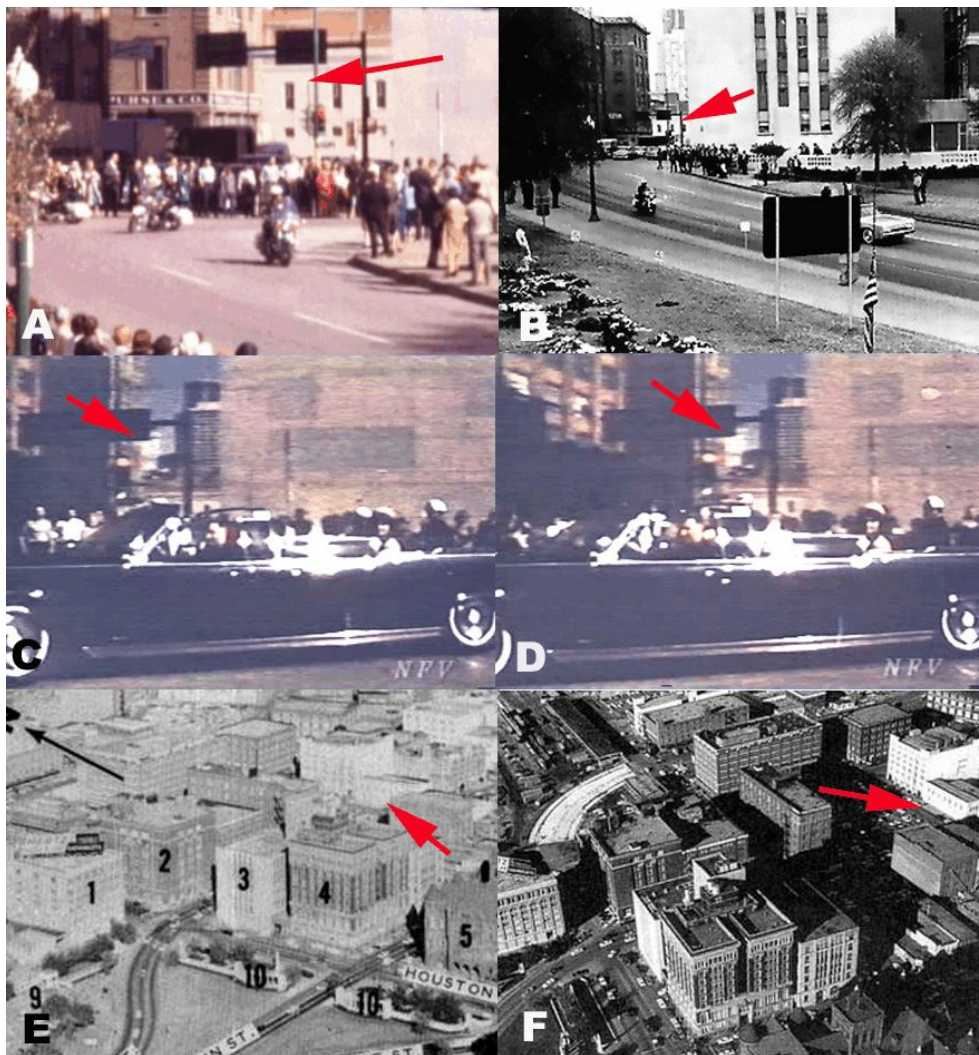


Figure 1 The white building on Elm Street. (A) Frame Z20 show the wall of a white building (arrow) in the middle of the street. (B) Photograph taken by Pete Barnes on November 27 show the white building (arrow) in the same location as the Zapruder film. (C) and (D) Two frames from the Tina Towner film; only a small white area (arrows) are visible on the north side of Elm Street. (E) Portion of aerial photograph depicted in CE876. The low white building (arrow) may be one depicted in the Towner film. (F) Similar aerial photo as in (E), showing a low white building (arrow) in the upper right-hand corner. The alignment of the white building depicted in (A) and (B) is not consistent with its location in C to F.

blocks beyond Houston Street) would be more blurred. The same also goes for the Purse & Co. building, which is also seen in relatively sharp focus in spite of its considerable distance from Houston Street and Zapruder's position. Zapruder reportedly used the telephoto setting on his camera's zoom lens, which would have caused a relatively shallow depth of field. On the other hand, small-format cameras like Zapruder's 8 mm camera, have a deeper depth of field than a large-format camera like the Speed Graphic camera used by the FBI during the re-enactment. And the depth of field is also affected by the aperture settings. Hence, it is difficult to make comparisons between the Zapruder frames and the FBI re-enactment photos.

Most aerial photographs of the Dealey Plaza area in the Warren Commission Exhibits do not show Elm Street to the east of the Dal-Tex building. An exception is [CE876](#) (WCH 17:896). That Exhibit, as well as a few other available [aerial photographs](#) of that area taken shortly after the assassination (e.g. some taken by Squire Haskins), show that there was a low (probably a two-storey) white building on Elm

Street, apparently at the intersection of Elm and North Market Streets (Figure 1E-F). However, the windows on the west wall of that building seem to be square rather than tall and narrow like the windows of the white building in the Zapruder film. Moreover, that building has a flat roof as opposed to the seemingly pitched roof of the white building depicted in the Zapruder film. A flat roof would not have been visible from Zapruder's position. There is a taller dark building immediately behind the white building, but I don't think its west wall with windows would have appeared like the brown roof-like area of the white building in the Zapruder film. Hence, the low white building at the intersection of Elm and North Market Streets does not seem to be identical to the white building depicted in the Zapruder film. If that is so, the film editors must have inserted the image of a different building into these frames.

The low white building at the intersection of Elm and North Market Streets was obviously demolished and replaced by a taller building some time after the assassination, since aerial [photographs](#) taken in the late 1960's show a different (taller) building at that location. One might speculate whether that replacement had anything to do with the discrepancy between real life Elm Street and the Elm Street depicted in the Zapruder film.

The white building depicted in the Zapruder film is, however, visible in the photographs taken by Pete Barnes of the Dallas Police Crime Lab on November 27, 1963. Pete Barnes stood on the same pedestal as Zapruder, using a Speed Graphic camera. In his photographs, the white building is in the exact same position as in the Zapruder frames (Figure 1B). However, that does not prove that there was such a white building there. Rather, it shows who were involved in the production of the extant Zapruder film, as well as in the assassination itself and the cover-up. Since the Towner film and several aerial photographs show that there was no white building consistent with the building depicted in the Zapruder frames and the Barnes photographs, these latter images have to be composites, in which the white building as well as other features have been edited into the original images. Thus, it is a waste of time trying to look for discrepancies between the Zapruder frames and the Barnes' photographs, since they have been edited by the same persons, and obviously have been made to match each other as closely as possible.

THE MISSING TREE ON THE WEST SIDE OF HOUSTON STREET

At the time of the assassination there were three fairly large and evenly spaced trees along the west side of the North Reflecting Pool on the west side of Houston Street, i.e. in front of the Dallas County Records Building and the Dallas County Criminal Courts Building (between the North Peristyle and Elm Street). In addition there was a similarly sized tree on the south side of Elm Street in the northeastern corner of the grassy area of the Plaza. Thus, the latter tree was positioned a little to the northwest of the northernmost tree of those standing along the North Reflecting Pool, with a concrete wall between them. All four trees can be clearly seen in [CE740](#) (WCH 17:270), [Holland Exhibit B](#) (WCH 20:161), in the FBI model of Dealey Plaza in [CE878 and CE879](#) (WCH 17:899), as well as in the aerial photograph of Dealey Plaza printed in several Commission Exhibits with different markings on it, e.g. in [CE359](#) (WCH 16:956).

In Zapruder frames [Z198](#) and Z204-Z244, the trunk and part of the foliage of the tree in the grassy area are seen, but no tree is visible beyond the concrete wall behind this tree in any of the Zapruder frames (Figure 2A). One possible explanation for the absence of the tree in the background could simply have been that it was hidden behind the three in the foreground, but that is not the case. By examining aerial photographs, like [CE359](#), one finds that the tree in the background should be a little to the right of the tree in the foreground from Zapruder's point of view. Moreover, the tree in the background should be directly in line with the southwestern corner of the Records Building.

In some of the frames of the Wiegman film both trees are visible (Figure 2B), as is the position of the northernmost tree behind the concrete wall relative to the shrubs and flowers in front of the wall. By

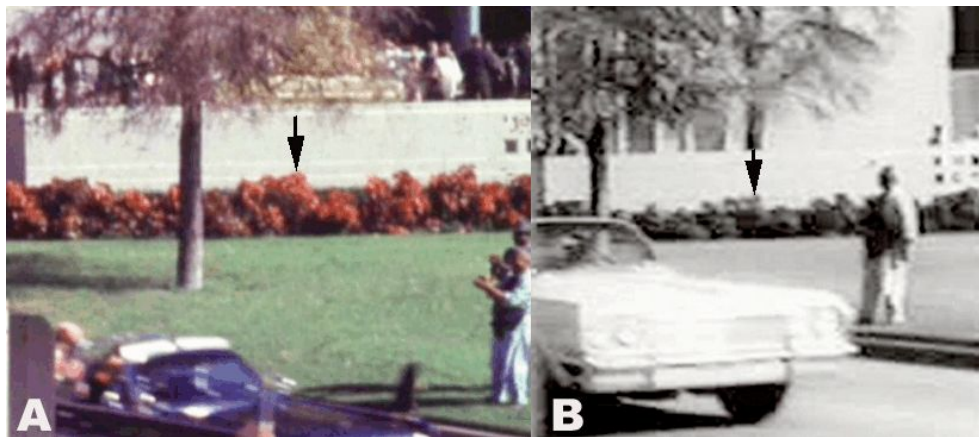


Figure 2 (A) In the Zapruder film, as shown here in Z221, the tree behind the concrete wall in the vicinity of the tree in the grassy area is missing. (B) A frame from the Wiegman film showing the relative position of the tree behind the concrete wall to the shrubs (arrow) in front of the wall (arrow). The arrow in (A) points to the same shrubs, suggesting the approximate position where the missing tree should have been behind the wall.

comparing the Wiegman frames with the Zapruder frames, the approximate position of where the tree should have been seen in the Zapruder frames can be determined, taking into account the fact that Wiegman was filming from a different position than Zapruder. Wiegman was standing on the sidewalk on the north side of Elm Street, close to the light pole visible in Z260-Z282, which means that he was to the right of Zapruder's line of sight toward these trees. Some shrubs with a characteristic outline are seen directly in front of the tree in the Wiegman frames, and the same bushes are also visible in the Zapruder frames. Since the distance between these bushes and the tree behind the wall was much shorter than the distance between them and the two photographers, a lateral shift in the position of the latter, does not affect the relative position of the bushes and the tree to any appreciable degree. Hence, the tree behind the wall should have been located only slightly to the left of these characteristic bushes. That position also corresponds to the tree being directly in line with the corner of the Records Building, which can be seen in the background of the Zapruder frames (or the gate between the Records and Criminal Courts buildings).

From this comparison, it is clear that from Zapruder's position, and hence in the authentic Zapruder film, the northernmost tree in front of the North Reflecting Pool should have been visible a little to the right of the tree in the grassy area from about frame Z211 until frame Z238. But there is no tree there. There is a darker area in the foliage immediately to the right of the trunk of the near tree, which one might think is the trunk of a tree in the background (e.g. in Z221), but the same dark area is also seen in the Wiegman frames, so it is either be part of the foliage of the near tree in the grassy area, or the result of the foliage of both trees overlapping each other in that area. It is only the trunk of the tree behind the wall that is missing completely, some of its foliage is still there.

Obviously, those who produced the extant Zapruder film, made a mistake when they forgot to include this tree in the edited background in Zapruder frames Z211-Z238. Hence, it was necessary for the Secret Service and the FBI to cover up this mistake in subsequent photographs. In the Barnes photographs taken from Zapruder's position five days after the assassination (Figure 1A), the foliage of both trees have been merged, so that there appears to be only one tree there, with its trunk arising in the grassy area, just as depicted in the Zapruder frames. Moreover, in [Shaneyfelt Exhibit No. 32](#) (WCH 21:481) the northernmost tree along the North Reflecting Pool is totally gone (compare with [CE740](#); WCH 17:513), whereas in [Shaneyfelt Exhibit No. 28](#) (WCH 21:478) that particular area is conveniently hidden behind a car in the foreground. Whether the missing tree had been physically removed at the time the photograph of Exhibit 32 was taken by Special Agent Shaneyfelt of the FBI, or was removed in the photo by

retouching, is difficult to ascertain.

Anyway, the missing tree in the Zapruder frames was indeed removed some time before the FBI did their re-enactment of the assassination on May 24, 1964. By that date, the fairly large tree had been replaced by a much smaller tree with a slender trunk, so that it was barely visible from Zapruder's position. This was probably done to avoid revealing the absence of the tree in selected Zapruder frames between Z210 and Z240, which are being compared with re-enactment photographs in Commission Exhibits Nos. [893](#), [894](#), [895](#), [896](#), [897](#), and [898](#) (WCH 18:89-91). We may also note that by May 1964, the bushes in front of the wall had been cut to equal heights, making it more difficult to detect whether anything was missing in the background in the Zapruder frames. When testifying before the Warren Commission on July 22, 1964, [Zapruder](#) initially confused the perforated concrete wall seen in the background of the frames allegedly from his film with the concrete structure of the pergola, and then he offered the following remark as an excuse; "...that is where they have moved now the flowers and all that." So some remodelling had apparently taken place in that area in the months following the assassination.

At the time of the FBI re-enactment in May 1964, the intermediate tree along the North Reflecting Pool had not yet been replaced, since the trunk of a fairly large tree is visible in Exhibits Nos. [898 and 899](#) (WCH 18:91). The intermediate tree is also visible in the aerial photo of Dealey Plaza depicted in [CE2117](#) (WCH 24:547). But that tree was subsequently also replaced by a smaller tree, as [aerial photographs](#) of Dealey Plaza from the late 1960's show that there are one large and two small trees along the North Reflecting Pool. Replacing just one of the trees might have given somebody a clue, so those involved in the cover-up probably replaced one more tree to avoid that.

THE STEMMONS FREEWAY SIGN

The Stemmons Freeway sign is of great importance in the Zapruder film since President Kennedy was hit by the first bullet(s) when he was behind the sign, so that nobody knows exactly when and how he was struck. Was that just a coincidence, since there was indeed a Stemmons Freeway sign between Zapruder and Elm Street, or did someone insert a new sign into the frames because the authentic sign didn't hide enough of what happened?

In the Zapruder film the rear side of the Stemmons Freeway sign on the north side of Elm Street is visible in frames Z59-Z65, Z88-Z109, and Z133-Z235. The full width of the upper portion of the sign is visible in frames [Z194-Z207](#) and Z212-Z214. In none of the frames is the lower portion of the sign visible. Hence it is impossible from the film to determine the shape of the sign, i.e. whether it was rectangular or more square. Nor is it possible to determine the position of the sign relative to the sidewalk on the north side of Elm Street. As seen in the Zapruder film, the sign apparently consists of a single signboard with rounded (upper) corners. Moreover, the upper edge of the Stemmons Freeway sign seems to be nearly horizontal, the northern signpost (on the left hand side of the sign in the film) is nearly vertical, whereas the southern (right) signpost is leaning slightly toward Elm Street. The signboard and the signposts seem to be in pristine condition, as if newly placed there.

Most other available photographs taken immediately before and after the assassination on November 22, 1963, seem at first sight to corroborate the general appearance of the Stemmons Freeway sign as depicted in the Zapruder film (Figure 3). This goes for Phillip Willis' 5th slide (Willis #5) and Betzner's 3rd photograph (Betzner #3), both of which were taken from the corner of Elm and Houston Streets as the Presidential limousine was going down Elm Street past the sign. The front side of the sign is also visible in three photographs allegedly taken by Jim Towner (Towner #2), Phil Willis (Willis #6), and Art Rickerby (Rickerby #1), respectively, immediately after the shooting. All of the aforementioned photographs show a sign consisting of a single signboard, reading in three lines:

<p style="text-align: center;">STEMMONS FREEWAY KEEP RIGHT</p>
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In Willis #6, however, most of the sign is obscured by the White House Press bus. The front side of the Stemmons Freeway sign is also visible in parts of the Couch, Martin, Towner and Wiegman films, taken immediately after the shooting, but most of these images are so blurred or underexposed that it is impossible to determine the exact appearance of the signboard. In addition to the main sign, there were two smaller signboards on the southern signpost, closest to Elm Street, which are visible in many photographs taken on November 22, 1963, or later. The appearance of these smaller signboards is not disputed, and will not be further discussed here.

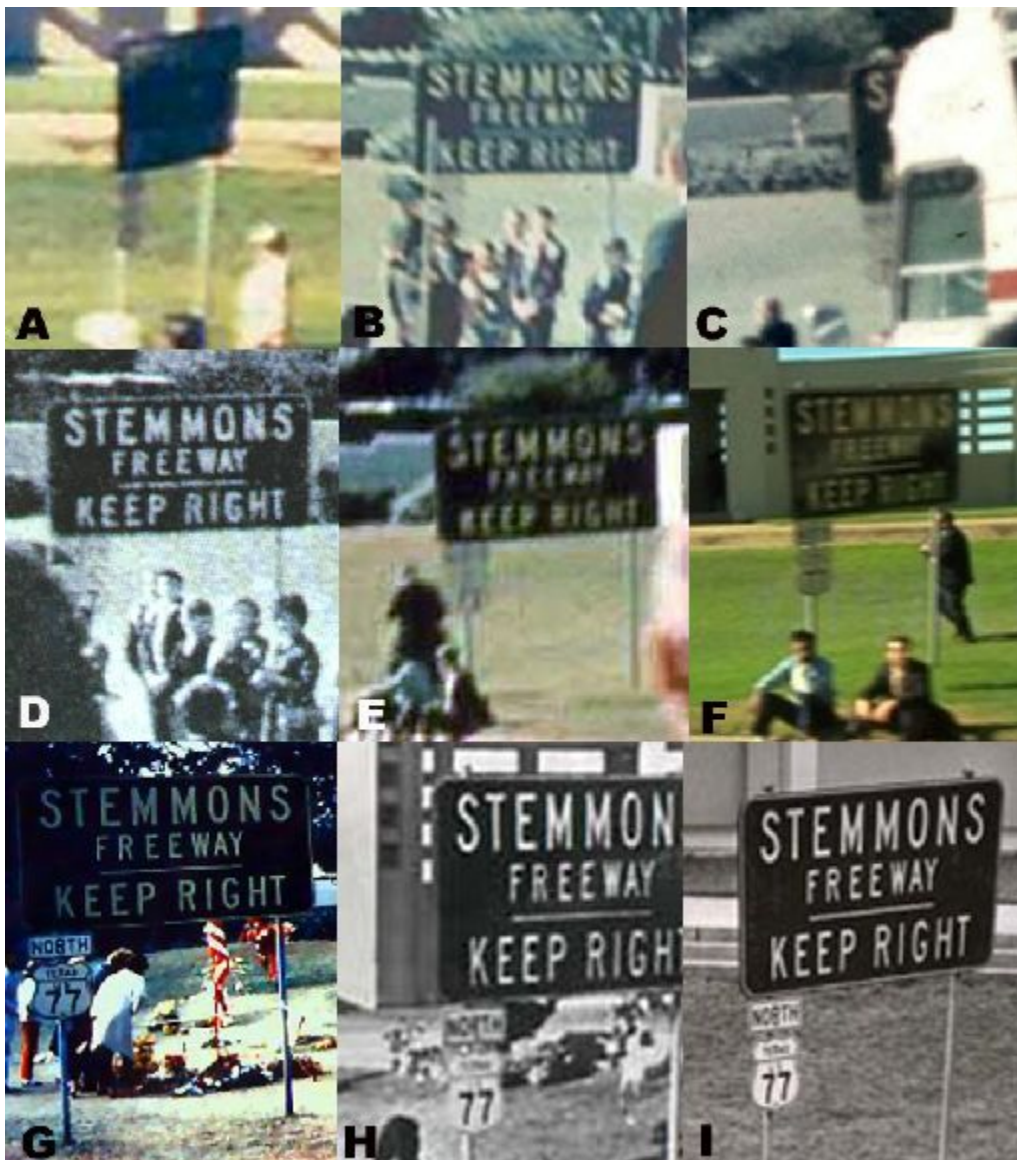


Figure 3 The front side of the Stemmons Freeway sign. The images have been cropped from the following photographs: (A) Wilma Bond #8; (B) Phil Willis #5; (C) Phil Willis #6; (D) Betzner #3; (E) Jim Towner #2; (F) Art Rickerby #1; (G) and (H) photo taken a few days after the assassination; (I) photo taken during FBI re-enactment on May 24, 1964.

The rear side of the Stemmons Freeway sign is visible in Art Rickerby's photographs #2 and #3, which were taken immediately after the shooting. These photographs show a sign consisting of a single rectangular signboard (Figure 4). That also seems to be true of a photograph taken by Clint Grant at the same time that Rickerby took his pictures, but unfortunately I have only come across cropped versions of Grant's photograph, intended for showing the Dark-Complexioned Man and the Umbrella Man sitting in front of the sign.

Moreover, in all photographs of the Stemmons Freeway sign taken in the days and months after the assassination, the sign also consists of a single signboard (Figures 3 and 4). This goes for the photographs (of the rear side of the sign) taken by Pete Barnes on November 27, 1963 (Figure 4B), and by the FBI during the re-enactment of the assassination on May 24, 1964 (see [CE888](#)-CE898; WCH 18:86-91), as well as for many photographs taken by private citizens. In all of these photos, the front side of the sign reads: **STEMMONS / FREEWAY / KEEP RIGHT** in three lines as described above.

Since so many pictures show the same general appearance of the Stemmons Freeway sign as the Zapruder film, one might come to believe that this film depicts the authentic road sign. However, a closer look at color slides Nos. 7, 8 and 9 taken by Wilma Bond, a color slide taken by Jay Skaggs, as well a black and white photograph taken by Richard Bothun, shows that the Stemmons Freeway sign in those images is different from the one depicted in the Zapruder film and the aforementioned photographs. [Bond's slides Nos. 7 and 8 (as well as Nos. 5 and 6) are available on several Internet sites, whereas slide No. 9 is not. The latter slide (or an

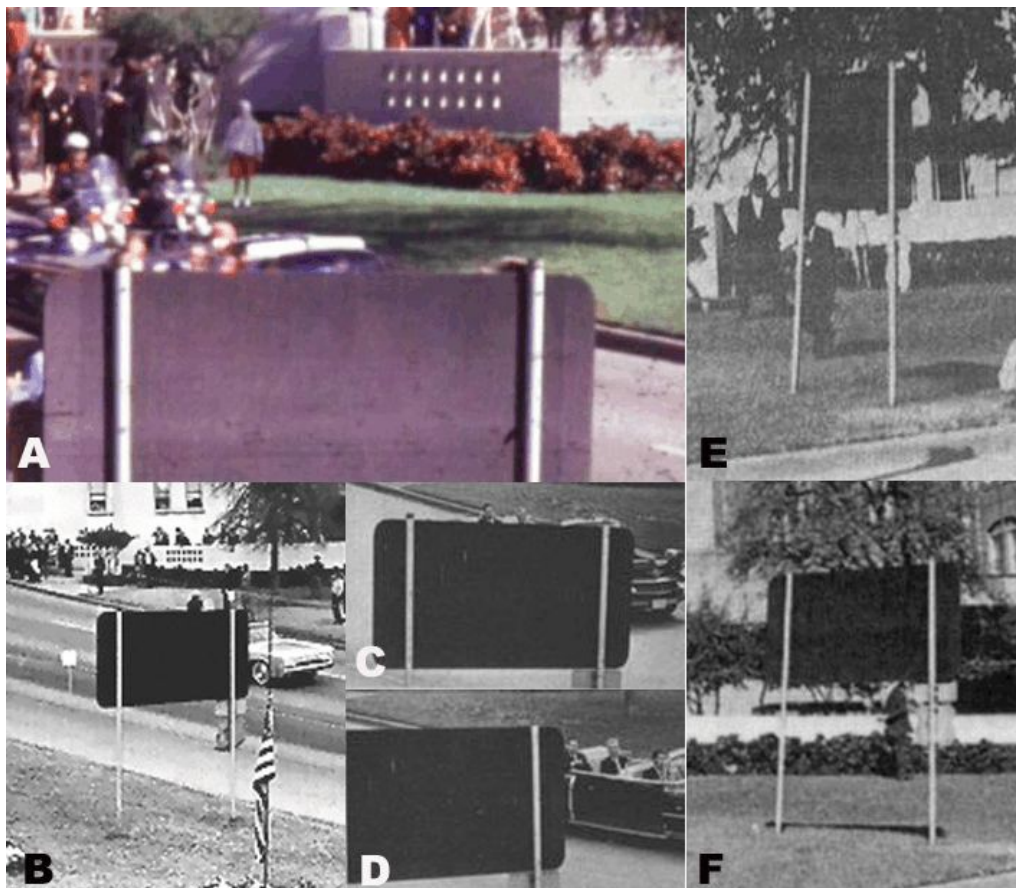


Figure 4 The rear side of the Stemmons Freeway sign. The images have been cropped from the following photographs: (A) frame Z202 of the Zapruder film; (B) one of Pete Barnes' photographs from November 27, 1963; (C) CE893, FBI re-enactment photograph from May 24, 1964; (D) CE895; (E) Richard Bothun #4; (F) Art Rickerby #3. Photos A-D were taken from Zapruder's position, photos E and F from Elm Street. Note that the left sign post (from rear) in D does not extend beyond the upper edge of the sign as in C and the other images.

enlargement of a portion thereof) is printed as Photo #16 in the article "[The Umbrella System: Prelude to an Assassination](#)" by Richard E. Sprague and Robert Cutler, but this photo is of such a low resolution, that it doesn't reveal as much about the nature of the Stemmons sign as Bond Nos. 7 and 8. Hence, it is not further discussed here].

Wilma Bond, standing at the North Peristyle, took five color slides in the minutes immediately after the shooting, showing part of Elm Street in the foreground and the grassy knoll and the North Pergola in the background. Jay Skaggs took 20 color slides in Dealey Plaza shortly before and after the assassination. One of his slides was taken a brief moment after Bond took her slide No. 7. The latter two slides show nearly the same view, but Skaggs was standing in the grassy area a little to the west of (in front of) Bond's position at the North Peristyle.

In Bond's slides Nos. 7 and 8 we can clearly see that the two lateral edges of the Stemmons Freeway sign are not smooth, but indented (Figure 5A-D). There seems to be two evenly spaced indentations on each side. This appearance strongly suggests that on November 22, 1963, the Stemmons Freeway sign did not

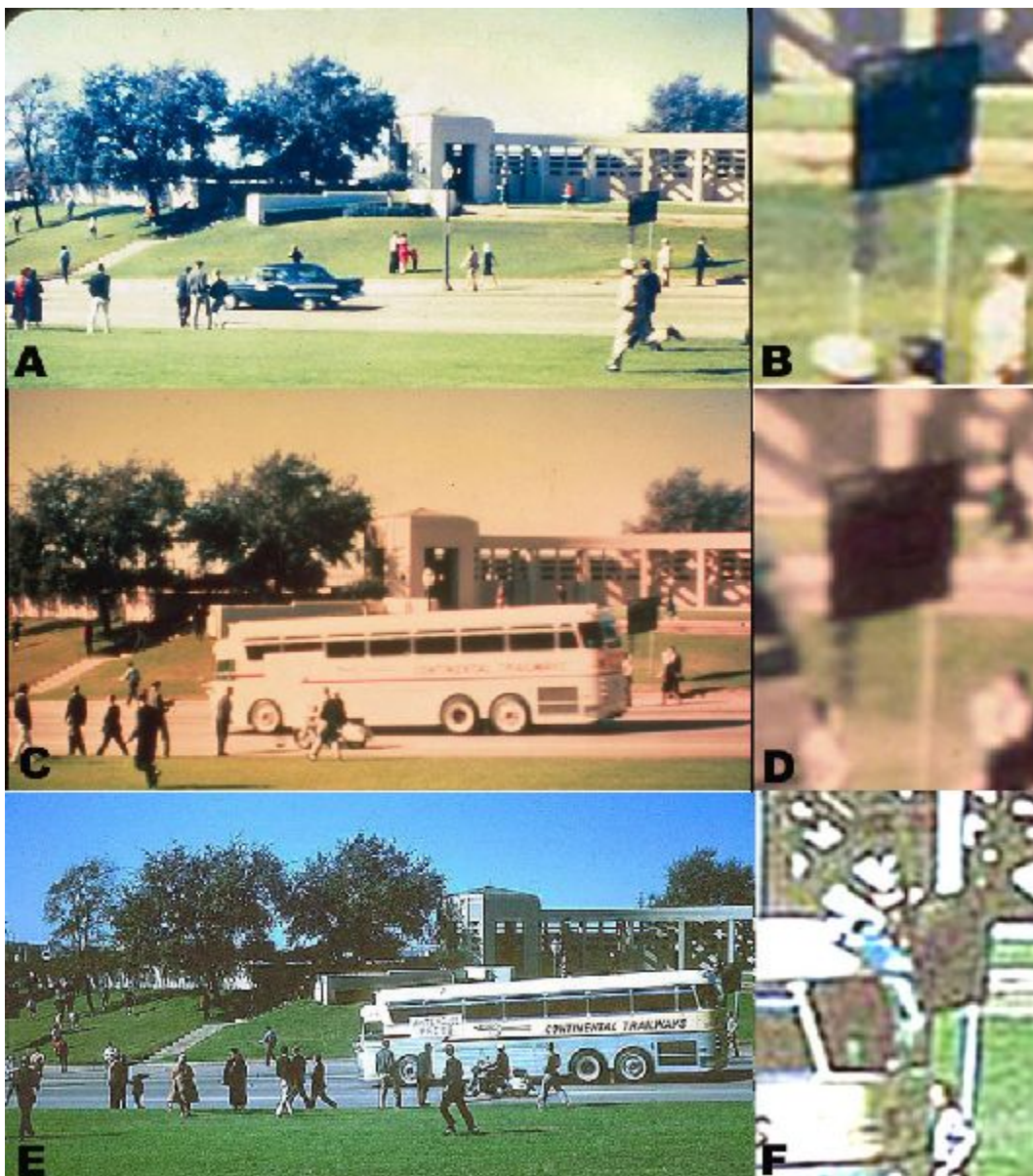


Figure 5 The Stemmons Freeway sign as depicted in Wilma Bond #7 (A and B), Bond #8 (C and D) and Skaggs (E and F). Note indented lateral edges suggesting the sign consisted of three signboards stacked on top of each other rather than a single signboard.

consist of a single broadly rectangular signboard, but rather of three narrow, similarly sized, rectangular signboards stacked on top of each other. The indentation of the lateral edges suggests that the three signboards were not aligned perfectly on top of each other, but were pointing (bent) in slightly different directions. However, the notches might also be partly due to the three boards having rounded corners, like the two boards of the Fort Worth Turnpike sign (see later), creating a small gap between adjacent boards at their lateral edges. Except for the notch between the two signboards, the Fort Worth Turnpike sign has smooth edges in Bond #4 and Bond #6, proving that there was nothing wrong with the camera and film Bond used as regards their ability to reproduce a signboard accurately.

Bond #7 and Bond #8 also indicate that the sign was leaning toward Elm Street, but this feature is much more evident in other photographs and films showing a front or rear view of the sign, as will be pointed out later. This marked leaning is not consistent with the appearance of the sign in the Zapruder film.

The Stemmons Freeway sign is not as clearly shown in Skaggs' slide as in Bond #7 and Bond #8, being partly obscured by the White House press bus, and being somewhat underexposed (Figure 5E-F). Yet, Skaggs' slide also show that the right-hand (northern) lateral edge of the sign is indented, strongly suggesting that it consisted of more than one signboard.

Richard Bothun took four photographs at Dealey Plaza on November 22, 1963. His first three photographs were taken of the motorcade from the intersection of Main and Houston Streets. He then ran across the grassy area to the south side of Elm Street, where he can be seen in Zapruder [frames Z330-Z354](#) on the right-hand side of photographer Altgens (left side in frames). Bothun didn't manage to take any photographs as the limousine passed by in front of him. Instead he took his fourth photograph that day immediately after the shooting across Elm Street toward the North Pergola, showing the Newman family lying on the ground. The picture also shows an oblique view of the rear side of the Stemmons Freeway sign, as well as the Dark-Completed Man and the Umbrella Man sitting close to the sign (Figure 6A).

Bothun's picture is somewhat blurred, and there are dark areas behind the sign, so it is difficult to make out any details about the outline of the signboard itself. However, the cropped and enhanced version of the photo published as JFK Exhibit F-404 by the HSCA ([HSCA Hearings 4:435](#)), seems to depict the edges of a narrow signboard at the bottom right-hand corner (as seen in photo) of the main signboard (Figure 4 E). Moreover Bothun's photo clearly shows that the sign is leaning toward Elm Street and that the signposts are not in parallel, but are pointing in different directions. This leaning becomes even more apparent if the photograph is rotated about 2.5 degrees clockwise to obtain the correct horizontal/vertical alignment as determined from the pergola in the background (Figure 6B). Hence, the appearance of the Stemmons Freeway sign in the Zapruder film is not consistent with its appearance in Bothun #4.

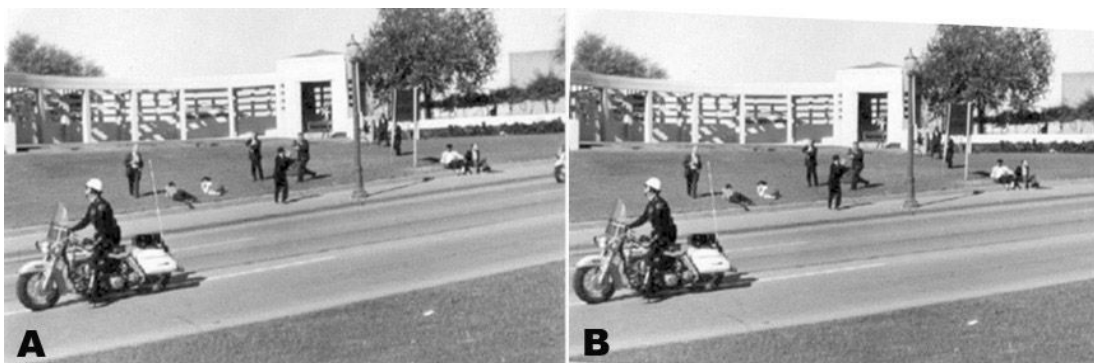


Figure 6 Richard Bothun's fourth photograph. (A) As published. (B) Rotated 2.5 degrees clockwise. Note the leaning of the Stemmons Freeway sign

The text on the Stemmons Freeway sign is not clearly visible in Bond's slides, but it probably reads the same as depicted in other photos, with the exception that "FREEWAY" was not underlined. The other major difference, of course, would have been that each line of text was on a separate signboard with rounded corners (not shown here).



Thus, the Stemmons Freeway sign probably resembled the Fort Worth Turnpike sign a little further down on Elm Street toward the triple underpass, which is visible in Zapruder frames Z419-Z445, as well as in many other photographs taken immediately after the assassination (e.g. Willis #6; Towner #3; Bond #4 and #6; Rickerby #1; Cancellare). The [Fort Worth Turnpike sign](#) consisted of a narrow board at the top reading FORT WORTH, and a taller board at the bottom reading TURNPIKE / KEEP RIGHT in two lines. Each of the boards had rounded corners, so that a notch appears on each of the lateral edges between the two signboards.

How is it possible then, that Bond's and Skaggs' slides show a Stemmons Freeway sign different from the one depicted in the Zapruder film and most other photographs taken on the day of the assassination, or later? Since the great majority of the photographs seem to corroborate the appearance of the sign in the Zapruder film, one might think that is how the sign really looked like. If true, someone must have altered the appearance of the sign in the Bond's and Skaggs' slides. However, I believe it's the other way around, i.e., Bond's and Skaggs' slides show the authentic Stemmons Freeway sign as of November 22, 1963, whereas the other films and photographs either show an edited or retouched version of that sign (other images taken that day) or a completely new sign, which had replaced the original one (images taken on subsequent days).

Wilma Bond's slides Nos. 7 and 8

As to Wilma Bond's slides, they were, just like the original Zapruder film, in the possession of Life Magazine. However, at the Clay Shaw trial in 1969, where her slides Nos. 4 and 5 were introduced as evidence, showing people running toward the grassy knoll after the shooting, [Mrs. Bond](#) testified that they depicted what she had seen when she took them, i.e. they had not been altered:

DIRECT EXAMINATION BY MR. ALFORD:

Q: Mrs. Bond, did you have occasion while you were in Dealey Plaza and shortly after you heard what you testified to be the third unusual noise to take a photograph?

A: Yes, sir.

Q: Do you -- how many photographs did you take?

A: I took nine.

Q: Do you have two of those photographs with you?

A: Yes, sir, I do.

Q: Please give them to me.

A: (The witness complies.)

Q: Have these photographs been in your possession continually since they were developed?

A: No, sir.

Q: And in whose possession have they been other than yours?

A: Well, Life Magazine had them for a while and several other people used them but they had permission to do so.

Q: After receiving these slides back were you able to look at them and identify them as the slides which you took?

A: Yes, sir.

Q: Mrs. Bond, from -- I want you to please examine these two photographs now, hold them up to the light and examine them --

A: They are my slides, sir.

TRAVERSE BY MR. DYMOND:

Q: Mrs. Bond, these slides which you have exhibited here, did you develop the negative yourself?

A: No, sir, I did not.

Q: Were you present while it was being developed?

A: No.

Q: And you say while you were taking pictures you were not able to look and see what was going on in this -- in the area?

A: When you are taking the picture you are looking but it was snapped fast as I could and I didn't see what was going on until they were developed and after I did see the things.

BY MR. ALFORD:

Q: Mrs. Bond, after viewing these two photographs are you able to identify them as being your photographs?

A: They are photographs I took, sir, they are slides.

MR. DYMOND: Just a moment please. We object to any testimony concerning these photographs, or with reference to them, on the ground that the proper foundation has not been laid. All this lady testified to is that she took two pictures, took some film to a developer and this is what she got back and she is not able to identify these photographs as to what she saw there that day, was not present when the negatives were developed and that the original has been out of her possession and in the hands of other people and I don't think there has been a sufficient amount of identification between what she took and what is on these slides.

THE COURT: The objection is overruled.

Even though one cannot rule out the possibility of some alteration of Bond's slides, that does probably not apply to the appearance of the Stemmons Freeway sign in slides Nos. 7-9, since that appearance contradicts the way the sign was supposed to look like in order to be consistent with the sign depicted in the Zapruder film. Since Bond's slides merely show a side view of the Stemmons Freeway sign, those initially in control of her slides, may have overlooked this discrepancy, like so many others in the ensuing years.

We may notice that the chain of custody of Bond's slides was a central issue when using them as evidence of what happened in Dealey Plaza after the assassination. By showing that Wilma Bond had not been in the possession of her slides at all times after she took them, Mr. Dymond tried to imply that they may have been altered. That also applies to all other photographs and films taken at Dealey Plaza on November 22, 1963. Did the photographers keep their films and photographs to themselves until they were made public, or were they turned over to the authorities, or to someone (particularly the news media) acting on behalf of the authorities?

Jay Skaggs' slide

Jay Skaggs [reportedly](#) kept all his 20 slides taken at Dealey Plaza on November 22, 1963 to himself and his family for 39 years before donating them to The [Sixth Floor Museum](#) in 2002. If that is true, and since there is no reason to believe that he altered the slides himself, his slide of Elm Street and the grassy knoll shows the authentic Stemmons Freeway sign, which corroborates the appearance of the sign in the Bond slides.

Bothun's fourth photograph

Richard Bothun reportedly developed all his films himself. Of the four photographs he took at Dealey Plaza, he donated a copy of his fourth photograph to the Dallas Morning News, but kept the original prints and negatives to himself. I don't know whether the available version of his photo #4 has been made from the print he donated to Dallas Morning News, or from his original negative or print. If it stems from the print Bothun donated, there is a possibility that the appearance of the Stemmons Freeway sign has been altered in this photograph. Only a slight retouching of the rear side of the sign would have been

required to obscure the gaps between the three separate signboards. But that might not even have been necessary if the original were as underexposed as the available version of Bothun #4.

Yet, there is an indication of some alteration in Bothun #4. The lane line in Elm Street seen on the right-hand side of the photograph should have extended almost down to the lamp pole, rather than ending in front of the Dark-Completed Man and the Umbrella Man. The position of this lane line between the middle and right lane is clearly seen in Rickerby #1, Towner #3 and in some of the Secret Service re-enactment [photographs](#). As to the vertical alignment of the photograph, Bothun may well have tilted his camera slightly to his left when snapping the picture, but the fact that the nearest signpost is in a perfect upright position as opposed to the leaning lamp pole, when it was the other way around, makes me wonder whether Bothun's original has been slightly rotated and cropped to obtain a better agreement with the Zapruder frames as regards the alignment of the Stemmons Freeway sign.

Phil Willis' 5th slide

As mentioned previously, Willis slide No. 5 shows the entire front side of the Stemmons Freeway sign, whereas his slide No. 7 show part of the sign. Both of these slides depict a single rectangular signboard. Could these slides have been altered? Yes, I think they could. And I will go into some detail to show why that is so.

Phillip L. Willis, a retired Air Force major, took five color slides of the Presidential limousine in Dealey Plaza immediately before the assassination, as well as seven slides of the aftermath of the assassination. Willis, together with his wife and two daughters, then went to the Eastman Kodak laboratory in Dallas to develop his slides in the afternoon of November 22. At that time, Zapruder was also at the laboratory together with Forrest Sorrels, head of the Dallas Secret Service office, to develop his film. This was confirmed by Forrest Sorrels in his WC testimony ([WCH 7:352](#)):

Mr. SORRELS. [...] At that time Mr. Harry McCormack, who is a reporter for the Dallas Morning News, and whom I have known for many years, came to me and says, "Forrest, I have something over here you ought to know about."

I said, "What have you got here?" He said, "I have a man over here that got pictures of this whole thing." I said, "Let's go see him."

So we went on to a building at the corner of Elm and Houston, on the east side of Houston, and across the street from the court house building there, up to the office of a Mr. Zapruder, they have a dress manufacturing place there in that building. And he was there with another man connected with the business there, and apparently some magazine representatives there. And Mr Zapruder was real shook up. He said that he didn't know how in the world he had taken these pictures, that he was down there and was taking the thing there, and he says, "My God, I saw the whole thing. I saw the man's brains come out of his head."

And so I asked Mr. Zapruder would it be possible for us to get a copy of those films. He said, yes. So then, accompanied by Mr. Zapruder, and this other gentleman in the business there with him, whose name I don't recall at the moment, and Mr. McCormack, we went then to the Dallas Morning News Building, which is about three blocks from Mr. Zapruder's building, three or four blocks from there, with the idea of getting those films developed right away.

There was no one there that would tackle the job. We then went to the television section, WFAA, of the Dallas Morning News, to see if we could get them to handle it there, and they said, no, they would not attempt to do that, but they did assist us by calling Eastman Kodak Co., and they said if we came out there right away, that they would get right on it.

We got a police car, and went right on out to the Eastman Kodak Co., and while there I met another gentleman who had seen some still pictures, and arranged with him for us to get copies of those.

Mr. STERN. What was his name — do you recall?

Mr. SORRELS. He is a salesman for the Ford Co. on West Commerce Street — Mr. Willis. And so he said, yes, that he would be glad to furnish me with a copy of the pictures.

Some months later, Willis made copies of his 12 slides commercially available to the public under the title 'Assassination in Dallas'. A set of these slides were introduced as evidence by the Warren



Figure 7 Phil Willis' fifth slide, showing the Presidential limousine and the follow-up car proceeding down Elm Street.

Commission as [Willis Exhibit No. 1](#) (WCH 21:765-773). Willis' slide No. 5 was also introduced separately as [Hudson Exhibit No. 1](#) (WCH 20:183). In a '[foreword](#)' to his collection of slides, Willis states:

The motorcade through the streets of Dallas was photographed many times, but very few pictures exist of the fateful seconds, when the life of a young and vigorous president was brutally terminated by the assassin's bullets. This series of color slides, all taken by a Dallas amateur photographer, is authentic and has never been published before. The only other known pictures of the tragedy were purchased and published by syndicated media. The photographer of this series turned his slides over to the U.S. Secret Service immediately after the tragedy, and chose to wait a few months before making them available to the public. This is the only existing complete series covering the last 25 seconds of happiness in the life of president John F. Kennedy, the tragedy and immediate aftermath.

Whereas Forrest Sorrels told the Commission that he, while at Eastman Kodak, had only arranged with Mr. Willis to obtain *copies* of his slides for the Secret Service, Mr. Willis states that he immediately turned his slides, presumably the original ones, over to them.

In his testimony before the Warren Commission ([WCH 7:492-497](#)), Willis described how he took the photographs. We may note that Willis states that he was a personal friend of Vice President Johnson. Willis doesn't say anything about turning his slides over to the Secret Service, and he is not asked about this either. Instead, Willis tries to give the impression that he was so shocked by the assassination that he didn't want to make his slides available to the public.

Mr. LIEBELER. Where did you station yourself at first? Were you at the corner, you say?
Mr. WILLIS. At the corner of Houston and Main.

Mr. WILLIS. I remained there until I got the shot of the President approaching the turn onto Houston Street [[Willis #1](#)], and being a personal friend of then Vice President Lyndon Johnson, we were anxious to get him in one, and did [[Willis #2](#)]. Then I took a picture as they turned onto Houston Street [still referring to Willis #2]. Then another one from the rear after they proceeded down Houston approaching the turn they were to make onto Elm [[Willis #3](#)]. Then I immediately ran across the plaza, raced over to Elm Street and stationed myself on the curb in front of the Texas School Book

Depository.

Mr. LIEBELER. You were there when the motorcade made a left turn on Houston and went down Elm Street; is that correct?

Mr. WILLIS. Yes; and I photographed the President. I was standing in front of the curb, as is shown in Life magazine [i.e. in a frame from the Zapruder film], on the edge of the street, and I photographed the presidential car at not more than 10 feet because I didn't get the front or the rear of the car. I just got the occupants in the center. I was that close [Willis #4; at about Z140].

Mr. LIEBELER. Now you have indicated that you are depicted in a picture which is in the John F. Kennedy Memorial Edition of Life magazine in a picture [Zapruder frame] that you said you were in the upper left-hand corner of page 4; is that correct?

Mr. WILLIS. Yes, sir.

Mr. LIEBELER. You are the individual who stands almost directly behind the first motorcycle policeman in that picture, and you are shown with a camera?

Mr. WILLIS. With my camera raised; yes, sir. The little girl in the red dress and white scarf and coat is my daughter.

Mr. LIEBELER. The farthest person in the right in the back of that picture?

Mr. WILLIS. The farthest person in that picture.

Mr. LIEBELER. Now did you stand at that particular spot the entire time, or did you move down Elm Street?

Mr. WILLIS. No, sir; I took that picture just seconds before the first shot was fired, to get back close up. Then I started down the street, and the regular weekly edition of Life magazine came out and shows me in about three different pictures going down the street. Then my next shot was taken at the very – in fact, the shot caused me to squeeze the camera shutter, and I got a picture of the President as he was hit with the first shot. So instantaneous, in fact, that the crowd hadn't had time to react [Willis #5; at Z202].

Mr. LIEBELER. Now you have, as I understand it, a series of 12 slides, which apparently have been prepared by something called Phil Willis Enterprises, and which I understand is being marketed, at least in the Dallas area?

Mr. WILLIS. We haven't done anything with them as yet, but I am the only one, I am told, who has a complete set of the prints covering the last 25 seconds of the President's life and the assassination and the tragedy following. I was so shocked I didn't sell any, like everyone did at the moment. And the same people who bought those, said they would have been invaluable had I brought them to them, but it didn't dawn on me to do that. And later there has been so many requests because of the historical nature, that we felt compelled to make them available to the public.

Mr. LIEBELER. I have here a picture that has been marked Hudson Exhibit No. 1, which I now show you and I suggest to you that it is one of the pictures, that is a picture made from one of the slides.

Mr. WILLIS. I made that picture [print for the Commission].

Mr. LIEBELER. You made that picture yourself?

Mr. WILLIS. Yes, sir.

Mr. LIEBELER. That is the same as slide No. 5? In your series of slides?

Mr. WILLIS. That is correct.

Mr. LIEBELER. Can you tell us when that picture was made?

Mr. WILLIS. That picture was made at the very instant that the first shot was fired. As a matter of fact, the fellow [i.e. Mr. Zapruder] standing on the ledge under the right-hand corner of the Stemmons Highway sign [sic; Freeway] is a gentleman who took the last pictures that appeared in Life, and his pictures showed that this instant with this sign in between the photographer and the President, shows that at this instant he had already grabbed his throat.

This was pointed out to the Secret Service and the Federal Bureau of Investigation. Picture No. 2 will verify that, in Life magazine. You see the highway sign that he has the rear of, is the one I have the front of. And as he approached this same sign in this film, he has already grabbed his throat. That is verified by that fact.

Mr. LIEBELER. Referring to the pictures on page 4 of the memorial edition of Life magazine. Picture No. 1 shows you standing, as we have already indicated, standing back with your camera?

Mr. WILLIS. Picture 2 shows the President just as the car comes from behind this sign, and it shows that he has already reached for his throat at that time.

Mr. LIEBELER. The sign in question is one that reads "Stemmons Freeway Keep Right", and the front of that sign appears in the picture that you took which is marked Hudson Exhibit No. 1?

Mr. WILLIS. The only one in that vicinity. It has to be the same one. You will also note in my first picture, he is facing the outside of the street and smiling and waving, and he had already turned his head the other way when I have the picture in question here from the rear. That same picture from the other side of the street in Life shows he has grabbed his throat when they proceeded to that point of the sign in question.

Mr. LIEBELER. Go through that again. I didn't understand it. Let me remind you of this. When you mention a picture, let's try and refer to them by numbers, because if you do that, I won't have to repeat it again, because we have to get the numbers down on the record. You were making a point just a minute ago about something that I didn't understand. You were referring to some of the pictures in Life

magazine, and also to Hudson Exhibit No. 1, which is the picture you took.

Mr. WILLIS. All right, sir, Hudson Exhibit No. 1, which is a copy of the picture I took, shows the President's car had proceeded almost past the "Stemmons Freeway Keep Right" sign. Referring back to panel No. 2 of the Life Memorial Edition of Life magazine on page 4, it shows that Mrs. Kennedy has her hand over her mouth, and the President has already grabbed his throat. That picture shows that his car has not passed the Stemmons sign completely.

Mr. LIEBELER. Yes.

Mr. WILLIS. Referring back to Hudson Exhibit No. 1, which I took, the President's car in fact has passed the Stemmons sign, and he has turned the opposite direction from the previous picture that I took close up, and it proves without question that at this instant the President had been hit.

The testimony of Abraham Zapruder was taken at 1 p.m. on July 22, 1964, by Mr. Wesley J. Liebeler, whereas the testimony of Phillip L. Willis was taken at 2:30 p.m. on the same date in the same office by the same attorney. Moreover, Mr. Zapruder was asked to identify himself in Hudson Exhibit No. 1 (Willis #5). In his [testimony](#) (WCH 7:570), Zapruder pretended he didn't know anything about that slide and the photographer. Interestingly, he raises the question of whether the photograph is authentic or not, so he was obviously aware of what could be done with photographs.

Mr. LIEBELER. I show you a picture that has been marked [Hudson Exhibit No. 1](#) and ask you if you can in fact see yourself in that picture?

Mr. ZAPRUDER. Let me see – there it is here. That's me standing there – there's a girl – that's where I was standing.

Mr. LIEBELER. You are pointing out a concrete abutment that comes up immediately to the right of the sign that reads "Stemmons Freeway, Keep Right"?

Mr. ZAPRUDER. That's right. That's the girl behind me -- that's my girl that works in my office. She was up there, too.

Mr. LIEBELER. So, you and this girl are shown standing on top of this concrete abutment there?

Mr. ZAPRUDER. That's right – she was right behind me and that's from where I took the pictures.

Mr. LIEBELER. Then, you can actually see yourself in this picture, can't you?

Mr. ZAPRUDER. Well, I can't distinguish myself being – I know I was there.

Mr. LIEBELER. Do you recognize that this picture was taken at the time you were there?

Mr. ZAPRUDER. Yes; I was there and I would say this couldn't be anybody else, unless – if this is an authentic photograph and it isn't composed now or changed – I would say that's me. That's the first time I have seen that. Were these pictures ever published in a magazine – there were pictures like that I suppose -- actually?

Mr. LIEBELER. This picture here is in fact one of a series of pictures that is being sold down here in Dallas by a fellow named Willis, I believe his name is Phil Willis. He has a series of slides that are available and it's picture No. 5 of those slides in which you can see yourself back there.

Mr. ZAPRUDER. That must be it because there's another couple back there – I took some from there and I was shooting some of the pictures to start my roll from the beginning. I didn't want to have a blank and I shot some, in fact, they have it – the Federal Bureau of Investigation have those pictures.

Even though both Phil Willis and Mr. Liebeler knew about Zapruder, Mr. Zapruder is not mentioned by name by either of them during Willis' testimony. And interestingly, Mr. Willis did not volunteer to Mr. Liebeler that he had been to the Eastman Kodak laboratory to get his slides developed at the same time that Mr. Zapruder was there to get his film developed in the afternoon of November 22. Neither did he tell Mr. Liebeler that he obviously had seen the original Zapruder film on that occasion. In the Clyde Shaw trial, [Mrs. Willis](#) testified that she had seen the film at Eastman Kodak, and we may take for granted that Mr. Willis also did so.

Q: Did you have an unobstructed view of President Kennedy at the time of the third shot?

A: Absolutely.

Q: Mrs. Willis, would you please describe for the Gentlemen of the Jury and the Court what you saw as a result and as the effects of this third shot?

A: On the third shot his head exploded and went back and to the left.

Q: Did you observe anything, anything other than the explosion?

A: It exploded like a red halo.

Q: Mrs. Willis, have you ever as of this day seen the Zapruder film?

A: Yes.

Q: Where did you see it?

A: At Eastman Kodak.

Q: Did this film indicate the same thing you observed?

MR. DYMOND: I object as that is something for the Jury to determine. I think he is trying to corroborate the witness with a self-serving declaration.

BY MR. ALFORD:

Q: Did you at the time you observed the explosion of the President's head, did you see anything leave the President's head?

A: Yes, it seemed to be a matter of some type from his head.

Q: What was the direction of this matter as you were able to observe?

A: Back.

Q: Would that be to the backwards left or to the backwards right as he was seated in the car?

A: To his left.

Unfortunately, Mr. Dymond prevented Mrs. Willis from telling the court whether the Zapruder film she had seen at Eastman Kodak was consistent with what she had witnessed. However, it probably was, since that was the authentic Zapruder film. More important, though, Mrs. Willis was apparently not shown the Zapruder film during the Clyde Shaw trial, and hence she was not asked whether that film was consistent with the film she had watched at Eastman Kodak.

Although, Mr. Willis keeps referring to the pictures in Life Magazine (of Zapruder frames), the following statements indicate that he had not only seen the original Zapruder film, but that in that film President Kennedy had not been completely obscured from view by the Stemmons Freeway sign:

Mr. WILLIS. That picture was made at the very instant that the first shot was fired. As a matter of fact, the fellow standing on the ledge under the right-hand corner of the Stemmons Highway sign is a gentleman who took the last pictures that appeared in Life, and his pictures showed that this instant with this sign in between the photographer and the President, shows that at this instant he had already grabbed his throat.

This was pointed out to the Secret Service and the Federal Bureau of Investigation. Picture No. 2 will verify that, in Life magazine. You see the highway sign that he has the rear of, is the one I have the front of. And as he approached this same sign in this film, he has already grabbed his throat. That is verified by that fact.

Mr. WILLIS. Picture 2 shows the President just as the car comes from behind this sign, and it shows that he has already reached for his throat at that time.

Mr. WILLIS. [...] That same picture from the other side of the street in Life shows he has grabbed his throat when they proceeded to that point of the sign in question.

It does not seem that Mr. Willis has merely deduced from seeing President Kennedy grabbing his throat as he emerged from behind the sign (Picture 2 in Life, or Z225), that he must have started grabbing his throat already when he approached the sign or was behind it. At least he doesn't explain it that way. Nor did he himself see the President grabbing his throat from his position to the rear of the car. Thus, when Mr. Liebeler asked him, "Did you think that the President had been hit by the first shot?", Mr. Willis answered, "I didn't really know, sir." So Mr. Willis might have seen the President grabbing his throat before he reached the sign somewhere else, i.e. in the original Zapruder film. Interestingly, he suddenly refers to "this film" rather than to the frames published in Life. Mr. Liebeler doesn't understand Mr. Willis' explanation either, so he asks Mr. Willis to repeat what he had said.

Mr. Willis then tries to explain his contradictory statements by first saying that when he took his picture #5 the limousine was *almost* past the sign, but when President Kennedy emerges from behind the sign in the Zapruder frames, his car had "not passed the Stemmons sign completely". But then he goes on to say that the car "...in fact [had] passed the Stemmons sign" when he took picture #5.

Many researchers think Willis #5 coincides with Z202. The Warren Report ([WCR 112](#)), however, concluded that Mr. Willis took this photograph at about Z210:

Another photographer, Phillip L. Willis, snapped a picture at a time which he also asserts was simultaneous with the first shot. Analysis of his photograph revealed that it was taken at approximately

frame 210 of the Zapruder film, which was the approximate time of the shot that probably hit the President and the Governor.

Since Mr. Willis probably had seen the authentic Zapruder film, he probably knew that the frames published in Life Magazine were not identical to any of the frames in that film. And he must have been fully aware of the fact that some of his own slides had been edited by the Secret Service. Perhaps that is why he felt it was necessary to state in the [foreword](#) to his slides that, "This series of color slides,, is *authentic*....". And when Mr. Liebeler asks him whether the sign depicted in the pictures (Zapruder frames) in Life Magazine is identical to the sign that reads "Stemmons Freeway Keep Right" in his own photograph (Hudson Exhibit No. 1), Mr. Willis eagerly stresses that: "The only one in that vicinity. It has to be the same one".

Mr. Willis was a former military officer and a personal friend of Lyndon B. Johnson, by now the new President. I guess Mr. Willis either had been told about the conspiracy to kill Kennedy, or he must have figured it out himself if his slides had been altered. Maybe even someone had commissioned him to be at Dealey Plaza to take photographs of the motorcade? And was it a coincidence that he went to Eastman Kodak to have his slides developed at the same time that Forrest Sorrels of the Secret Service brought Zapruder there? It's very telling that in his testimony Mr. Willis claims that he immediately knew that all three shots had come from the TSBD, but that he hadn't seen President Kennedy getting hit in the head with the third shot.

Mr. LIEBELER. Did you actually observe the President when he was hit in the head?

Mr. WILLIS. No, sir; I did not. I couldn't see that well, and I was more concerned about the shots coming from that building. The minute the third shot was fired, I screamed, hoping the policeman would hear me, to ring that building because it had to come from there. Being directly across the street from the building, made it much more clear to those standing there than the people who were on the side of the street where the building was.

Mr. LIEBELER. So you thought you had picked out a particular building at the time when you heard shots?

Mr. WILLIS. Absolutely.

Mr. LIEBELER. What building was that?

Mr. WILLIS. The Texas School Book Depository Building.

Mr. LIEBELER. You were pretty sure?

Mr. WILLIS. I felt certain. I even looked for smoke, and I knew it came from high up.

Mr. LIEBELER. How did you know that?

Mr. WILLIS. I even observed the clock on top of the building, it was 12:33 when I looked up there.

Mr. LIEBELER. The clock on top of the School Book Depository?

Mr. WILLIS. There is a Hertz sign on top of the building, and it alternates the time of day and the temperature, and when I looked up, it was 12:33, and the temperature was 68 degrees, as shown in my slide on No. 12.

Mr. LIEBELER. So you did not actually observe the President at the time he was hit in the head?

Mr. WILLIS. No, sir; I was just taking a picture of him, and the presidential party in the car come through my viewfinder and my camera. But my little daughter ran back and said, "Oh, Daddy, they have shot our President. His whole head blew up, and it looked like a red halo."

Mr. LIEBELER. Which one? Is this the girl that is here today?

Mr. WILLIS. The little one was the one that made that remark. My youngest daughter, Rosemary. The one that is with me today also saw it, and she went back and told her mother the same thing. And her mother said, "Yes; I saw it."

Well, I guess Mr. Willis did see, and maybe even took a photograph of President Kennedy getting hit in the head. But as a former military man, he had probably realized that the President had been hit by a bullet fired from in front of him, since Kennedy had been thrown backwards in the car as described by his wife in the Clyde Shaw trial: "On the third shot his head exploded and went back and to the left". So it was better for Mr. Willis to deny having seen Kennedy getting hit, so he wouldn't have to describe what he had seen.

I don't think Mr. Willis was telling the truth about his [slide No. 12](#) when he said, "There is a Hertz sign on top of the building, and it alternates the time of day and the temperature, and when I looked up, it was

12:33, and the temperature was 68 degrees, as shown in my slide on No. 12." That slide was probably not taken on the day of the assassination, but some time later. Other photos and films show that there were a lot of people around the TSBD in the hours after the assassination, whereas in his slide the eastern corner of Dealey Plaza looks fairly deserted. And the temperature usually varies through the day. The spot by Main Street from where the photo has been taken, was probably carefully chosen, in order to have the view to Houston Street and the corner of Houston and Elm completely blocked by the North Peristyle. By doing that, Mr. Willis avoided showing who, if any, were in that area, when he took slide No. 12, which would probably have revealed that the photo wasn't taken on the day of the assassination.

Neither is Mr. Willis telling the truth about slide [No. 6](#), neither in his testimony, nor in the [legend](#) to that slide in his collection. Mr. Willis claims that slide No. 6 shows the Presidential limousine before going under the triple underpass, whereas it in fact shows the camera cars leaving the Plaza a few minutes after the shooting. So his concern about the shots being fired from the TSBD wasn't as instantaneous as he claimed.

Mr. LIEBELER. I don't think I have any other questions about these pictures, unless you can think of something else that you think I should have asked you about, that I have forgotten about.

Mr. WILLIS. In slide No. 6, people were still on the ground and I took that picture, knowing that the party had come to a temporary halt before proceeding on to the underpass, and I have an arrow there which shows the back of the Secret Service agent climbing onto the back of the presidential car.

As to [slide No. 4](#), Willis claimed that he was so close to the limousine that only the central portion of the car was within his camera's field of view: "I was standing in front of the curb, as is shown in [Life magazine](#), on the edge of the street, and I photographed the presidential car at not more than 10 feet because I didn't get the front or the rear of the car. I just got the occupants in the center. I was that close." Well, as judged from the Zapruder film, he wasn't much farther away from the Secret Service car when he took his next [slide](#), but that photo shows all of that car as well as part of the Presidential limousine ahead of it. Hence, I think slide No. 4 is a cropped version of his original slide. Moreover, the image has to be rotated about 5 degrees counterclockwise to get the correct vertical alignment of the picture. The car wasn't travelling on a horizontal stretch of road at that moment, but had started on a downhill slope, as is evident from the corresponding Zapruder frames.

One might also wonder why that slide happens to be so blurred, particularly the background, as opposed to all of Mr. Willis' other slides. The blurring of the background is not caused by motion blur, as Mr. Willis was standing in the street a little ahead of the car, and didn't have to pan his camera. Moreover, the occupants of the car are also blurred, as opposed to the lower portion of the limousine, which is in sharp focus. So I would think that Willis #4 has been altered, probably to render some of the bystanders in the background unrecognizable, or to create an illusion of the car travelling at a considerable speed at the time, which it did not.

As regards [slide No. 5](#), I think the appearance of the Stemmons Freeway sign has been edited. I think the three signboards of the authentic sign have been merged into a single signboard by retouching, i.e. by filling in the gaps between the boards (Figure 1B). The white line underneath FREEWAY may be a vestige of a white border line along the edge of each signboard, indicating where the gap between the two lower signboards were. The part of the signboard that is visible in [slide No. 6](#) must have been edited in similar manner (Figure 1C).

The alignment of the sign in Willis #5 (and #6) does not seem to have been altered, however. The signposts and the signboard are leaning considerably toward Elm Street, and this leaning becomes even more pronounced if the photo is rotated about 4 degrees counterclockwise to obtain the correct vertical alignment of the slide, using the North Pergola as a reference. This alignment is not consistent with the appearance of the sign in the Zapruder film.

There are also other possible discrepancies between Willis #5 and the Zapruder film. The two police motorcycles on the left side of the Secret Service follow-up car seem to be further back along the follow-up car in [Willis #5](#) than in the corresponding Zapruder frames, i.e. frames around [Z202](#). The motorcycles also seem to be closer to the rear of the presidential limousine both in the Towner film (as the car turned onto Elm Street and started downhill a few seconds before Willis #5 was taken), and the Martin film (view from Houston street across the North Reflecting Pool as the limousine went by Mr. Willis). The far rearward position of the motorcycles might possibly be due to a distorted perspective due to the lens Willis used, but that doesn't seem likely when this slide is compared with [Willis #3](#), showing the same cars in a similar position on Houston Street. Hence, I think slide No. 5 has been intentionally altered to change the relative position of the motorcycles and the cars.

As to the motorcycle officers on the right-hand side of the cars, we see from Willis #5 that they are not riding side by side. The helmet of the foremost rider is barely visible at a location suggesting that he is right behind the right rear bumper of the limousine, as seen in the Zapruder frames. The other motorcycle officer is further back along the middle portion of the follow-up car. The latter rider (i.e. his motorcycle) is only barely visible in some of the Zapruder frames (i.e. in [Z183-Z185](#)), but in these frames he seems to be riding side by side with the other officer on the right side of the limousine. Since Willis #5 was taken only about a second after Z183, the rider on the right-hand side of the follow-up car should have been a more forward position. A possible explanation for this discrepancy will be offered later.

In Willis #5 the Dark-Completed Man is seen standing a considerable distance further down the street than the Umbrella Man, who is standing directly adjacent to the Stemmons Freeway sign, whereas they appear to be standing much closer together in the Zapruder film (e.g. [Z230](#)). Moreover in a photo taken at about the same time by Charles Bronson from near the South Peristyle across the plaza from Elm Street, the Dark-Completed Man is in fact standing slightly to the left (to the right in the photo) of the Umbrella Man, i.e. he is closer to Willis than the Umbrella Man (Figure 8). This discrepancy indicates that the position of the Dark-Completed Man has been altered, either in Willis #5 or in the Bronson photograph.



Figure 8 The relative position of the Umbrella Man (1), the Dark-Completed Man (2), and the Stemmons Freeway sign (3) in Z230 (A), Willis #5 (B) and the Bronson slide (C), respectively.

In Willis #5, only two persons are seen standing on the steps leading down from the North Pergola to Elm Street, whereas the Moorman Polaroid and the Muchmore film show three men on these steps, and the Nix film shows one of three men fleeing the scene by running up the steps (Figure). One of the three men on the steps was the grounds keeper of Dealey Plaza, Emmett J. Hudson, who was asked to identify himself in Willis #5 when he testified before the Warren Commission ([WCH 7:558-565](#)), which is why that picture was designated [Hudson Exhibit No. 1](#). However, Mr. Hudson couldn't find himself in that picture, either because he had been edited away, or because he was hidden behind the lamp post in the foreground. In the latter case, he would have had to be very slim.



Figure 9 The men on the steps. (A) The Moorman Polaroid showing the Presidential limousine at the time of the fatal head shot to President Kennedy. There are 3 men on the steps leading down from the retaining wall to Elm Street. No. 1 is Mr. Hudson. Arrow points to Mr. Zapruder and Mrs. Sitzman. (B) Frame from Muchmore film showing all 3 men on the steps, but No. 2 is turning around. (C) Frame from Nix film. Only two men are left, No. 3 has fled. (D) Frame Z413 from the Zapruder film possibly showing Mr. Hudson's head (arrow behind the bush).

Mr. LIEBELER. Can you see yourself in that picture anywhere, can you make yourself out?
 Mr. HUDSON. No, sir; I can't, unless it is one of these two men right here — I can't tell — if I had that picture that was taken in the Times Herald paper — I can show you myself in it.
 Mr. LIEBELER. Which one is that?
 Mr. HUDSON. Well, it was in the Times Herald paper the next morning after, I believe, after the assassination, maybe the evening after the assassination.
 Mr. LIEBELER. Look at this picture.
 Mr. HUDSON. [Examining picture referred to.] I don't know — if that's one of them men and myself or not up there.

 Mr. HUDSON. [...] If they had that picture that was taken — a fellow was shooting from across Elm up toward those steps here, that showed my picture in it, I believe. Now, I could be one of those men standing right there — I'm not for sure — I wouldn't say for sure that I was one of them or not, but I can't see it well enough to tell.

The picture Hudson referred to in the [Dallas] “Times Herald paper”, is the Moorman photo (Figure 9A). One might wonder why the Warren Commission attorney didn't show him the latter photo. In his testimony, Hudson mentions only one other man on the steps with him, although he must have seen three men in the Moorman photo. While examining Willis #5, Hudson remarks, “I don't know — if that's *one of them men* and myself or not up there”. If there had been just one more man, he would probably have said “the other man and myself”, so he actually confirms that there was more than one other man together with him on the steps. And if there were only two men there, one of them *had to be* Mr. Hudson.

In an [affidavit](#) dictated on the day of the assassination, Hudson also refers to only one other man, who

was sitting on the steps with him before the motorcade came by (“There was another man sitting there with me. He was sitting on my left.... I do not know who this other man was that was sitting beside me”). In his [testimony](#), Hudson initially says the other man was sitting on his left side before the motorcade came. But later we may get the impression that the same man was also standing on his left side.

Mr. HUDSON. [...]...and me and him both just sat there first on those steps. When the motorcade turned off of Houston onto Elm, we got up and stood up, me and him both. He was on the left side and I was on the right....

[...] this young fellow that was sitting there with me -- standing there with me at the present time, he says, "lay down, Mister, somebody is shooting the President." He says, "Lay down, lay down," and he kept repeating, "Lay down," so he was already laying down one way on the sidewalk, so I just laid down over on the ground and resting my arm on the ground and when that third shot rung out and when I was close to the ground -- you could tell the shot was coming from above and kind of behind.

However, the man Hudson refers to in his testimony as sitting or standing on his left side, is not the man seen standing in that position in the Moorman photo or the Muchmore film (Figure 9A-B). That man is seen running up the steps in the Nix film. The man Hudson refers to, has to be the man in red top standing three steps below him and in front of him (Figure 9B-C). That is the man who remains at the scene after the shots, and who can be seen sitting by the steps together with Mr. Hudson in [Willis #6](#) and #7 and in Bond Nos. 4-7. Maybe Hudson had told the FBI about the third man, and had been asked not to mention him anymore? After all, Hudson admitted that he did not tell the FBI *exactly* the same thing he told Mr. Liebeler.

Mr. LIEBELER. Have you been interviewed by the FBI?

Mr. HUDSON. Yes, sir.

Mr. LIEBELER. Do you remember who talked to you?

Mr. HUDSON. Not by name, I don't; no, sir.

Mr. LIEBELER. And did you tell them approximately the same thing you have told me?

Mr. HUDSON. Yes; approximately the same thing.

On the other hand, from his testimony, it is evident that Mr. Hudson didn't quite catch everything that was going on around him as the motorcade passed by. For instance, he hadn't noticed Governor Connally in the car at all (“Well, sir; I never noticed Governor Connally in the car. The first shot must have struck him and he had done fell over in the car when that happened.”), and he first suggested there might have been 2 minutes between the shots. He wasn't very accurate in his description of where Kennedy got hit in the head either; “Yes; it looked like it hit him somewhere along about a little bit behind the ear and a little bit above the ear.” So Mr. Hudson may simply not have noticed if a man came down the steps behind him as the limousine approached them. “It was such an exciting time...”, as he put it. But he ought to have realized that there was an additional man there when he saw the Moorman photo. The third man on the steps may be of importance as to the origin of the extant Zapruder film, and that may well be the reason why there are only two persons on the steps in [Willis #5](#), although the man they left standing was the one who fled.

Betzner's third photograph

Hugh William Betzner, jr. took three photographs of the Presidential limousine as it proceeded down Houston Street and turned onto Elm Street. In an [affidavit](#) dictated on the day of the assassination he described how he took these pictures:

I was standing on Houston Street near the intersection of Elm Street. I took a picture of President Kennedy's car as it passed along Houston Street [i.e. photo #1]. I have an old camera. I looked down real quick and rolled the film to take the next picture. I then ran down to the corner of Elm and Houston Streets, this being the southwest corner. I was standing back from the corner and had to take the picture through some of the crowd [#2]. I ran on down Elm a little more and President Kennedy's car was starting to go down the hill to the triple underpass. I was running trying to keep the President's

car in my view and was winding my film as I ran. I was looking down at my camera to see the number of the film as I ran. I took another picture as the President's car was going down the hill on Elm Street [#3]. I started to wind my film again and I heard a loud noise. I thought that this noise was either a firecracker or a car had backfired. I looked up and it seemed like there was another loud noise in the matter of a few seconds. I looked down the street and I could see the President's car and another one and they looked like the cars were stopped. Then I saw a flash of pink like someone standing up and then sitting back down in the car.

Betzner's second photograph of the Presidential limousine was indeed taken "through some of the crowd", which actually were Mr. and Mrs. Jim Towner, and their daughter Tina Towner. Jim Towner took a photo of the Presidential limousine (Towner #1), and Tina Towner filmed it, as the car turned the corner of Houston and Elm Streets. The Towner family, with Betzner behind them, can also be seen in the Dorman film. Betzner, wearing light-colored trousers, emerges from the crowd on the corner of Houston and Elm in Z135 and remains more or less visible until Z207. He can be seen to stop a few feet from the curb taking his third photograph, which many consider to have been taken simultaneously with [Z186](#).

In Betzner #3, only the right rear part of Presidential limousine is visible, the rest of the limousine being obscured by a bystander blocking part of Betzner's field of view (Figure 10). In the Zapruder film, a man in suit can indeed be seen to step a little forward on Betzner's left-hand side, but this man does not end up standing squarely in front of Betzner as seen in Betzner #3. Rather, he is standing almost at a right angle to him, with the right side of his body facing Betzner, and he is leaning slightly forward. Hence, I think Betzner #3 is a composite, in which the bald man has been edited into the original photo.

In his affidavit Betzner did not mention anyone blocking his view when taking the third photograph, as opposed to when he took the second photograph. His camera was obviously set to be in focus at a distance from him, as is evident from his third photo, as well as from his two preceding photos of the

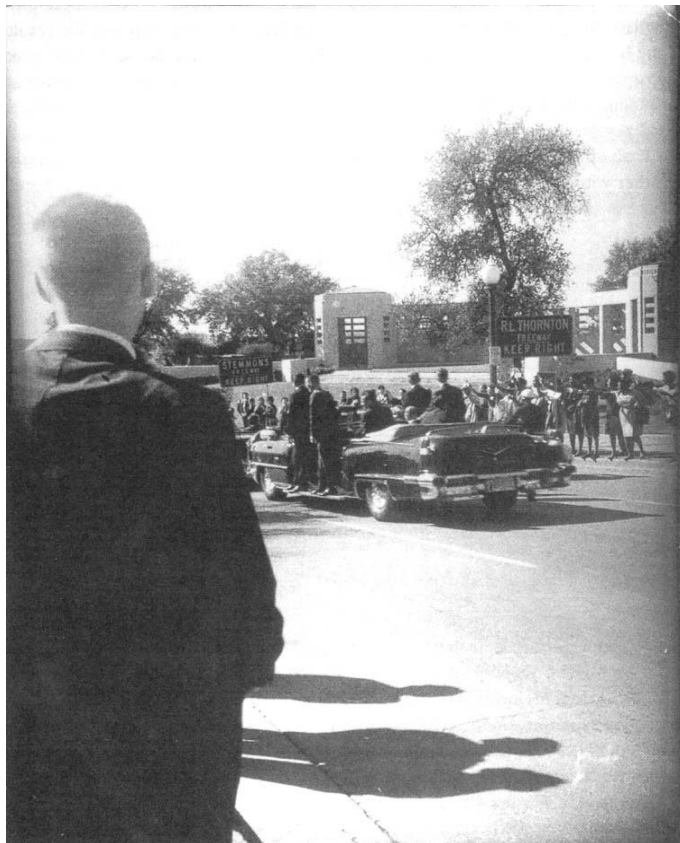


Figure 10 Betzner's third photograph.

limousine. It would not seem likely, therefore, that the man and the street immediately in front of Betzner would be in such a sharp focus as they are. Moreover, the bald man's coat seems to extend all the way down to his knees. I would think that approximately the lower quarter of the extant Betzner #3 photograph, as well as the upper tenth of it, have been added to the original photo, turning it from landscape format (width > height) into portrait format (height > width). Still the long to short side ratio of this photograph is markedly different from that of his two preceding pictures (about 1.2 versus 1.4).

From the Dorman and Zapruder films, Betzner can be seen holding his arms, and thus his camera, in exactly the same way when taking all of his photographs, suggesting that he used the same format throughout (switching between landscape and portrait format would necessitate a 90 degree rotation of his camera between exposures). If that is the case, his second photograph may also have been cropped in

order to change it from landscape to portrait format. That might have been necessary to avoid a sudden change in format between his second and third photograph, which might have alerted someone.

The purpose of editing a man into the foreground of Betzner's photograph was dual. First, the cars and the spectators on the north side of Elm Street, were literally pushed away from the viewer, making it much more difficult to examine their positions and reactions. Second, what was going on on the left side of the Presidential limousine and immediately ahead of it was completely hidden from view, even though much of this is seen in Willis #5. We may notice that the Umbrella Man, with the exception of a small portion of his umbrella, as well as the Dark-Complemented Man are not visible. Neither are the two motorcycle policemen on the left side of the limousine and follow-up car, but the shadow of the one closest to the car can be seen on the street. Whether that shadow is authentic or not, is impossible to tell. Anyway, the *relative* position of Betzner and Willis to the two cars, was almost identical when Betzner and Willis took their third and fifth photo, respectively. And the relative position of the two cars to each other is also almost identical in both photographs. Thus, the fact that the left front wheel of the follow-up car is visible in Betzner #3, as opposed to being blocked from view by a motorcycle policeman in Willis #5, suggests that the location of the two motorcycles has been altered in one of the photographs. And I think the motorcycles were relocated in Willis #5, and merely blocked out of view by inserting the bald man on the left-hand side of Betzner's photo.

Since Betzner #3 seems to be a composite, it is also understandable that the Stemmons Freeway sign appears as a single rectangular signboard in that image (Figure 3D). This appearance might easily have been achieved by retouching, merging the three signboards with rounded corners into one, but leaving a line below FREEWAY, probably where the gap between the two lower signboard once was. However, a closer look at the sign at high magnification, reveals that the retouching is flawed. Thus, at the extension of the white line at the lateral edge of the right-hand side of the sign, there is indeed a small notch, indicating where the two lower signboards with rounded corners met. Moreover, on either side of FREEWAY there is a darker area, suggesting retouching.

In the R.L. Thornton Freeway sign depicted in Betzner #3, the word FREEWAY is underlined, as in the Stemmons Freeway sign. This is not consistent with the appearance of the former sign in Commission Exhibit [CE2114](#) (WCH 24:544), where there is no line under FREEWAY. The editor of Betzner's photo may have underlined FREEWAY in the Thornton sign to make it similar to the Stemmons sign.

In Betzner #3, the Stemmons Freeway sign is leaning markedly toward Elm Street, in contrast to the near vertical posture of the Stemmons Freeway sign in the Zapruder film.

An editing of Betzner's photographs was certainly possible as he turned his film over to the authorities immediately after the shooting, as he describes in his [affidavit](#) from November 22, 1963:

I started figuring where I was when I had taken the third picture and it seemed to me that the fence row [on the grassy knoll] would have been in the picture. I saw a group of men who looked like they might be officers and one of them turned out to be Deputy Sheriff Boone. I told him about the picture I had taken. Deputy Sheriff Boone contacted superiors and was told to bring me over to the Sheriff's Office. Deputy Sheriff Boone took my camera and asked me to wait. I waited in the Sheriff's Office and some time later, an hour or two, he brought my camera back and told me that as soon as they got through with the film and they were dry that they would give me the film. A little later he came in and gave me the negatives and told me that they were interested in a couple of pictures and implied that the negatives was all I was going to get back.

It is not clear from Betzner's statement whether he received all the developed negatives from his film, or only some of them, but it seems the authorities (the FBI) kept the negatives of the pictures "they were interested in" until a later date. Thus, it would seem that Betzner actually states, "A little later he came and gave me [some of] the negatives, and told me that they were interested in a couple of pictures and implied that the [present] negatives was all I was going to get back [for the time being]". And when he

finally did get “his” remaining negatives back, they seem to have been altered or replaced by a new, edited set of negatives.

Rickerby’s and Stoughton’s photographs

Life Magazine photographer Art Rickerby was riding in Camera Car 2, which proceeded down Elm Street shortly after the shooting. He reportedly took three pictures from the car, all of which show the Stemmons Freeway sign, the first one from the front, and the latter two from the rear, but the second photo shows only part of the sign.

The first photograph Rickerby allegedly took (Figure 11B), which is in color, is rather blurred, as opposed to his other photographs, which are in black and white. The original of Rickerby #1 could of course have been blurred, but I think it is more likely that the original has been ‘edited’ to change the appearance of the Stemmons Freeway sign and to make the (faces of the) Dark-Completed Man and the Umbrella Man, sitting in front of the sign, unrecognizable. The fact that only some of the letters of the text on the sign are legible, suggests that some retouching has taken place (Figure 3F). Moreover, the three lines of text are not in parallel with each other, suggesting that the sign either consists of three separate signboards (each one having one line of text) pointing in slightly different directions, or of a single signboard that is considerably twisted. The lower third of the left lateral edge of the sign, is slightly out of line with the edge above it, indicating the outline of a narrow signboard at the bottom of the sign. Moreover, the sign is leaning toward Elm Street.

White House photographer Capt. Cecil Stoughton was in the same camera car as Art Rickerby, and took a color photograph at nearly the same time that Rickerby #1 was taken (Figure 11A). Stoughton’s photo is in much sharper focus, but has a much narrower field of view, so that neither the Stemmons Freeway sign nor the Dark-Completed Man and the Umbrella Man are visible (Figure). According to Richard Trask’s book *Pictures of the Pain* (Danvers, Mass: Yeoman Press, 1994) (as cited by [David Reizes](#)), Cecil Stoughton later recalled:

As we rolled to a stop just around the corner, Cancellare leaped out of the car and ran to take a picture of a family cowering on the grass. Tom Atkins was already there shooting his 16 mm Arriflex, and instead of doing likewise, I slipped on my 150 mm lens on the Hasselblad and shot one frame.

Well, I don’t think any photographer would have spent time changing lenses at such a moment, and from the great depth of field in his picture, it doesn’t look like one taken with a telephoto lens (150 mm). By cropping Rickerby #1 so that it shows the same area as Stoughton’s known photo, one notices that the



Figure 11 Two photographs showing the north side of Elm Street immediately after the shooting. (A) Photograph taken by White House photographer Cecil Stoughton. (B) Photograph allegedly taken by Art Rickerby, but which has actually been taken by Stoughton immediately before A. The Umbrella Man and the Dark-Completed man are sitting in front of the Stemmons Freeway sign.

perspective (relationship between foreground and background and relative size of different objects) is exactly the same in both photographs, showing that they were taken with the same type of lens. And I believe they were not only taken with the same type of lens, they were taken with the same lens on the same camera - Stoughton's camera.

Assuming then, that Stoughton took both photographs, the sequence can be determined by looking at the relative position of the lamp post on the curb to the tree in the background. In the photo that until now has been labelled Rickerby #1, the trunk of the tree is on the right-hand side of the lamp post, whereas in the photograph attributed to Stoughton, the lamp post is in line with the tree. This shift is merely the result of the camera car moving slightly down the street between the two photographs. Thus, Stoughton obviously took Rickerby #1, which should be renamed Stoughton #1 a brief moment before he took his heretofore only known photograph, which should be (re)named Stoughton #2.

The fact that Stoughton took Rickerby #1, explains why that photograph is in color, whereas Rickerby #2 and #3 are in black and white. In an email exchange between researcher [Denis Morissette](#) and Art Rickerby's widow in 1999/2000, she provided the following information:

Email; July 13, 1999: "He shot in color before the actual shooting, and again later at the funeral. However I believe that, in the frenzy of the moment, he was using trustworthy black and white. I own the copyright to any images not published in LIFE Magazine. However, the folks at LIFE keep them in their files for me."

Email, August 8, 1999: "It is my belief that Arthur's two b/w shots at Dealey Plaza were the only usable ones. It appears, now that I have seen the color print, that he was already in another car, heading for the hospital when it was made. I was so surprised to find that there was any color at all that I have asked the folks at the LIFE Picture Collection to pull the color file so that I can review it next week. I will let you know if we find anything.

I have the contacts from the black and white set. It goes from the grassy knoll to the back of Parkland and has nothing of special interest from your point of view."

Email, January 18, 2000: "I did go to New York to check on the color photo Black Star was featuring on its web page. They claim the original slide is long gone, but made me a copy of their print – not a very satisfactory solution. I also went to LIFE and searched their old color files. We found a nice shot of the funeral, but absolutely no other color from Dallas. The shot is interesting because it shows a different angle of the plaza, but nothing else exciting."

Thus, Art Rickerby does not seem to have told even his wife about the origin of the color photograph he allegedly had taken at Dealey Plaza. And Capt. Cecil Stoughton has obviously lied about it. Since he was working for the Secret Service, he could not admit that he himself or somebody else had cropped one of his photographs to avoid showing the authentic Stemmons Freeway sign and the two suspect persons sitting in front of it. That would be the same as admitting that this sign and/or the persons sitting there, somehow was associated with the assassination. But by lying about this photograph, Stoughton has indeed shown that the Secret Service was involved in the assassination, and then they may well have altered the appearance of the Stemmons Freeway sign in Stoughton #1.

Cecil Stoughton was the photographer who took the famous photographs of the swearing in of Vice-President Johnson aboard Air Force One about two hours after the assassination of President Kennedy. But Stoughton didn't go with Air Force One to Washington that afternoon. He remained in Dallas, so they had to call in another White House photographer, Robert Knudsen, to take pictures of the new President when the plane arrived at Andrews Air Force Base. One might wonder whether Capt Stoughton had some more photographic work do in Dallas that day.

In Rickerby's two black and white photos, which now should be designated Rickerby #1 and #2, the Stemmons Freeway sign appear as a single signboard. In my opinion, the appearance of the signboard has been altered in these photographs, probably by inserting a new signboard into the original photograph

by compositing. In his last photo the sign is seen leaning toward Elm Street, which is not consistent with the alignment of the sign in the Zapruder film. Since Time-Life was involved in the Zapruder film cover-up, it seems likely that they may also have contributed to altering other photographic evidence of the assassination. And if Rickerby assumed responsibility for taking Stoughton #1, he must indeed have been involved in the cover up.

Jim Towner's second photograph

Jim Towner stood at the southwestern corner of Elm and Houston Street together with his wife and daughter. He took one photograph as the limousine made its turn onto Elm Street and two photographs toward the grassy knoll immediately after the shooting. His second photo depicts a Stemmons Freeway sign consisting of a single rectangular signboard, similar to the one depicted in Willis #5 (Figure). If indeed Willis #5 has been edited, as discussed previously, the appearance of the sign must also have been edited in Towner #2 (Figure 12B). The text on the signboard is very blurred and "STEMMONS" slightly warped, suggesting some retouching (Figure 3E). Interestingly, the letters on the Fort Worth sign further down the road is in much better focus in his next photograph. In Towner #2, the Stemmons sign is leaning markedly toward Elm Street.

Unfortunately, I have not been able to find out whether Towner turned his photos over to the FBI or not immediately after the assassination. However, his first photo, showing the Presidential limousine making the turn from Houston Street onto Elm Street in front of the TSBD *do* show signs of editing (Figure 12A). Thus, the faces of nearly all the people in the background are unrecognizable due to blurring. One might think this was the result of motion blur caused by Towner panning his camera as the car passed by him, but that is not the case. If it had been caused by motion blur, the Dal-Tex building and the two cars in the background should have been equally blurred, but they aren't. It is possible that the conspirators didn't want to disclose the identity of one or more persons standing at that intersection, and created some artificial blurring of the bystanders. Or they didn't want these persons to be compared with the crowd seen at that location in the initial frames of the Zapruder film, although most of the spectators seen in Towner #1 are hidden behind the foliage of a tree in the latter film. They, may also have wanted to create an illusion of the limousine moving fast past Towner. So, if Towner #1 has been edited, I think it is reasonable to believe that his second photograph showing the Stemmons sign has also been edited.

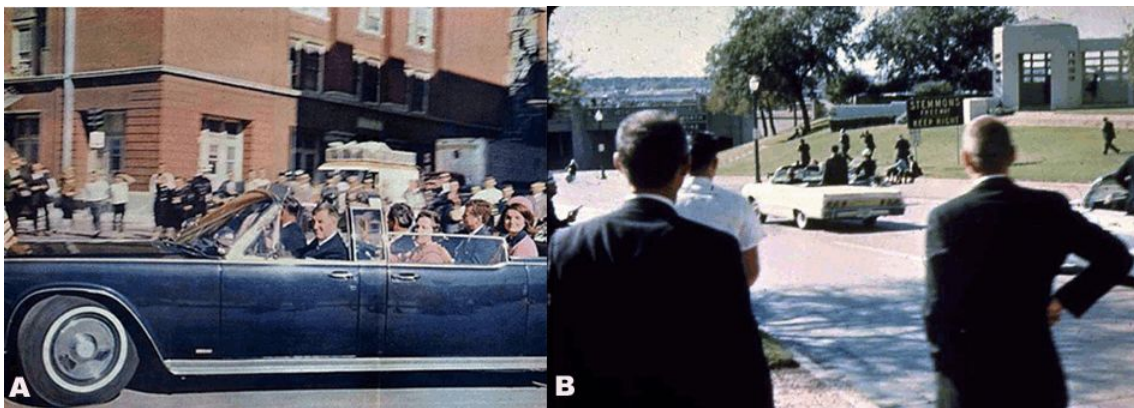


Figure 12 (A) Towner #1 showing the limousine turning from Houston Street onto Elm Street. Note blurring of the people in the background. (B) Towner #2 taken immediately after the shooting. The Umbrella Man and the Dark-complected man are sitting in front of the Stemmons Freeway sign.

Incidentally, the head of the bald man to the right in Towner #2, looks very similar to the bald man apparently inserted into Betzner #3, whereas the posture of the man to the left in Towner #2 (his neck and right shoulder/arm) bears a striking resemblance to the posture of the bald man in Betzner #3 (Figure 10 and 12B). This suggests that the images of the two men in the foreground in Towner #2 were

combined and edited into Betzner #3 by compositing. Or they may have used only the man on the left in Towner's photo and turned him bald by retouching when using him in Betzner's photo.

Cabluck's photographs

Harry Cabluck took three photographs through the window of the White House press bus as it proceeded down Elm Street shortly after the shooting, as seen for instance in Bond #7 and in Skaggs' slide. One of his photographs shows the area immediately in front of the Stemmons Freeway sign, but not the sign itself (Figure 13 B). The next photograph shows the area immediately to the rear of the sign (Figure 13A). That makes me wonder whether those photographs have been cropped to leave out the Stemmons Freeway sign and the Dark-Complemented Man and the Umbrella Man, who were still in the vicinity of that sign.

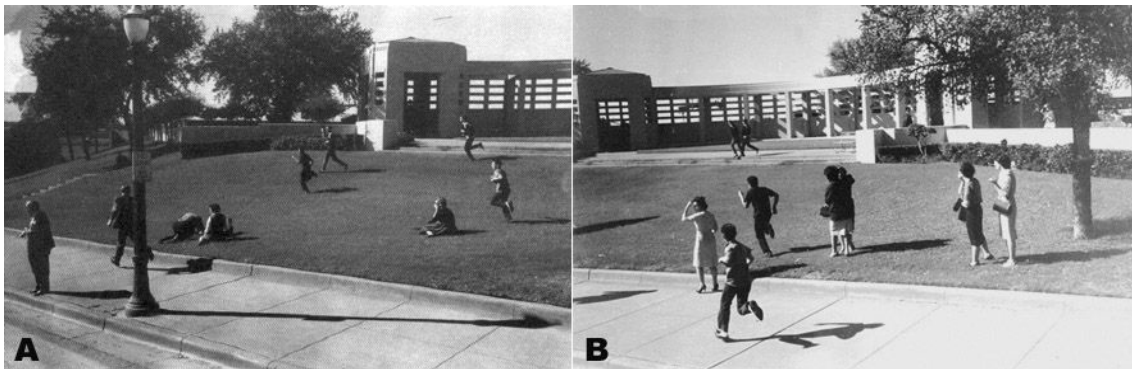


Figure 13 Two photographs taken by Cabluck through window of press bus shortly after the shooting. Neither of them shows the Stemmons Freeway sign.

Photographs from post November 22

Photographs of the Stemmons Freeway sign taken after November 22, 1963 consistently show a sign consisting of a single broadly rectangular signboard (Figure 3G-I). However, that is not surprising since that signboard seems to have been put up there a very short time after the assassination, thereby replacing the old signboard(s).

As mentioned earlier, the grounds keeper at Dealey Plaza, Emmett J. Hudson, was standing on the steps leading down from the North Pergola to Elm Street when the motorcade passed by. When testifying before the Warren Commission ([WCH 7:558-565](#)), Mr. Hudson was first asked to identify where he was standing on a photograph taken during the Secret Service re-enactment of the assassination on [December 5, 1963](#). He was shown a photograph referred to as No. 18 of [Commission Exhibit 875](#) (WCH 17:870-895), but it is difficult to determine from their statements which photograph they actually was looking at. It might have been the one on [page 889](#) of Volume 7 of the WC Hearings. As mentioned earlier Mr. Hudson was also asked if he could see himself in Willis #5 or [Hudson Exhibit No. 1](#). When asked where the Stemmons Freeway sign was in the Secret Service photograph, Mr. Hudson had difficulty finding it, obviously because it was hidden behind the foliage of a tree. During the ensuing discussion, Mr. Hudson reveals that one or more signs has been moved.

Mr. LIEBELER. Now, this picture, [Hudson Exhibit No. 1](#), has a sign in it that says, "Stemmons Freeway, keep right," doesn't it?

Mr. HUDSON. Yes.

Mr. LIEBELER. Can you find that sign on the [photograph No. 18](#) of Commission Exhibit No. 875? The one that we were talking about before.

Mr. HUDSON. That's right here, I believe — right here.

Mr. LIEBELER. Now, that sign says, "R. L. Thornton Freeway, keep right." Where is the Stemmons Freeway sign in this picture? Can you see it in that picture at all — I can't.

Mr. HUDSON. I can't either — that isn't it — it's farther up this way.

Mr. LIEBELER. That's further back up and it's out of the picture?

Mr. HUDSON. Yes.

Mr. LIEBELER. There are two signs in picture No. 18, one says, "R. L. Thornton Freeway, keep right," and the other one says, "Fort Worth Turnpike, keep right."

Mr. HUDSON. There were two of them that wasn't too far apart right through there – them signs was – one was right along in here and the other one was either further up, I guess. It's not in that picture – I don't believe. Now, they have moved some of those signs. They have moved that R. L. Thornton Freeway sign and put up a Stemmons sign.

Mr. LIEBELER. They have? They have moved it?

Mr. HUDSON. Yes, sir.

Mr. LIEBELER. That might explain it, because this picture here, [No. 18](#), was taken after the assassination and this one was taken at the time – [No. 1](#).

What Mr. Hudson probably meant to say was that they had moved the R.L. Thornton sign, and put up a *new* Stemmons sign, i.e. a new signboard on the old signposts. Thus, some pictures taken of the floral tribute to Kennedy on the north side of Elm Street in the days following the assassination, show the sign in the same position as on November 22, and with the signposts still leaning toward Elm Street. Even at the time of the FBI re-enactment in May 1964, the signposts seem to be leaning toward Elm Street (Figure), whereas the re-enactment photographs of the sign (CE888-CE898), show them in a near vertical position.

In the Executive Session of the Warren Commission on December 16, 1963, the members of the commission were briefly discussing the Zapruder frames that had been printed in Life Magazine. During that exchange commissioner John McCloy mentions that he has heard that the sign shown in those frames had been removed ([WCEXSess12/16/63:p. 34](#)):

MR. MC CLOY: [...] This sequence of pictures which Life Magazine has got, I don't know if you have it or not.

CHAIRMAN: I might say to the members that Time has volunteered to make this film available to us, and I accepted.

MR. MC CLOY: Now, here he's reaching up for his throat.

REP. BOGGS: But he's looking straight ahead, reaching up for his throat, that's very significant, I think.

CHAIRMAN: There's another sequence which they did not include and it shows the burst of blood and things from his head, blown out, they did not put it in because they thought it was too gruesome, and that's the head shot, which apparently came from the rear. They've got that and you can blow it up and stop it and do everything, and we can have it whenever we want it.

MR. MC CLOY: You see this sign here, someone suggested that this sign has now been removed. Why, I don't know. But from that sign you can get a pretty good idea where the angle was. That tree gives you a good notion of where the first bullet hit. [...]

Thus, it seems clear that the Stemmons Freeway sign as of November 22, 1963, was replaced by a new signboard very soon after the assassination, possibly already on Friday night or Saturday night, in order to make it conform with the appearance of the sign in the Zapruder film.

I also think the movement of the R.L. Thornton sign, as stated by Mr. Hudson, was related to the Zapruder film. Unfortunately, Mr. Hudson was not asked where the sign had been moved, but I think it was only moved sideways slightly closer to the sidewalk and/or a little further east (closer to Houston Street). In the Zapruder film, the left-hand part of the R.L. Thornton sign is visible in Z1-Z58, Z65-88, and Z110-Z132. In none of these [frames](#) is the lower portion of the left signpost shown, but if extended, it would have projected from a point in the grassy area very close to the sidewalk (Figure 14). Thus, it seems to have been too close to Elm Street in these Zapruder frames, and the conspirators knew about this mistake. I therefore think that they had to shift the sign to the right, so that it would appear to be closer to Elm Street as seen from Zapruder's position. This effect could be achieved either by simply moving the sign sideways toward the sidewalk, or by moving the sign eastwards, away from Zapruder's position, but maintaining the original distance from the sidewalk, since Elm Street and the adjacent sidewalk was curving to the right. Or they could have moved the sign a little closer to both Elm Street (sideways) and Houston Street (eastward).



Figure 14 Position of R.L. Thornton sign relative to sidewalk on north side of Elm Street. (A) Composite of Z41 and Z126. The approximate border of grassy area (green) and the origin of signpost has been added. (B) Re-enactment photograph from CE886. (C) Photograph taken a few days after the assassination. (D) Photograph B from CE2114. (E) Frame from film taken on the day of the assassination.

In the Barnes photographs, as well as in the ‘photograph from re-enactment’ in [CE 886](#) (WCH 18:85), the left signpost (on the right side as seen from the rear in photos) seems to be originating very close to the edge of the sidewalk, although this is somewhat difficult to determine due to the low resolution of these images. In [CE2114B](#) (WCH 24:544), however, the left signpost arises from the grassy area well beyond the edge of the sidewalk, as did the signposts of the Stemmons sign and Fort Worth sign. Photo B in CE2114 seems to have been taken just a few days after the assassination, since there are a lot of flowers in front of the pergola. Pete Barnes took his photographs on November 27, whereas the re-enactment photograph in CE886 was allegedly taken on May 24, 1964. The Secret Service re-enactment photographs from the alleged sniper’s window were taken on December 5, and as judged from the position of the signboard relative to the sidewalk in the [photographs](#) on pages 882-885 of CE875, the left signpost of the R.L. Thornton sign was well inside the grassy area at that time. Hence, I think the R.L. Thornton sign was edited into the Barnes photographs by compositing in order to obtain a position consistent with that which is depicted in the Zapruder frames. Then the sign then have been moved closer to the sidewalk before the FBI re-enactment six months later, so that CE886 may show the true location of the R.L. Thornton sign at the time that photograph was taken.

Re-enactment photographs

The Barnes photographs from November 27, 1963 and the FBI photographs from the re-enactment on May 24, 1964, show the rear of the new signboard in exactly the same position as in the Zapruder film (Figure 4B-D). I doubt that was possible by just taking the photographs from Zapruder’s position using cameras (Speed Graphic cameras) and lenses different from the ones Zapruder used. And did they take into consideration Zapruder’s height and his posture on the pedestal, i.e. the vertical position of his camera at the time he filmed the limousine? I doubt it. According to FBI agent Lyndal Shaneyfelt’s WC testimony ([WCH 5:138-165](#)), Mr. Zapruder was not present at the re-enactment to guide them.

Mr. SPECTER. And how did you ascertain the position of Mr. Zapruder?

Mr. SHANEYFELT. Mr. Zapruder's position was known, as he was on the top of the abutment along

Elm Street – he stated that he was standing on the abutment. And there is relatively no room to move around there, other than to stand there. It is about 2 feet wide by 3 to 4 feet deep.

Mr. SHANEYFELT. And aside from that, we checked that position against his photographs and determined that that was in fact correct.

Mr. SPECTER. Was the position of Mr. Zapruder confirmed through the use of any other film?

Mr. SHANEYFELT. Yes; in Mr. Nix's motion picture films you can see Mr. Zapruder standing on the abutment.

I think the signboard has been inserted into all of these re-enactment photographs by compositing, just as it was in the Zapruder frames. A clear indication of this is seen in the re-enactment photos in [CE895](#), [CE896](#) and [CE897](#), in which the left signpost (right, when seen from the rear of the sign) does not extend beyond the upper edge of the signboard as one or both signposts do in [CE888-CE894](#) and CE899, as well as in other photographs of the Stemmons Freeway sign after the assassination. It seems that Special Agent Lyndal L. Shaneyfelt of the FBI made a small mistake when he prepared the three above-mentioned exhibits for the Warren Commission.

Zapruder and the Stemmons Freeway sign

According to Zapruder's Warren Commission testimony ([WCH 7:569-576](#)), he had looked around in Dealey Plaza to find a spot where he would have an unobstructed view of the motorcade as it proceeded down Elm Street:

Mr. LIEBELER. I understand that you took some motion pictures at the time of the assassination?

Mr. ZAPRUDER. That's correct.

Mr. LIEBELER. Could you tell us about the circumstances under which you did that, where you were at the time and what happened?

Mr. ZAPRUDER. Yes.

Mr. LIEBELER. And what you saw.

Mr. ZAPRUDER. Well, of course, what I saw you have on film, but that was the day, November 22, it was around 11:30. In fact, I didn't have my camera but my secretary asked me why I don't have it and I told her I wouldn't have a chance even to see the President and somehow she urged me and I went home and got my camera and came back and first I thought I might take pictures from the window because my building is right next to the building where the alleged assassin was, and it's just across – 501 Elm Street, but I figured – I may go down and get better pictures, and I walked down. I believe it was Elm Street and on down to the lower part, closer to the underpass and I was trying to pick a space from where to take those pictures and I tried one place and it was on a narrow ledge and I couldn't balance myself very much. I tried another place and that had some obstruction of signs or whatever it was there and finally I found a place farther down near the underpass that was a square of concrete I don't know what you call it maybe about 4 feet high.

When Zapruder first describes what happened in the Presidential limousine, there is no mention of any sign obstructing his view of President Kennedy. And he appears to be genuinely surprised when presented with frames allegedly from his film, in which the car goes behind the road sign and Kennedy disappears from view.

Mr. LIEBELER. As you stood there on this abutment with your camera, the motorcade came down Houston Street and turned left on Elm Street, did it not?

Mr. ZAPRUDER. That's right.

Mr. LIEBELER. And it proceeded then down Elm Street toward the triple underpass; is that correct?

Mr. ZAPRUDER. That's correct. I started shooting – when the motorcade started coming in, I believe I started and wanted to get it coming in from Houston Street.

Mr. LIEBELER. Tell us what happened as you took these pictures.

Mr. ZAPRUDER. Well, as the car came in line almost – I believe it was almost in line. I was standing up here and I was shooting through a telephoto lens, which is a zoom lens and as it reached about — I imagine it was around here — I heard the first shot and I saw the President lean over and grab himself like this (holding his left chest area).

Mr. LIEBELER. Grab himself on the front of his chest?

Mr. ZAPRUDER. Right — something like that. In other words, he was sitting like this and waving and then after the shot he just went like that.

Mr. LIEBELER. He was sitting upright in the car and you heard the shot and you saw the President slump over?

Mr. ZAPRUDER. Leaning – leaning toward the side of Jacqueline. For a moment I thought it was, you know, like you say, "Oh, he got me," when you hear a shot – you've heard these expressions and then I saw — I don't believe the President is going to make jokes like this, but before I had a chance to organize my mind, I heard a second shot and then I saw his head opened up and the blood and everything came out and I started – I can hardly talk about it [the witness crying].

Mr. ZAPRUDER. I heard the second – after the first shot – I saw him leaning over and after the second shot – it's possible after what I saw, you know, then I started yelling, "They killed him, they killed him," and I just felt that somebody had ganged up on him and I was still shooting the pictures until he got under the underpass — I don't even know how I did it. And then, I didn't even remember how I got down from that abutment there, but there I was, I guess, and I was walking toward – back toward my office and screaming, "They killed him, they killed him," and the people that I met on the way didn't even know what happened and they kept yelling, "What happened, what happened, what happened?" It seemed that they had heard a shot but they didn't know exactly what had happened as the car sped away, and I kept on just yelling, "They killed him, they killed him," and finally got to my office and my secretary – I told her to call the police or the Secret Service — I don't know what she was doing, and that's about all. I was very much upset. Naturally, I couldn't imagine such a thing being done. I just went to my desk and stopped there until the police came and then we were required to get a place to develop the films. I knew I had something, I figured it might be of some help – I didn't know what.

Mr. LIEBELER. [...]. One thing I would like you to do now – we have a series -- a little book here that is [Commission Exhibit No. 885](#) and it consists of a number of frames from motion pictures and I want to show you certain numbers of them which are important to our work and ask you if those look like they were taken from your film and if in fact you could recognize it as you look through this book that these are individual frame-by-frame pictures of the pictures that you took.

Mr. ZAPRUDER. Yes, they are frame by frame and they weren't very clear, for the simple reason that on the telephoto lens it's good to take stills – when you move – did you ever have binoculars – and every time you move everything is exaggerated in the move – that's one reason why they are kind of blurred – the movement. Now, you want me to identify whether these are my pictures?

Mr. LIEBELER. Yes, specifically, I first call your attention to [No. 185](#). This is No. 185 on the back of it and will you look at the whole book and identify it if you can and tell us that those are the pictures that — that those appear to be the pictures or copies of the pictures that you took from your motion picture camera?

Mr. ZAPRUDER. Well, I would say this, they look like – if they were taken from the film I had – these are the ones. I mean, I don't know how to express myself.

Mr. LIEBELER. Well, they were.

Mr. LIEBELER. Now, specifically here let me show you the ones that have been numbered 185 and 186 and see if you can recognize those. This is 185 here that we are looking at now – of Commission Exhibit No. 885.

Mr. ZAPRUDER. Yes. This is where he came in from Houston Street and turned there.

Mr. LIEBELER. Yes; and they are going down Elm Street now?

Mr. ZAPRUDER. Yes; this is before--this shouldn't be there the — shot wasn't fired, was it? You can't tell from here?

Mr. LIEBELER. (no response).

Mr. ZAPRUDER. I believe it was closer down here where it happened. Of course, on the film they could see better but you take an 8 millimeter and you enlarge it in color or in black and white, you lose a lot of detail. I wish I had an enlarger here for you.

Mr. LIEBELER. In any event, frame No. 185 does look like it's one of the frames, sir?

Mr. ZAPRUDER. Yes.

Mr. LIEBELER - And [186](#) is similar also?

Mr. ZAPRUDER. Yes.

Mr. LIEBELER. Now, I've got a list of them here that I want to ask you about – picture [207](#) and turn on over to this picture. It appears that a sign starts to come in the picture — there was a sign in the picture.

Mr. ZAPRUDER. Yes; there were signs there also and trees and — somehow — I told them I was going to get the whole view and I must have.

Mr. LIEBELER. But the sign was in the way?

Mr. ZAPRUDER. Yes; but I must have neglected one part – I know what has happened – I think this was after that happened — something had happened.

Mr. LIEBELER. Do you remember when you looked at your pictures yourself, do you remember that there was a sign that does appear between the camera and the motorcade itself and you can see the motorcade for a while and the sign comes in the view?

Mr. ZAPRUDER. That's right.
Mr. LIEBELER. And the motorcade comes behind it. Now, what about picture No. 210 – however – there is no No. 210 in here.
Mr. ZAPRUDER. No.
Mr. LIEBELER. How about No. [222](#)? Now, in No. 222 you can see the President's car coming out from behind the sign.
Mr. ZAPRUDER. Yes.
Mr. LIEBELER. And you can see Governor Connally right there in that center seat, I believe?
Mr. ZAPRUDER. Yes; Governor Connally – yes – these are all the same pictures — I remember the car was kind of buried and I was kind of low and I don't know how I got that view — I didn't get just the full view of the shot.
Mr. LIEBELER. Let's turn to [225](#) and there the car is coming further out from behind the sign.
Mr. ZAPRUDER. Yes.
Mr. LIEBELER. Is that still the same part of the sequence?
Mr. ZAPRUDER. Yes.
Mr. LIEBELER. You can now see the President for the first time.
Mr. ZAPRUDER. Yes; that's the President.
Mr. LIEBELER. The President appears to have his hand up by his throat as he is just coming from behind the sign.
Mr. ZAPRUDER. Yes; it looks like he was hit – it seems – there--somewhere behind the sign. You see, he is still sitting upright.
Mr. LIEBELER. Yes; he's sitting up and holding his hand up.
Mr. ZAPRUDER. Do we have the sequence — the next frames?
Mr. LIEBELER. Yes; it will be No. [227](#) and his hand comes up even more and he starts to move a little to his left.
Mr. ZAPRUDER. Apparently. And they started speeding the car then to — but he is still sitting up here. Is that still the President here?
Mr. LIEBELER. Yes; in picture No. [228](#) — he still appears to have his hand up and in No. [229](#) it's even more pronounced.
Mr. ZAPRUDER. Yes.
Mr. LIEBELER. As the car keeps coming up from behind and in picture [230](#) he has raised both hands up.
Mr. ZAPRUDER. It looks to me like he went like this – did he go to his throat — I don't remember — I thought he went like this [holding both hands on the left side of his chest]. Did it show?
Mr. LIEBELER. Let's turn over to picture [231](#) here – these still appear to be the same sequence of pictures, do they not?
Mr. ZAPRUDER. Yes; you get about 16 per second and I think my camera was moving a little fast, maybe 18 frames per second. You see, we have a lot of pictures on there.

At first Zapruder is reluctant to admit that there was a sign blocking his view: “Yes; there were signs there also, and trees, and – somehow – I told them I was going to get the whole view, and I must have”. But when Mr. Liebeler insists; “But the sign was in the way?”, Zapruder apparently remembers something someone has told him, and he may have realized what has happened to ‘his’ film: “Yes; but I must have neglected one part – I know what has happened – I think this was after that happened – something had happened”.

Even though Zapruder admits that “... the car was kind of buried and I was kind of low...”, he doesn't understand how the car could have disappeared completely behind the sign: “...I don't know how I got that view – I didn't get just the full view of the shot.” We must also keep in mind that Zapruder had watched his film several times before his testimony. He had watched the original immediately after it was developed, and he kept one of the three copies at least until the next day. And Forrest Sorrels had shown one of the Secret Service copies to him several times.

Mr. LIEBELER. Now, Mr. Zapruder, after you had the film developed I understand Mr. Sorrels from the Secret Service came over and helped you get the films developed and you gave two copies of your films to Mr. Sorrels, is that correct?
Mr. ZAPRUDER. Yes. One we have sent to Washington the same night and one went over for the viewers of the FBI on Ervay Street.
Mr. LIEBELER. That's the Secret Service?
Mr. ZAPRUDER. The Secret Service – I brought one roll there and they told me to dispatch it by Army plane or I don't know what they had done with it but it was supposed to have gone to Washington and one of them, I believe, remained here with Mr. Sorrels. He came to my office quite a few times to show

them to different people.

Mr. LIEBELER . Now, I understand that you, yourself, retained the original film?

Mr. ZAPRUDER. No; I don't have that at all – I don't have any at all. They were sold to Time and Life magazines.

Anyway, Zapruder's recollections of what he had seen did not only stem from what he had viewed through his viewfinder when filming the assassination, but also from what he had seen by watching his film. And Mr. Liebeler's question, "Do you remember when you looked at your pictures yourself, do you remember that there was a sign that does appear between the camera and the motorcade itself and you can see the motorcade for a while and the sign comes in the view?", is not a question, but rather a suggestion of what Zapruder is supposed to answer. So when Mr. Zapruder answers "That's right", I think he merely admits that there was a road sign in the foreground between himself and the motorcade (i.e. it was "in the view"), not that the sign blocked his view of President Kennedy within the limousine. Apparently, Mr. Zapruder had not realized or seen before his testimony that President Kennedy was hit when he was behind the sign: "Yes; it looks like he was hit – it seems – there – somewhere behind the sign."

Interestingly, Mr. Liebeler jumps from Z207 to Z222 when showing Zapruder the frames (Z210 happens to be missing) of the limousine passing behind the sign. Thus, Zapruder was not shown the frames in which all the occupants of the car was totally blocked from view by the signboard. So he may have thought that the car was out of view for only a very brief period. For the rest of the sequence, Mr. Liebeler only skips one or two frames, between those he show to Zapruder. And even more important, as to the origin of the film, the last frame Zapruder is shown on this occasion is Z313.

[Marilyn Sitzman](#), albeit taller than Mr. Zapruder, did not mention any road sign blocking her view when interviewed by Mr. Thompson: "There was nothing unusual until the first sound, which I thought was a firecracker, mainly because of the reaction of President Kennedy. He put his hands up to guard his face and leaned to the left, and the motorcade, you know, proceeded down the hill." So, based on the testimonies of Mr. Zapruder, Mrs. Sitzman and Mr. Willis, I don't think the Stemmons Freeway sign blocked as much of Zapruder's field of view as seen in the extant Zapruder film. And if President Kennedy was about to disappear behind a road sign, a normal reaction for any spectator would have been to instantaneously extend his/her body as far as possible to catch what was going on behind the sign. Yet, there is no horizontal movement of the signboard relative to the background, indicating any vertical movement of the camera corresponding to a stretching of the body of the cameraman.

In fact, the sign remains fixed in the same relative position to the background throughout all the frames in which it is visible, as if the camera wasn't moving either vertically or horizontally relative to the signboard (Figure). That is virtually impossible to achieve for any living person, let alone for Mr. Zapruder, who reportedly had difficulty balancing himself on the pedestal and hence needed his secretary [Marilyn Sitzman](#) to stand there beside him ("Well, he stood up there, and he asked me to come up and stand behind him, 'cause when he takes the pictures looking through the telescopic lens, he might get dizzy, and he wanted me to stand behind him, so in case he got dizzy I could hold onto him.").

Moreover, there is a break in the film between frames Z132 and Z133, the first 132 frames showing the three motorcycle officers apparently preceding the pilot car at the very beginning of the motorcade. Quite some distance behind them followed 5 motorcycle policemen and the lead car, before the Presidential limousine came. [Mr. Zapruder](#) (WCH 7:571) never stated that he stopped his camera for a while when he filmed the motorcade, but Mr. Shaneyfelt said so to the Warren Commission ([WCH 5:139](#)):

Mr. SHANEYFELT. I numbered the frames on the Zapruder film beginning with No. 1 at the assassination portion of his film. He did have on his film some photographs of a personal nature that we disregarded, and started at the first frame of his motion picture that was made there on Elm Street of the assassination.

Mr. SPECTER. And what was happening at the time of frame 1?

Mr. SHANEYFELT. At the time of frame 1, the police motorcycle lead portion of the parade is in view, and that goes for several frames. Then he stopped his camera, feeling that it might be some time before the Presidential car came into view. Then when the Presidential car rounded the corner and came into view, he started his camera again, and kept it running throughout the route down Elm Street until the car went out of sight on his right.

If Zapruder actually stopped his camera, it is inconceivable that he would have managed to put it back up again in front of his face at the exact same position it was in before the break. Yet, the Stemmons Freeway sign have remained in the same relative position to the background after the break. And even when the camera is panning up and down Elm Street in the initial 132 frames, and then down the street as the limousine passes by, there is no corresponding shift in the position of the signboard relative to the background. This panning would have caused the camera to be shifted sideways, and hence the relative position of the sign to the background should also have changed slightly. The same is true for other objects in the foreground, including the spectators on the sidewalk on the north side of Elm Street. All of this show that the Stemmons freeway sign has been inserted into the Zapruder frames.

As to the spectators on the north side of Elm Street, it has been pointed out before by different researchers, that the absence or sparsity of movements among these people, suggests that one or a few frames has been used to depict that area throughout all the frames of the film showing this crowd, i.e. until Z207. That the crowd was nearly motionless throughout the short time span covered by frames Z1-Z132 (about 7 seconds) could perhaps have been conceivable, but not the fact that they remained in virtually the same position throughout the long break in the film. But Betzner's third photograph, and a photograph taken by Robert Croft, show that the bystanders along the north side of Elm Street were cheering and clapping and waving their hands as the Presidential limousine passed by in front of them. In contrast, that same crowd in the Zapruder frames, looks like they are still waiting for the President. Hence, I believe the Zapruder film does not show the crowd on the north side of Elm Street 'live' as the motorcade passes by, as opposed to the crowd on the opposite side of the street, but shows them as they stood there waiting for the car to arrive, i.e. they were filmed a short time before the motorcade arrived. The reason for this, I will explain later.



Figure 15 Relative position of edge of Stemmons Freeway sign and lane line in Elm Street in seven Zapruder frames. There is no shift in position between Z61 and Z172, a period which also includes the brake in the film between Z132 and Z133.

Comparison of appearance

It is somewhat risky to compare the Stemmons Freeway sign in different images, due to differences in resolution between them, both when recorded and when reproduced. Thus, some of the differences may be artefactual rather than real. However, if one compares the appearance of the front side of the Stemmons Freeway sign in photographs taken at November 22 and later (Figure 3B-I), it is evident that the sign looks almost identical in different photographs taken after November 22 (Figure 3G-I). The

signboard has the same general outline and the text on the signboard looks like it is printed on the sign, having perfectly aligned letters and lines. That is to be expected since these photographs show the same signboard.

A comparison between photographs taken on November 22 and photographs taken later, shows that there are subtle differences in the appearance of the Stemmons Freeway sign, but it is difficult to pinpoint these. Although the letters on the signboard look quite similar (same font), they appear to be slightly shorter and thicker on November 22 photographs. Their blurred outline and less than perfect alignment might be partly due to blurring of the photographs themselves, but might also be the result of retouching. In Willis #5 (Figure 3b) and Betzner #3 (figure 3D), the text (Stemmons/Keep Right) seems to be closer to the edge of the sign than in the post-assassination photographs. The photographs showing the front side of the sign were probably edited by the same person(s), so a fairly consistent appearance is to be expected. And the new signboard was of course made as similar as possible to the old sign, with the exception that the three lines of text were not spread out on three signboards.

The true height to width ratio of the entire sign is impossible to determine and compare since the photographs have been taken at different angles to the signboard(s). Some of the variations might also be related to different cameras and lenses being used.

As pointed out in connection with the different photographs, the Stemmons Freeway sign was leaning considerably toward Elm Street as of November 22, 1963. This marked leaning is also seen in the Couch, Martin, Towner and Wiegman films, all of which were taken shortly after the shooting. Apparently, they did not correct this leaning when they replaced the old signboards with a new one, since post-assassination photographs show the same feature.

In contrast to the marked leaning of the true Stemmons Freeway sign, the Zapruder film, the Barnes photographs and FBI's re-enactment photographs all show a sign with a near perfect vertical/horizontal alignment. That also shows that the sign has been inserted into these frames and photographs by compositing.

THE SLOPE THAT DISAPPEARED

It is an indisputable fact that Elm Street is a downhill slope between the intersection of Houston and Elm and the triple underpass. The FBI and Warren Commission members were also quite familiar with this fact, as is evident from the model of the area shown in [CE878](#) and CE 879, the map in [CE882](#) and CE883 and the physical description of Dealey Plaza in [CE877](#) (WCH 17:897-898):

The declining angle, east to west, of the entire Plaza area is approximately 3 degrees, or about a 1 foot drop per 20 linear feet. The distance from Houston Street to the Underpass is approximately 495 feet by way of Elm and Commerce Streets. When traveling by way of Main Street, this distance is approximately 425 feet. The road level at the Triple Underpass is approximately 24 feet lower than at the Houston Street level.

The 3 degree street angle was also mentioned repeatedly by Mr. Specter and Mr. Shaneyfelt during the latter person's [WC testimony](#) about his analysis of the Zapruder film. Moreover, the angle was (mis)used by Mr. Specter and the Warren Commission to make the alleged bullet trajectory through Kennedy's and Connally's bodies fit in with a shot fired from the sixth floor of the TSBD.

Mr. SPECTER. Was there any street angle taken into consideration in the calculations here?
 Mr. SHANEYFELT. Yes; there is a 3° street grade that has to be deducted from the angle to the window to determine the actual angle from the street to the window as opposed to the horizon.
 Mr. SPECTER. Will you now —
 Mr. DULLES. Frame 161 is 3° on 161?
 Mr. SHANEYFELT. Three degrees all along Elm Street.

Mr. DULLES. All along. That applies to all of these different pictures, is that correct?

Mr. SHANEYFELT. That is correct.

Mr. SPECTER. What would the angle be considering the adjustment on the angle of the street?

Mr. SHANEYFELT. It would be less than 3° or 12° 21', approximately.

Mr. SPECTER. When you say approximately is that because the adjustment is somewhat greater than 3°?

Mr. SHANEYFELT. Yes.

Mr. SPECTER. How much is it exactly, if you know?

Mr. SHANEYFELT. It is 3.9. It is almost 4.

Mr. SPECTER. Three degrees nine minutes?

Mr. SHANEYFELT. Three degrees nine minutes, I am sorry.

And for anyone having ever looked at photographs from [Dealey Plaza](#), or who have visited the place, it should be plain to see that the grassy area of Dealey Plaza bordered by Elm, Houston, and Commerce Streets and the triple underpass, is not a plane but a downhill slope between Houston Street and the underpass. Yet, for more than 40 years no one seems to have realized the most obvious of all the discrepancies in the Zapruder film: *the limousine gradually turning from going downhill to moving horizontally*, as if Elm Street levelled off halfway between the intersection of Elm and Houston Streets and the triple underpass.

In the opening sequence (Z1-132) and in the next 85 frames or so, the Zapruder film shows the correct declining angle of Elm Street, as determined from the angle of the car and the curb on the south side of the street relative to the horizontal plane (Figure 16). Then, as the limousine emerges from behind the sign, the declining angle of the street gradually decreases, due to a counterclockwise rotation of the original frames. This initial rotation is evident when using the perforated concrete wall in the background as a reference line. At frame [Z218](#) the upper edge of that wall is horizontal, but in subsequent frames it gradually moves upward at the far end, having been rotated about 3.3 degrees by frame [Z255](#). Then the upper edge disappears from view, but the extent of the rotation can still be determined from the perforations on the front side of the wall, as well as from the edge of the grassy area and the flowers in front of it. The counterclockwise rotation also becomes evident from the leaning of the lamp post in the foreground. At frame [Z270](#) the original image has been rotated about 3.5 degrees, and as the lamp post disappears from view at [Z282](#), the rotation has reached about 4.5 degrees.

At [Z279](#), the first frame without the lamp post in the main frame area, the limousine has finished its transition from going downhill to moving horizontally, as if the downhill slope had levelled off at this point. By frame [Z298/Z289](#) the last reference point, i.e. the flowers in front of the South Peristyle, disappears from view. By this time the frame has been rotated between 5 and 6 degrees counterclockwise. In the ensuing 80 frames or so the limousine still travels in a nearly horizontal direction, the frames still having been rotated about 5 degrees counterclockwise, assuming that the entire frames were rotated. Then from about [Z370](#) the counterclockwise rotation of the frames gradually declines as different reference points appear on both sides of Elm Street, and the limousine goes downhill again toward the triple underpass.

The discrepancy between the true course any car would travel down Elm Street, and the course the limousine was travelling according to the Zapruder film, becomes particularly evident if one puts together a complete [panorama](#) of selected Zapruder frames, covering the entire stretch of Elm Street from Houston Street to the triple underpass (see also Figures 16-19). Such a panorama shows that the car initially proceeded downhill, then horizontally and slightly “uphill”, and then downhill again in the final frames. In fact, the limousine is at about the same horizontal level when reaching the underpass at about Z470 as it was at Z133 when it first appears in the film. Moreover, the enormous increase in the size of the limousine becomes very striking when looking at such a panorama rather than individual frames. I think this increase in size is partly due to a magnification of edited frames, rather than merely the car coming closer to the cameraman.



Figure 16 Panorama made from selected Zapruder frames showing the entire journey of the limousine down Elm Street between Houston Street and the triple underpass. Orientation of frames as in film.



Figure 17 Panorama made from selected Zapruder frames with 3-8 degrees clockwise rotation of frames from about Z240 until Z430, re-establishing approximately the topography of Dealey Plaza.

Some might think that the temporary horizontal movement of the limousine is due to the change in perspective as the car approached the cameraman on a downhill curving course, and then passed by in front of him and went away from him. That change in perspective would certainly cause some changes in the appearance of the downhill slope down Elm Street, but the road will never appear to be going horizontally, as if on a plain, as numerous published photographs taken from Zapruder's position, clearly show. The appearance of the slope will also depend on the type of lens used on the camera.

Some might argue that the counterclockwise rotation of the frames relative to the horizontal plane was merely due to Mr. Zapruder bending over sideways to his right side and/or rotating his camera. Thus, in the Moorman photograph (Figure 9A) and in some frames of the Nix film, Mr. Zapruder appears to be bending over somewhat in that direction. However, a closer look at these photographs reveals that Mr. Zapruder is mainly bending his knees and hips, i.e. crouching, rather than bending his upper body to his right side. Mr. Zapruder was probably afraid of bending too much sideways, knowing that might cause him to lose his balance and fall off the abutment. So I don't think he rotated his camera much, if at all, to the right. Moreover, it is inconceivable that a cameraman, while tracking the moving limousine, would manage to rotate his camera exactly to the same degree as the declining angle of the street, so that the edge of the car would remain in parallel with the edge of the frames. Hence, it was not merely the camera that was rotated counterclockwise, but the processed frames, and the extant Zapruder film is not Zapruder's camera-original film.

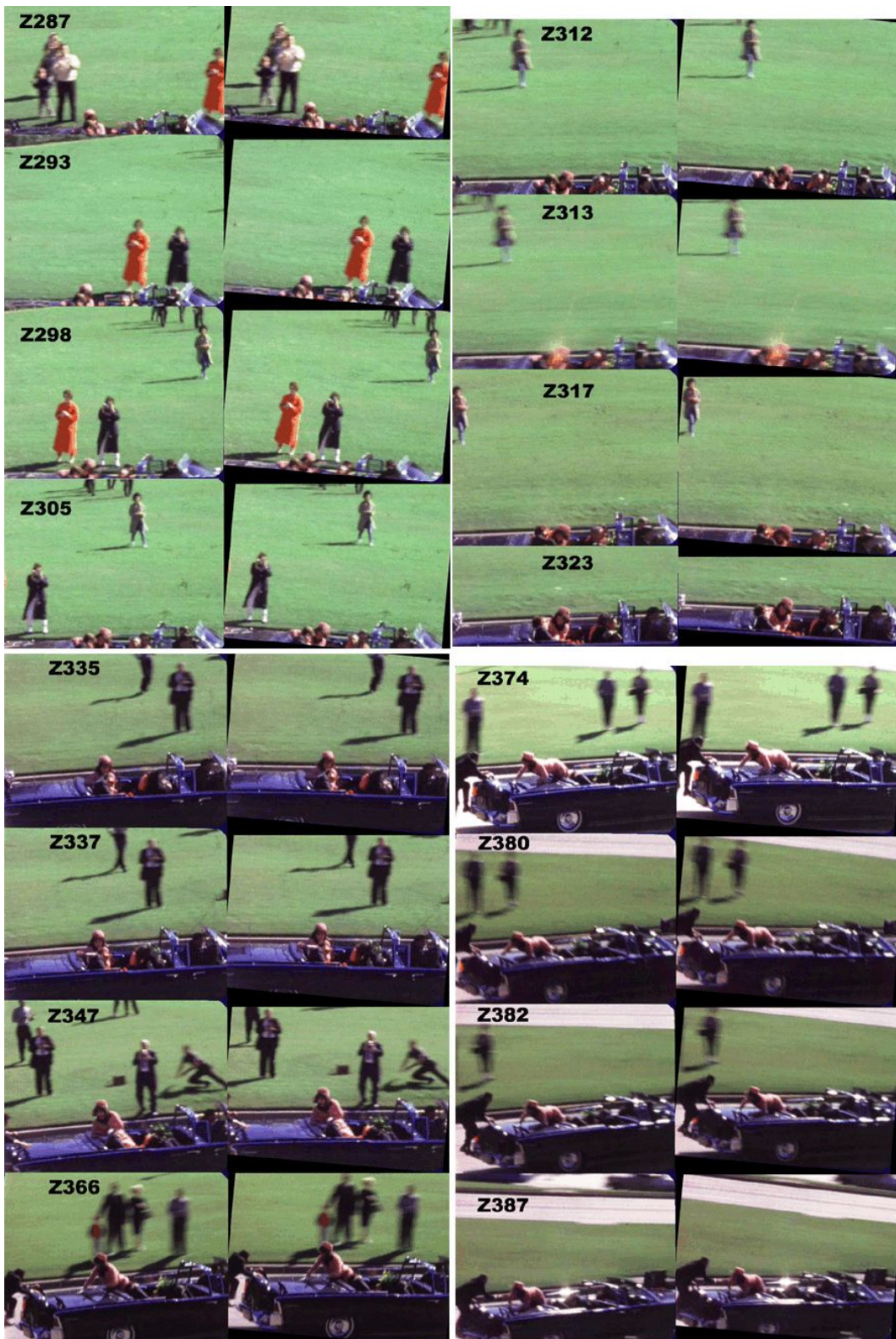


Figure 18 Frame by frame comparison of selected Zapruder frames before (left) and after 5 degrees clockwise rotation (right) of the frames.



Figure 19 Comparison between panorama from Zapruder frames before (A) and after 8 degrees clockwise rotation (C) with the Bronson slide which have been rotated 5 degrees counterclockwise (B).

The rotation also necessitated a cropping of the frames to maintain a rectangular outline of the frames. The steps involved are depicted in Figure 20A-D. After rotation and cropping the lower rear part of the limousine would have been gone. Hence, I believe the rotation and subsequent cropping of the frames is the major reason why most of the right side of the limousine, including much of President Kennedy and Mr. Connally, gradually disappears from view when the street levels off due to frame rotation from about Z280. The cropped frames would of course initially have been smaller than the original frames, which would have necessitated an enlargement of the cropped frames to maintain the original frame size (unless they started with less than the full frame area when reproducing the initial frames). Thus, as the panorama clearly shows (Figures 16-17), there is a marked increase in the size of the limousine and its occupants for the duration of the sequence with rotated frames, but, as already noted, some of this increase in size would be due to the car approaching the cameraman.

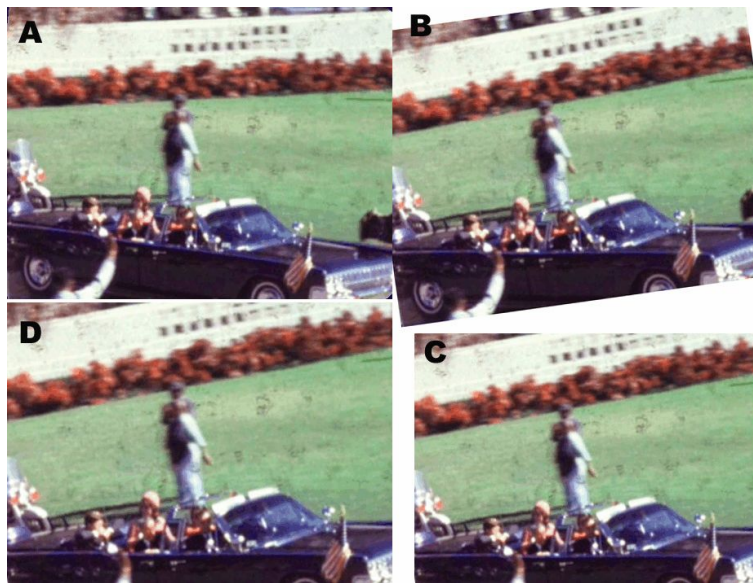


Figure 20 Steps involved in maintaining full frame size after rotation. (A) Original frame, Z232. (B) Rotation of frame counterclockwise. (C) Cropping of frame. (D) Enlargement of cropped frame to obtain original frame size.

We may also note that all landmarks in the foreground and background disappears as the degree of rotation increases. They are all gone during the horizontal phase of the journey, except for the people in the grassy area, but reappears as the limousine approaches the triple underpass. This was necessary in order to make the rotation less evident. Thus, another reason for the film editors to let the car grow bigger and bigger, may have been to leave as much of the surroundings as possible out of the frame area to facilitate the rotation.

As to the people in the background in the grassy area, the rotation of the frames clockwise by about 5 degrees gives them back their true posture as they were standing or running on the ground at the time of the assassination (Figure). All of them maintain an erect upper body after this rotation back to their original position. And it becomes evident that those not already standing by the curb, were running across a downhill slope rather than a plain. Likewise, the peculiar posture of Mrs. Mary Moorman (blue coat) and Mrs. Jean Hill (red coat), each of them standing with their legs wide apart and with their right knee slightly bent ([Z298](#)), can be seen to be due to the fact that they were standing on a sloping surface with their right foot slightly higher on the ground than their left foot. When using the people in the background as a reference, the maximum counterclockwise rotation allowed (to still keep them erect) would be about 5 degrees, but it seems some of the frames have to be rotated back with more than this amount to obtain a correct course for the limousine through Dealey Plaza. So it is possible that the car and the street in the foreground was rotated independently and to a greater extent than the people in the background. However, the difficulty in reproducing a correct panorama of Dealey Plaza with the extant frames, might also be related to the enlargement of some frames.

FBI agent Lyndal Shaneyfelt surely knew about the discrepancy between the Zapruder film and the true topography of Dealey Plaza when he prepared [Commission Exhibit 902](#) (WCH 18:95), in which the alleged position of the limousine at the time of the fatal head shot as depicted in Z313, frame 24 of the Nix film, and frame 42 of the Muchmore film is compared with re-enactment photographs allegedly taken from the position of Zapruder, Nix and Muchmore, respectively. Thus, in the re-enactment photo of Z313 in CE902, the FBI uses the same trick as in the Zapruder film – all the reference points in the foreground and background are left out of the frame, and Elm Street is suddenly turned into a horizontal stretch of road. If Mr. Shaneyfelt had believed or known that the rotation of the Zapruder frames was simply due

to Mr. Zapruder having rotated his camera, he would most likely have told the Commission so, and not bothered to prepare such a re-enactment photo. But he probably knew that the Moorman photograph, which had already been released, did not show Mr. Zapruder rotating his camera, so he didn't try with that explanation. Hence, the fact that he prepared a rotated re-enactment photograph of Z313, shows that he was trying to cover-up a flaw in the Zapruder film.

We may also note that in the re-enactment photo of Z313, the car is in the south lane, rather than in the middle lane, in which the Presidential limousine was allegedly travelling, a position which is supported by the location of the two motorcycles to the left rear of the car in the Zapruder film. And the corresponding 'photograph through rifle-scope' in CE902, does indeed show the car in the middle lane. Hence, the FBI had to cheat in order to get the car in the same relative position to the curb in the background as the limousine had in the Zapruder frames. They apparently did the same in [CE901](#), and possibly also in the preceding exhibits (CE897-899), but their creative way of using shadows and contrast has made the lane lines nearly invisible. This discrepancy concerning the position of the left side of the car relative to the curb in the background may give us a clue as to the origin of the extant Zapruder film, as will be discussed later.

Returning to [CE902](#), we may also note that in order to make the horizontal orientation of the limousine less evident, when compared with the re-enactment photo of frame 24 of the Nix film, the latter photograph has been rotated about 6 degrees clockwise. Of course, frame 24 of the Nix film have the same vertical alignment, which strongly suggests that the FBI also have rotated the frames of the original Nix film to make it more consistent with the Zapruder film. According to Mr. Shaneyfelt's [WC testimony](#) the FBI obtained a *copy* of the Nix film, whereas they actually obtained the original and probably altered it before turning a new 'original' back to Mr. Nix. Some of these alterations were necessary to conceal the origin of the extant Zapruder film, as will also be discussed later.

Mr. SPECTER. What other movies have been examined by you in the course of this analysis?

Mr. SHANEYFELT. An amateur 8-mm. motion picture film made by a Mr. Orville Nix of Dallas, Tex., has been examined. Mr. Nix was standing on the corner of Houston and Maine Streets, photographing the motorcade as it came down Main Street and turned right into Houston Street.

Mr. SHANEYFELT. [...]. After he heard the shots, he hurried down along the curb of Main Street, but did not remember exactly where he was standing. On the basis of his motion pictures, we were able to analyze the pictures using his camera, and on the 23d of May of this year, during the survey, preparatory to the reenactment, we reestablished this point by viewing pictures taken from his motion picture camera, at varying angles across here, in order to reestablish the point where he was standing, based on the relationship of this street light to other items in the background of the photograph.

Mr. SPECTER. Would you outline in a general way how you obtained the copy of the Nix film?

Mr. SHANEYFELT. Yes. The Nix film was obtained as a result of a notice that the FBI gave to processing plants in the Dallas area, that the FBI would be interested in obtaining or knowing about any film they processed, that had anything on it, relating to the assassination. And, as a result of this, we learned of the Nix film and arranged to obtain a copy of it.

Senator COOPER. May I ask a question. After you had made those calculations to establish the position of Mrs. Muchmore and Mr. Nix and Mr. Zapruder, did you then identify those positions to the three and ask them whether or not it corresponded – your findings corresponded with their recollection as to where they were standing?

Mr. SHANEYFELT. We did not do that; no. Mr. Nix, I might say, did state that he went down along this side – the south side of Main Street, along the curb, and it generally conforms to where he stated he went, but he could not place the exact position. We did, by this study.

Frame 42 of the Muchmore film, as well as the re-enactment photo of that frame seems to have the correct vertical alignment, and both clearly show that the car was going downhill at the time of the fatal head shot at Z313. Thus, CE902 is very revealing as to what they did with the film giving rise to the

extant Zapruder film.

Even though Shaneyfelt and the FBI in their [CE902](#) pretended that Elm Street and the limousine was going in a horizontal direction when the fatal head shot occurred, his own [Shaneyfelt Exhibit No. 31](#) (WCH 21:480), clearly shows the downhill slope of Elm Street in that area, as do his [Shaneyfelt Exhibits Nos. 32 and 33](#) (WCH 21:481). The latter Exhibit is another clear proof of FBI's involvement in the Zapruder film hoax and its cover-up. Thus, the picture in [Shaneyfelt Exhibit No. 33](#) purports to show the portion of Elm Street the limousine was travelling along between approximately [Z390](#) and [Z429](#) of the Zapruder film, including the sequence where the limousine is partly obscured by some bushes in the immediate foreground (Figure 21). Lyndal L. Shaneyfelt described this Exhibit in detail in connection with his WC testimony about the bullet mark on the south curb of Elm Street ([WCH 15:699-670](#)):

Mr. SHANEYFELT. [...] The photograph, Shaneyfelt 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 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 limousine, would 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 Shaneyfelt Exhibit No. 33?

Mr. SHANEYFELT. 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 the Bureau, advise us as to when Special Agent Hill of the Secret Service reached the Presidential car. Can you tell us now the results of that investigation?

Mr. SHANEYFELT. 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 Shaneyfelt Exhibit No. 33, can you tell us the location of Special Agent Hill and Mrs. Kennedy at frame 410?

Mr. SHANEYFELT. 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 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 lid.

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

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 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.

[Shaneyfelt Exhibit No. 33](#) does show some bushes in the foreground similar to those in the Zapruder film. In addition it shows part of the low retaining wall, leading from the southwestern shelter of the North Pergola toward Elm Street in front of the picket fence. That concrete wall do not, however, extend directly from the abutment on which Mr. Zapruder was standing, but from a point a little to the right (west) of that abutment, as Mr. Shaneyfelt himself showed in the map in [CE882](#) and [CE883](#), and which is particularly evident in the last pages of [CE885](#) showing the lower part of Dealey Plaza during the

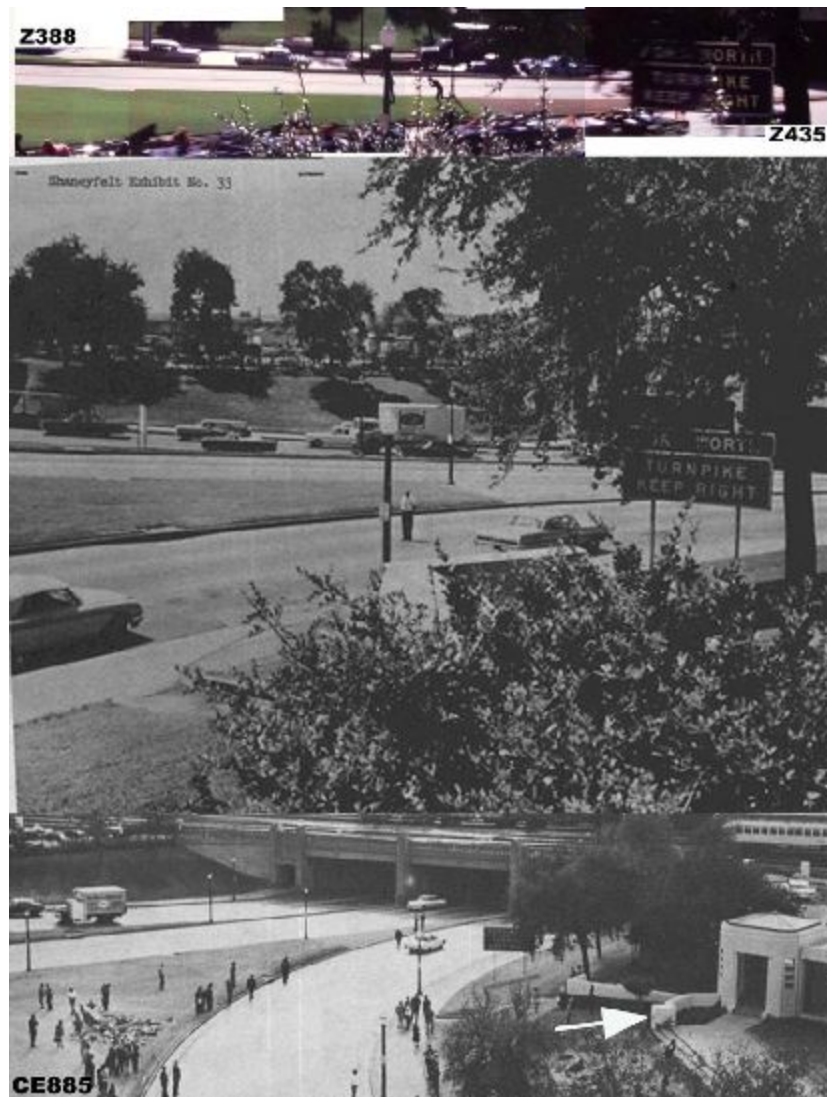


Figure 21 Comparison of panorama of Zapruder frames Z388-Z435 (top) with Shaneyfelt Exhibit No. 33 (middle) and Secret Service re-enactment photograph in CE885. The retaining wall does not run from Zapruder's pedestal (bottom; arrow), but from a point to the right (west) of that abutment.

Secret Service re-enactment on December 5, 1963. Hence, Zapruder was not looking straight down along the upper edge of this retaining wall, but was looking more at the front side of the wall, which was facing the intersection of Elm and Houston Street, as seen in CE885 and in numerous photographs taken in the direction of the grassy knoll (Figure 21). It was behind this wall the famous bench was situated, on which [Marilyn Sitzman](#) claimed a young black couple was sitting during the shooting. The bushes seen in the Zapruder film are supposed to project from the small tree or large bush in the corner between the abutment and the retaining wall. At its far end, the concrete wall makes a 90 degree turn, and not the wider angle turn shown in the Exhibit. The wall itself, however, points to approximately the correct point in Elm Street as seen from Zapruder's position. Anyway, [Shaneyfelt Exhibit No. 33](#) is not an authentic photograph taken from Zapruder's position as claimed by Shaneyfelt. Rather, it is a composite or fabrication, misrepresenting the true appearance of that area and probably the view Zapruder had of the limousine.

However, a comparison between Shaneyfelt Exhibit No. 33 and a panorama put together from the pertinent Zapruder frames (Figure 21), shows that the lower part of Dealey Plaza is closely similar in both, including the large tree and the Fort Worth sign in the foreground, and Main and Commerce Street

and the South knoll in the background. The vertical alignment is slightly different, though, so that Exhibit 33 has to be rotated about 2 degrees counterclockwise to match the alignment in the Zapruder frames, which at this part of the journey do not seem to have been rotated much if anything. The slight rotation of Exhibit 33 may be due to the way that picture has been reproduced in the WC volume. But since Shaneyfelt Exhibit 33 somehow has been altered to match the Zapruder film, we may suspect that something is wrong with the Zapruder film also, or its alleged origin.

The disappearance of Mrs. Connally

Mrs. Connally was sitting on the left jump seat of the Presidential limousine. When her husband, Governor Connally, who was seated in the right jump seat, was struck by a bullet in his back approximately at [Z295](#) (in my [opinion](#)), his upper body was thrown forward and sideways to his left ([Z323](#)) and he fell over into Mrs. Connally's lap ([Z337](#)), partly obscuring her from view. In subsequent frames, an increasingly smaller portion of Mrs. Connally or her pink dress remains visible, and by about [Z356](#) she has totally disappeared from the interior of the car. As Mrs. Connally disappears, her bouquet of flowers gradually replaces her, and these flowers are all that are seen at her position until frames [Z391](#)-[Z394](#), when an object resembling her is temporarily visible. Governor Connally, on the other hand, seems to have slumped forward and to his left, apparently lying with his face down in the car, but as the flowers replaces his wife, he becomes almost invisible too.

The disappearance of Mrs. Connally was [physically impossible](#), as she herself pointed out in her HSCA [testimony](#) ("...there is no way either of us could have got to the floor.") (HSCA Hearings 1:11-60):

Mrs. CONNALLY. I heard – you know how we were seated in the car, the President and Mrs. Kennedy, John was in front of the President and I was seated in front of Mrs. Kennedy – I heard a noise that I didn't think of as a gunshot. I just heard a disturbing noise and turned to my right from where I thought the noise had come and looked in the back and saw the President clutch his neck with both hands.

He said nothing. He just sort of slumped down in the seat. John had turned to his right also when we heard that first noise and shouted, "no, no, no," and in the process of turning back around so that he could look back and see the President – I don't think he could see him when he turned to his right – the second shot was fired and hit him. He was in the process of turning, so it hit him through this shoulder, came out right about here. His hand was either right in front of him or on his knee as he turned to look so that the bullet went through him, crushed his wrist and lodged in his leg. And then he just recoiled and just sort of slumped in his seat.

I thought he was dead. When you see a big man totally defenseless like that, then you do whatever you think you can do to help most and the only thing I could think of to do was to pull him down out of the line of fire, or whatever was happening to us and I thought if I could get him down, maybe they wouldn't hurt him anymore. So, I pulled him down in my lap.

We learned later – I read a lot of stories that upset me later because they said we slipped down into the floor, that John slid off, fell over into my lap. Those little jump seats were not very big and there was no way that he could have slid to the floor, there is no way either of us could have got to the floor.

The only thing I could do was pull him down and by leaning over him, I hoped if anything else happened, they wouldn't hurt him anymore. I never looked back after John was hit. I heard Mrs. Kennedy say, "they have shot my husband."

Then, I heard a third shot and felt matter cover us and she said, "They have killed my husband, I have his brains in my hand". I thought was John was dead, and I heard the Secret Service man say, "Let's get out of here quick." So, we pulled out of the motorcade and we must have been a horrible sight flying down that freeway with those dying men in our arms and going to no telling where. We just see the crowds flashing by.

John said nothing. I said only to him from the time I saw one little movement, that maybe he is still alive, and, I kept whispering to him, "Be still, it is going to be all right, be still, it is going to be all right."

During his WC testimony Roy Kellerman, who was sitting in the right front seat of the limousine, was asked what he observed among the occupants of the car immediately after the shots. When he turned around, Mr. Hill was lying across the trunk of the car, while Mrs. Kennedy had returned to the back seat

(WCH 2: 77):

Mr. Specter. Where did you look next; what did you observe following that?

Mr. Kellerman. Then I observed how the President was lying, which was – he was – flat in the seat in this direction.

Mr. Specter. On his left-hand side?

Mr. Kellerman. Yes, sir. Governor Connally was lying straight on his back with Mrs. Connally over him about halfway.

Thus, Mr. Connally was leaning her upper body over her husband, as is also seen in a photograph of the limousine en route to Parkland Hospital (Figure 22). According to Kellerman, Governor Connally was lying “straight on his back” rather than face down in Mrs. Connally’s lap. The first frames after he was

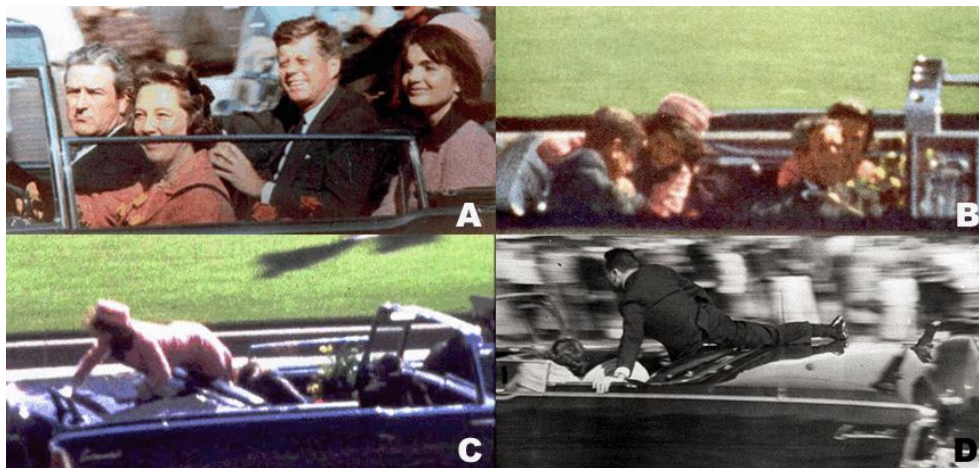


Figure 22 Position of Mrs. Connally in the limousine during motorcade. (A) Before arriving at Dealey Plaza; note bouquet of flowers in her lap. (B) At Z312; Governor Connally has been hit and is falling towards her. (C) At Z372; Mrs. Connally has disappeared from view, but the flowers are still there. (D) On the way to Parkland Hospital; Mrs. Connally is still sitting in her jump seat.

hit at about Z295, also show him falling that way, but in subsequent frames he seems to be lying mostly on his left-hand side, rather than flat on his back. Hence, the Zapruder film may not show the true posture of Governor Connally after Mrs. Connally disappears from view. The bouquet of flowers that replaced Mrs. Connally in the car is similar to the one she received at Love Field, and which she was holding in her lap up until the wounding of her husband. But I don’t think she would hold on to them after her husband fell over into her lap, and she would definitely not hold them up in the air as shown in the Zapruder film. So this bouquet of flowers must have been edited into the frames to hide Mrs. Connally.

The Fort Worth Turnpike sign

The Fort Worth Turnpike sign is more or less visible in the foreground in frames Z419 till Z445, particularly in [Z427](#), [Z429](#) and [Z435](#). It is evident from these frames and from several other photographs taken at Dealey Plaza on November 22 (e.g. Bond #4 and #6; Towner #3; Willis #6; Cancellare), that the sign consisted of two signboards with rounded corners. However, a closer look at the abovementioned Zapruder frames reveals that the sign appears to consist of two layers, the top or front layer being the actual signboards, whereas the bottom layer is a thin film. This bottom layer does not have rounded corners corresponding to the actual signboards, so it fills the gap between the adjacent boards (Figure 23).

I believe this bottom layer was not present on the sign itself, but is something left over from the compositing process in which the Fort Worth Turnpike sign was inserted into the frames. The



Figure 23 The Fort Worth Turnpike sign as seen in Z427 (left) and Z435 (right). The sign itself has rounded corners, but beyond it is a second layer with right angles, which also fills the notch between the two signboards (arrows). This second layer is probably the result of compositing.

background color of the sign seems to be green in the abovementioned photographs by Bond, Towner and Willis, whereas it is blue in the Zapruder frames. I don't know whether this discrepancy is of any significance, since it might be related to the way different colors have been reproduced by different films.

Why was the Zapruder film edited?

With all the abovementioned discrepancies between the extant Zapruder film and the true Dealey Plaza as of November 22, 1963, it is obvious that the film is not a camera-original film, neither from Zapruder's camera nor from anyone else's camera. The question then arises, "Why did the conspirators edit the original film on which the extant Zapruder film was based?" It would be natural to think that this editing only was related to what the film depicts about the act of assassinating President Kennedy. But I think that is only one of the reasons – maybe even a minor reason. I believe the main reason for editing the film was to avoid revealing the origin of the film.

If we initially assume that the extant Zapruder film was indeed based on Zapruder's 8 mm film, only some of the discrepancies between what the film shows and that which actually happened or could be viewed from Zapruder's position make some sense. The break in the film could have been included to hide something that happened as the limousine made its turn from Houston onto Elm Street. Many believe the limousine made a very wide turn, bringing it close to the curb on the north side of Elm Street. The Secret Service re-enactment photographs in [CE875](#) (WCH 5:870-895) do not show such a wide turn, but the FBI unwittingly admitted this was so in their [CE886](#), which shows the stand-in car for the limousine in such a position (station A) during the re-enactment. [Mr. Shaneyfelt](#) (WCH 5:138-165) had some difficulties explaining why they had placed the car in that position:

Mr. SPECTER. What was the starting position of the car at the most easterly position on Elm Street, immediately after turning off Houston Street?

Mr. SHANEYFELT. The first position we established that morning was frame 161.

Mr. SPECTER. Was there not a position established prior in sequence to frame 161, specifically that designated as position A?

Mr. SHANEYFELT. That was actually established later. But the first one to be actually located was 161. And we went back later and positioned point A.

Mr. SPECTER. Well, let's start with the position which is the most easterly point on Elm Street, which I believe would be position A, would it not?

Mr. SHANEYFELT. Yes.

Mr. SPECTER. Have you a photographic exhibit depicting that position?

Mr. SHANEYFELT. Yes; in each of the positions that we established, we used, insofar as possible, the Zapruder pictures to establish the position, or we established it from the window, and made photographs from the position Mr. Zapruder was standing in.

Mr. SPECTER. This chart has been marked as Commission Exhibit No. 886.

(The document referred to was marked Commission Exhibit No. 886 for identification.)

Mr. SHANEYFELT. This shows the photograph that was made from the point where Zapruder was standing looking toward the car, and is a point that we have designated as position A because it is in a position that did not appear on the Zapruder film. The Zapruder film does not start until the car gets farther down Elm Street.

Mr. SPECTER. And why was that location selected for the position of the car?

Mr. SHANEYFELT. This location was selected as the first point at which a person in the sixth floor window of the Book Building at our control point could have gotten a shot at the President after the car had rounded the corner from Houston to Elm.

Mr. SPECTER. And what position is station C?

Mr. SHANEYFELT. Station C is on a line drawn along the west curb line of Houston Street in a direct line, and station C is at a point along that line that is in line with where the car would have turned coming around that corner. It is on a line which is an extension of the west curb line of Houston Street.

Mr. SPECTER. When you say that position A is the first position at which President Kennedy was in view of the marksman from the southeast window on the sixth floor of the School Book Depository Building, you mean by that the first position where the marksman saw the rear of the President's stand-in?

Mr. SHANEYFELT. That is correct.

Mr. SPECTER. So that would be the first position where the marksman could focus in on the circled point where the point of entry on the President was marked?

Mr. SHANEYFELT. That is correct.

Mr. SPECTER. Could the marksman then have taken a shot at the President at any prior position and have struck him with the point of entry on that spot, on the base of the President's neck?

Mr. SHANEYFELT. I don't quite understand the question.

Mr. SPECTER. Was there any prior position, that is a position before position A, where the marksman from the sixth floor could have fired the weapon and have struck the President at the known point of entry at the base of the back of his neck?

Mr. SHANEYFELT. No; because as the car moves back, you lose sight of the chalk mark on the back of his coat.

Senator COOPER. When Mr. Frazier testifies, then, will he correlate this photograph with a frame from photographs taken of the actual motorcade at the time of the assassination?

Mr. SHANEYFELT. No; we cannot correlate this with a frame from the motion picture because Mr. Zapruder didn't start taking pictures until the car had passed this point. So we, therefore, on this frame and for the next two or three points, have no picture from Mr. Zapruder, since he wasn't taking pictures at that time.

Mr. DULLES. Off the record.

(Discussion off the record.)

Mr. DULLES. Back on the record. Do I understand that you are not suggesting that a shot was necessarily fired at this point A, but this was the first point where this particular vision of the President's back could have been obtained?

Mr. SHANEYFELT. That is correct. It is only an arbitrary point showing the first possible shot that could have entered the President's coat at this chalk mark.

So position A was the first time President Kennedy could have been hit in his back from the alleged position of Mr. Oswald. And those conducting the re-enactment would probably not have bothered to locate this point unless they knew the Presidential limousine had been in that position. But how did they know that, if that position had not been shown in the Zapruder film? Well, I guess they knew it because that position had been depicted either in the original Zapruder film, or in some other film.

The insertion of a Stemmons Freeway sign completely blocking the view to President Kennedy at the time he was first hit also makes some sense, but mainly if he was hit with more than one bullet. As I have stated in my [article](#) about the forgery of the autopsy photographs, based on the medical evidence as well as some witness observations, I believe President Kennedy initially was hit almost simultaneously with two bullets. One shot, fired from the rear, probably from the Dal-Tex building, hit him in the back, below

his right shoulder blade. The other shot, which most likely was fired from the South Knoll at the southwestern corner of Dealey Plaza, hit him in the throat. None of these bullets seem to have transited Kennedy's body.

The insertion of the Stemmons Freeway sign would make sense if the objective was to hide that President Kennedy was hit with more than one bullet, i.e. if he showed reactions of being shot twice. The two reactions may have been so closely spaced that none of the bystanders would have noticed, whereas the film would have shown. Moreover, a film without the signboard may have shown more precisely when and where the first two bullets struck Kennedy, i.e. his location in the street, his posture in the car and the location of the wounds. That would have made it possible to determine roughly the points of origin of the shots. Another reason for inserting the new signboard may have been to conceal the actions of the Umbrella Man and the Dark-Complemented Man. In my opinion, these two men were somehow involved in the assassination, probably by signalling the gunmen when to strike and how their first bullets hit.

Why risk revealing the editing of the film by rotating the frames? Well, they didn't risk much by doing that, it seems, since that editing has passed unnoticed for more than 40 years. However, one objective may have been to alter the position of President Kennedy at the time of the fatal head shot to make it more compatible with a shot fired from the sixth floor window of the TSBD. The effect on a trajectory of rotating the frames counterclockwise would be to change the point of origin of a shot through a person to a lower level than without such rotation, suggesting that the shots from the rear of the limousine actually came from a *higher* level than the sixth floor of the TSBD, e.g. the roof of the Dal-Tex Building. Now, in my [opinion](#), President Kennedy's head wound was not caused by a bullet fired from behind him, but rather from in front of him (the South knoll), so it is no use trying to figure out a revised trajectory of a shot from behind hitting Kennedy in the head based on frames that have been rotated back. Such a trajectory didn't exist. However, it may be useful to do that on the shot from behind that went through Governor Connally. But then you will have to know when and at which point along Elm Street he was hit. In my opinion that occurred at about Z295.

The Warren Commission, on the other hand, tried to prove that a shot from the sixth floor window of the TSBD did hit Kennedy in the rear of his head. In this connection they used frames Z312 and Z313 to prove how President Kennedy was sitting in the car when he was hit in the head (WC Report, p. [109-110](#)):

After a bullet penetrated President Kennedy's neck, a subsequent shot entered the back of his head and exited through the upper right portion of his skull. The Zapruder, Nix and Muchmore films show the instant in the sequence when that bullet struck. (See Commission Exhibit No. 902, [p. 108.](#)) That impact was evident from the explosion of the President's brain tissues from the right side of his head. The immediately preceding frame from the Zapruder film shows the President slumped to his left, clutching at his throat, with his chin close to his chest and his head tilted forward at an angle.³²⁵ Based upon information provided by the doctors who conducted the autopsy, an artist's drawing depicted the path of the bullet through the President's head, with his head being in the same approximate position.³²⁶

The Warren Commission also tried to prove that such a trajectory from the TSBD was possible by comparing the schematic drawing of the (fabricated) head wounds in [CE388](#) with frames Z312/[CE389](#) and Z313/[CE390](#). To me, the position of Kennedy's head depicted in CE388 seems to be more compatible with the original frames than with the rotated frames used in the edited film. Yet, in his WC testimony, [Dr. Humes](#) (WCH 2:347-376), one of the three autopsy doctors, claimed that the position of Kennedy's head in their drawing (prepared by Mr. Rydberg) was fully compatible with the position depicted in the Zapruder frames. Now, I guess they had seen the film or selected frames from it before they had made their drawing, so it ought to fit fairly well.

Dr. Humes didn't manage to explain how the proposed bullet path through Kennedy's head in that position was compatible with a shot from the TSBD. He was totally confused as to the trajectories and

the relationship between the alleged head wounds and the alleged origin of the head shot. He also claimed that the angle of declination was sharper when Kennedy was hit in the head than when he was struck by the first bullet, whereas it should have been the other way around for two shots fired from the TSBD, as the Warren [Commission](#) also found out, since the car had been moving away from the alleged shooter in the meantime (although the vertical distance increased also). However, Dr. Humes comes pretty close to revealing the rotation of the frames when stating that CE389 (or Z312) "...shows the President's head in a slightly inclined forward position, and I am not enough aware of the geography of the ground over which the vehicle was traveling to know how much that would affect it." Mr. Specter, then suggests that there was "a slight angle of decline on the street", but still no one in the Commission realizes the discrepancy between the Zapruder frames, showing no such decline, and the true geography of Dealey Plaza. Although confusing, Dr. Humes' testimony is very revealing as to showing how the conspirators struggled to make two sets of fabricated evidence (autopsy findings and possible trajectories) fit together:

Mr. SPECTER. Dr. Humes, this would be a good juncture to produce two photographs. May it please the Commission, Mr. Chief Justice Warren, I have identified as Commission Exhibits 389 and 390 which will at a later time be identified as being two frames from the motion picture camera operated by one Abraham Zapruder, being the amateur photographer who was on the scene, which I think would assist in evaluating the angle of the President's head corresponding to that exhibit designated as 388.

I will hand those to you, Dr. Humes, and ask you if you would state for the record the relative position of the President's head in 389 which is a frame about one-sixteenth of a second before the point of impact shown in Exhibit 390.

(The frames referred to were marked Commission Exhibits Nos. 389 and 390 for identification.)

Commander HUMES. It will be noted in Exhibit 389 that the President's head is bent considerably forward and perhaps somewhat to the left in this frame of the photograph 389.

Mr. SPECTER. Is that in approximately the same position as the angle of the head depicted in Commission Exhibit No. 388?

Commander HUMES. Yes, sir; it is.

Mr. SPECTER. Dr. Humes, can you compare the angles of declination on [385](#), point "C" to "D", with 388 "A" to "B"?

Commander HUMES. You will note, and again I must apologize for the schematic nature of these diagrams drawn to a certain extent from memory and to a certain extent from the written record, it would appear that the angle of declination is somewhat sharper in the head wound, 388, than it is in 385.

The reason for this, we feel, by the pattern of the entrance wound at 388 "A" causes us to feel that the President's head was bent forward, and we feel this accounts for the difference in the angle, plus undoubtedly the wounds were not received absolutely simultaneously, so that the vehicle in which the President was traveling moved during this period of time, which would account for a difference in the line of flight, sir.

Mr. SPECTER. Aside from the slight differences which are notable by observing those two exhibits, are they roughly comparable to the angle of decline?

Commander HUMES. I believe them to be roughly comparable, sir.

Mr. SPECTER. Could you state for the record an approximation of the angle of decline?

Commander HUMES. Mathematics is not my forte. Approximately 45 degrees from the horizontal.

Mr. SPECTER. Would you elaborate somewhat, Doctor Humes, on why the angle would change by virtue of a tilting of the head of the President since the basis of the computation of angle is with respect to the ground?

Commander HUMES. I find the question a little difficult of answering right off, forgive me, sir.

Mr. SPECTER. I will try to rephrase it. Stated more simply, why would the tilting of the President's head affect the angle of the decline? You stated that was--

Commander HUMES. The angle that I am making an observation most about is the angle made that we envisioned having been made by the impingement of the bullet in its flight at the point of entry. This angle we see by the difference of the measurement of the two wounds.

Therefore, this is -- we have several angles we are talking about here, unfortunately, this is -- the angle of which we speak in this location, "A" to "B", and it is difficult.

I have to retract. Since we feel from their physical configurations, wounds 385 "C" and 388 "A" are entrance wounds, if there wasn't some significant change in the angulation of the President's head with respect to the line of flight from these missiles, the physical measurements of 385 "C" and this 388 "A" should be similar. They aren't, in fact, dissimilar in that there is a greater angulation in 388 "A". Therefore, there has to be either a change in the position of the vehicle in which the President is riding with respect to the horizontal or a change in the situation of the President's head. I believe

that the exhibits submitted earlier, the photograph.

Mr. SPECTER. I believe the ones were given to you so far, excuse me, you are right, 389.

Commander HUMES. [389](#), in fact at this point shows the President's head in a slightly inclined forward position, and I am not enough aware of the geography of the ground over which the vehicle was traveling to know how much that would affect it.

Mr. SPECTER. If you were to be told that there was a distance traversed of approximately 150 feet from the time of Point "C" on 385 to Point "A" on 388, and you would assume the additional factor that there was a slight angle of decline on the street as well, would those factors, assuming their to be true, help in the explanation of the differences in the angles?

Commander HUMES. I think that they would make the figure as depicted in 388 quite understandably different from 385.

It was not only Dr. Humes who was confused about the angles of declination of the shots, of Elm Street itself and of the bullet paths through the victims – the whole Warren Commission seems to have been. Throughout the Commission's work Mr. Specter and others seem to have believed that the angle of declination of Elm Street by itself had some bearing on the bullet paths through President Kennedy and Governor Connally. Thus, [page 106](#) and 107 of the Warren Report states:

A surveyor then placed his sighting equipment at the precise point of entry on the back of the President's neck, assuming that the President was struck at frame 210, and measured the angle to the end of the muzzle of the rifle positioned where it was believed to have been held by the assassin.³⁰¹ That [angle](#) measured 21°34'.³⁰² From the same points of reference, the angle at frame 225 was measured at 20°11', giving an average angle of 20°52'30" from frame 210 to frame 225.³⁰³ Allowing for a downward street grade of 3°9', the probable angle through the President's body was calculated at 17°43'30", assuming that he was sitting in a vertical position.³⁰⁴

That angle was consistent with the trajectory of a bullet passing through the President's neck and then striking Governor Connally's back, causing the wounds which were discussed above. Shortly after that angle was ascertained, the open car and the stand-ins were taken by the agents to a nearby garage where a [photograph](#) was taken to determine through closer study whether the angle of that shot could have accounted for the wounds in the President's neck and the Governor's back.³⁰⁵ A rod was placed at an angle of 17°43'30" next to the stand-ins for the President and the Governor, who were seated in the same relative positions.³⁰⁶ The wounds of entry and exit on the President were approximated based on information gained from the autopsy reports and photographs.³⁰⁷ The hole in the back of the jacket worn by the Governor and the medical description of the wound on his back marked that entry point.³⁰⁸ That line of fire from the sixth floor of the Depository would have caused the bullet to exit under the Governor's right nipple just as the bullet did. Governor Connally's doctors measured an angle of declination on his body from the entry wound on his back to the exit on the front of his chest at about 25° when he sat erect.³⁰⁹ That difference was explained by either a slight deflection of the bullet caused by striking the fifth rib or the Governor's leaning slightly backward at the time he was struck. In addition, the angle could not be fixed with absolute precision, since the large wound on the front of his chest precluded an exact determination of the point of exit.³¹⁰

The alinement of the points of entry was only indicative and not conclusive that one bullet hit both men. The exact positions of the men could not be re-created; thus, the angle could only be approximated.³¹¹ Had President Kennedy been leaning forward or backward, the angle of declination of the shot to a perpendicular target would have varied. The angle of 17°43'30" was approximately the angle of declination reproduced in an artist's [drawing](#).³¹² That drawing, made from data provided by the autopsy surgeons, could not reproduce the exact line of the bullet, since the exit wound was obliterated by the tracheotomy. Similarly, if the President or the Governor had been sitting in a different lateral position, the conclusion might have varied. Or if the Governor had not turned in exactly the way calculated, the alinement would have been destroyed.

And during Mr. Shaneyfelt's [testimony](#) (WCH 5:138-165), on which the abovementioned conclusions were based, the street grade is mentioned several times by Mr. Shaneyfelt and Mr. Specter:

Mr. SHANEYFELT. Yes. At the position that has been designated as frame 161, and appears on Commission Exhibit No. 888, the distance from the wound mark on a stand-in for President Kennedy to station C was 94.7 feet. The distance to the rifle in the window was 137.4 feet, the angle to the window was 26°58' based on the horizontal line, the distance to the overpass was 392.4 feet, and the angle to the overpass was minus 0°7'.

Mr. SPECTER. Are all angles calculated thereon based on the horizontal?

Mr. SHANEYFELT. Yes.

Mr. SPECTER. Was there any street angle taken into consideration in the calculations here?

Mr. SHANEYFELT. Yes; there is a 3° street grade that has to be deducted from the angle to the

window to determine the actual angle from the street to the window as opposed to the horizon.

Mr. SHANEYFELT. The angle, based on the horizontal at frame [210](#), to the rifle in the window was 21°34'.

Mr. SPECTER. What was the comparable angle at frame [225](#)?

Mr. SHANEYFELT. 20° 11'.

Mr. SPECTER. So what would be the average angle then between those two points?

Mr. SHANEYFELT. The average angle, allowing for the 3°, street grade results in an average angle between frame 210 and frame 225 of 17°43'30".

Mr. SPECTER. And that is the average angle from the muzzle to President Kennedy as he sat in the car or President Kennedy's stand-in as he sat in the car?

Mr. SHANEYFELT. That is correct. To the wound entrance.

Mr. SPECTER. Is the average angle of 17°43'30" measured from the muzzle to the President's body as the President would be seated in the car?

Mr. SHANEYFELT. That is out on the street in those frame positions, yes. It is measured to the point of the wound on the back of the President.

Mr. SPECTER. I now hand you a photograph which has been marked as Commission Exhibit No. [903](#) and ask you if you know who the photographer was?

Mr. SHANEYFELT. Yes; I took this photograph.

Mr. SPECTER. When was that photograph taken?

Mr. SHANEYFELT. It was taken Sunday afternoon, May 24, 1964.

Mr. SPECTER. Is there a white string which is apparent in the background of that photograph?

Mr. SHANEYFELT. That is correct.

Mr. SPECTER. What is the angle of declination of that string?

Mr. SHANEYFELT. That string was placed along the wall by the surveyor at an angle of 17°43'30".

Mr. SPECTER. Did the surveyor make that placement in your presence?

Mr. SHANEYFELT. He did.

Mr. SPECTER. Were the stand-ins for President Kennedy and Governor Connally positioned in the same relative positions as those occupied by President Kennedy and Governor Connally depicted in the Zapruder films?

Mr. SHANEYFELT. Yes; these positions were approximately the position of the President and Governor Connally in the Zapruder films in the area around frame 225 as they go behind the signboard and as they emerge from the signboard.

Mr. SPECTER. Was the rod which is held in that photograph positioned at an angle as closely parallel to the white string as it could be positioned?

Mr. SHANEYFELT. Yes.

Mr. SPECTER. And through what positions did that rod pass?

Mr. SHANEYFELT. The rod passed through a position on the back of the stand-in for the President at a point approximating that of the entrance wound, exited along about the knot of the tie or the button of the coat or button of the shirt, and the end of the rod was inserted in the entrance hole on the back of Governor Connally's coat which was being worn by the stand-in for Governor Connally.

Mr. SPECTER. And was Governor Connally's stand-in seated in the position where the point of exit would have been below the right nipple at the approximate point described by Governor Connally's doctors?

Mr. SHANEYFELT. That is correct.

Senator COOPER. May I ask a couple of questions?

Am I correct in assuming that you have made these determinations about the degree of the angle of the trajectory of the bullet at the time the President was struck, locating the position of the President in the car on the one hand, and the location of the rifle at the time the shots were fired?

Mr. SHANEYFELT. The location of the wound, you mean the angle of the wound?

Senator COOPER. Yes.

Mr. SHANEYFELT. The angle—

Senator COOPER. You had to establish the position of the President at the time the bullet struck him and the position of the rifle to make a determination about the degree of the angle of the direction?

Mr. SHANEYFELT. That is correct. The positions in the car, their positions in the car, were based on the Zapruder film.

Senator COOPER. And you were able to determine what you think very accurately the position of the President in the car by the films that you have examined?

Mr. SHANEYFELT. Yes.

Senator COOPER. Then the factor then, which is not determinable exactly, then is the location of the rifle, is that correct?

Mr. SHANEYFELT. That is correct.

Thus, by subtracting the street grade of about 3 degrees from the average angle of declination of a shot

fired from Oswald's window in the TSBD, they arrived at an angle of declination of the bullet that allegedly passed through Kennedy's body (back of neck to throat) that miraculously was exactly the same as the angle of declination of the bullet path depicted in the schematic drawing made by the pathologists from memory. This is nonsense. Mr. Specter and the Commission stated that they assumed that Kennedy was sitting in a "vertical position" in the car when he was struck, but still they subtracted the street grade. So either they're trying to fool us, or they are fools themselves. Thus, the upper body of a conscious person riding in a car will not tilt appreciably forward when a car goes downhill. Due to different postural reflexes, he will maintain an upright position by automatically moving his upper body backwards, i.e. he will indeed be sitting in a vertical position with his upper body (at a 90° angle to a horizontal line). But then the angle of declination of a bullet hitting him in the back from above and behind will be the same regardless of the angle of declination of the street or the car (seat) he is sitting in. The only thing that affects the angle of declination of a bullet passing through a victim in an *erect* position is the vertical and horizontal distance between the weapon and the victim.

Mr. Specter and the Warren Commission apparently assumed that because the street grade was 3 degrees downhill, Kennedy's upper body was also leaning 3 degrees forward, even though they stated it was vertical, so that the same amount could be subtracted from the angle of declination of the bullet before it struck. I also wonder how they calculated the average angle of declination between the two points where Kennedy could have been hit.

At the time of the fatal head shot, however, President Kennedy had slumped forward since he was no longer able to maintain an upright body posture. But the angle of declination of the street at that point would have had no direct effect on his position in the car, even though the downward slope probably exaggerated his movement forward. The only thing that mattered was how much he was actually leaning forward relative to a vertical or horizontal line. So by rotating the frames counterclockwise, his head appeared to be in a more upright position than it actually was.

The rotation of the frames also changed the relative positions of President Kennedy and Governor Connally, i.e. Governor Connally appears to be seated higher in the car relative to Kennedy than he actually was. But the first shot that allegedly passed through both Kennedy and Connally according to Mr. Specter and the Warren Commission, occurred earlier in the film than the frames that have been rotated, so the rotation has no bearing on the single bullet theory. However, the rotation has made it less evident that the shot that hit Connally was a shot that narrowly missed Kennedy's head at about Z295.

A rotation of the frames would also tend to speed up the car, because when a downhill movement is turned into a horizontal movement by rotation, the horizontal distance covered will be greater. Thus, if a car moves 100 feet along a downhill slope, as measured on the ground, it will have travelled less than 100 feet in the horizontal direction. But if the downhill slope is converted to a plane (by 'rotation' of the ground) the car would have travelled 100 feet in the horizontal direction, too. But in this case, I don't think the rotation had any significant effect on the apparent speed of the car.

As discussed previously, the enlargement of the original frames between about Z200 and Z400 might have been necessary as a result of the rotation of the frames, i.e. to compensate for the cropped area of the original frames, and to leave out reference points in the foreground and background. However, another very important objective of gradually enlarging the limousine in the foreground would have been to keep it moving along the street at a given rate of speed, when it in fact slowed down. By enlarging the car slightly from frame to frame, independently of the background, it would appear to be moving forward, even if it was standing still. And it was possible to omit some frames, and still keep the car moving forward. Thus, the gradual increase in size of the car coincides with the time period between the first and last shot, when, according to many witnesses the car slowed down and nearly came to a full stop. The Warren Commission, on the other hand, believed in Mr. [Shaneyfelt](#) (WCH 5:161) of the FBI, who told them that the Zapruder film had proved (based on film speed, time and distance between frames Z161

and Z313) that the car was travelling at an average speed of 11.2 miles per hour during that period.

The Secret Service also maintained that the car was travelling at 10-15 miles per hour at the time of the assassination. So did President Johnson, who was riding in the Vice-Presidential car about three car lengths behind the Presidential limousine, with the follow-up car in between them. In a [statement](#) to the Warren Commission he wrote:

As the motorcade proceeded down Elm Street to the point where the assassination occurred, it was traveling at a speed which I should estimate at 12 or 15 miles and [sic] hour.

Interestingly, President Johnson carefully avoids stating anything about the speed of the motorcade *during* the shooting – he is merely stating the speed of the cars up until the first shot. However, Senator Yarborough, who was riding in the same car as Vice-President Johnson, was very clear about the speed of the Presidential limousine during the shooting. Senator Yarborough is perhaps one of the most credible witnesses as to what happened on Elm Street. In an affidavit to the Commission, dated July 10, 1964, he stated ([WCH 7:440](#)):

When the noise of the shot was heard, the motorcade slowed to what seemed to me a complete stop (though it could have been a near stop). After what I took to be about three seconds, another shot boomed out, and after what I took to be one-half the time between the first and second shots (calculated now, this would have put the third shot about one and one-half seconds after the second shot – by my estimate – to me there seemed to be a long time between the first and second shots, a much shorter time between the second and third shots – these were my impressions that day), a third shot was fired. After the third shot was fired, but only after the third shot was fired, the cavalcade speeded up, gained speed rapidly, and roared away to the Parkland Hospital.

Senator Yarborough had already written a letter to the chairman of the commission, Chief Justice Earl Warren, telling him about the slowdown of the cars. During the executive session of the Commission on January 21, 1964, Mr. Warren referred to this letter when they were discussing the speed of the limousine during the shooting ([WCExSess 1/21/64:p.42](#)):

The Chairman. For instance, there were some reports that the instant the shot was fired, the first shot was fired, that the car speeded up. Now, I had a letter from Senator Yarborough who said he was in the second car behind it, and he said that when the shot was heard, that there was a noticeable slowdown almost to the point where the motorcycle rider, as I recall it, couldn't keep erect, and then it was after that they speeded up.

Rep. Boggs. What is really significant is whether the man lived or died. If the car speeded up he probably would still be alive today.

In summary, an editing of Zapruder's original film would have made sense in order to literally hide what was going on behind the Stemmons Freeway sign when President Kennedy was hit with the first shot(s), to partly conceal the origin of the fatal head shot, and to speed up the slow-moving limousine. In addition some more subtle changes may have been made to conceal some of the reactions of the Secret Service agents and the true nature of Kennedy's large wound in the right rear of his head. However, the latter wound is fairly accurately depicted in the film, at least for the few who are able to interpret such images.

From the Warren Commission testimony of Special Agent Kellerman ([WCH 2: 61-112](#)), it appears the Secret Service had one or more films of the assassination that revealed more about what happened in the limousine than the extant Zapruder film shows. Thus, Mr. Kellerman suggests the commissioners "may come up with a little different answer" as to how shots were fired (into the car) if they viewed these films. It is not clear whether he is referring to the extant Zapruder film or an the unedited version of that film. The film(s) he had seen, apparently began with the limousine turning onto Elm Street ("as we turned"), not with the lead motorcycles making that turn. Interestingly, Mr. Zapruder's name is not familiar to him. And we may note how rapidly Mr. Specter changes subject when Mr. Kellerman is about

to reveal something about a second film of the assassination.

Mr. SPECTER. Have you now told us about all of the facts which you took into account in your conclusion that there were more than three shots?

Mr. KELLERMAN. Yes, sir.

Mr. SPECTER. Do you have anything to add, Mr. Kellerman, by way of explanation or elaboration, to tell us which might be helpful with respect to your conclusion based on all of these items which you have described to us that there were more than three shots?

Mr. KELLERMAN. Gentlemen, I think if you would view the films yourself you may come up with a little different answer.

Mr. SPECTER. Well, have you viewed the films, Mr. Kellerman?

Mr. KELLERMAN. I have; yes, sir.

Mr. SPECTER. Was there something special in your viewing of the films which led you to believe that there were more than three shots?

Mr. KELLERMAN. No, it doesn't point out more than three shots, sir.

Mr. SPECTER. Which films are you referring to?

Mr. KELLERMAN. These are the colored ones that were taken on the right side.

Mr. SPECTER. Taken by Mr. Abraham Zapruder?

Mr. KELLERMAN. I don't know.

Mr. SPECTER. You are not familiar with the photographer?

Mr. KELLERMAN. No; I am not.

Mr. SPECTER. Well, can you describe the view you say is from the right-hand side of the automobile?

Mr. KELLERMAN. That is right.

Mr. SPECTER. So that would be on the side of the road where the Texas School Book Depository Building was?

Mr. KELLERMAN. Yes, sir.

MR. SPECTER. And approximately where did those pictures begin and end?

Mr. KELLERMAN. These pictures began as we turned off Houston Street onto Elm.

MR. SPECTER. And where did they end?

MR. KELLERMAN. As we are, just before we are, going into the viaduct.

Mr. SPECTER. Were those black and white or in color?

Mr. KELLERMAN. No; they were colored.

Mr. SPECTER. Have you seen any other films of the assassination?

Mr. KELLERMAN. Yes; I saw a black-and-white, but I didn't – I saw a black-and-white film. However, I didn't get enough out of it there to —

Mr. SPECTER. Before proceeding any further, I would like to move for the introduction in evidence of Exhibit 351.

Representative FORD. It is approved.

(The windshield referred to was marked Commission Exhibit No. 351 for identification and was received in evidence.)

Mr. SPECTER. Do you have anything at all to add which you think might be helpful, Mr. Kellerman, on the question of how many shots were fired, or have you told us everything you have in mind on that question?

Mr. KELLERMAN. I believe I have, Mr. Specter.

Senator COOPER. What was the name of the special agent driving the car – the President's car?

Mr. KELLERMAN. William Greer.

Senator COOPER. He was the one to whom you spoke when you heard the report?

Mr. KELLERMAN. Yes, sir.

Senator COOPER. Has he ever expressed any opinion to you as to the number of shots that were fired?

Mr. KELLERMAN. No, sir. I think we are all of the opinion, Senator, that we know of three.

Mr. SPECTER. Mr. Kellerman, referring to Commission Exhibit No. 347, will you pinpoint as precisely as you can on that aerial shot, aerial picture, where the President's car was at the time of the first shot? And mark that, if you would, please, with an "X" in red pencil.

Mr. Kellerman. My guess would be right in here, sir.

Mr. SPECTER. Now, would you mark as closely as you can where the President's car was at the time of the second shot and mark that with a "Y" in red.

(Mr. Kellerman marking the picture.)

Mr. SPECTER. Now, you have marked the cars being in approximately the middle of the road; is that accurate, as you recollect it?

Mr. KELLERMAN. That is the general procedure, Mr. Specter; they were travelling in the center of the road.

Mr. SPECTER. Now, with respect to the time of the third shot, would your marking be any different from the "Y" position?

Mr. KELLERMAN. No; it would not.

Representative FORD. May I ask – you have viewed these colored motion pictures which were taken during the assassination. Have you looked at those to see what your own actions were during this period of time?

Mr. KELLERMAN. Yes, sir.

Representative FORD. Do they coincide with what you have testified to here today?

Mr. KELLERMAN. They certainly do.

In addition to the changes in the in the extant Zapruder film that do make sense if it had been based on Zapruder's camera-original film, we have several other deviations from the true Dealey Plaza at the time of the assassination – the insertion of a white building in Elm Street, a motionless crowd on the north side of Elm Street, a missing tree in the background, the disappearance of Mrs. Connally, and evidence of the Fort Worth sign being inserted into the frames. None of these alterations make sense if Zapruder was the man who had filmed the extant Zapruder film. But they do make sene – very much so – if the extant Zapruder film was filmed by a different person from a slightly different position than from the abutment on which Mr. Zapruder and Mrs. Sitzman were standing.

Who filmed the Zapruder film?

After having looked at the frames from the Zapruder film and compared them with thousands of other images from Dealey Plaza repeatedly for several months, I gradually came to the conclusion that the original film giving rise to the extant Zapruder film was not filmed by Mr. Abraham Zapruder, but by someone standing behind the low retaining wall about 20 feet to the southwest of Mr. Zapruder. That is about the only other place in Dealey Plaza from where a Zapruder-like film could have been made. And I believe this secret cameraman is the well-known Black Dog Man seen in Betzner #3 and in Willis #5.

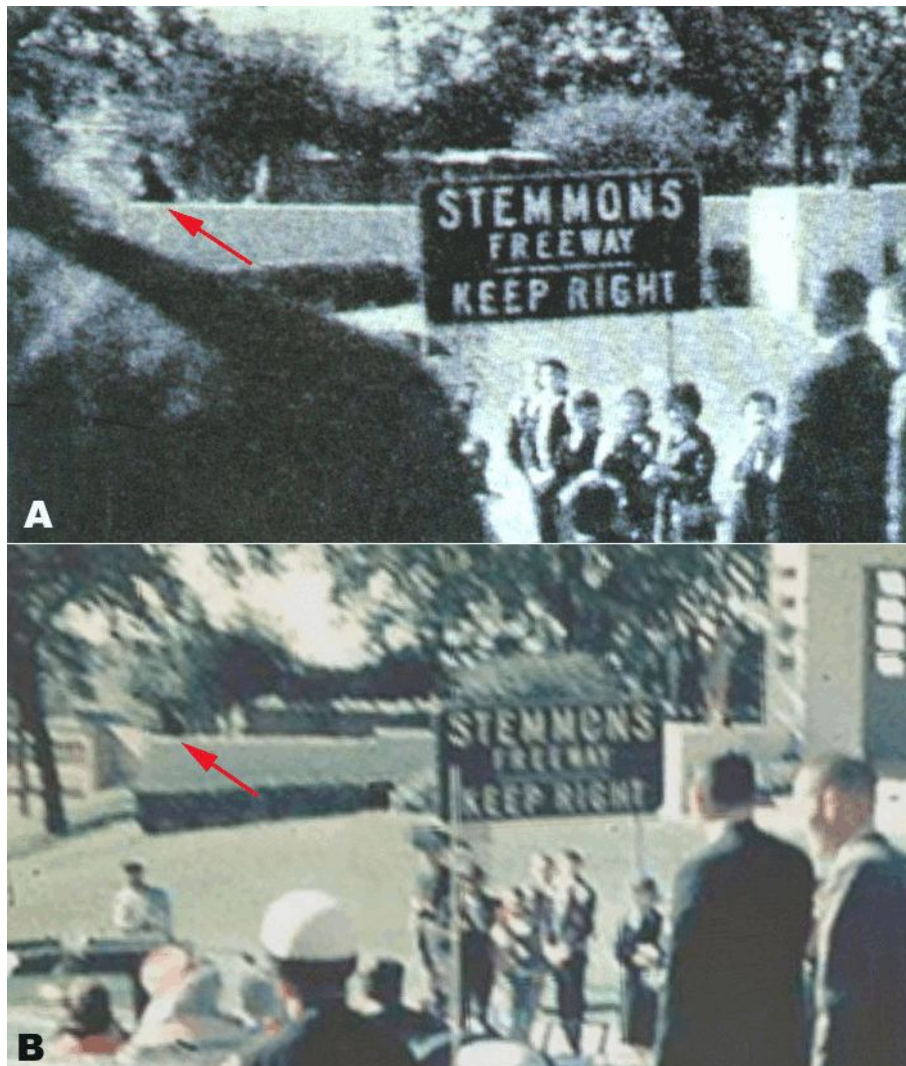


Figure 24 The Black Dog man or the secret cameraman; (A) from Betzner #3 and (B) from Willis #5. In both photographs Mr. Zapruder, standing together with Mrs. Sitzman, is filming from the pedestal to the right, whereas the cameraman who filmed the original of the extant Zapruder film is standing behind the retaining wall to the left (arrow). Note similar posture of both cameramen.

The Photographic Panel of the HSCA made an extensive examination of the Willis No. 5 photograph, the Moorman photograph and the Nix film, to see if there could have been a gunman behind the retaining wall ([HSCA AppH 6:121-131](#)). They concluded that Willis #5 indeed showed a person in that position, but he didn't appear to hold a gun:

(293) Preliminary visual inspection of the Willis photograph showed extensive blurring of all features of the picture near the retaining wall on top of the grassy knoll. The blurring is most clearly seen in the

freeway sign, which is in the line of sight between the retaining wall and the Willis camera. (See fig. IV-7, [JFK exhibit F-155](#).) [...]

(295) The retaining wall at the top of the knoll was subsequently enlarged by a computer operation similar to enlargement by photooptical and photo-chemical techniques. This computer display made visible an object whose size and shape were consistent with a human being, positioned just inside the retaining wall. (See fig. IV-8, [JFK exhibit F-160](#).) The object possessed colors with a distinct resemblance to flesh tones, as revealed on the color display. The Panel perceived the object to be that of a badly blurred image of a person, dressed in dark clothing, standing or leaning just inside the retaining wall.

(301) Based on these measurements, as well as visual analysis, the Panel concludes that the object was most probably an adult person standing behind the wall. First, the general shape and structure of the object, including the location of the flesh tones, appear to be human. The height of the object in relation to the known height of the wall is consistent with that of an adult of average height (5'6" to 6' tall). Third, the measured values of the flesh tones of the object are comparable with those of people in the photograph. Fourth, an additional Willis photograph, No. 6, taken after the Presidential limosine had exited Dealey Plaza but showing approximately the same field of view as No. 5, no longer shows the object near the retaining wall, or anywhere else; it has disappeared. (See [fig. IV-9](#).) The mobility of the object greatly increases the likelihood of its being a person.

(302) [...] As the blur could not be clarified, the panel could reach no conclusion as to the existence of a rifle or any other weapon in relation to the person standing behind the retaining wall.

The Panel didn't find any evidence of a man behind the wall in the Moorman Polaroid, but they did find an object resembling a man in some of the Nix frames:

(303) The Moorman No. 2 photograph is a black and white Polaroid print that has suffered from handling during the intervening years. A number of large and small defects were visible on the photograph when the panel examined it. It, too, shows the grassy knoll and the retaining wall in the same region where the person was identified in Willis No. 5. (See fig. IV-10, [JFK exhibit F 129](#).) It also shows another region of the knoll which critics of the Warren Commission have identified as important: The stockade fence. [...]

(305) [...]. The Moorman photograph was so underexposed in the region of the retaining wall that the alterations in contrast produced no significant increase in detail. The Panel could find no evidence of a person in a position on the retaining wall corresponding to that identified in the Willis No. 5 photograph.

(307) The final photographic source relating to the grassy knoll is the Nix motion picture film. Several frames coinciding with the fatal head shot frames of the Zapruder film were selected for scanning and input into the computer. [...] Fig. IV-11 ([JFK exhibit F-161](#)) shows both original and enhanced images of the Nix film, centered around the region of the retaining wall.

(308) The enhanced Nix film shows an object that can be construed as having a shape similar to that of a person. It is also possible to interpret this object as being of the same general shape as the person identified at the wall in the Willis No. 5 photograph. Nevertheless, the person in the Willis photograph displayed distinct flesh tones in the computer display of the image. No such pattern of flesh tones is visible in the enhanced (or original) Nix frames.

(309) The Panel could not conclude that the object near the retaining wall in the Nix film was the same as the person visible in the Willis No. 5 photograph. This image was not identified by the Panel as a human being. It was more likely the result of a pattern of light and shadows cast on an object in the background behind the retaining wall by the nearby trees.

(310) The area of the retaining wall image in the Nix frames was also examined for the presence of a flash of light or a puff of smoke from a discharging rifle, which some bystanders claimed to have seen. No evidence of either was found.

As stated before, I believe the Nix film was altered by the FBI and/or their co-conspirators. And the main purpose of this alteration may have been to make the area between the retaining wall and the stockade fence on the grassy knoll so dark that the cameraman behind the short end of that wall would no longer be visible. And to make the man who fled from the steps literally disappear into the darkness. I would think the Moorman Polaroid of the grassy knoll has also been edited to remove the cameraman from that image.

The HSCA Panel didn't examine Betzner #3, which gives the best outline of the person behind the retaining wall. In my opinion, the outline of this figure is clearly that of a man holding a camera in front of his face. Since that concrete wall wasn't very high, this person must probably have been crouching or resting on his knees behind the wall, or he might somehow be sitting on the bench that allegedly was there. I have never for a minute believed any shots were fired from that position or from behind the stockade fence on the grassy knoll, because the risk of being seen with a gun in that area would be too great. The flash of light allegedly seen by some witnesses in that area, may simply have been sun glare from the lens of the camera the man behind the wall was holding. Neither does the medical evidence support the concept of any shots being fired from that area. However, that area would be a very good place for the conspirators to have their own cameraman, particularly when Mr. Zapruder and Mrs. Sitzman were so easily visible high on their pedestal.

In his Warren Commission testimony ([WCH 7:558-565](#)), Mr. Hudson was asked whether he had seen any photographers in the area behind him. He seems to have seen several there, but he may also have misunderstood the question, and was referring to the Plaza in general. On the other hand, he might just have *pretended* he was stupid, and deliberately answered in a confusing manner.

Mr. LIEBELER. Do you see this little pedestal back up here?

Mr. HUDSON. Yes.

Mr. LIEBELER. Just above the "X" where you were standing?

Mr. HUDSON. Yes.

Mr. LIEBELER. Did you see anybody standing up there that you can remember, during the time the president went by?

Mr. HUDSON. Oh, there was a bunch of people in there, you know, a whole bunch of them – a lot of people in there – a lot of people in here.

Mr. LIEBELER. Did you see anybody standing up there taking motion pictures with a movie camera?

Mr. HUDSON. Oh, yes; I seen people up there trying to get – taking pictures.

Mr. LIEBELER. Did you see a man with a movie picture camera?

Mr. HUDSON. Not in particular, I didn't. It was such an exciting time – now – I did notice a man back over here on this triangle.

Mr. LIEBELER. Standing across Elm Street?

Mr. HUDSON. Yes, sir.

Mr. LIEBELER. With a motion picture camera?

Mr. HUDSON. Well he had a camera – I don't know whether it was a motion picture camera or not, but he had a camera.

If there was a cameraman behind the retaining wall, then Mrs. Sitzman's account of a young black couple sitting on a bench in that area must be untrue. In a taped [interview](#) with author Josiah Thompson on November 29, 1966, she claimed that she had seen this couple sitting there on the bench eating lunch before the motorcade arrived, but immediately after the shooting they got up from the bench and ran away.

Thompson: And then you watched the – then after the head shot, the car disappeared under the underpass?

Sitzman: Uh huh. And I got off the concrete slab we were standing on, and I ran down the hill, and I met some men from across the street, and I took it for granted that they were Secret Service or CIA or something like that; and they asked me what happened, and I said, "they killed him." And I walked back up the hill, and I talked to an FBI man up there that did identify himself to me, but I don't recall his name, and then I walked back behind the marble thing there, not behind it, but back inside.

Thompson: Inside the alcove.

Sitzman: And I looked out the back. Everybody was running back that way. Everybody ran up the hill and back and looked out that way.

Thompson: And where did they run? Did they run back into the railroad yard or into the parking lot?

Sitzman: Some ran – I mean – I finally got back up to the alcove. There was bunches of people just swarming back there, and I think almost everybody on that hill ran back up that way. And another thing that I remember this day: there was a colored couple. I figure they were between 18 and 21, a boy and a girl, sitting on a bench, just almost, oh, parallel with me, on my right side, close to the fence.

Thompson: In other words, between you and the fence, there's a tree right next to the –

Sitzman: There's a tree, and there's another part of the marble or concrete, whatever they call it, slab,

fence, whatever they call it, between that and the wooden fence.

Thompson: Which direction was the bench facing when you –

Sitzman: It was facing towards the street.

Thompson: Towards the street. Parallel? Downstreet? Facing forward?

Sitzman: And they were eating their lunch, 'cause they had little lunch sacks, and they were drinking coke. The main reason I remember 'em is, after the last shot I recall hearing and the car went down under the triple underpass there, I heard a crash of glass, and I looked over there, and the kids had thrown down their coke bottles, just threw them down and just started running towards the back and I – Of course, I don't see anything unusual in that because everybody else was running that way, 'cause when I look over on my left side, the people on the hill were all running back the same way too.

Thompson: Could I ask you something about your gaze and actions immediately after the head shot? On the trailer of Mr. Zapruder's film, we noticed that he turned to his right and photographed the general area of the stockade fence, the trees and the stockade fence and that particular area. Did you turn in that direction after the head shot too?

Sitzman: In a way, I have a feeling this: He might have heard the kids throw down the coke bottles and heard that crash or else maybe it was just what he saw could have caused a reaction where he'd jump, but I don't think it was the sound of bullets, because I didn't jump.

Thompson: [...] Now, to get to this area between the stockade fence and the cement abutment, or small mall: Did you turn after the shot to look in this general area?

Sitzman: Yes.

Thompson: And did you see anyone in this area?

Sitzman: No, just the two colored people running back.

Thompson: I see. They were already – they'd gotten up from the bench and were now running around into the gap made between the stockade fence and the pergola.

Sitzman: Either in the gap there or back in the alcove. I don't recall which way they went. I saw ... I heard the bottles crash, and of course I looked that way, to my right, right away, and they were getting up and running towards the back. And I turned back to see if there was anything in the front street, because then they didn't affect me one way or another.

Thompson: To see if anything else was going on. Had you seen them sitting on the bench before you stood next to them?

Sitzman: Oh yeah, yes. Everybody is – oh, ten or fifteen minutes before, everybody was milling around down there, trying to find a place to stand and everything, and I know when we went over to get up on the marble thing, they were already sitting there.

Thompson: Well, did you notice at any point whether either of these two moved up to the end of the, to the point of the wall?

Sitzman: No. They may have. I don't know.

Thompson: Of course, you were looking at the parade at that point, and you wouldn't have seen what they did.

Sitzman: Yeah. I always have the feeling that they were still sitting on the bench, because when I looked over there, they were getting up from the bench.

Mrs. Sitzman's story isn't very credible, as pointed out by many researchers before. No one else, including Mr. Zapruder, have ever testified about having seen such a couple, and no one have come forward and identified themselves as that couple. Moreover, Mrs. Sitzman did not run down toward Elm Street when she got off the abutment, as she claimed, instead she and Mrs. Zapruder immediately went into the alcove of the Pergola behind them, and either looked for someone fleeing the area in front of them (the man on the steps and the cameraman) or the Presidential limousine heading for Parkland Hospital. So by the time of the interview in 1966, Mrs. Sitzman must have been told by somebody to make up this story in order not to reveal the existence of a second cameraman behind the retaining wall. Now, Mr. Zapruder did say in his Warren Commission testimony that there was another couple back there when he was asked to identify himself in Willis #5, but he was probably referring to Mr. and Mrs. Hester, whom he had filmed together with Mrs. Sitzman before the motorcade arrived.

Mr. ZAPRUDER. That must be it because there's another couple back there – I took some from there and I was shooting some of the pictures to start my roll from the beginning. I didn't want to have a blank and I shot some, in fact, they have it – the Federal Bureau of Investigation have those pictures.

As to Mr. Zapruder, he might not have seen the secret cameraman behind the retaining wall before he himself started filming, since the other cameraman may have arrived quietly from behind the stockade

fence after Mr. Zapruder had climbed onto the abutment and was facing Houston Street. I don't know whether the second cameraman was visible through Zapruder's viewfinder, and was recorded on Zapruder's film, or whether he was (mostly) blocked out of Mr. Zapruder's view by the large bush between them. The fact that Mr. Zapruder immediately ran into the alcove and looked out the back of it, suggests that he had noticed someone running that way, but in his Warren Commission testimony he only mentioned policemen running in that direction.

Creating the deception

A film shot from behind the retaining wall showing the motorcade going down Elm Street would have been fairly similar to a film shot from Zapruder's position. However, the field of view as well as the relative positions of all objects would be slightly different, i.e. objects would have been shifted sideways and slightly vertically relative to each other. Because, the cameraman behind the retaining wall was not only to the right of Zapruder – he was also at a considerably lower level than Zapruder high on the abutment. And for part of the limousine's journey through Dealey Plaza, he would have been much closer to Elm Street and the car than Zapruder was. So in order to create the illusion of the extant Zapruder film having been shot from Zapruder's position, certain objects had to be repositioned in the frames.

From the secret cameraman's position, the northwestern corner of the County Records Building would have projected more into Elm Street than from Zapruder's position, obscuring most of that street to the east of the intersection of Elm Street and Houston Streets from view. Hence the editors literally had to create a gap between the corner of the Records Building and the opposite side of the street by pushing the buildings on the north side of Elm Street to the left and/or the Records Building to the right, but probably keeping the crowd in the middle of the intersection in their original position. This gap to the left of the Records building they filled with the white building seen in the initial Zapruder frames.

The tree that went missing behind the concrete wall on the west side of Houston Street, would have been situated farther to the right of the tree in the grassy area, similar to the view seen in the Wiegman frames. So it would have to be shifted to the left. But they apparently forgot to move that tree into its 'correct' position when they edited the original of the secret film.

The authentic Stemmons Freeway sign would have been more to the left in the secret cameraman's field of view than as seen from Zapruder's position. Hence it would not have obscured the same stretch of Elm Street from view as seen in the extant Zapruder film, which probably shows the sign in approximately the correct position as seen from Zapruder's position. Since the Stemmons Freeway sign was removed and replaced by an overhead sign in the late 1960's, probably to prevent anyone from making comparisons with the Zapruder film, it is somewhat difficult to visualize exactly which part of Elm Street would have been blocked out of view from the secret cameraman's position. However, Betzner #3, Willis #5, the Bench Photograph, the Couch film and the Wiegman film, particularly the latter, suggest that a portion of the right-hand (northern) lane and possibly the adjacent sidewalk on the north side of Elm Street immediately to the west of the intersection of Houston Street was obscured from view by the authentic Stemmons Freeway sign. Realizing that, some peculiar features of the extant Zapruder film start to make sense.

In the first frames of the Zapruder film, [three](#) police motorcycles arrive from Houston street. Two of them immediately make a left-hand turn onto Elm Street and start going downhill. The third motorcycle policeman appears to be heading straight ahead and disappears from view after [Z41](#), being obscured by the foliage of a tree. Then he's gone until about [Z112](#), when his motorcycle becomes barely visible behind the same tree. In the subsequent frames he gradually emerges (e.g. in [Z131](#)) from behind the

foliage until the break in the film.

In the first frame after the break ([Z133](#)), the limousine has already made its turn onto Elm Street, but only one of the motorcycles on the (true) right-hand side of the limousine is visible, approximately where the lost motorcycle reappeared in the opening sequence. The second motorcycle on the right-hand side of the limousine is not seen until frame [Z153](#), but it never emerges fully into sight in any frames. As the Presidential limousine and the follow-up car proceed downhill, the Vice-Presidential car also makes its turn onto Elm Street. In frame Z153 it is seen directly behind the follow-up car and the entire front end of the car is visible, but in subsequent frames, the right-hand side of the front disappears from view. And throughout the first 207 frames of the film, the people standing on the sidewalk on the north side of Elm Street hardly move at all.

I believe the reason why the motorcycles close to the curb on the north side of Elm Street temporarily disappear, and the reason why the left-hand turn of the limousine onto Elm Street is all gone from the Zapruder film, was that these vehicles were blocked out of view by the authentic Stemmons Freeway sign, as seen from the secret cameraman's position. The limousine might not have disappeared completely, but if it made a very wide turn as suggested by [CE886](#), its right-hand side may have been obscured, just as in CE886, although it's the Thornton sign we see in that Exhibit. If the limousine was (partly) hidden by the Stemmons sign for a little while as it made its turn onto Elm Street, the film editors would have to wait until that car, as well as the follow-up car behind it, came into full view before they could be depicted in a film allegedly taken by Mr. Zapruder. So I guess that is the reason why we have this break in the faked Zapruder film. The fact that one of the three lead motorcycles disappeared from view was of course less obvious, so they kept that sequence.

The authentic Stemmons Freeway sign probably also blocked much of the crowd on the sidewalk on the north side of Elm Street out of view, so they had to insert part of a few frames showing that crowd from a different position. So I would guess the secret cameraman shot some frames from near Zapruder's position a little while before the motorcade arrived in Dealey Plaza, and then moved down to the far end of the retaining wall, and filmed the motorcade from that position. Since the crowd was still waiting for the Presidential party to arrive when they were filmed, they were not cheering yet. And since the crowd was not filmed exactly from Zapruder's position, they had to change the relative position of the sidewalk to the RL Thornton sign slightly, and that is when they seem to have shifted the signpost a little too close to the sidewalk.

Since the limousine was already well past the authentic Stemmons Freeway sign when it reached the point in the street where it was supposed to go behind the sign as seen from Zapruder's position, a new sign had to be inserted into the frames of the other film. This sign was probably inserted at roughly the same relative position to objects in the background as seen in the authentic Zapruder film, but as judged from Zapruder's testimony, the inserted sign obscured more from view than the authentic side. The objective of this was probably to conceal what actually happened to President Kennedy when he was hit by the first two shots (in the shoulder and throat, respectively). Then, probably as a result of the urgency of finishing the editing of some of the frames showing the sign, in order to make them available as "Zapruder frames" for printing in Life Magazine a few days after the assassination, the editors had to use a simple rectangular signboard, rather than three signboards stacked on top of each other. And they also avoided showing the two small signboards on the southern signpost, because that would probably have been more difficult to achieve by compositing.

So in the first 250 frames or so several changes were necessary to obtain the correct foreground and background relative to the motorcade proceeding down Elm Street. I don't know precisely how they did this, but technically it was possible by compositing, i.e. merging different images into a new image, and then making a complete film by filming the edited images frame by frame. Thus, what we see 'live' in the first part of the Zapruder film, is merely what is happening on Elm Street and immediately to the

south of that street (far side), whereas the foreground showing the north side of Elm Street, and the background showing the far side of the intersection of Houston and Elm Streets and possibly the rest of Houston Street are based on a few frames probably recorded immediately before the motorcade arrived. Then as the limousine proceeded down Elm Street they got rid of most of the troublesome foreground and background by letting the car occupy an increasingly larger portion of the frames, so a rotation of the frames was all that was necessary to maintain the illusion. As the limousine approached the underpass, some repositioning of objects was again necessary, but to a lesser extent than in the early frames, since the field of view of the two photographers now was fairly similar.

The reasons for rotating the frames between Z200 and Z400 may have been many, as discussed previously (altering the trajectory, increasing the speed of the car). But it was probably absolutely necessary to avoid revealing the true position of the cameraman and to obtain a perspective which, in some respects at least, resembled that which could be observed from Zapruder's position. Until the limousine was directly in front of the two photographers (i.e. when the long axis of the car was perpendicular to the line of sight), the secret cameraman was filming the car at a sharper angle than Mr. Zapruder from his position. So the car would appear to be coming more directly toward the former, rather than passing by at a distance, like it did from Zapruder's point of view. However, by rotating the frames the car would again appear to be heading for a point farther to the right of the cameraman (going past him farther away from him), as if filmed from Zapruder's position. These differences in perspective are difficult to visualize and describe, so it would be better to make and compare pairs of photographs taken from both cameramen's positions of a car going down the street to fully appreciate what the editors have achieved. I hope somebody will do that some day.

At the time of the fatal head shot at [313](#), the limousine appears to be directly in front of the cameraman (long axis of car perpendicular to line of sight), but since that cameraman was standing to the right of Mr. Zapruder, the fatal head shot probably occurred a little farther down Elm Street toward the triple underpass than the Zapruder film suggests. The Warren Commission's assertion on page 110 of their [Report](#) that they found the same location of the car in the street by comparing the Zapruder, Nix and Muchmore films cannot be trusted. That finding was based on the erroneous assumption (they knew better) that the Zapruder film had been filmed by Mr. Zapruder from his known position on the pedestal.

By using the Zapruder, Nix and Muchmore motion pictures, the President's location at the time the bullet penetrated his head was fixed with reasonable precision. [...] The President's location, established through the Nix and Muchmore films, was confirmed by comparing his position on the Zapruder film. This location had hitherto only been approximated, since there were no landmarks in the background of the Zapruder frame for alignment purposes other than a portion of a painted line on the curb.³²⁹ Through these procedures, it was determined that President Kennedy was shot in the head when he was 230.8 feet from a point on the west curbline on Houston Street where it intersected with Elm Street.³³⁰ The President was 265.3 feet from the rifle in the sixth-floor window and at that position the approximate angle of declination was $15^{\circ}21'$.³³¹

In the re-enactment photograph from Zapruder's position in [Commission Exhibit 902](#) (WCH 18:95), the car has been placed in the south lane of Elm Street to obtain the same relative position to the curb in the background as in Z312. However, the Presidential limousine was allegedly travelling in the middle lane at that point, as suggested in the corresponding 'photograph through rifle-scope' in CE902, in which the car is indeed in the middle lane. Thus, it seems the FBI had some difficulties in getting the car properly aligned to match the Zapruder frames. This discrepancy might be explained by the fact that the extant Zapruder film was shot from a much lower position relative to the street level than from Zapruder's pedestal. Hence, the left-hand edge of the car would appear to be 'higher' relative to the curb than when filmed from Zapruder's position. The same would be true for other frames.

Since the secret cameraman was at a lower position than Zapruder, he would not have had as good a view of the interior of the limousine and the occupants as from Zapruder's position until the car came fairly close to him. Then the shorter distance between him and the car would compensate more and more for

his lower position, and for a while he would have a better view of the interior of the car than Zapruder had, and he would literally look down into the car. As the car finally approached the triple underpass, he would no longer have a better view of the interior of the car as compared to Zapruder from his position. Anyone can check that this is so by looking down into a box on the ground from different heights and distances. In order to ascertain whether the view into the interior of the limousine in the Zapruder film is consistent with a film being shot from behind the retaining wall or from the pedestal, pairs of photographs should be taken of a limousine on Elm Street from both positions and compared. I feel pretty certain that the view of the interior of the car as depicted from about frame Z300 until about frame Z400 would have been impossible to shoot from Zapruder's pedestal. Interestingly, [frame Z312](#) was the last frame the FBI tried to duplicate during their re-enactment, as opposed to the Secret Service who took photographs of the stand-in car when it was [further down](#) the street, but from a different position.

As pointed out several times already, there is a dramatic change in the size of the limousine in the extant Zapruder film. The enormous growth in size is made less evident by the fact that as the car grows bigger an increasingly smaller portion of the car is depicted in the frames. I think this temporary increase in size is partly due to enlargement of frames during editing, and partly due to the car first approaching, then passing by, and finally going away from the cameraman. Another possibility would be that the secret cameraman zoomed in on the car as it approached him and then zoomed out again. Mr. Zapruder reportedly used the telephoto setting on his zoom lens throughout his film, so any change in relative size in his film could not be due to zooming of the lens.

Since the secret cameraman was standing closer to Elm Street than Zapruder, but was farther away from the car as it turned onto Elm Street, a greater variation in size of the car would be expected in his film than in any film from Zapruder's position. Thus the secret cameraman would have been farther away from the limousine up until the fatal head shot at Z313, but closer to it thereafter. Assuming the limousine travelled in the middle lane all the time, the distance between Zapruder and the car was probably at its shortest at around Z313, whereas the minimum distance between the car and the secret cameraman behind the retaining wall was at around Z360. It is difficult to determine if the car actually is at its biggest at around Z360, since the changing perspective makes it very difficult to compare measurements of a given object between different frames. Besides, I would think the editors were intelligent enough to let the car reach its maximum size when it was expected to, as seen from Zapruder's position, i.e. around Z313.

When comparing the distances between each of the cameramen and the limousine at different points in the street, one must keep in mind the topography of Dealey Plaza, i.e. the cameramen were standing at different elevations and the car was going downhill past them. Thus, it may be very misleading to compare distances measured from a two-dimensional map. The line of sight distances will have to be determined and used. Since I don't have these distances, I cannot determine if the increase in size of the limousine is more compatible with a film from Zapruder's position than with the other cameraman's position.

The bushes seen in the foreground from Z390 until about Z442 must have been edited into the frames since there were no bushes in front of the secret cameraman during that time. These bushes are supposed to represent part of the tall bush between Zapruder's pedestal and the retaining wall, which would probably have been in Zapruder's field of view at this time, as allegedly shown in [Shaneyfelt Exhibit 33](#). However, this Exhibit doesn't show the true appearance of the retaining wall as seen from Zapruder's position, as pointed out before. Thus, FBI produced a faked photo to make it consistent with the faked photographs in the Zapruder film.

When the limousine goes past these bushes, an object similar to a human head, possibly with a hat, appears among them, particularly in frame [Z412](#) and [Z413](#). The Photographic Panel of the HSCA

examined this object extensively, basing their examination on the erroneous assumption that the Zapruder film had been filmed by Mr. Zapruder from the abutment ([HSCA AppH 6:131-133](#)):

(319) When the Presidential limousine accelerated and pulled out of Dealey Plaza after the shooting, Zapruder continued to follow it with his camera. As the car passes him, going from left to right in front of him, a bush becomes visible in the lower right of the film frame, moving into the field of view from the right and traveling to the left as Zapruder panned the camera to the right. For a number of frames, the object that resembles a head is visible within the bush. In [Zapruder frame 413](#) the object is very distinct and clear. [...]

(320) The head in the bush is visible only in a few frames. From Zapruder's position on an abutment, which was connected to the retaining wall that lay to the right of the Presidential limousine (as it proceeded down Elm Street), his camera was the only one positioned so as to look through the bush and to the limousine in a geometry that shows the head, bush and limousine in the same line of sight. [...]

(321) Since the head-like object is visible for several frames coming in from the right and moving to the left as the camera pans right, the Panel concluded that the object was real and not a chance arrangement of leaves. In frame 413, the head appears to be wearing a hat, such as a tennis hat, with a pulled-down brim. The "hat" is not visible in any other frames, however, and the Panel concludes that the "hatbrim" in frame 413 was only a coincidental juxtaposition of leaves near the head.

(322) Frame 413 was scanned for input to a digital computer. [...]. The Panel again concluded that the object was a head. Flesh tones were visible on the back of the neck and ear. A hairline at the back of the neck was distinct and visible. The hair appeared to be fair in color; the head was either close-cropped or balding.

(323) Having found the object to be a head, placement of the head and bush in relation to Zapruder became of great importance. Placing the bush was simple because the Nix film shows Zapruder and the bush in a series of frames. By using photogrammetric techniques, the USGS was able to place the Presidential limousine at the time of frame 413. (118) A line of sight drawn between Zapruder and the Presidential limousine passes directly through the bush as seen in the survey map of Dealey Plaza (see fig. II-10, JFK exhibit F-133).

(325) Accordingly, this photograph was then studied photogrammetrically. A basic principle in optics states that the size of an image is inversely proportional to the distance of the object from the camera that created the image. (120) Using this principle, the distance of an object from a camera can be calculated by comparing the size of its image to the image size of a similar object at a known distance. The size of the image of the head in the bush was compared to the size of the image of a head in the Presidential limousine. A simple calculation can determine where the head in the bush was located on the line of sight between Zapruder and the limousine (see addendum B).

(326) The head of the Secret Service agent climbing into the Presidential limousine was used for the calculation. Several measurements were made. The closest to Zapruder that the head in the bush can lie was in the middle of the sidewalk that runs from the top of the grassy knoll down to the street. The farthest away would be 10 to 15 feet beyond the sidewalk.* [Addendum B]

(327) Based on this analysis, an inspection of the Dealey Plaza survey map (fig. II 10, [JFK exhibit F-133](#)) revealed that the head in the bush was not in the bush at all. The bush lies between Zapruder and head, with the head itself an appreciable distance away from the bush. Accordingly, there was no evidence of a person actually hiding behind the bush.

The HSCA Panel wasn't very clear as to where they calculated the head to have been located, neither in their report nor in [Addendum B](#), which states that: "The placement of the head beyond the bush is a certainty. The placement of the head beyond the retaining wall is almost as certain, since the corner of the retaining wall would correspond to a ratio of head sizes of approximately 0.25." They apparently found that the head or rather the person should have been somewhere behind (beyond) the retaining wall, and probably in the middle of the "sidewalk" at the point where the line of sight from Zapruder through the bush intersected this sidewalk. That would be about the same as the distance between Zapruder and the man they had located behind that wall in Willis #5. Still, they made no reference to that man.

Since the original of the extant Zapruder film was filmed by a cameraman standing behind the retaining wall, the head we see in Z412-Z413 has to belong to a person standing on the steps leading down to Elm Street. And then it most likely belonged to Mr. Emmett Hudson, the grounds keeper, who was the only one still standing on these steps by this time, since the man who had been standing on his-left hand side, had already fled or was in the process of running up the steps immediately to the right of the cameraman, whereas the third man on the steps was in the process of throwing himself to the ground on the east side

of the steps, as seen in the Nix film (Figure 9). And Mr. Hudson was indeed wearing a whitish hat, as seen in the Muchmore film, the Moorman Polaroid and in several photographs taken after the shooting showing Mr. Hudson sitting by the steps together with the other man. And the distance between the photographer behind the retaining wall and Mr. Hudson is compatible with the distance between the photographer and the head computed by the HSCA Panel.

Hence, the bushes in the foreground have been added to the original frames to pretend the film was shot by Mr. Zapruder, who had such bushes in his line of sight of the limousine at that time. It may also have been convenient to use these bushes to partly disguise what was going on in the limousine. As to the man who fled from the steps, I would think his task was to confirm that Kennedy got killed and to prevent anyone from entering that area so the cameraman wouldn't be disturbed.

As mentioned earlier, the Fort Worth Turnpike sign visible in frames Z419 till Z445, seem to have been inserted into these frames by compositing. Why do that, when the limousine for the most part remained visible below the signboard? Well, again the position of the sign had to be altered in order to be consistent with a film from Zapruder's position. At this point the secret cameraman had almost the same line of sight to the limousine as seen from Mr. Zapruder's position, so it might not have been necessary to shift the sign sideways. However, since the secret cameraman filmed from a much lower position than Mr. Zapruder, the sign would have to be shifted vertically nearer to the ground to be in the correct position. Since the secret cameraman was much closer to the sign than Mr. Zapruder, the sign would also have been much larger than it should have been as seen from Zapruder's position. So it may have been necessary to reduce it somewhat in size before reinserting it into the edited frames. Whether all of these changes were done or not, I have not been able to ascertain due to lack of other reliable pictures for comparison. I would certainly not judge the authenticity of the sign by comparing it with the sign shown in [Shaneyfelt Exhibit 33](#).

The deceivers

The fairly high technical quality of the extant Zapruder frames also indicates that this was not based on a film made by an amateur like Mr. Zapruder. Since the extant Zapruder film is not a camera-original film, but an edited film, some details have been lost in that process. And we may expect that those who edited the film reduced the quality to some extent to make it look like an amateur film. However, when he was about to be shown frames from 'his' film during his Warren Commission testimony (WCH 7:569-576), [Mr. Zapruder](#) excused himself for the poor quality of his film:

Mr. Liebler. [...]. One thing I would like you to do now – we have a series – a little book here that is Commission Exhibit No. 885 and it consists of a number of frames from motion pictures and I want to show you certain numbers of them which are important to our work and ask you if those look like they were taken from your film and if in fact you could recognize it as you look through this book that these are individual frame-by-frame pictures of the pictures that you took.

Mr. Zapruder. Yes, they are frame by frame and they weren't very clear, for the simple reason that on the telephoto lens it's good to take stills – when you move – did you ever have binoculars – and every time you move everything is exaggerated in the move – that's one reason why they are kind of blurred – the movement. Now, you want me to identify whether these are my pictures?

The fact that his film was of rather poor quality is also evident from the blurred frames he shot of Marilyn Sitzman, Beatrice Hester and Charles Hester at the North Pergola a few minutes before the motorcade arrived to start his roll of film. And at that time Mr. Zapruder was still standing on the ground close to the people he filmed. According to Mrs. Sitzman, Mr. Zapruder might get dizzy when he was standing on the pedestal, so she had to get up there too. So the film shot from that location was probably even more blurred than these initial frames.

Irrespective of the quality of the original Zapruder film, how could the Secret Service and FBI be satisfied with just obtaining copies of the Zapruder's film when they were going to start investigating the murder of their President. Because a copy is not nearly as good as the original as regards revealing details, as Mr. Shaneyfelt later pointed out in his Warren Commission [testimony](#):

Mr. SPECTER. Can you outline in a general way how the movies taken by Mr. Zapruder came into your possession?

Mr. SHANEYFELT. Yes; Mr. Zapruder, on realizing what he had in his photographs, took them immediately to a local Dallas processing plant, had them processed, and had three copies made. He turned two copies of those movies over to representatives of the Secret Service. The original and other copy he sold to Life. The FBI was given one of the copies by the Secret Service. The Secret Service loaned a copy to us long enough for us to make a copy for our use, which we did, and this copy is the one that I have been examining.

Mr. SPECTER. At any time in the course of the examination of the Zapruder film, was the original of that movie obtained?

Mr. SHANEYFELT. Yes; it was. On February 25, Mr. Herbert Orth, who is the assistant chief of the Life magazine photographic laboratory, provided the original of the Zapruder film for review by the Commission representatives and representatives of the FBI and Secret Service here in the Commission building.

Mr. SPECTER. And what was the reason for his making that original available?

Mr. SHANEYFELT. Life magazine was reluctant to release the original because of the value. So he brought it down personally and projected it for us and allowed us to run through it several times, studying the original.

Mr. SPECTER. Was that because the copies were not distinct on certain important particulars?

Mr. SHANEYFELT. That is correct. The original had considerably more detail and more there to study than any of the copies, since in the photographic process each time you copy you lose some detail.

So it took three months before Mr. Shaneyfelt of the FBI allegedly had a chance to view the original film. That doesn't make sense if the FBI and the Secret Service were genuinely interested in investigating the crime. Well, they were not. Elements of the FBI and the Secret Service and other governmental agencies were involved in the conspiracy to kill President Kennedy, so they already knew who had killed him, and didn't need Mr. Zapruder's camera-original film to find out. Moreover, they already had their own original film that had been filmed by the secret cameraman behind the retaining wall. Hence, the 'original film' the authorities obtained from Life Magazine was the edited version of their own film, which they had given to Life Magazine earlier. The original and copies of their own films must then rapidly have replaced the original and three copies of the authentic Zapruder film, which they already had taken control of with the help of some friends in Life Magazine.

Of course, the authentic Zapruder film was used as a template for their own edited film, in order to make it as similar as possible to that film. The 31 frames from the 'Zapruder' film published in Life Magazine on [November 29](#), just one week after the assassination, must have been edited very quickly since the printing of that issue reportedly started on November 25. However, the editing may have started already on Friday, November 22, since they had access to their own film immediately after the assassination, as opposed to Zapruder's original film, which was not sold to Life Magazine until Saturday, November 23. Moreover, the frames that were published one week after the assassination were in black and white – color frames were not printed until some weeks later.

The original of the extant Zapruder film was obviously filmed with a professional camera, and they probably used 16 mm film. The speed of that camera may well have been 18.3 frames per second, and that may explain why Zapruder's Bell & Howell camera was determined by the [FBI](#) to operate at an average speed of 18.3 frames per second, whereas the standard speed for that camera model was about 16 frames per second. Because it was not an advantage to have a fast camera as far as the timing of the shots was concerned, because that would shorten the interval between selected frames in the film. And the conspirators needed a long enough interval between successive shots to make it compatible with one gunman firing all shots. Mr. Zapruder was apparently a little surprised about the findings of the FBI as regards the camera speed during his Warren Commission [testimony](#) (WCH 7:576):

Mr. LIEBELER. Yes; the FBI asked for the camera back because the Commission wanted to determine whether there was any difference in the frame speed as the camera unwound itself, as it went along.

Mr. ZAPRUDER. Well, they claimed – they told me it was about 2 frames fast – instead of 16 it was 18 frames and they told me it was about 2 frames fast in the speed and they told me that the time between the 2 rapid shots, as I understand, that was determined – the length of time it took to the second one and that they were very fast and they claim it has proven it could be done by 1 man. You know there was indication there were two?

I would think that Special Agent Lyndal L. Shaneyfelt of the FBI was heavily involved in producing the extant Zapruder film from the original someone (else?) filmed at Dealey Plaza. From the way he prepared different Exhibits related to the film, it is obvious that he knew the film was flawed in some respects, as far as giving a perfect illusion of being filmed by Mr. Zapruder. And it would be wise to let the man who made the film examine it and testify about it for the Warren Commission. But I think most of the people from the Secret Service and the FBI who were involved in the analysis of the film and the FBI re-enactment in May 1964, must have understood that the extant Zapruder film was a hoax. That also goes for the Commission members participating at the re-enactment. The names of these people were given by [Mr. Shaneyfelt](#) during his testimony about the film:

Mr. SPECTER. Now, how many occasions were you a participant in an analysis of these various film which you have just described?

Mr. SHANEYFELT. Seven.

Mr. SPECTER. And when was the first time that you were a participant in such an analysis?

Mr. SHANEYFELT. On January 27, 1964.

Mr. SPECTER. And who else has been with you at the time you analyzed those films just stating in a general way without identifying each person present on each of the occasions?

Mr. SHANEYFELT. On most occasions, Mr. Gauthier of the FBI was present, I was present, Mr. Malley of the FBI was present. Inspector Kelley from Secret Service, and Mr. John Howlett from Secret Service. Representatives of the Commission were always present – normally Mr. Redlich, Mr. Specter, or Mr. Eisenberg were present. [...]

Mr. SPECTER. Were you present on May 24 in Dallas, Tex.?

Mr. SHANEYFELT. Yes.

Mr. SPECTER. And what, if anything, was done at the site of the assassination on that date?

Mr. SHANEYFELT. On May 24, 1964, representatives of the Commission, Secret Service, and FBI reenacted the assassination, relocated specific locations of the car on the street based on the motion pictures, and in general staged a reenactment.

Mr. SPECTER. Who was present at that time representing the Commission?

Mr. SHANEYFELT. The Commission was represented by Mr. Rankin, Mr. Specter, and Mr. Redlich.

Mr. SPECTER. And who was present at that time from the FBI?

Mr. SHANEYFELT. I was present, Inspector Gauthier was present, Inspector J. R. Malley was present, Special Agent R. A. Frazier was present, with some aids, assistants.

Mr. SPECTER. Other aids from the FBI were also present?

Mr. SHANEYFELT. Yes; in addition, there were several agents from the Dallas office of the Federal Bureau of Investigation who assisted.

Mr. SPECTER. And were there representatives of the Secret Service participating in that onsite testing?

Mr. SHANEYFELT. Yes; there were. Inspector Kelley was present, Agent John Howlett was present, the driver of the car, or the Secret Service agent whose name I do not recall –

Mr. SPECTER. George Hickey?

Mr. SHANEYFELT. That is correct.

Mr. SPECTER. And at what time did the onsite test start?

Mr. SHANEYFELT. They started at 6 o'clock Sunday morning.

Mr. SPECTER. Why was that time selected?

Mr. SHANEYFELT. The time was selected because of the traffic in the area. The Dallas Police Department recommended that that would be the most logical time to do it, causing the least problem with traffic.

Mr. SPECTER. At what time did the onsite tests conclude?

Mr. SHANEYFELT. They concluded about 1 o'clock, 12:45 to 1 o'clock.

The re-enactment photographs from Zapruder's position that were printed as Commission Exhibits were taken with a Speed Graphic camera. However they also took some pictures with Mr. Zapruder's camera

as described by [Mr. Shaneyfelt](#):

Mr. SPECTER. What motion pictures, if any, were taken during the reenactment?

Mr. SHANEYFELT. During the reenactment the black-and-white photographs were made from Zapruder's position with a Speedgraphic camera and we also took motion pictures with Mr. Zapruder's camera from Zapruder's position with the car in the fixed locations as they were established with the car just stationary in those locations.

After establishing all those points and making these film records of it, we then had the car proceed along that Elm Street route at approximately 11 miles per hour, and filmed it with Mr. Zapruder's camera loaded with color film from Mr. Zapruder's position and simultaneously photographed it with Mr. Nix's camera from Mr. Nix's position, and Mrs. Muchmore's camera from Mrs. Muchmore's position, and this was done twice.

The re-enactment film made by Zapruder's camera was briefly shown to Commission members Mr. McCloy, Mr. Dulles, and Representative Ford, by Mr. Shaneyfelt on June 4, 1964. Also present were Mr. Redlich and Mr. Specter of the Commission. Nobody made any noteworthy comments about the film, so it may either have looked similar to the 'original' one, or those present kept quiet about the discrepancies. The film was then, along with other films from the re-enactment, designated CE907. If that film still exists, unedited, in the National Archives, it would be very valuable as a comparison to the extant Zapruder film.

Mr. Specter. Could you now show us the film which was taken at the reconstruction from the Zapruder position?

(Film)

Mr. Shaneyfelt. These films we made in Dallas have been developed and left intact and have not been edited in any way so there are a lot of blank spaces where we run the leader off and turn the film. This is position 161. This side-to-side jiggle is a camera malfunction.

Mr. McCloy. This is 16 mm.?

Mr. Shaneyfelt. No; 8 mm.

Representative Ford. Is this from his camera?

Mr. Shaneyfelt. Yes; taken with his camera. Frame 222, frame 225. This is frame 231.

Representative Ford. He has a delayed reaction compared to what the President did.

Mr. Specter. What frame is this, Mr. Shaneyfelt?

Mr. Shaneyfelt. 313, the head shot.

Mr. McCloy. The head shot.

Mr. Shaneyfelt. This is the position which is not duplicated on the Zapruder film. This is running the film out to reload it. During that run at 11 miles an hour we made no effort to duplicate the body position because it would have been most difficult to know just when to turn. The only other films we have are the ones we shot with the Nix and Muchmore cameras of this same run from their positions.

When did Mr. Zapruder himself realize his film had been replaced by a different film? I don't think he knew anything about that when he [testified](#) before the Warren Commission in July 1964. But he may have realized during that testimony that something was not quite right with the frames he were shown. Yet, he more or less verified that they were from his film, or at least looked like they were from his film. But then he also stated that the frames had to be from his film *if* they had been taken from his film. And Mr. Liebeler reassured him that so they were.

Mr. LIEBELER. [...] One thing I would like you to do now – we have a series – a little book here that is Commission Exhibit No. 885 and it consists of a number of frames from motion pictures and I want to show you certain numbers of them which are important to our work and ask you if those look like they were taken from your film and if in fact you could recognize it as you look through this book that these are individual frame-by-frame pictures of the pictures that you took.

Mr. ZAPRUDER. [...] Now, you want me to identify whether these are my pictures?

Mr. LIEBELER. Yes, specifically, I first call your attention to [No. 185](#). This is No. 185 on the back of it and will you look at the whole book and identify it if you can and tell us that those are the pictures that – that those appear to be the pictures or copies of the pictures that you took from your motion picture camera?

Mr. ZAPRUDER. Well, I would say this, they look like – if they were taken from the film I had – these are the ones. I mean, I don't know how to express myself.

Mr. LIEBELER. Well, they were.

Mr. ZAPRUDER. Well, it looks like them – that's when they turned in from Elm Street. Is that it? I'm

trying to visualize it. This is taking it from the opposite side of me, is it, where I would have been taking it, because I see this structure – I have been around there and – or these this couldn't be here – where did they get this in there – how did they get this in there, if I was taking the pictures where did they get this in there? That shouldn't be there.

Mr. LIEBELER. This is the thing back up behind on Dealey Plaza, I think, isn't it?

Mr. ZAPRUDER. They have one there, too?

Mr. LIEBELER. Yes, I think there is. Now, if you will look at Hudson Exhibit No. 1, you will see that there is some kind of concrete structure there and is a different kind from that figure. It has bigger holes in it.

Mr. ZAPRUDER. That's right – in the back of this here, that's where it is – that's what I thought it was – that's where I got mixed up.

Mr. LIEBELER. You thought that the concrete latticework on the individual pictures in Commission Exhibit No. 885 –

Mr. ZAPRUDER. Now I see it – that's where they have moved now the flowers and all that.

Mr. LIEBELER. Yes – I have to state this for the record – so they can understand what we are talking about – you confused it with the concrete latticework shown in the background in the individual photographs in Commission Exhibit No. 885, with the larger and obviously different concrete structure in the background of Hudson Exhibit No. 1?

Mr. ZAPRUDER. Yes, that – there is Elm Street there – this is a corner.

It is puzzling that Mr. Zapruder didn't instantaneously recognize the first frame he was shown (Z185) as a picture of the intersection of Elm and Houston Streets. After all he had viewed his own film several times and he had his office across the street from that intersection. Was there something in that picture that he didn't expect to see or didn't remember he had seen?

I think that Mr. Zapruder was genuinely upset and shocked by seeing President Kennedy being killed in front of his eyes and camera. And he apparently instantaneously knew there were more than one person behind the assassination, because he kept yelling, "*They* killed him, *they* killed him, *they* killed him." And I think he was just trying to help the authorities by turning his film over to them. But he may well have been commissioned by someone to go and film the motorcade from the abutment, but if that was so, I don't think he was aware of being (mis)used by someone else.

At the time of the Clyde Shaw trial in 1969, however, things had changed. I think Mr. Zapruder by now was fully aware of what had happened to his film(s), and that he had either sided with the conspirators or had tacitly accepted not to reveal the truth. So in this trial he was definitely not trying to be helpful, as the following exchange from his [testimony](#) shows:

BY MR. OSER:

Q: On the date of November 22, 1963, did you have an occasion to be in that area of Dallas known as Dealey Plaza?

A: I imagine you mean at the place where I was taking pictures.

Q: Yes.

A: Yes, I came down to take pictures of the President and whatever it was.

Q: From what area or location did you view the motorcade? Where were you?

A: I was on the abutment. Do you mean geographically, whether it is east, west, north or south? Is that what you want to know?

Q: Yes, sir. Where were you?

A: I will have to figure it out.

Q: Where were you standing?

A: When I took the pictures?

Q: Yes, sir.

A: On a concrete abutment.

During his testimony, Mr. Zapruder was asked repeatedly about the copy of 'his' film being shown during the trial. But he was mostly asked if the copy *depicted* the same as he had viewed in his film previously, and of course he could verify that, because the copy of the film showed the same event. But when he finally was asked more specifically whether the film shown was a complete copy of his film or not, Mr. Zapruder did not answer "Yes", but went into a discussion about what was meant by complete. So I believe he tried hard to avoid lying bluntly about the film, and he did not verify unambiguously that the

copy shown in the trial was a copy of *his* film. If, on the other hand, the film shown at the trial indeed had been a true copy of Zapruder's own film, wouldn't he have proudly stated, "Yes, this is a copy of my film"?"

BY MR. OSER:

Q: During the time your film was being processed, were you present, sir?

A: Yes, sir, I was.

Q: On that particular day did you have occasion to view what your film showed?

A: Yes, the same evening I saw this film.

Q: Mr. Zapruder, do you have in your possession at this present time a copy of this film?

A: Yes, I do.

Q: What is contained on this roll of film, is that the same as you saw it from the developed original on November 22, 1963?

A: Yes, sir.

BY MR. DYMOND:

Q: You say you were present when the copies of your film were made?

A: Yes, sir.

Q: Were you actually present in the room in which these copies were being made?

A: Yes, sir, I was in the processing room watching them actually process the film.

Q: Is the copy you have here today identical to the original or are there any plates missing out of this copy?

A: That would be hard for me to tell, sir.

THE COURT: I cannot hear the witness. What is it?

THE WITNESS: That would be hard for me to say. He asked me if there are any frames missing.

THE COURT: What is your answer?

THE WITNESS: I couldn't say.

BY MR. OSER:

Q: Mr. Zapruder, from having seen the film just projected on the screen, can you tell us whether or not this represents what you saw on November 22, 1963, after your original film was developed in Dallas, Texas?

A: I would say they do.

THE COURT: I didn't hear you again.

THE WITNESS: I would say that they do. Yes, they do.

BY MR. DYMOND:

Q: Mr. Zapruder, are you able to testify that this film that you have just seen run is a complete copy of the pictures taken by you on that day, no frames being missing?

A: By complete, what do you mean? If there are any frames removed or so?

Q: Any frames removed or damaged or for any reason not shown in this film?

A: I couldn't tell you.

Q: So you couldn't tell whether any part has been skipped, is that correct?

A: I could not.

THE COURT: Bring the Jury back.

(WHEREUPON, the Jury returned to the courtroom.)

THE COURT: All right, Mr. Oser, you may proceed.

BY MR. OSER:

Q: Mr. Zapruder, from having seen what was projected on this film, can you tell the Court whether or not it appears to be the same as you viewed your original film on November 22, 1963 in Dallas, Texas?

A: Yes, it does.

MR. OSER: I tender the witness on traverse.

BY MR. DYMOND:

Q: This will sound repetitious, but it is because the Jury has now come in. Having viewed this film, sir, are you in a position to say whether the film you have just seen is a complete copy of what you took without any frames having been deleted or taken out or skipped?

A: I couldn't tell if any frames were removed. Seen as a whole it shows that I have seen. Seeing you have 18 frames a second you can take out one or two and I couldn't tell.

Why would the conspirators make their own film of the assassination in Dealey Plaza and subsequently switch it with Zapruder's film? To have their own film made was essential to see how the operation was performed, so that they could adjust their cover-up accordingly afterwards. Thus, Mr. Kellerman had

been shown at least two films of the assassination before his Warren Commission testimony, so he could adjust his testimony to that which was depicted in the films. Having their own film, also meant that they were in full control of the film so that they could edit it as they pleased, and present their own version of the event, and use it as evidence against the alleged killer, Lee Harvey Oswald. But of course, they couldn't come forward with their own film. That would be the same as telling everybody who was behind the assassination. So they needed a second film they could replace with their own. And that is where Mr. Zapruder becomes part of their screenplay. And he played his part probably without knowing it until sometime later. And when he had to be told, he was generously paid to pretend their film was his own film. And numerous others must have known the truth about the Zapruder film.

But why use their own film, and risk everything, when they could have used an edited version of Zapruder's film. Well, I think the technical quality of that film was not good enough for them. The perverts behind the assassination of President Kennedy, particularly FBI director J. Edgar Hoover and then Vice-President Lyndon B. Johnson, wanted to show the world how they got rid of Kennedy and blew out his brains. They probably hated him so much that they not only wanted him dead – they wanted to see him suffer and die.

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