

dent of 265.3 feet, with the photograph through rifle scope identified on the document being the view which the marksman had of the President at the time the President was struck in the head, and I ask you again for an opinion as to the ease or difficulty of that shot, taking into consideration the capabilities of Mr. Oswald as a marksman, evidenced by the Marine Corps documents on him.

Major ANDERSON. I consider it to be not a particularly difficult shot at this short range, and that Oswald had full capabilities to make such a shot.

(Discussion off the record.)

Mr. SPECTER. May the record show that we have been off the record because Mr. Rankin stepped out, but we will proceed now to complete the deposition since he hasn't returned at this time.

Major Anderson, assume if you will that there were three shots fired by the assassin with a Mannlicher-Carcano rifle in a time span of 4.8 to 5.6 seconds. Would that speed of firing be within the capabilities of Mr. Oswald based upon the information as to his marksmanship ability from the Marine Corps records?

Major ANDERSON. Yes, sir; it would.

Mr. SPECTER. Major Anderson, are you as familiar with the telescopic sights as is Master Sergeant Zahm?

Major ANDERSON. No, sir; I am not. Sergeant Zahm is far more familiar and much more of an expert on telescopic sights than I am.

Mr. SPECTER. Has the testimony which you have provided here today on the general propositions to which you have testified been within your sphere of specialization?

Major ANDERSON. Yes, sir; they have.

Mr. SPECTER. That concludes the deposition of you, Major Anderson. We very much appreciate your coming.

Major ANDERSON. You are quite welcome.

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### TESTIMONY OF SGT. JAMES A. ZAHM

The testimony of Sgt. James A. Zahm was taken on July 24, 1964, at 200 Maryland Avenue NE., Washington, D.C., by Messrs. J. Lee Rankin, general counsel; and Arlen Specter, assistant counsel of the President's Commission.

Mr. SPECTER. Sergeant Zahm, will you stand and raise your right hand. Do you solemnly swear that the testimony which you shall give before the President's Commission on the Assassination of President Kennedy will be the truth, the whole truth, and nothing but the truth, so help you God?

Sergeant ZAHM. I do.

Mr. SPECTER. Would you state your full name for the record, please?

Sergeant ZAHM. James A. Zahm.

Mr. SPECTER. What is your profession or occupation, please?

Sergeant ZAHM. Master sergeant.

Mr. SPECTER. And in what branch of the service are you?

Sergeant ZAHM. U.S. Marine Corps.

Mr. SPECTER. How long have you been in the Marine Corps, Sergeant Zahm?

Sergeant ZAHM. Eighteen years.

Mr. SPECTER. Of what do your current duties consist?

Sergeant ZAHM. I am the NCO in charge of the Marksmanship Training Unit Armory at the Marksmanship Training Unit in the Weapons Training Battalion Marine Corps School, Quantico, Va.

Mr. SPECTER. When you say NCO, what do you mean by that for the record.

Sergeant ZAHM. Noncommissioned officer.

Mr. SPECTER. How long have you been so occupied in that particular duty?

Sergeant ZAHM. Two years 4 months.

Mr. SPECTER. What experience have you had if any in marksmanship?

Sergeant ZAHM. I became engaged in competitive shooting in 1952, and I became a distinguished rifleman in 1953. I fired the national matches from 1952

through to date about eight times. This is annually. I won the President's match in 1953 at the national matches and the Leech Cup in 1952, and the Marine Corps Cup in 1957. There are some others.

Mr. SPECTER. What experience have you had with telescopic sights, Sergeant Zahm?

Sergeant ZAHM. One of my additional duties at the present time is the non-commissioned officer in charge of the long-range team. This consists of about 40 members of the Marine Corps Rifle and Pistol Team, and I am charged with training, providing weapons, and hand loading the ammunition for practice and eventual firing at 600 and 1,000 yards in the interservice match.

Mr. SPECTER. Are telescopic sights used regularly in those activities?

Sergeant ZAHM. Yes.

Mr. SPECTER. Could you characterize for me in some manner your experience then with telescopic sights in the number that you have used or duration of time where you have used telescopic sights?

Sergeant ZAHM. Well, from my own experience, and it is true that the higher powered telescopes are used in the particular type of firing we are doing right now, deliberate slow fire at extreme ranges of 600 and 1,000 yards. We use 12-power to 20-power telescopes. These are unsuitable for moving targets or closer ranges from unsteady positions, because the power of the telescope tends to magnify the shooter's movements and makes a hold more difficult.

In the lower-powered telescope such as four-power telescope at closer ranges ranging from 50 to 200 yards, this is an ideal type of weapon for moving targets or type of telescope for moving targets, and for the closer ranges, things being inherent in the focus of the scopes when you get in too close, the higher power type scopes tend to blur out to a certain degree.

Mr. SPECTER. Can you characterize the increased efficiency of a marksman in using a four-power scope as opposed to using only the iron sights?

Sergeant ZAHM. Well, with the iron sights you have more room for error in the fact that you have three variables. You have your targets, your front sight and your rear sight, and you have the possibility of an error in aligning the sights, and then you also have the possibility of an error in the sights on the targets, which we refer to as the sight picture. Looking through aperture or even the open buckhorn type sights, when you are concentrating on your sights, your targets tend to become blurred because of the close focus of your eye in aligning the sights.

Now this as opposed to telescope of a four-power nature it is a natural characteristic of a telescope when you are looking for your target, it is a natural thing to center your target in the view of your telescope, and in the center view of your telescope is the aiming crosshairs. This is only one point.

If you get this one point, the crosshairs in the proper relationship to your target, this is an aid in locating, finding your target, because you are using the scope in the sense as binoculars. Once you have found your target, your sights are already aligned, and then through good trigger manipulation the shot should be well on the target.

Mr. SPECTER. With respect to rapid-fire shooting, how does the telescopic sight on a four-power scope work out?

Sergeant ZAHM. Four-power being a reasonably low-power scope, it has a fairly broad field of view. By this we mean it covers a reasonable amount of area out at about 100 yards, about I think probably around 30 feet or so. Using the scope, rapidly working a bolt and using the scope to relocate your target quickly and at the same time when you locate that target you identify it and the crosshairs are in close relationship to the point you want to shoot at, it just takes a minor move in aiming to bring the crosshairs to bear, and then it is a quick squeeze.

Mr. SPECTER. Would you characterize it as easy, difficult, or how would you characterize it to use a scope, a four-power scope in rapid fire?

Sergeant ZAHM. A real aid, an extreme aid.

Mr. SPECTER. Suppose in focusing in through the four-power scope you do not get a completely circular view, but instead get a partial view with a corner of the view being blacked out because you don't have the scope in direct alinement, but you are still able to see a sufficient amount of daylight through the scope so

that you can see where the crosshairs line up on target. Is it in sufficient alinement at that juncture to permit the marksman to shoot accurately?

Sergeant ZAHM. Yes.

Mr. SPECTER. And how does that work out that the alinement is sufficient to permit an accurate shot, even though the marksman does not have a completely clear view through the entire circle of the scope?

Sergeant ZAHM. Well, in the assembly of the telescope, the aiming reticle or crosshair is so placed in the scope that it is in the same plane as the focus of the lenses, and regardless of the position of the eye behind the scope, this makes no apparent or no real movement of the reticle on the target itself, so if the shooter can look through the scope and see the juncture of the crosshairs, and it is on his target, if he properly manipulates the trigger he will get a hit.

Mr. SPECTER. Have you had an opportunity to examine the documents identified as Commission Exhibit No. 239 and Exhibit No. 1 to Major Anderson's deposition, Sergeant Zahm?

Sergeant ZAHM. Yes; I have.

Mr. SPECTER. Based on the tests of Mr. Oswald shown by those documents, how would you characterize his ability as a marksman?

Sergeant ZAHM. I would say in the Marine Corps he is a good shot, slightly above average, and as compared to the average male of his age throughout the civilian, throughout the United States, that he is an excellent shot.

Mr. SPECTER. How much familiarity would a man with Oswald's qualifications, obtained in the Marine Corps, require in order to operate a rifle with a scope such as a Mannlicher-Carcano rifle with a four-power scope?

Sergeant ZAHM. How much familiarity would he require?

Mr. SPECTER. Let me rephrase the question. Would it be very difficult for a man with Oswald's capabilities as a marksman to use a rifle with a four-power scope?

Sergeant ZAHM. No; I feel that the instruction that he had received qualifies him on the basic fundamentals of marksmanship. There are just a few refinements in the operation of the bolt rifle and the scope through a minimum amount of experimenting would make him as proficient with the bolt and the scope as it did with the weapons he received instruction on, and if not it would improve his proficiency actually through the use of the telescope. I feel that this would be an advantage.

Mr. SPECTER. How many shots in your opinion would a man like Oswald have to take in order to be able to operate a rifle with a four-power scope, based on the training he had received in the Marine Corps?

Sergeant ZAHM. Based on that training, his basic knowledge in sight manipulation and trigger squeeze and what not, I would say that he would be capable of sighting that rifle in well, firing it, with 10 rounds.

Mr. SPECTER. Would dry runs be an aid to a man like Oswald in learning how to operate a rifle with a scope on it.

Sergeant ZAHM. Yes.

Mr. SPECTER. Would you describe for the record what is meant in marksmanship terms by a dry run?

Sergeant ZAHM. Dry firing is working the bolt and manipulating the trigger and alining the sights, whether it be scope or iron, without any ammunition. The advantage in the scope in dry firing is that when he snaps the trigger or squeezes the trigger, he can see any apparent error in his trigger manipulation, movement of the piece, by the jump of the crosshair much easier than he can with iron sights.

Mr. SPECTER. Would the use of a four-power scope be a real advantage to a marksman of Mr. Oswald's capabilities or of a slight advantage, or how would you characterize the advantage that he would obtain, if any, from the use of such a scope?

Sergeant ZAHM. I consider it a real advantage, particularly at the range of 100 yards, in identifying your target. It allows you to see your target clearly, and it is still of a minimum amount of power that it doesn't exaggerate your own body movements. It just is an aid in seeing in the fact that you only have the one element, the crosshair, in relation to the target as opposed to iron sights with alining the sights and then alining them on the target. It is a real aid.

Mr. SPECTER. Sergeant Zahm, I am now going to show you the same photographs which I showed to Major Anderson in setting the basis for asking you a hypothetical question on capabilities here. As the record will show, we have heretofore before the President's Commission entered into evidence Exhibit No. 347 which is an overhead shot of Dealey Plaza. Commission Exhibit No. 348, which I am now displaying to you, is a photograph of the Texas School Book Depository Building. The evidence in the record indicates that the marksman stood at the point designated "A" with the lower half of the window being raised halfway, and the gun protruding out of that window pointing down the street called Elm Street in approximately the angle of my pencil which is virtually although not exactly straight down the street. Elm Street declines 3° as it slopes under the triple underpass.

As the evidence will further show, Commission Exhibits Nos. 893 and 895 respectively depict frames 210 and 225 of the Zapruder film which is a range of the first shot from 176.9 feet to 190.8 feet. In the lower left-hand corner under designation "Photograph through rifle scope" there is shown the view of the marksman from the sixth floor of the depository building as he looked down at President Kennedy with this picture being taken of a stand-in for President Kennedy, with the white mark designating the spot on the President where the first bullet struck him.

Now assuming that the President was struck under those circumstances at a distance of from 176.9 feet to 190.8 feet, using a 6.5 mm Mannlicher-Carcano rifle with a four-power scope, would a man with Oswald's marksmanship capabilities be able to complete such a shot and strike the target on the white mark there?

Sergeant ZAHM. Very definitely.

Mr. SPECTER. How would you characterize that, as a difficult, not too difficult, easy, or how would you characterize that shot?

Sergeant ZAHM. With the equipment he had and with his ability, I consider it a very easy shot.

Mr. SPECTER. Now taking a look at Commission Exhibit No. 902, which as the record will show, has been introduced into evidence to depict the shot which struck President Kennedy in the head at a distance from the rifle in the window to the part of the President's body being 265.3 feet. Assuming the same factors about using a Mannlicher-Carcano rifle and pointing it down Elm Street as shown on Commission Exhibit No. 347, would a marksman of Mr. Oswald's capabilities using such a rifle with a 4-power scope be able to strike the President in the back of the head? Would Mr. Oswald possess the capability to complete such a shot which did, in this situation, strike the President in the back of the head?

Sergeant ZAHM. Yes; I think that aiming at the mass of what portion of the President is visible at that distance and with his equipment, he would very easily have attained a hit, not necessarily aiming and hitting in the head. This would have been a little more difficult and probably be to the top of his ability, aiming and striking the President in the head. But assuming that he aimed at the mass to the center portion of the President's body, he would have hit him very definitely someplace, and the fact that he hit him in the head, but he could have hit, got a hit.

Mr. SPECTER. So you would have expected a man of Oswald's capabilities at a distance of 265.3 feet to strike the President someplace aiming at him under those circumstances?

Sergeant ZAHM. Yes.

Mr. SPECTER. And within the range of where you would expect him to hit him, would that include the President's head?

Sergeant ZAHM. Yes.

Mr. SPECTER. And how would you characterize that shot with respect to whether it was difficult or not difficult?

(Discussion off the record.)

Mr. SPECTER. Let's go back on the record. May the record show that Sergeant Zahm has questioned the appearance of the "photograph through rifle scope" which appear on Exhibits Nos. 895 and 902. And as the record will show, there

are only four photographs on Exhibit No. 895 whereas there are eight on Commission Exhibit No. 902, so that necessarily the photograph through the rifle scope is much smaller as it is depicted on Exhibit No. 902, and I want you to bear that in mind, Sergeant Zahm, in answering the question as to whether you consider the shot at a distance of 265.3 feet to be difficult or not difficult; or characterize it for me in your own words.

Sergeant ZAHM. I consider it still an easy shot, a little more difficult from the President's body position and increase in distance of approximately 40 feet, but I still consider it an easy shot for a man with the equipment he had and his ability.

Mr. SPECTER. Assuming that there were three shots fired in a range of 4.8 to 5.6 seconds, would that speed of firing at that range indicated in the prior questions be within Mr. Oswald's capabilities as a marksman?

Sergeant ZAHM. Yes.

Mr. SPECTER. What effect if any would the alinement of the street have on the moving vehicle in the way that it is shown on the picture, Exhibit No. 348?

Sergeant ZAHM. This is a definite advantage to the shooter, the vehicle moving directly away from him and the downgrade of the street, and he being in an elevated position made an almost stationary target while he was aiming in, very little movement if any.

Mr. SPECTER. How would the fact that the street had a 3° decline affect the difficulty of the shot.

Sergeant ZAHM. It would make it easier because Oswald was in an elevated position, and therefore if the car was traveling on a level terrain, it would apparently—he would have to keep adjusting by holding up a little bit as the car traveled. But by going downgrade this just straightened out his line of sight that much better.

Mr. SPECTER. So that if the car had been proceeding on a level, the assassin would have had to have raised his weapon as the distance between the rifle and the car increased to allow for trajectory?

Sergeant ZAHM. No; just to allow for the movement of the targets, the travel. Assume that you are aiming standing at ground level and aiming down a little at somebody walking straight away from you, and you could hold your finger and point to him and never have to move it. But when he gets to the bottom of the hill and the ground levels out, then as he continues on you have to point your finger—

Mr. SPECTER. Raise your finger as you are indicating with your finger now?

Sergeant ZAHM. Right; you would have to raise your finger to track the target.

Mr. SPECTER. So that if you were aiming at a man in a moving car driving on the horizontal, as he got farther away from you, would you (a) hold your rifle at the same level, (b) lower it, or (c) raise it?

Sergeant ZAHM. If you were in an elevated, a slightly elevated position, and he was driving on straight level terrain, you would have to continually track and raise your weapon as he increased his distance from you.

Mr. SPECTER. And if he was going down in an angle of descent, would that decrease the necessity for you to raise your rifle in tracking him?

Sergeant ZAHM. Right; it would slow the movement down. There still might be a slight movement, but it wouldn't be as fast. Therefore, not affecting the aiming or possibly having to introduce a lead in your aiming, because the target is staying relatively in the same position on the line of sight.

Mr. SPECTER. So then it would have been an aid to the assassin to have had the President's car going on a downgrade because that would have taken into consideration some of the adjustment necessary by virtue of the greater distance between the rifle and the victim?

Sergeant ZAHM. Yes.

Mr. SPECTER. Do you have anything to add, Sergeant Zahm, which you think might be helpful in this analysis?

Sergeant ZAHM. No, sir; I don't think so.

Mr. SPECTER. Thank you very much for appearing before the Commission today, sir.