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Who Shot President Kennedy?

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Using previously unavailable technology, NOVA probes the available evidence surrounding the 1963 assassination of John F. Kennedy.

INTRODUCTION

NARRATOR  
The weather couldn't be better. We have a brilliant sun at this moment. The wind has diminished considerably.

NARRATOR  
On November 22, 1963, President John Fitzgerald Kennedy made a political visit to Dallas, Texas. At forty-six, in the third year of his administration, he and his glamorous wife, Jackie, had captured the imagination and the heart of the nation.

NARRATOR  
Shaking hands with many of the people who have come here to see him. The gun-metal grey limousine, blue and grey, is pulling away now from the fenced area.

NARRATOR  
The presidential motorcade drove through the streets of Dallas enroute to a luncheon speaking engagement at the Trade Mart.

NARRATOR  
The president and Mrs. Kennedy seated on the back seat. The governor and Mrs. Connally on the second seats or jump seats. And then the official driver and Secret Servicemen are in the front seat. The president's car is now turning onto Elm Street and it will be only a matter of minutes before he arrives at the Trade Mart.

NARRATOR  
It appears as though something has happened in the motorcade route. Something I repeat has happened in the motorcade route. There's numerous people running up the hill alongside Elm Street there by the Stemmons Freeway. Several police officers are rushing up the hill at this time. Stand by.

NARRATOR  
Parkland Hospital. There has been a shooting. Parkland Hospital has been advised to stand by for a severe gunshot wound. The policeman says, "No, you cannot come in here, you cannot come in here. We'll let nobody else in." It was definitely the president's car and just now we've received reports here at Parkland that Governor Connally was shot in the chest and the first unconfirmed reports say the president was hit in the head. Just a moment. We have a bulletin coming in. The president of the United States is dead. Women here in shock, some have fainted. Grown men, Secret Servicemen standing by the emergency room, tears streaming down their faces. There's only one word to describe the picture here, and that's grief, and much of it. It's official. As of just a few moments ago, the president of the United States is dead.

NARRATOR

In the past twenty-five years, there were two major federal inquiries into the murder of the president. One concluded that Kennedy was killed by a lone assassin shooting from the far window of this room; the other concluded there was an accomplice. Today questions are still being asked.

I'm Walter Cronkite. Which conclusion does the evidence really support? Are there reasons to believe there was another gunman? And did someone tamper with what should be the best evidence--the body of the slain president? Eyewitness testimony raised these doubts but cannot resolve them. Even modern forensic science--ballistics, analysis of acoustics, photography, autopsy records--can only bring us closer to an answer to the question, "Who Shot President Kennedy?"

NARRATOR

Tentative answers to the question began to form the same afternoon of the murder, at this Dallas movie house. Lee Harvey Oswald was arrested there as a suspect in the killing of a Dallas policeman less than an hour after the President died. Before the evening was over he also was accused of being the rifleman who assassinated Kennedy.

MEMSREEL

Lee Harvey Oswald:

These people have given me a hearing without legal representation or anything.

Questioner:

Did you shoot the president?

Lee Harvey Oswald:

I didn't shoot anybody. No sir.

NARRATOR

He insisted that he was innocent of both murders. On the morning of November 24, millions of Americans watched as Kennedy's casket was brought to the Capitol Building, where he would lie in state. As the procession was underway in Washington, in Dallas the news media crowded into the basement of police headquarters waiting for Oswald to be transferred from the city lockup to the more secure county jail.

MEMSREEL

Newscaster:

Oswald has been shot! Oswald has been shot! Holy mackerell! The shot, it's a mass confusion here. Rolling and fighting. As he was being led out now, as he was being led

Newscaster (cont'd.):

back, he was thrown to the ground. The police have the entire area blocked off.

NARRATOR

Jack Ruby, a striptease club owner with mafia ties, killed Oswald. Suspicions quickly grew that Oswald was killed to conceal his role in a conspiracy.

MEMSREEL

Newscaster:

Ten months after the fateful November 22, the seven members of the Warren Commission, headed by the Chief Justice of the Supreme Court, came to the White House to give to the president the results of their painstaking investigation into the determinable facts of the assassination of President John F. Kennedy.

NARRATOR

People were eager for the truth about the case. The Warren Commission published twenty-six volumes filled with evidence gathered for it by the FBI, which investigated thousands of leads and used the latest scientific tools. Readers learned that the commission came to the same conclusion that local police officials had reached within hours after Oswald's capture: Lee Harvey Oswald, acting alone, had murdered President Kennedy and wounded Texas Governor John Connally.

The case that Oswald was the lone assassin seemed strong. As the motorcade passed, many witnesses heard three shots fired from the sixth floor of this, the Texas Schoolbook Depository Building. Oswald worked in the building and was stationed on the sixth floor that day. Within minutes after the shooting, police found book cartons piled around the window. They concluded it was the sniper's nest. The police also found three spent 6.5 mm. cartridges next to the window. They also discovered a bolt-action rifle near-by between boxes, and Oswald's palm print was later found on it. Handwriting experts found that Oswald had purchased the rifle under an assumed name. He bought it for under \$20 from a mail order house. Two large bullet fragments were recovered from the limousine. One whole bullet was found on a hospital stretcher. The bullet, fragments and cartridges were all ballistically traced to Oswald's rifle.

The president's body was examined at Bethesda Naval Hospital near Washington D.C., six hours after his death. The official autopsy confirmed that Kennedy had been hit twice. One bullet went through his neck; another



NARRATOR (continued)  
caused a massive and fatal wound to his head. The autopsy found both shots came from behind and above, from the direction of the Schoolbook Depository Building. All of these facts seemed to prove Oswald alone was responsible for the assassination.

But critics were quick to point out weaknesses and contradictions in the evidence. Many writers claimed it was physically impossible for one man alone to have done all that the Warren Commission said Oswald had done. They argued the Commission discounted eyewitness and photographic evidence suggesting there was a second gunman. New Orleans District Attorney Jim Garrison conducted a trial in 1968 based on his belief that Oswald was part of a combined CIA-Mafia assassination plot. Garrison's case collapsed.

Nevertheless, by the mid-1970s several Warren Commission members and President Johnson said they doubted Oswald acted alone--and opinion polls showed that four out of five Americans believed there must have been a second gunman.

All of these factors fueled a new investigation that began in 1977--this one by Congress. The House Select Committee on Assassinations agreed with the Warren Commission that Oswald killed the president and wounded Governor Connally. But they added--there was a second gunman, who fired and missed. The second gunman conclusion was based in part on acoustic evidence, which remains controversial. So even though both government investigations agreed about Oswald, the issue of a conspiracy was never laid to rest. Even today critics continue to question whether the physical evidence involving the rifle and bullets supports the lone assassin conclusion. That conclusion is known as "the single bullet theory."

This is Dealey Plaza, the scene of the crime. NOVA has had this computer model of Dealey Plaza built to accurate scale to help our investigation. Here is the Schoolbook Depository Building, here the grassy knoll where a second gunman may have been concealed. The motorcade route took Kennedy's limousine down Houston Street and then, with a sharp left, on to Elm Street.

The Warren Commission initially assumed the first bullet wounded the president in the neck, the second wounded the governor, and the third struck Kennedy in the head and killed him. This was partly based on Governor Connally's eyewitness account.

NEWSREEL

Newsreelers:

As soon as he was able, Governor Connally appeared on nationwide television to give the

Newsreelers (cont'd):  
most lucid account so far of the tragic events.  
Governor Connally:  
We had just turned the corner. We heard a shot. I turned and looked in the back seat. The president was slumped. He had said nothing. Almost simultaneously, as I turned, I was hit and I knew I'd been hit badly.

NARRATOR  
If Connally was correct that he and Kennedy were hit by separate shots, this created a timing problem.

Josiah Thompson analyzed this problem in his book, Six Seconds in Dallas, considered one of the most perceptive analyses of the assassination. As a private investigator, Thompson has worked on over 100 murder cases. He helped examine Kennedy's murder for Life Magazine. Some of his arguments are based on FBI test results.

JOSEPH THOMPSON  
Well, here's the problem--the mechanical firing time of the rifle as tested by Frazier of the FBI. By mechanical firing time we mean just this: boom, working the bolt and pulling the trigger again. The necessary minimum mechanical firing time is 2.3 seconds. If you add on to that realistic additions, such as re-acquiring the target in the scope and secondly, zeroing in the cross hairs to permit accurate shooting, you're now no longer at 2.3 seconds. You're up to three or four seconds between shots on this rifle. Just given the Zapruder film, wasn't enough time for this rifle to get off two shots in that time interval.

NARRATOR  
Abraham Zapruder was standing here on the grassy knoll when he took the most famous pictures of the assassination, with his 8 mm home movie camera. The camera ran at eighteen frames per second, so every frame is a snapshot of the event, an 18th of a second apart. After closely analyzing his film, the Warren Commission then decided Oswald's first shot had missed and his second shot struck both men. This was their solution to the timing problem and it became known as the "single bullet theory."

Josiah Thompson argues that the Zapruder film also shows the theory is wrong.

JOSIAH THOMPSON

This is frame 207. Now between this frame and frame 222 when the car emerges from the sign, the Warren Commission believed that Kennedy and Connally were both hit by the single bullet. At this point we see no indication of any hit. This is now frame 222. Connally is emerging from behind the sign, looks apparently composed, unhit. We now have frame 225. For the first time we can see that John Kennedy has clearly been hit. Connally's sitting in front of him, looking to his right. This is frame 230. Connally's sitting composed in front of him, holding his Stetson, looking calm.

According to the Warren Commission, Connally's been hit by a bullet that blew five inches out of his fifth rib and shattered his wrist at this point. Moving ahead now to frame 236, Kennedy is obviously reacting. Connally is turning, his mouth open in what may be "Oh no, no," which he said he was saying when he was hit. Two-three-seven now, Connally continuing his turn and now in the next eighteenth of a second, enormous changes. Connally's shoulder's been driven down, his hair has been displaced and his cheeks are puffed. This is frame 238. In fact, what we're watching is a snapshot taken just before and just after the impact of the bullet driving into Connally's shoulder, compressing his lung, hence puffing his cheeks. If that's what we're seeing then it's quite clear Kennedy was hit significantly earlier and the single bullet theory is wrong.

NARRATOR

But a congressional panel looked at the Zapruder film and concluded that Connally simply reacted to the shot later than Kennedy. The panel was headed by forensic pathologist Dr. Michael Baden.

MICHAEL BADEN

In the Zapruder film there appears to be a delayed reaction in Governor Connally responding to injury. However, people often respond in delayed fashion to gunshot wounds. There isn't an instantaneous response.

NARRATOR

Despite his first account of what happened, Governor Connally later testified that he had not seen Kennedy wounded by the first shot. Congress determined that Connally turned here in response to hearing that first shot, but the shot missed--and both men were then wounded by the single bullet three seconds later when they were hidden by the sign. Three seconds between shots was enough time for a gunman to fire twice.

So, as far as timing is concerned, although it cannot be ruled out that the first bullet struck Kennedy and the second--shot by another gunman--hit

NARRATOR (Continued)

Connally, it is plausible to conclude both men were wounded by a single bullet.

Darrell Tomlinson, a Parkland Hospital employee, re-enacts how he found that bullet on a stretcher. The bullet was ballistically traced to Oswald's rifle. The Warren Commission concluded that it was the bullet that had wounded both men and that it had fallen out of Connally's clothing onto his hospital stretcher.

DARRELL TOMLINSON

The bullet was found here, in this area, and not on that stretcher. That's the stretcher that I took off the elevator.

NARRATOR

The stretcher he took off the elevator was Connally's, so Tomlinson found the bullet on a different stretcher not connected to the case. This led critics to claim the bullet was planted. But the commission decided Tomlinson was mistaken.

DARRELL TOMLINSON

It was there when I came up.

NARRATOR

This is the bullet. Could it look like this after it went through Kennedy's neck and then struck the Governor? The surgeon who operated on Governor Connally's chest wounds at Parkland Hospital was Dr. Robert Shaw.

DR. ROBERT SHAW

The bullet struck lateral to the shoulder blade, stripped out approximately ten centimeters of the fifth rib, driving fragments of the rib into his chest, went on and struck the radius bone of his lower arm at this point, and a small fragment of bullet entered the inner aspect of his lower left thigh. I have never seen a bullet that had caused as much bony damage, as you found in the case of Governor Connally, remain as a pristine bullet.

NARRATOR

At the National Archives in Washington, Dr. Cyril Wecht, former head of the American Academy of Forensic Sciences, examined bullets the Warren Commission had test fired. To find out if a bullet could break so many



NARRATOR (Continued)  
bones and remain apparent in fact, the commission used a rifle similar to Oswald's.

DR. CYRIL WECHE

And then they got these bullets, all 6.5 mm, and they test-fired, first into cotton wadding. These two bullets were fired into cotton wadding, striking nothing. You will note that these bullets have a minimal degree of protrusion of the lead at the base; otherwise they are intact, which is what you would expect. The next bullet broke one rib of a goat carcass. Notice please it's widening. This bullet struck one of the two large wrist bones in a human cadaver. They wanted to simulate the fracture of that same bone Governor Connally. Please note that substantial deformity. This is classical, typical when a bullet strikes a dense, heavy bone or some other very firm object. Now I want you to look at the so-called stretcher bullet. This bullet is the actual bullet that the Warren Commission claims broke both John Connally's right fifth rib, destroyed four inches of that bone, pulverizing it, and which caused a comminuted or an extensively fragmented fracture of a dense heavy bone down near the base of the wrist, and emerged in this condition. You will see that it is near pristine. As a matter of fact, its nose, the cone, the sides of the bullet are completely intact and unscathed. It has only minimal protrusion of the lead core at the base, in the same fashion that the two bullets did that had been fired into test wadding. That's from the impact of the firing mechanism.

NARRATOR

Some ballistics experts argue that the Warren Commission should have test-fired through two bodies instead of just one. They say the single bullet would have been slowed down by passing through Kennedy's neck before entering Connally's body. And a bullet that has slowed down is less likely to be deformed.

The single bullet was also examined to determine if it is chemically identical to the bullet fragments removed from Connally's arm. Critics were convinced they would not match and thus the single bullet theory would be proven wrong. Congress asked Dr. Vincent Guinn to use a technique called neutron activation analysis to find out.

DR. VINCENT GUINN

What I did in the analysis was to take very small pieces of each of the samples and put them in our nuclear reactor, bombard them with neutrons and that made some of the elements present in the bullet lead radioactive.

DR. VINCENT GUINN (Continued)  
Then I counted them, each sample on what's called a gamma ray spectrometer which detects the different radioactive elements.

NARRATOR

This enables Dr. Guinn to measure them to learn if a particular sample is chemically identical to a particular bullet.

VINCENT GUINN

The fragments that were recovered from Governor Connally's wrist matched in composition the bullet lead in the so-called stretcher bullet.

NARRATOR

It is possible that other bullets manufactured at the same time would have very similar composition and could also have been the source of the fragments. Nevertheless, Dr. Guinn's results support the single bullet theory, but don't prove it. And the bullet is not misshapen as the test bullets remain an open question. Dr. Wecht urges a new firing test to help settle that issue.

Was it possible for a single bullet fired from the sixth floor of the Schoolbook Depository building to go through the bodies of both the president and the governor? The FBI restaged the shooting for the Warren Commission which concluded that the angle of trajectory was feasible. But looking at the wounds, Dr. Shaw disagrees.

ROBERT SHAW

I couldn't quite understand why a bullet going through the president's neck, coming from the right and above, exiting out through his throat, would then zig and zag to strike the governor, who was sitting directly in front of the president. It would seem to me that that bullet would've struck the governor in the left side of his chest, rather than the right side of his chest.

NARRATOR

It appears initially that Dr. Shaw is correct. Photographs showed Connally seated slightly to Kennedy's left and the location of their wounds suggest they were hit by two separate bullets, not by a single bullet fired from the sixth floor. Looking at the limousine from ground level the bullet paths also don't line up with the sixth floor. The path of the bullet through Kennedy's neck goes slightly downward and doesn't line up with the wounds through Connally, which go sharply downward. Dr. Baden.

MICHAEL BADDEN

The bullet path through President Kennedy's back and neck indeed was in the anatomic position at somewhat of an upward angle through the neck, slightly upward. But this is entirely consistent with a bullet trajectory coming from above downward at a 20, 30 degree angle if the president were leaning forward at the time that the bullet struck him in the manner that I'm doing. Now, as far as Governor Connally's wound goes, it was going downward and he would've--it would be entirely consistent with entering, if he were leaning backward slightly. So, one way in which a single bullet could readily accommodate the president and Governor Connally would be the president leaning slightly downward and the governor slightly backward.

NARRATOR

The model suggests that from this point of view the angle of trajectory for the bullet path could line up and lead back to the sixth floor window.

What about the argument that the bullet had to zig and zag to strike both men? The model shows that if Connally had moved just slightly more to Kennedy's left, perhaps when he turned to look over his right shoulder--which is what he said he did--then the angle of trajectory for the bullet path could also line up. Additionally, a bullet doesn't always travel in a straight line after it enters a human body, as this Army ballistics film demonstrates. When a rifle bullet is fired into a block of gelatin simulating human flesh, it can change direction.

So, the gelatin test demonstrates that the bullet could have changed direction as it went through Kennedy's neck--even without striking bone, and changed direction again after it entered Connally's chest, and the computer model suggests that the bullet paths through both men could line up.

Despite all the efforts by critics, the single bullet theory has yet to be disproven. But the fact that the single bullet theory cannot be proven beyond a shadow of a doubt, contributed to the search for another gunman. And there already was evidence suggesting there was a second gunman, firing from the grassy knoll.

NEWSREEL

Newscaaster:

There's numerous people running up the hill  
alongside Elm Street there by the Steemans  
Freeway. Several police officers are  
rushing...

NARRATOR

From the moment the president was killed, many eyewitnesses testified that they believed there was a man with a gun on the grassy knoll. One eyewitness was Malcolm Summers, who re-enacted his experience for NOVA.

MALCOLM SUMMERS

After the motor van had passed, I walked about a minute and then I came running over across to the knoll. When I got here, I was stopped by a person in a suit with an overcoat over his arm, threw over his arm. Also had a gun under his arm. It looked like a little machine gun to me, a small machine gun.

NARRATOR

Malcolm Summers was one of several eyewitnesses, including at least one Dallas policeman, who ran into people claiming to be federal officials and who were never found. Chief Counsel for the House Assassination Committee, Robert Blakely.

ROBERT BLAKELY

A careful examination of where all of the Secret Service agents were that day and their duty assignments indicates that no Secret Service agent was in that area.

NARRATOR

Another eyewitness, Skinny Holland, watched from this overpass. Josiah Thompson interviewed Holland for his book.

JOSIAH THOMPSON

He said he and six or seven of his fellows also saw some puffs of smoke come out from under the bushes near a stockade fence on the grassy knoll. This meant so much to them they ran right over there, as soon as the shooting was over. About fifteen feet down from the corner he found some fresh footprints, some cigarette butts--indications that somebody had been there.

NARRATOR

Memories can fade. But photographs are fixed in time. This perhaps was the most photographed murder in history and critics thought they saw gunmen in at least six different Dealey Plaza pictures.

This man appears to shoot directly at the camera, but photo analysis revealed he was only lights and shadows.



NARRATOR (Continued)

Critics said this open umbrella was a CIA weapon which the man holding it used to fire a dart that paralyzed Kennedy in the neck. But a witness told Congress he was the man with the umbrella, and he had held it open to make a symbolic political statement.

Chairman:

I think that it's important that committee staff open this umbrella so we can ascertain there's no dart gun in it.

Witness:

As far as I'm concerned, they are certainly welcome to.

Chairman:

May you ought to turn that way with it.

NARRATOR

Congress hired a group of experts to examine all the photos. In this one the limousine is in the foreground, moments before Kennedy was first wounded. On the grassy knoll is a shape resembling a black dog. Photo analyst Bobbie Hunt.

BOBBY HUNT

It is a black shape, apparently the head and shoulders of a man. In the region of what we call the face there are some pink tones, purported to be flesh tones, and there was also an object which looked like a rifle with a flash suppressor or a nozzle on the rifle. We concluded that this was a human being. That conclusion was derived from the enhancement and from some color spectrographic analysis we did on the visible flesh tones of the object. We did not conclude, however, that that was a rifle. We simply said it was consistent with a blur induced by the motion of the photograph.

NARRATOR

Critics argued this picture showed that same person from another angle, right at this point in the photo. The congressional photo team decided not to enhance it because it was too deteriorated.

At NOVA's request, researchers at Polaroid and the Massachusetts Institute of Technology agreed to look at the photo. First, Brian Hallstrom scanned a negative of the photo to measure the light intensity, bit by bit, of every part of the picture. A computer tape with that information was given to Steve Isabelle, who used a number of techniques to increase the contrast and sharpen the edges of objects seen in the photo. An outline has been added to suggest what critics claim is the man and the flash of a gun

NARRATOR (Continued)

hiding part of his face. Hallstrom and Isabelle believe this could be a man, but this spot is most likely sunlight filtering through trees.

Steve Isabelle:

What I see in the image is an object that could possibly be a person. Can you see that?

Brian Hallstrom:

I think that that requires a little bit of imagination, but I believe that you can see something is there about the right size.

NARRATOR

Some people believe there is another suspicious shape in a different part of the photo, behind the fence. It is in the same place where Skinny Holland and others saw a puff of smoke and fresh footprints.

If that shape was an assassin, this is the view he would have had. The motel shows that his view of the limousine would have been blocked by a retaining wall on the knoll. Kennedy appears here; a gunman could have aimed and fired. The location of the limousine in the motel corresponds with frame 313 of the Zapruder film.

In the Zapruder film it can be seen that Connally is turning, perhaps in reaction to hearing the first shot, then both he and Kennedy are hidden behind the sign when they presumably were both wounded by the second shot. Kennedy is struck in the head and killed at this moment; frame 313.

The motel does not prove someone struck the president from the knoll. It does show that it was possible.

The violent motion of Kennedy's head to the left and backwards is another reason many people believed the shot came from the grassy knoll. It seemed to be a logical conclusion. Dr. Wecht.

CYRIL WECHT

If you have that kind of force slamming into the rear of somebody's head, then that should drive the individual forward. But instead, we have him moving backward and to the left. That suggests the very distinct possibility of another shot having been fired in synchronized fashion from the right side, the so-called grassy knoll area.



NARRATOR

But a test using 6.5 mm bullets firing into human skulls appear to discount this argument. Dr. John Lattimer, a physician and Warren Commission defender, filmed his own test--shooting at a skull filled with white paint and brain tissue. Shot from behind, the skull is propelled backward--similar to what happened to Kennedy. Although not conclusive, the test suggests the fatal shot could have come from behind. This view was also expressed by the late Nobel physicist Luis Alvarez.

So, neither the photographic evidence nor the movement of Kennedy's head prove he was struck from the grassy knoll. But much of the eyewitness testimony has never been explained, and there were ear witnesses who heard shots from several locations. Malcolm Summers.

MALCOLM SUMMERS

I do think the first shot came from the Schoolbook Depository up there, and then when the second shot came, I did not know who, who all was shooting. I was thinking it was more than one person shooting him. The first shot sounded just like a little pop. It sounded like a firecracker from a faraway distance. The others sounded real close, real close.

NARRATOR

Years after the assassination, it was claimed that the sounds of the gunshots that Summers and others heard had been picked up by a microphone accidentally stuck open on a policy motorcycle and recorded on a dictabelt at Dallas police headquarters. Critics argued the dictabelt recorded the sounds of four gunshots, one more than Oswald could have fired. Were the sounds the actual shots?

Congress hired acoustic experts to find out. They set up an elaborate test. With microphones placed strategically in Dealey Plaza, they recorded the sounds of rifle shots from the sixth floor of the Schoolbook Depository and from the grassy knoll. Comparing those shots with the sounds on the dictabelt, they confirmed that the dictabelt had actually recorded the sounds of four gunshots, not three. Then with a close study of the physical layout of Dealey Plaza they calculated the unique echo pattern that would be found if a shot had been fired from the grassy knoll.

The result was this acoustic fingerprint. This pattern of twenty-six distinct echoes matched, point for point, the echoes on the police recording. It led to a dramatic conclusion.

MARK WEISS

It appears that, with the probability of 95 percent or better, there was indeed a shot fired from the grassy knoll.

NARRATOR

Challenges to this acoustic finding came from some unusual sources. The most important came from Steve Barber, a rock drummer living in a small town in Ohio.

STEVE BARBER

I didn't have access to the tape recordings themselves at the point where I was, you know, trying to study them. And July of 1979, Gallery Magazine put out this special issue on the assassination of President Kennedy. And in it, included a paper record of the recorded gunshot evidence. And if you overlook the narration you can pretty much hear what they're talking about. I just played this thing to death, just trying to hear, you know, the gunshots and hear for myself what they really said was 95 percent evidence of a conspiracy.

NARRATOR

Steve Barber alone heard something all the experts missed, the barely audible sound of Sheriff Decker at headquarters telling policemen on the scene, "hold everything secure..." The stuck open microphone which was on Channel One, had somehow picked up Sheriff Decker's words from Channel Two--a phenomenon known as cross-talk--and back at police headquarters the dictabelt recorded what the microphone had picked up.

STEVE BARBER

I found that when Sheriff Decker is speaking, his voice is coming through the open microphone during the sound impulses that the acoustic experts said were gunshots. But he didn't make his statement until a minute and a half after the assassination had already occurred. So those cannot be gunshots simply because of that.

NARRATOR

In 1982, the National Academy of Sciences confirmed the cross-talk Steve Barber discovered, and thus concluded the acoustic evidence of a fourth shot, coming from the grassy knoll, was invalid. This left Congress with no scientific evidence of conspiracy. However, some congressional experts believe the cross-talk might be due to a recording mixup on the dictabelt, and they point out that the academy did not account for the acoustic fingerprint of the grassy knoll shot. Chief Counsel Blakey.

ROBERT BLAKEY

You can reconstruct an acoustical fingerprint for each of the four shots. We did it for the shot on the grassy knoll. If it were to be done for the other three shots, it would either corroborate what we did or tend to undermine it. I would like to see what a fingerprint, acoustical fingerprint analysis, of the other three shots indicates.

NARRATOR

So, if there was a grassy knoll gunman, as eye and ear witnesses testified, the best scientific analysis available today of the photographic and acoustic evidence does not yet prove it. The one remaining category of doubt relates to what should be the best evidence, the body of the slain president.

Controversial evidence about the body of the president has been the focus of a new critical approach developed by David Lifton. His investigation led to a thoroughly researched, best-selling book published after Congress re-examined the assassination. Lifton found new evidence about the autopsy and new evidence from eyewitnesses whom he filmed. This led him to a provocative conclusion.

DAVID LIFTON

What is very clear is that the president's body did not make an uninterrupted journey from Dallas to Bethesda. It began in a large Parkland Memorial Hospital.

AUBREY REICH

I helped put President Kennedy's body in a bronze ceremonial casket on November 22, 1963 at Parkland Memorial Hospital.

DAVID LIFTON

He wrapped the body in sheets. It was placed in the casket.

NARRATOR

The bronze casket was placed on board Air Force One. This was not the casket from which Kennedy's body was removed by Bethesda autopsy technician Paul O'Connor.

PAUL O'CONNOR

We opened the plain shipping casket up and there was a gray body bag zipped shut. We unzipped the body bag and the president's body was lifted out of the body bag.

NARRATOR

Reich told Lifton that Kennedy's body was not in a body bag when it left Dallas. How could he be so certain?

AUBREY REICH

I remember picking him up. I was the one that had the blood on my shirt and everything from the body. If he had been in a crash bad ya couldn't a got any blood on ya because it's a sealed bag.

NARRATOR

Was the large bronze casket empty when it was unloaded at Bethesda, as Lifton argues? The Secret Service refused to comment for NOVA, but an air force officer claims the body could not have been switched because the casket was in his view for all but five minutes of the journey from Dallas to Bethesda. But after the body arrived at Bethesda Naval Hospital for the autopsy, many problems followed.

The autopsy should have determined how the gunshots killed Kennedy, and where the bullets entered and exited his body. Dr. James Humes, a Naval Hospital pathologist--not a forensic expert--was in charge. This was his first autopsy involving gunshot wounds. It resulted in many irregularities.

He did not examine Kennedy's clothing to locate and confirm entry and exit wounds. He did not dissect the neck wound to trace the bullet's path through the body. He did not locate the wounds with reference to fixed body landmarks and he apparently made errors of several inches in drawings locating the wounds. He did not properly examine the brain which disappeared some years later and has not been found since. He didn't realize there was a bullet wound in the front of the neck until he contacted the Dallas doctors the following day. By then the body had been removed and re-examination was impossible. And finally, he burned his original autopsy notes before they were made public. Compounding these problems, the autopsy descriptions of the wounds were substantially different from the way the doctors in Dallas described them, as David Lifton explains.



DAVID LIFTON  
We have two groups of doctors seeing the body, which is evidence. Their observations are six hours apart. What did they see in each area of the body? In the area of the neck, President Kennedy suffered a wound in Dallas which was described as an entry wound.

NARRATOR  
If Kennedy was shot from behind, the wound on the front of his neck had to be an exit wound. But that is not what Nurse Audrey Bell, on duty in the Emergency Room that day, recalls.

AUDREY BELL  
It looked small and round, like an entry wound, instead of larger like an exit wound could often look.

DAVID LIFTON  
The wound was about 5mm or a 1/4 inch across, the size of a pencil, right at the throat, at the Adam's apple. The wound Dr. Perry made a tracheotomy through.

NARRATOR  
Lifton claims he was told by the Dallas doctor who made the tracheotomy that his incision through the neck wound was smooth and less than half the width described by Dr. Humes, the autopsy doctor.

DAVID LIFTON  
More significantly, he describes it as having widely gaping, irregular edges. So the inconsistency here is that we have a widening of a wound which in Dallas was thought to be a bullet's entry. At Bethesda in the autopsy report, their conclusion is that this is the exit for a bullet which entered from behind.

NARRATOR  
The records on Kennedy's head wound, the one that killed him, also seem to be inconsistent, both in terms of size and location. Six of the Dallas doctors including the neurosurgeon who pronounced Kennedy dead, said the cerebellum was visible through the hole in the skull. But according to the autopsy, the wound was not at the bottom and back of his head, where the cerebellum is located.

In fact, in this drawing we see only a small entry wound at this location. The drawing, based on an autopsy photo of the back of Kennedy's head, was

NARRATOR (Continued)  
made public by Congress and seems inconsistent with this drawing showing the size and location of what critics point out looks like a large exit wound. The drawing was approved by Dr. McClelland, one of the attending physicians in Dallas.

DAVID LIFTON  
Based on the absence of any evidence coming from the Dallas end of the line that there were rear entries on the body, I conclude that President Kennedy was shot from the front.

NARRATOR  
This document led Lifton to conclude the wounds had been altered. It is a report written by two FBI agents who attended the autopsy. Their report states it was apparent that surgery of the head area was done before the autopsy started. Had surgery been done in Dallas?

AUDREY BELL  
No, there was no surgery done on the president's head. The president was only treated in the trauma room, in the emergency room.

NARRATOR  
This autopsy sketch done in Bethesda shows the head wound almost five times larger than the description given by a doctor in the Dallas medical team, further evidence to Lifton of an altered wound. If the wound was altered, Lifton believes it was to get access to Kennedy's brain.

DAVID LIFTON  
The brain had the bullets! That's the reason for getting access to the brain. The reason for altering the body is that the body is the diagram of the shooting. And it's the most important evidence in the case. I infer the purpose of doing it from the effect it has. Someone wants to make it appear, in the evidence, that President Kennedy was struck twice behind from the director of the Schoolbook Depository Building, and to obliterate any evidence of frontal entry. That's my opinion about what these facts mean.

NARRATOR  
The autopsy doctor refused to be interviewed by NOVA. But four of the doctors who treated Kennedy in Dallas agreed to come to the National Archives to examine photos of the president's body at the time of his autopsy. Perhaps they could corroborate or disprove Lifton's explosive



NARRATOR (Continued)  
claims of altered wounds. Would their recollection of the wounds match the photos they would be seeing for the first time?

DR. ROBERT McCLELLAND  
Let me show you to my best recollection what the wound looked like to me that day in Trauma Room One.

NARRATOR  
Before each doctor looked at the photos he described the wounds he had seen back in 1963.

ROBERT McCLELLAND  
I could see the president's head wound quite well. And I was probably looking into a wound that was on the lateral or the side part of the head and the back part of the head.

Dr. Paul Peters:  
It would be this portion of the head right here.

Dr. Richard Dulany:  
As I remember, it was like this.

Dr. "Pepper" Jenkins:  
There was a big wound, big deficit in his skull in the temporal parietal area.

Archives official:  
Would you come in please?

NARRATOR  
The examination of the fifty-two color and black and white autopsy photos by the doctors for NOVA was unprecedented. Special permission had to be obtained from the Kennedy family to arrange this. Cameras were barred from the room in which the doctors look at the pictures. Each took as much time as he felt necessary to examine them--from thirty minutes to a full hour.

PAUL PEREMS  
I would have to say honestly in looking at these photos, they're pretty much as I remember President Kennedy at the time, except for that little incision that seems to be coming down in the parietal area. I could envision that an incision might have been made in order to pull the scalp back to expose this bone to make a photograph of that area.

NARRATOR  
Perhaps this explains the surgery to the head area the FBI mentioned.

Richard Dulany:  
I don't see any evidence of any alteration of his wound in this pictures from what I saw in the emergency room.

Pepper Jenkins:  
Nothing that I have seen would make me think it's been changed from what happened that day.

Robert McClelland:  
The tracheostomy incision which was shown on several of the photographs I examined looks exactly the same size and the same configuration as it did when Dr. Barry and I did that incision. I find no discrepancy between the wounds as they're shown very vividly in these photographs and what I remember very vividly.

NARRATOR  
But do the doctors' assertions that they saw no altered wounds clear up the issue? This drawing suggests what many of the photos examined by the doctor and NOVA show--a large wound about this size and location. But what about this photo which shows what appears to be only a small entry wound in the back of Kennedy's head? Dr. McClelland speculates.

ROBERT McCLELLAND  
The pathologist has taken this loose piece of scalp, which is hanging back this way in most of the pictures, exposing this large wound and has pulled the scalp forward to take a picture. Naturally, the scalp appears to be in its normal state. And there doesn't seem to be any sort of wound in the area where I had drawn the picture that showed this large hole.

NARRATOR  
But doesn't this large wound suggest a shot from the front, as Lifton argues?

This drawing made for Congress, suggests how a small rear entry wound could have created the large wound. Finally, if the large wound was really in this part of the head, why did most of the doctors note back in 1963 that they had seen a specific part of the brain called the cerebellum?

PEPPER JENKINS  
I did say cerebellum in my first official report. And the cerebellum ordinarily is in a posterior part. And here I knew very well that the wound was more anterior than that, but there was a portion of the brain that looked like it had a stalk, and it's convoluted to look like what I thought was cerebellum.

PAUL PETERS  
I said that I thought perhaps part of the cerebellum was missing. And that shows how even a trained observer can make an error in a moment of urgency.

NARRATOR  
In fact, the Dallas doctors were caught up in an emergency life saving effort. They were not doing an autopsy or trying to describe the wounds.

RICHARD MCCLELLAND  
We simply were performing the tracheostomy and felt that it was not an appropriate thing to do at the time, to examine the head wound.

PEPPER JENKINS  
How would you do that, with the widow of the President of the United States, who is dead. What's the, no one thought about the morbidity of doing examination at that time. That would have been a little sacreligious I think, under the circumstances.

NARRATOR  
Their visit to the National Archives revealed that the doctors' original observations in Dallas were done with haste and some imprecision. It should be noted that in previous interviews with journalists some of their comments seemed to support Lifton's claims of altered wounds. But they made those comments before they saw the color photos at the National Archives.

With all the contradictions and unresolved doubts, will we ever come to a final undisputed conclusion? Josiah Thompson.

JOSIAH THOMPSON  
In a homicide case, you get a convergence of the evidence after a while. There may be discrepancies in detail, but on the whole things come together. With this case--it's now twenty-five years--things haven't gotten any simpler; they haven't come together. If anything, they've

JOSIAH THOMPSON (Continued)  
become more and more problematical, more and more mysterious. That just isn't the way a homicide case develops.

NARRATOR  
It is understandable that shock, grief and doubt elevated the tragic event of November 22, 1963 to a national obsession.

Relying mainly on analysis of physical evidence NOVA has explained many but not all questions about the assassination. The single bullet theory remains in tact, despite its implausible aspects. There is no irrefutable photographic or acoustic evidence of a second gunman. The president's body was so badly handled it probably can never be a source of verifiable evidence.

To bring us closer to the truth, there could be a new rifle test, a new acoustic test, an examination of the brain if it is ever found, an analysis for traces of blood on the single bullet. Much controversy about the assassination has been political, and the ultimate solution to the mystery may lie outside the domain of science. But science must always set the standard of proof for any answer to the question, "Who Shot President Kennedy?"

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