

## The JFK Assassination

*President John F. Kennedy*



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The assassination of John F. Kennedy, the thirty-fifth President of the United States of America, took place on Friday, November 22, 1963, in the state of Texas. Ballistic evidence played an important role in the forensic investigation of the President's death as he was fatally wounded by two gunshots.

### Description of the Assassination

President Kennedy was riding in an open top convertible limousine in a presidential motorcade through the city of Dallas, Texas. The President's wife, Texas Governor John Connally, Governor Connally's wife and a driver were also in the vehicle. As Kennedy's limousine slowly passed by the Texas School Book Depository, three shots were heard from a distance of approximately 60 meters.

As President Kennedy waved to the crowds on his right, the first bullet entered his upper back, exited through his throat and entered Texas Governor John Connally penetrating his back, chest and right wrist. The second bullet fired missed the vehicle, while the third bullet struck the President in the back of the head. After the three shots had been fired, the driver of the President's limousine sped to a local hospital in a desperate attempt to get emergency medical treatment for the President and Texas Governor. The President died before arriving at the hospital, while the Governor survived after receiving emergency surgery.

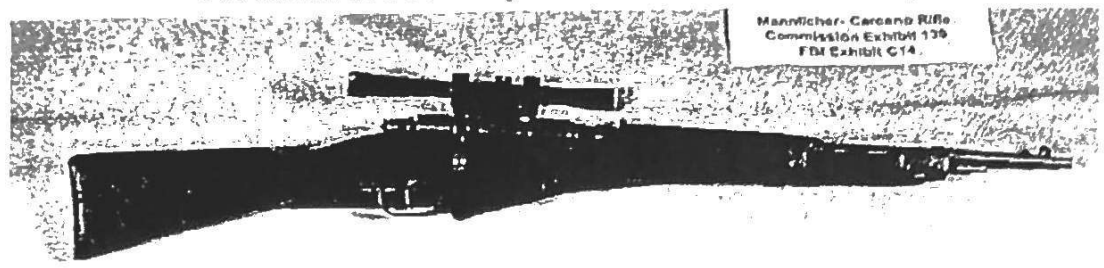
### The Investigation

The Dallas Police immediately began searching the area for signs of the assassin. Witnesses saw the shots coming from a nearby building called the Texas Book Depository. After searching the building, two police officers found an Italian bolt-action rifle on the 6th floor soon after the assassination. A witness who saw the male assassin fire the last shot from the Texas Book Depository building gave police a physical

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description. Police determined that the person that matched the description might be an employee of the Texas Book Depository who was missing, Lee Harvey Oswald.

*The Italian bolt-action rifle that killed President Kennedy*



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A few hours after the assassination, Dallas Police Officer J. D. Tippit, after hearing the assassin's description stopped Oswald on a street corner. When Officer Tippit tried to question Oswald he shot him four times with a revolver. Tippit died from his gunshot wounds and Oswald fled the scene on foot. He went into the nearby Texas Theater without paying. The police quickly arrived and arrested Oswald after being notified by theater staff.

Oswald was questioned for 12 hours about both the Tippit shooting and the assassination of the President. He denied any involvement with both murders. Paraffin tests were performed on Oswald's hands and right cheek for gunpowder residue. The results were positive for the hands and negative for the right cheek.

Two days later as Lee Harvey Oswald was being taken to the Dallas County Jail, he was shot and killed by Jack Ruby, captured on live television in the basement of Dallas police headquarters.

An official investigation by the Warren Commission conducted in September of 1964 concluded that Lee Harvey Oswald was solely responsible for the assassination of President Kennedy.

Internal Ballistic Evidence

The bullet that hit President Kennedy in the head imploded upon impact and as a result could not be analyzed for rifling impressions. However, the bullet that hit both Kennedy and Governor Connally was found in the hospital after it fell out of the shallow entry wound in Connally's leg. The bullet was a 6.5-millimeter round nose military style full metal jacket design specifically meant to pass through the human body. Important pieces of ballistic evidence related to this bullet found by the FBI included:

- Neutron Activation Analysis (NAA) of the bullet fragments in Governor Connally's wrist matched the bullet found.
- The weight of the bullet found was 158.6 grains. The average weight of a single, unfired bullet of this type is 160.8 grains. The lead fragments retrieved from Connally's wounds in the wrist weighed about 2 grains.

- Rifling impressions found on this bullet matched the lands and grooves in the rifle found at the Texas Book Depository.

*Photo of Bullet that hit President Kennedy & Governor Connally*



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from [http://en.wikipedia.org/wiki/Single\\_bullet\\_theory](http://en.wikipedia.org/wiki/Single_bullet_theory)

In October of 1981, Lee Harvey Oswald's body was exhumed after British novelist, Micheal Eddowes, proposed that the body buried was not Oswald, but a look-alike KGB assassin. Eddowes claimed that when Oswald visited the Soviet Union he was replaced with a Soviet KGB agent. In the end, the novelist's theory proved to be wrong as examination of the remains through dental records positively identified the body as being Lee Harvey Oswald.

#### External Ballistic Evidence

The bullets that hit President Kennedy were calculated to have a muzzle velocity of between 560 to 610 meters/second. Each bullet arced while traveling 58 meters in a downward trajectory with an angle of 25 degrees hitting President Kennedy's at about 518 meters/second.

#### Terminal Ballistic Evidence

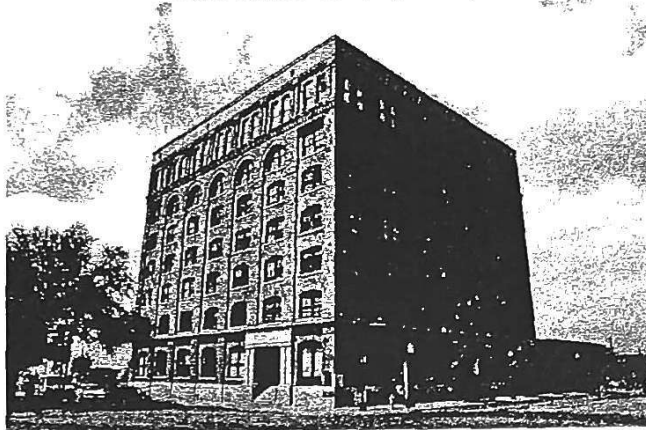
The first bullet that hit the President entered his upper back above the shoulder blade, passed through the base of his neck, bruising the upper tip of the right lung without puncturing it, then exited the front of his neck. The entry point of the bullet was 4 mm by 7mm in size, while the exit wound was 3 mm by 5 mm in size. The bullet fractured one of the President's vertebrae in his spine.

After exiting the President's neck, the bullet slowed to about 457 meters/second and started to tumble, and hit Governor Connally who was sitting in front of Kennedy. The bullet entered Connally's back, creating an 8 mm by 15 mm entry wound. This large entry wound indicates that the bullet was tumbling upon impact, which was caused by its path through President Kennedy's body. The bullet completely destroyed part of one of Connally's ribs as it smashed through his chest, leaving a 50 mm exit wound. Slowing down to 274 m/s, the bullet entered Connally's upper right wrist, depositing metal fragments and exiting through the palm. The bullet slowed to 122 m/s and embedded

itself in the front side of the Governor's left thigh, creating a 10 mm wound. It was a shallow wound as the bullet actually fell out at the hospital and was found by a hospital staff.

The autopsy of President Kennedy concluded that the second bullet, which hit his head, had been fatal. A small entry wound was visible in the rear right hand side of the President's head. The bullet imploded upon impact causing a large portion of the right side of Kennedy's brain and skull to detach.

*Texas Schoolbook Depository*



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Five years after John F. Kennedy death, former FBI agent and New Orleans District Attorney, Jim Garrison, attempted (unsuccessfully) to prove that Lee Harvey Oswald was not solely responsible for the assassination, alleging that it was a government conspiracy involving a number of different people.

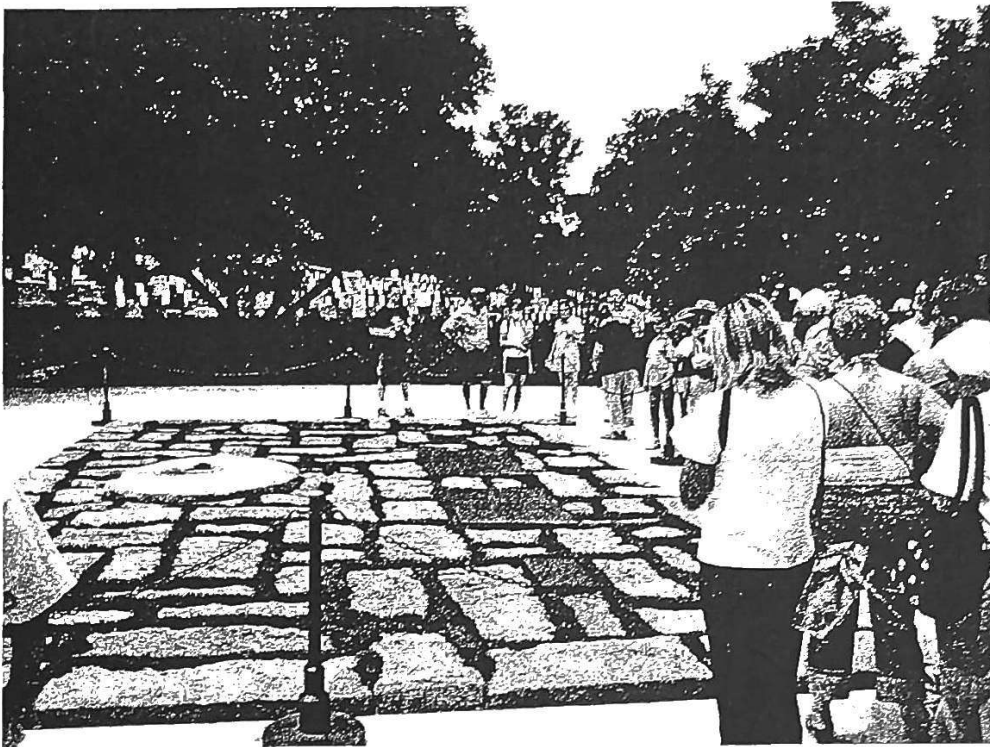
'JFK' was a controversial Hollywood movie made by Oliver Stone that was based on a book written by Jim Garrison.

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*When the second bullet hit President Kennedy it created a 4mm x 7mm entry wound. Upon exiting his body it struck Governor Connally, creating an 8mm x 15 mm entry wound.*

4. Explain why Governor's entry wound was so much larger than the President's entry wound.



*President Kennedy's gravesite at Arlington National Cemetery in Arlington, Virginia.*

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In the 1970's an investigation by the *House Select Committee on Assassinations* concluded that Lee Harvey Oswald was the assassin of John F. Kennedy, but also suggested that there were likely others involved in the planning of the assassination in a "probable conspiracy".  
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