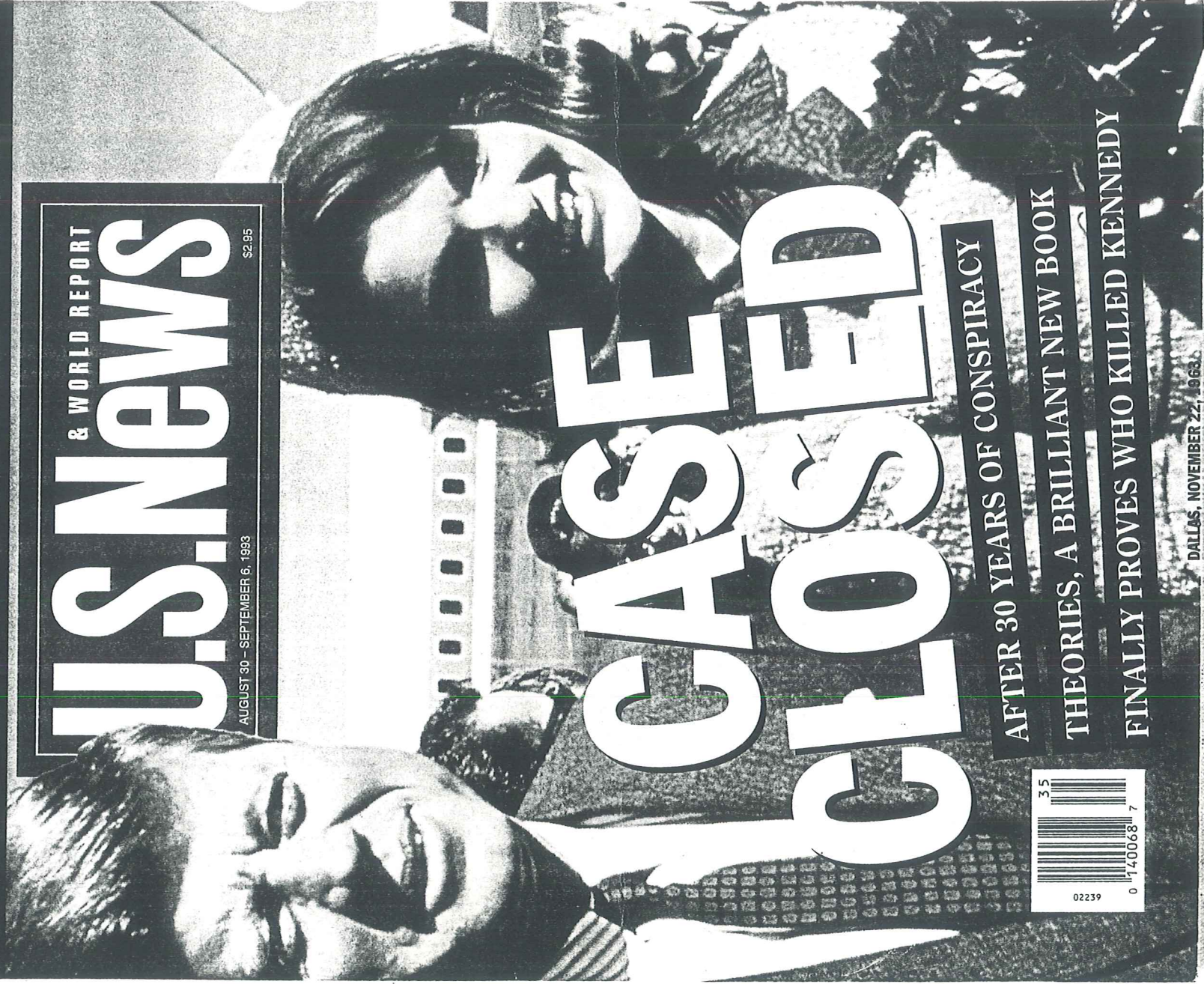


SPECIAL DOUBLE ISSUE

U.S. NEWS
& WORLD REPORT

AUGUST 30 - SEPTEMBER 6, 1993

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DALLAS, NOVEMBER 22, 1963

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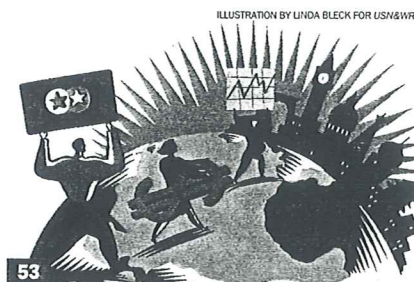
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JFK verdict. A reconstruction of events in Dallas 30 years ago corrects Warren Commission errors.



The cost of cleanup. Four years after the Exxon Valdez spill, much remains to be done.



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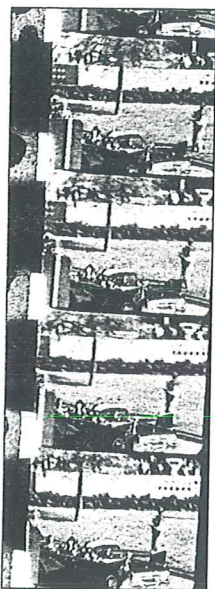
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INTRODUCTION

The Man With a Deadly Smirk

DEALEY PLAZA, NOV. 22, 1963: The roar of the crowd . . . the flicker of an 8-millimeter home-movie camera . . . the wave, followed by the crack of gunfire . . . the splatter of blood and brain matter. The murder of John F. Kennedy reruns in the nation's collective consciousness like a horror show that never closes. Fully 7 out of 10 Americans think a nameless, craftily concealed conspiracy did Kennedy in—and why wouldn't they? For three decades, harum-scarum conspiracy theories have come not as single spies but in battalions, marching at us out of 200 books and a Hollywood blockbuster. Saturnine superpatriots, bearded Marxists, vengeful Mafiosi, power-mad bureaucrats, ticked-off generals, burnt-



Frames of reference

out spooks—the suspects stretch to the horizon. Ten new assassination books arrive this fall on the eve of the slaying's 30th anniversary: 10 books with a smell about them, including one with the smell of truth.

That book is Gerald Posner's "Case Closed," to be published September 1 by Random House (excerpts start on Page 74). A 39-

year-old lawyer turned writer (his credits include co-authoring the acclaimed biography "Mengele: The Complete Story," 1986), Posner achieves the unprecedented. He sweeps away decades of polemical smoke, layer by layer, and builds an unshakable case against JFK's killer. To do this, he had to fully reappraise a massive evidentiary record, plunging in without a clue as to where or when he would come out. He

? **DEBUNKING THE MYTHS**

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■ SPECIAL REPORT

reindexed all 26 volumes of Warren Commission testimony and the 1979 report of the House Select Committee on Assassinations and cross-referenced material in hundreds of books and articles. Then, to fill gaps not bridged by his labyrinth of 3-by-5 cards, he did more than 200 interviews of his own. His conclusion: Yes, Lee Harvey Oswald—the pathetic “patsy” of so many conspiracy scenarios, the putative fall guy of the much maligned Warren Commission—gunned down Kennedy. And yes, he acted alone.

Americans determined to disbelieve this thesis may be beyond persuasion. But readers who follow Posner's analysis with an open mind will have their eyes opened in new ways. The Warren Commission correctly identified Oswald as the killer but filed a brief against him that was hobbled by mistakes and unanswered questions. Posner now performs the historic office of correcting the mistakes and laying the questions to rest with impressive finality, bringing the total weight of evidence into focus more sharply than anyone has done before.

Shell proof. The central issue raised by the physical evidence has always been whether a single bullet could pass through Kennedy's upper back and also cause the wounds suffered by Texas Gov. John Connally. The two men were struck almost simultaneously. If a different bullet hit Connally, only a second gunman could have fired it. Posner demonstrates how computerized re-enactments, special enhancements of the Zapruder film, new bullet-impact tests and medical expertise have at last proved the single-bullet theory beyond a reasonable doubt (see Page 88). “The chapter on the single bullet is a tour de force, absolutely brilliant, absolutely convincing,” says Stephen Ambrose, the distinguished biographer of Dwight Eisenhower and Richard Nixon, who was previously a strong single-bullet skeptic.

“Case Closed” demolishes just as decisively another *cause célèbre* among conspiracy theorists: contradictions between how the treating physicians at Parkland Hospital and the autopsy doctors described Kennedy's wounds. Exit wound or entrance wound? Big or small? High or low? Warren Commission critics have treated the discrepancies as proof that the body was tampered with to obscure the presence of a gunman or gunmen who fired from the grassy

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Boy with an attitude



Young Oswald at the Bronx Zoo



Oswald (in dark glasses) with fellow sheet-metal workers in Minsk, where he was sent in 1960. When the defector's celebrity faded, he grew dissatisfied with Russia.

LEE AND THE KGB

“My fondest dreams are shattered,” Lee Oswald wrote in his diary on Oct. 21, 1959, just after the Soviet Foreign Ministry denied his request for citizenship and ordered him to leave. “I decide to end it. Soak wrist in cold water to numb pain. Then slash my left wrist. Then plaug wrist into bathtub of hot water . . . somewhere, a violin plays, as I watch my life whirl away.” Oswald was revived by blood transfusions. His suicide note, left on his hotel-room bed table and included in his KGB file, read:

“Did I come here just to find death? I love life.” Two psychiatrists found Oswald “mentally unstable.”



Oswald's passport

Former KGB officer Yuri Nosenko, who handled Oswald's case, told Gerald Posner: “It made us feel he should be avoided at all costs.”

Even so, weighing all the risks after Oswald's suicide attempt, high Kremlin officials decided it would be dangerous *not* to let the ex-marine stay. Said Nosenko: “He was so unstable he might . . . succeed in killing himself. Then we would be criticized for a KGB murder of an American tourist.” Too much was at stake. Several weeks earlier, Eisenhower and Khrushchev had thawed the cold war at a summit in the Maryland countryside, and the Kremlin did not want “the spirit of Camp David” jeopardized. Oswald was granted asylum and sent to work in Minsk. The local KGB office was ordered to watch him but not recruit him as an agent. Recalls Nosenko: “The KGB didn't want Oswald from Day 1.”



Lee Oswald in Minsk with Marina, a 19-year-old pharmacology student he married in 1961. Later, in America, he would beat her.

knoll, on Kennedy's right, while Oswald (or someone else) fired from the Texas School Book Depository behind the president. But when Posner himself interviewed the Parkland doctors, all but one agreed with the autopsy findings, conceding that their original observations, made hastily under great stress, had been incomplete, partially incorrect or subsequently distorted by conspiracy writers.

Conspiracists have also long believed that if they could get a look inside Oswald's KGB file, it might well show he was a Soviet agent. "Case Closed" not only examines that file but reports the author's interview with Yuri Nosenko—the first ever exclusively devoted to the former KGB officer's supervision of the Oswald case. Both confirm that Oswald was not only *not* an agent but was deemed totally untrustworthy by the spy agency (box, Page 65).

Previously undisclosed files cited by Posner also play havoc with the romanticized portrait of New Orleans District Attorney Jim Garrison in his 1991 film, "JFK." The files—of Garrison's own investigators—buttress an earlier generation's verdict that Garrison's chaotic assassination prosecution twisted the truth with cynical abandon. On issue



Oswald's first love in Russia (upper right) rejected him.

after issue, Posner catches Stone and the major conspiracy writers in serious misrepresentations of the evidence (examples begin on Page 77).

THE GRASSY-KNOLL FOLLIES

The high quotients of common sense, logic and scrupulous documentation found in "Case Closed" are niceties not often found in the field of assassination studies. One book entitled "Is President John F. Kennedy Alive—and Well?" has run through 15 editions. Another book, "Best Evidence," made the bestseller lists in 1981 with its theory that on the flight back to Washington, Kennedy's body was stolen from his casket right from under the eyes of the first lady and presidential aides and surgically altered to disguise wounds made by a second gunman. The author, David Lifton, who is at work on yet another conspiracy book, has spent his adult life trying to unmask the JFK plotters. In the mid-1960s he did photo enhancements of shrubbery on the grassy knoll and thought he could discern a man with a periscope, a man with a machine gun, another with an electronic headset, still another wearing a Kaiser Wilhelm helmet, and a galoot who was either

Douglas MacArthur or the general's dead ringer.

The conspiracy writers are fed by a network of amateur sleuths who keep vast files of clippings in their basements and troll for fresh witnesses who all too often have found their tongues after half a lifetime of terrified silence. By one count, 30 men have been identified by buffs as "the second gunman" or have themselves "confessed" to firing shots at Kennedy, usually from the grassy knoll.

The quest for Kennedy's killers long ago became the domain of both hobbyists and profiteers. A for-profit JFK Assassination Information Center prospers in Dallas by selling bumper stickers, T-shirts and other murder memorabilia and charging people \$4 to view its exhibits. Conspiracy buffs meet for three days each year in Dallas (\$150 registration fee) to swap theories, attend seminars on such topics as "Media Coverup—Then and Now" and welcome star conspiracy "witnesses," who sign autographs like rock stars. Conspiracy "research" occasionally forms a symbiotic alliance with tourism. Sponsors of a three-day John F. Kennedy Assassination Symposium last week at Laurentian University in Sudbury, Ontario, advertised that participants could also wrap in a visit to the Shakespeare festival and take their children to a



Conspiracists Jim Garrison (right) and Mark Lane in 1967

social turmoil of the late '60s, Watergate and the disillusionments of the '70s. JFK's murder came to be remembered as a loss of national innocence, which served to magnify the appeal of conspiracy scenarios. A single individual might murder a man, but a whole era? Many people want a more formidable set of villains. "If you put 6 million dead Jews on

local amusement park and an underground nickel mine.

Assassination artifacts can be big moneymakers. Jack Ruby's gun went for \$200,000 at auction last year; the new owner offers 5,000 "limited edition" bullets shot from it for \$500 each. Character assassination of the dead and group libel can be even more lucrative. Warner Bros.' "JFK," a heavily fictionalized film tarring Earl Warren, Lyndon Johnson, the CIA and the FBI, has grossed \$196.5 million worldwide.

Culture shock. Every presidential assassination and every war in U.S. history has spawned suggestions of secret plots and hidden agendas, but never before have the conspiracy alarms sounded so loud so long. Jack Ruby's shooting of Oswald on live television only 48 hours after his arrest (box, below) stirred visceral suspicions that were only deepened by the troubled epoch that followed—the calamity of Vietnam, the

THE WRATH OF SHEBA'S MASTER

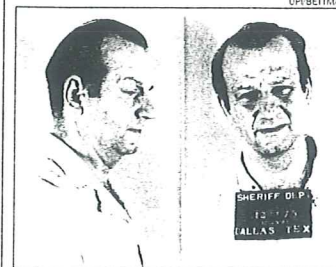
Who was Jack Ruby? Conspiracy buffs portray him as a hit man enlisted by the mob or some other murderous cabal to silence Lee Oswald before he implicated others. It is a theory without a lick of actual evidence. The facts suggest that Ruby was no more than a luckless lout trying to play the hero. A former street brawler out of Chicago who was barely making ends meet as a nightclub owner, Ruby was notorious for his violent temper—and for his eagerness to please policemen, reporters and the Dallas establishment. He spent half his time glad-handing and back-

slapping, the other half throwing unruly customers or errant employees down the stairs at his Carousel Club. Beset with financial troubles, he appeared on the verge of an emotional collapse after JFK's death. He closed his two nightclubs out of respect, wept openly and wailed that he and other Jews would be blamed

because a strongly anti-Kennedy ad in a Dallas newspaper the day of the killing was signed with a Jewish name.

"You little S.O.B." Two days later, Ruby happened to enter the basement of police headquarters just as Oswald was being taken out. Noticing "a smirk on his face" and thinking "why you little S.O.B." (as he told his brother Earl), he pulled out the gun he often carried and fired before anyone in the mob of reporters and policemen could stop him. Ruby felt sure people would see him as a hero. "You guys couldn't do it," he told an assis-

tant district attorney. "Someone had to do it." A lie detector test supported his denials of premeditation. So did other circumstances. On the evening of November 22, Ruby had made no move for the .38 caliber revolver in his hip pocket when he came within a few feet of Oswald at police headquarters. Two days later, when he *did* shoot him, Ruby's beloved dog Sheba was outside in his car. Ruby was a solicitous master, always dotting on his dogs, whom he called his "children." Says former Dallas Assistant D.A. Bill Alexander: "Ruby would never have taken that dog with him if he had known he was going to end up in jail. He would have made sure that dog was at home and well taken care of."



Police booking photos of Jack Ruby

SPECIAL REPORT

one side of a scale and on the other side put the Nazi regime ... you have a rough balance: greatest crime, greatest criminals," historian William Manchester has written. "But if you put the murdered president of the United States on one side of a scale and that wretched waif Oswald on the other side, it doesn't balance. You want to add something weightier to Oswald. It would invest the president's death with meaning, endowing him with martyrdom. He would have died for something. A conspiracy would, of course, do the job nicely."

Some conspiracists are so deep in denial—the actual evidence notwithstanding—that they have diminished Oswald's role to that of a fall guy without a drop of blood on his trigger finger. In the film "JFK," Oswald loiters harmlessly in the Texas School Book Depository lunchroom while Kennedy is killed by operatives of a vast military-industrial conspiracy bent on preventing him from pulling U.S. forces out of Vietnam (never mind that most historians agree that cold warrior Kennedy had revealed no such intent). Posner puts Oswald back at the center of the action by establishing who he really was and what he really did November 22 (article, Page 74).

THE LONE GUNMAN

Who *was* Oswald? How strange that the question is still being asked a generation after he himself answered it so vividly upon his arrest. His lips denied his crime but his face affirmed it. The faint smirk he wore both betrayed his guilt and celebrated it. It bespoke a tormented loner with an attitude too monumental to be concealed even when self-preservation demanded it. That attitude had shown itself many times before—in a small child who hurled rocks at other children; in a 13-year-old who was asked whether he preferred the company of boys or girls and replied: "I dislike everybody"; in a 15-year-old who became a Marxist and refused to salute the flag in school, and who as an adult wrote of himself: "Lee Harvey Oswald was born in Oct 1939 in New Orleans, La. the son of a Insuraen [sic] Salesman whose early death left a far mean streak of independence [sic] brought on by neglect [sic]."

A psychiatrist who examined Oswald in early adolescence found he had a "vivid fantasy life, turning around the topics of omnipotence and power," and from the mass of evidence adduced by Posner, there seems little doubt that Oswald dwelt in a parallel universe all his own. In it, he was always a hero aborning, a man on the verge of being recognized for his high intelligence and unique talent—first by the Marines, in which he enlisted at age 17; then by the Soviet Union, to which he defected, and then by the Cubans, whom he sought to join in their revolutionary struggles.

In the real world, each of these imagined utopias mocked his megalomaniac expectations. The Marines ridiculed him as "Ozzie Rabbit" for his reclusiveness and twice court-martialed him for misbehavior. The Soviets packed him off to Minsk to labor as a lowly sheet-metal worker until he returned to America in disgust. The Cubans gave him the bum's rush as a strange bird whose erratic migrations held no charm for them. In his private universe, Oswald was a dutiful husband; in the real world, he regularly beat his Russian-born wife, Marina, for such offenses as failing to draw

his bath. She fought back by insulting his manhood. In Oswald's mind, he was a born spy with a flair for operating sub rosa against the forces of fascism; in truth, he chose his aliases, false addresses and other superspook affectations by reading a book, "How to Be a Spy," that graced his coffee table. U.S. leftists, like their foreign counterparts, viewed him as too weird to be trusted.

The tension between Oswald's fantasies and his no-account life sought release in violence. By the spring of 1963, he had carefully cased the home of retired Maj. Gen. Edwin Walker, a prominent right-winger living in Dallas, and sent off by mail for a 6.5-mm Mannlicher-Carcano rifle (the same rifle that would kill John Kennedy). He posed with it in his back yard while Marina snapped a now famous photograph. The caption, apparently in Marina's hand, read: "Hunter of fascists. Ha, ha, ha." One evening, he took his rifle, crept close to Walker's house and fired at him in his den. The bullet was deflected by the window frame, saving Walker's life but deepening Oswald's despair.

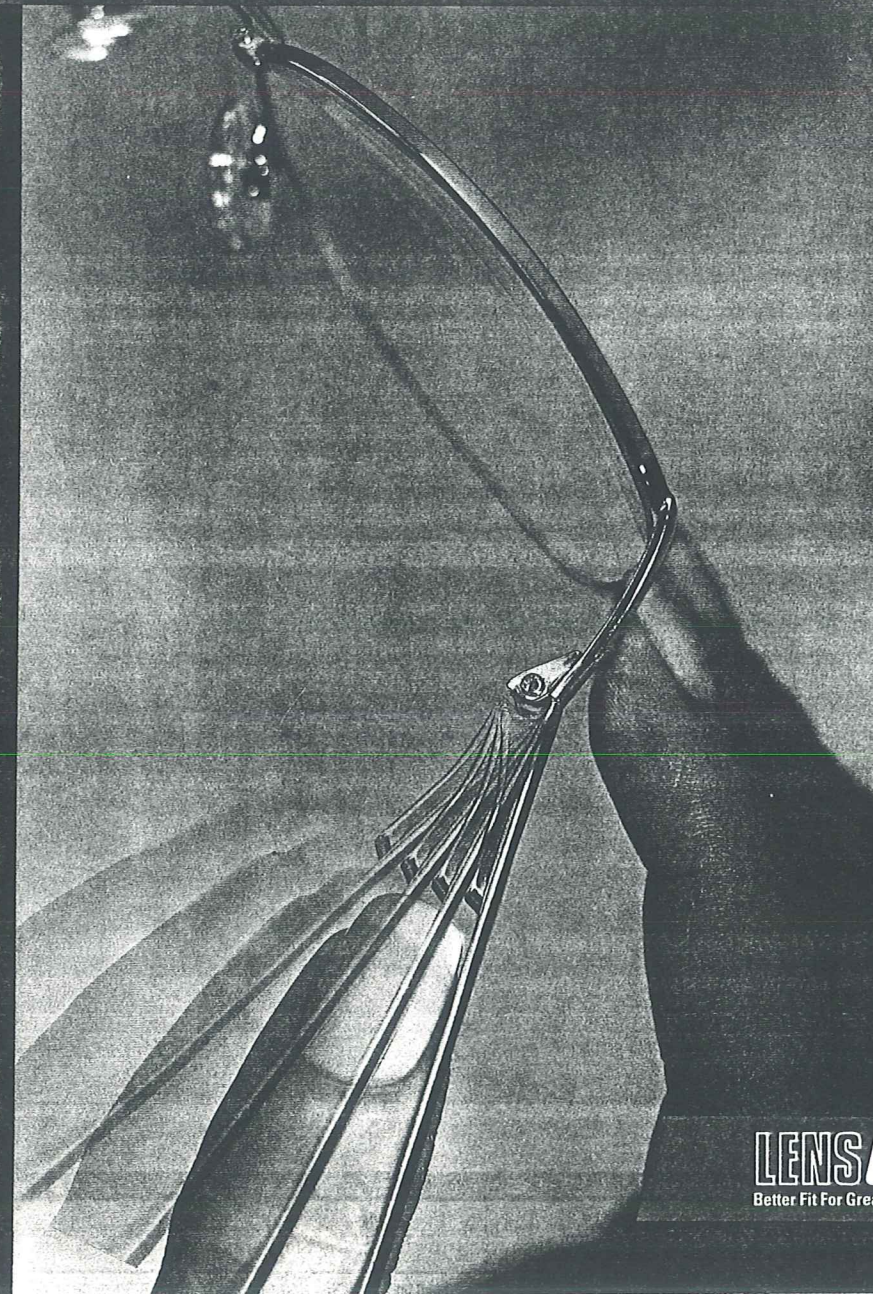
By November, the 24-year-old Oswald had reached a new nadir. He had lost three low-paying jobs in a row and at the end of September had been refused a visa by Cuba after spending much of his meager savings to visit the Cuban Embassy in Mexico City to offer himself to "Uncle Fidel." Back in Dallas, he was desperate to reinflate his ego. What better than to play a delicious secret joke on all those who had spurned him—one that would demonstrate that he was a man wily enough to change the very course of history? On November 19, the Dallas newspapers reported the route John Kennedy would follow during a visit to the city three days later. The presidential motorcade was to pass by the Texas School Book Depository, where Lee Harvey Oswald had recently found a job and could enter, no questions asked. Destiny bayed in his ears like the hound of hell. ■

BY GERALD PARSHALL



Previously unpublished photo of Oswald in August 1963

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The Sniper's Nest

By Gerald Posner

THEY HAD QUARRELED EARLIER IN THE EVENING, as they so often did, and during the night when Marina Oswald rested her foot against Lee's leg, he shoved it away with a ferocity that surprised her. When she got up the next morning, her husband was gone and the coffeepot in the kitchen was cold. Returning to the bedroom, Marina was startled to see that he had left \$170 on top of their bureau. It was a remarkable sum for the Oswalds, and she knew it must be almost all of their savings. She did not notice something else that would have alarmed her. On the bureau, in a hand-painted demitasse that had belonged to her grandmother, Lee had placed his wedding ring. He had never before taken it off. It was Nov. 22, 1963.



A pose for posterity

At 7:15 a.m., when Lee Oswald arrived by foot at Buell Frazier's house one block away, he carried a long, paper-wrapped object parallel to his body, one end tucked under his armpit, the other end not quite reaching the ground. He laid the brown package across the back seat of Frazier's car, and when Frazier got in and asked what the package was, Oswald answered "curtain rods." At the School Book Depository, although the two usually went in together, Oswald this day quickly left the car and walked ahead, carrying the package next to his body.

Other employees noticed that Oswald did not follow his normal routine of immediately going to the domino room and reading the day-old newspapers. Later that morning, between 9:30 and 10, he was staring out a first-floor window toward Dealey Plaza when a co-worker, James "Junior" Jarman, approached him. Oswald asked why crowds were gathering outside, and Jarman told him the president was due to pass by in a couple of hours. When

ADAPTED FROM THE FORTHCOMING BOOK "CASE CLOSED: LEE HARVEY OSWALD AND THE ASSASSINATION OF JFK" BY GERALD POSNER. © 1993 BY GERALD POSNER, PUBLISHED BY RANDOM HOUSE INC.



ARTHUR PIPHERBY, LIFE MAGAZINE, © TIME WARNER

asked if he knew which direction the motorcade would take, Jarman said the cars were expected to cross directly in front of the depository. "Oh, I see," said Oswald.

Five men were laying plywood on the sixth floor, which was a 96-foot-by-96-foot open storage space broken only by support posts and stacks of books scattered about. On the south side, seven large double windows looked directly over Elm Street and Dealey Plaza. At 11:40, one of the workers, Bonnie Ray Williams, spotted Oswald near the windows overlooking Dealey Plaza. About five minutes later, the crew broke for lunch. They got in two elevators and raced each other to the first floor. Coworker Charles Givens immediately returned to the sixth floor to collect a forgotten pack of cigarettes, saw Oswald "toward the window up front where the shots" would be fired and said, "Boy, are you going downstairs? It's near lunchtime." Oswald said, "No, sir."

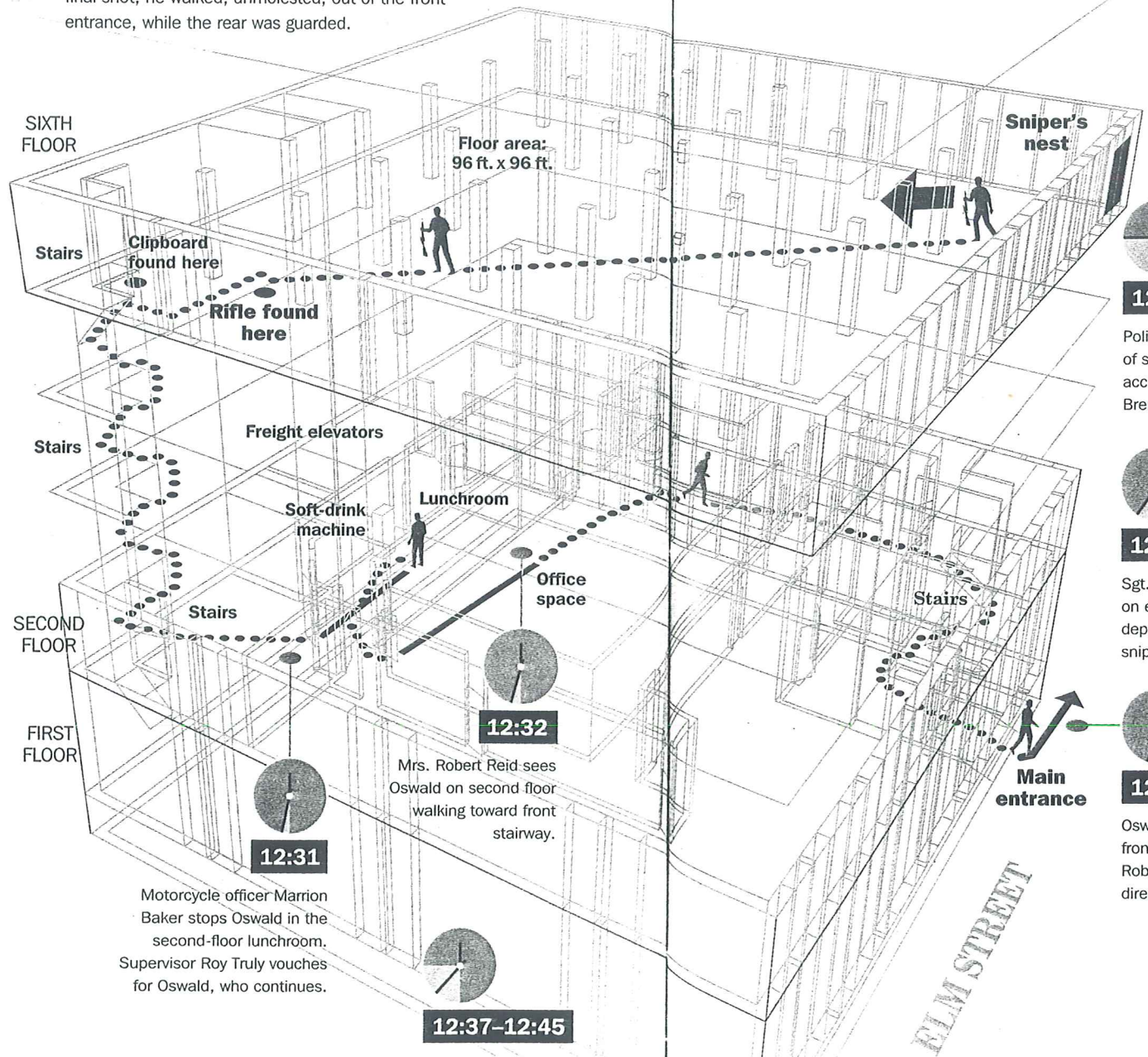
Now all alone, there was time to assemble the Mannlicher-Carcano rifle and move books to form a sniper's nest in the southeast corner. That corner had an ideal, unobstructed view of the motorcade route. The sniper's nest was not difficult to construct. Because of the laying of the new floor, workers had moved many of the book cartons, weighing up to 50 pounds each, to the sides of the room. An assortment of boxes was used to make a three-sided shield, which would protect the sniper from being observed by anyone who wandered onto the sixth floor. Boxes were also arranged as a brace upon which the rifle would rest when fired.

THE SURGE OF THE CROWD

A security car was the first in the presidential motorcade to make the turn from Houston Street onto Main and proceed toward the depository. Two car lengths behind it was the presidential limousine, its bubble-top off as JFK had requested. A second Secret Service agent sat with the driver in the front seat; in the fold-down jump seats were Texas Gov. John Connally and his wife, Nellie; in the rear bench seats, President Kennedy and the first lady, Jacqueline. The remainder of the motorcade consisted of four police motorcycle escorts, a convertible filled with Secret Service agents, Vice President Lyndon Johnson's limousine, cars carrying local dignitaries and reporters, a VIP bus and a press bus. The crowd surged forward. The presidential limousine slowed considerably to navigate the

The getaway

Oswald came very close to being captured as he fled from the Texas School Book Depository. But within three minutes after his final shot, he walked, unmolested, out of the front entrance, while the rear was guarded.



12:30
 Oswald shoots JFK.

12:45
 Police radio a description of suspect based on the account of witness Howard Brennan.

12:36
 Sgt. D. V. Harkness, relying on eyewitnesses, cites book depository as possible sniper's nest.

12:33
 Oswald leaves via Elm Street front entrance, meets Robert MacNeil (of NBC), directs him to a phone.

12:31
 Motorcycle officer Marrion Baker stops Oswald in the second-floor lunchroom. Supervisor Roy Truly vouches for Oswald, who continues.

12:32
 Mrs. Robert Reid sees Oswald on second floor walking toward front stairway.

12:37-12:45
 Police seal all entrances to book depository.

Graphics by John Grimwade; edited by Clive Irving; research by Joyce Pendola

THE LUNCHROOM DEBATE

? Many conspiracy writers have tried hard to prove that Lee Oswald was not on the sixth floor of the depository at the time of the assassination. In this they accept his protestations after his arrest that he had been in the first-floor lunchroom with Junior Jarman and had gone to the second floor to buy a Coke.

Carolyn Arnold, a secretary to the depository's vice president, told Anthony Summers ("Conspiracy: The Definitive Book on the JFK Assassination") that at 12:15



Where Lee Oswald missed a meal

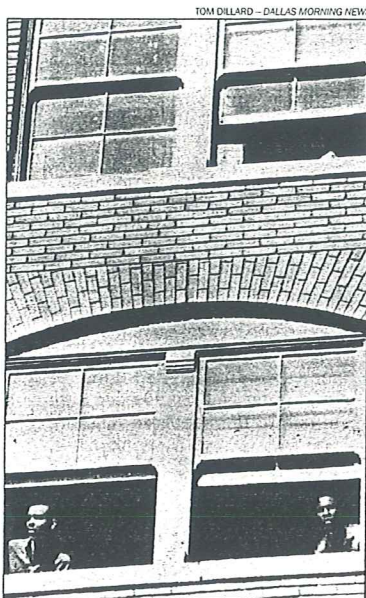
she entered the second-floor lunchroom and saw Oswald sitting in one of the booths having lunch. Her interview with Summers—given in 1978, a decade and a half after JFK's death—was the first time that she ever publicly told the story about seeing Oswald in the lunchroom.

Records check. Arnold had given two different statements shortly after the assassination. In one, she said she "could not be sure" but she might have caught a fleeting glimpse of Lee Oswald in the first-floor hallway, and in the second statement she said that she did not see him at all. Arnold told Summers that the FBI had misquoted her, but she signed her FBI affidavit as correct.

Four other women, who worked with Arnold, support her original story and not the one she told 15 years later. More important, the contemporaneous accounts of eight other workers who were in one or both lunchrooms say that Oswald was in neither. Junior Jarman, with whom Oswald claimed to have had lunch, denied even seeing him during his lunch break.

120-degree left turn onto Elm, directly in front of the depository.

Jackie Kennedy, dressed in a pink, wool two-piece suit, with a pillbox hat, was hot under the unfiltered, midday sun. She saw the triple underpass just a couple of hundred yards away and thought, "It would be cool under that tunnel." Mrs. Connally turned to the Kennedys and said, "Mr. President, you can't say that Dallas doesn't love you." The president said, "No, you certainly can't." It was 12:30 on the Hertz sign atop the School Book Depository.



TOM DILLARD—DALLAS MORNING NEWS

The gunman's window (top right)

Most people did not realize that the first loud crack was gunfire. Some thought it was a firecracker or backfire from a police motorcycle. By the second shot, many realized it was too loud to be anything but gunfire. The president's arms jerked up into a locked position level with his chin. Governor Connally smashed back into his jump seat and then fell over into his wife's arms. The president, strapped into a back brace, remained propped upright, his head lolling slightly to the left. Incredibly, the president's driver, William Greer, sensing something was wrong in the back, slowed the vehicle to almost a standstill and turned in his seat to see what had happened.

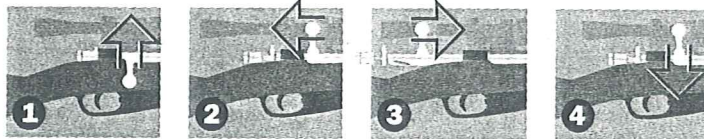
As Greer turned, there was a stomach-wrenching sound, as if a grapefruit had been struck by a baseball bat. The

The \$12 rifle

Did Oswald have time to fire three shots? Enhancements of the Zapruder film lead to the answer. His first shot missed. He had at least 3 seconds to reload, aim and fire the second shot, which hit both Kennedy and Connally. He then had another 5 seconds—ample time—for the third shot, which killed the president.

Bolt action

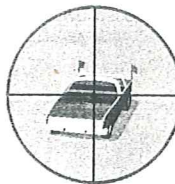
The bolt action can easily be operated in a fraction of a second.



1. Push bolt up...
2. Pull back (to eject case and position next cartridge)...
3. Push forward...
4. Push down (to lock bolt).

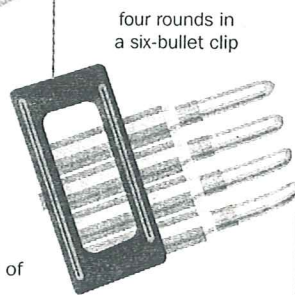
The gunsight

Through the 4x telescopic sight, the target filled Oswald's vision. The president appeared to be only about 25 yards away at the time of the third shot.



The ammunition

The rifle fired 6.5-mm full-metal-jacketed bullets with a muzzle velocity of over 2,000 feet per second.

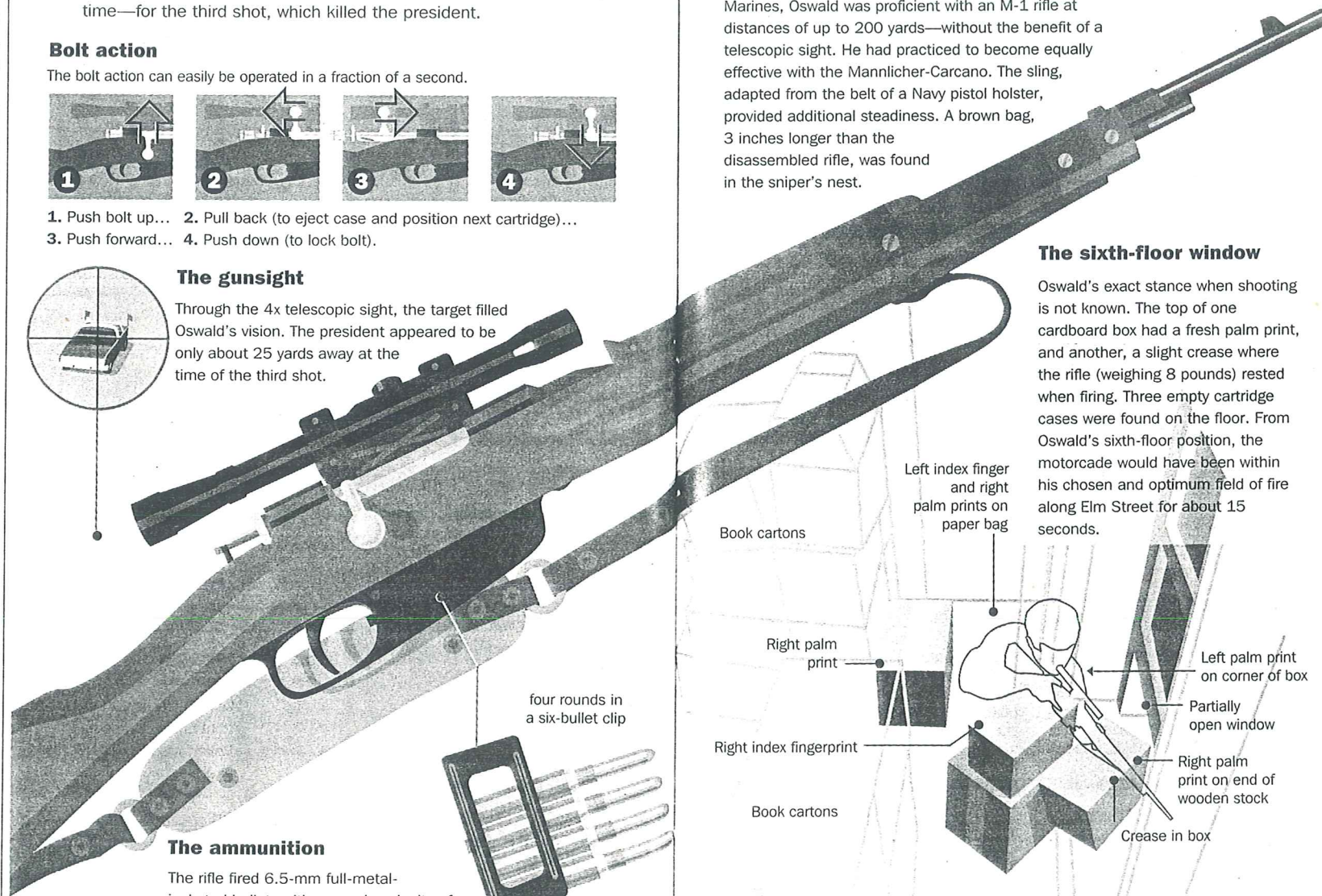


four rounds in a six-bullet clip

Graphics by John Grimwade; edited by Clive Irving; research by Joyce Pendola

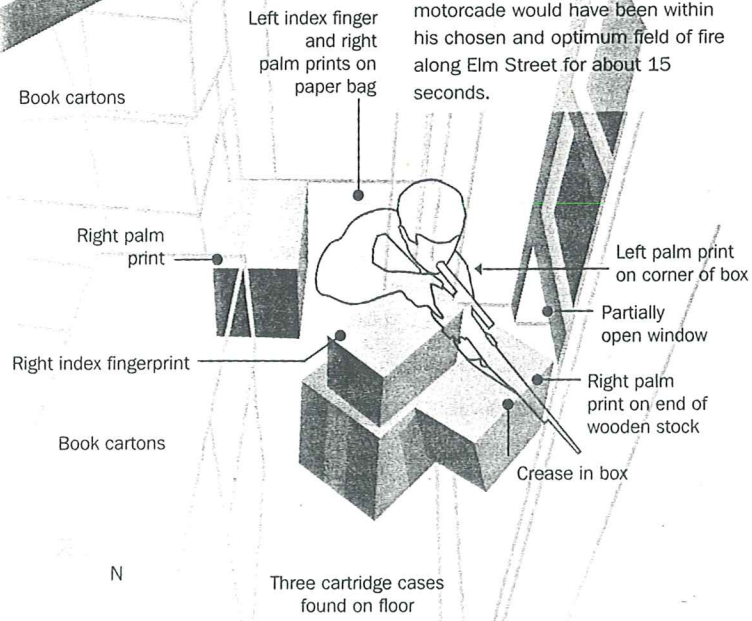
The weapon

Oswald's Italian World War II Mannlicher-Carcano was purchased from a mail-order house in Chicago. The rifle cost \$12.78, the 4x telescopic sight \$7.17. In the Marines, Oswald was proficient with an M-1 rifle at distances of up to 200 yards—without the benefit of a telescopic sight. He had practiced to become equally effective with the Mannlicher-Carcano. The sling, adapted from the belt of a Navy pistol holster, provided additional steadiness. A brown bag, 3 inches longer than the disassembled rifle, was found in the sniper's nest.



The sixth-floor window

Oswald's exact stance when shooting is not known. The top of one cardboard box had a fresh palm print, and another, a slight crease where the rifle (weighing 8 pounds) rested when firing. Three empty cartridge cases were found on the floor. From Oswald's sixth-floor position, the motorcade would have been within his chosen and optimum field of fire along Elm Street for about 15 seconds.



Book cartons

Left index finger and right palm prints on paper bag

Right palm print

Left palm print on corner of box

Right index fingerprint

Partially open window

Book cartons

Right palm print on end of wooden stock

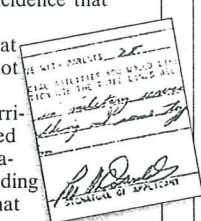
Crease in box

Three cartridge cases found on floor

THE FILE CLERK FROM HELL

“He came in, introduced himself to me, and I took him in my office and interviewed him. He seemed to be quiet and well-mannered. . . . He looked like a nice young fellow to me . . . he used the word *sir*, which a lot of them don't do at this time.” Thus, Roy Truly hired Lee Harvey Oswald as a \$1.25-per-hour clerk at the Texas School Book Depository. His principal responsibility was to find books in the seven-floor building and bring them down to the first floor, where orders were processed.

“Guiding hands.” Some have questioned the coincidence that Oswald obtained a job at a building that gave him a clear shot at the presidential motorcade. Jim Garrison, for one, charged that Oswald was manipulated, that “guiding hands made sure that he would be at the right place at the right time.”



Oswald's job form

That argument ignores the fact that no motorcade route had even been proposed when Oswald was hired—five weeks before Kennedy's trip to Dallas. Moreover, such a theory means that Linnie Mae Randle, who suggested he apply to the depository, and Ruth Paine, who told Oswald of the suggestion, were part of the conspiracy, as well as Truly and other Texas employers who rejected Oswald for jobs earlier in the week. Even Robert Stovall, Oswald's ex-employer, who scuttled his hiring at Padgett Printing Co. with a poor recommendation, would have had to be part of the plot.

That single incident, Oswald's obtaining the job at the School Book Depository, highlights two key flaws in almost every conspiracy theory: the constant interpretation of coincidence as evidence of conspiracy and the inordinate number of people who would have had to be involved in any such plot—more than a dozen on this issue alone.

**CASE
CLOSED**

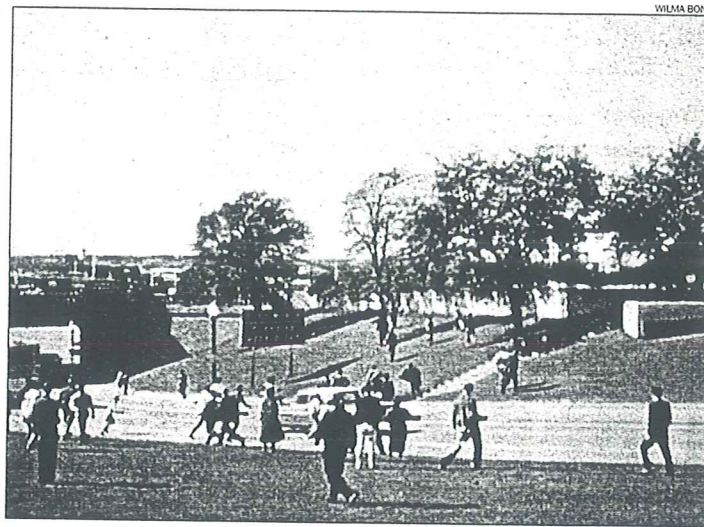
final bullet tore off the right side of the president's head, sending a red mist of blood, brain tissue and skull fragments upward and to the front. As Kennedy fell partially across the back seat and toward the floor, Jacqueline began climbing out the rear and onto the trunk. Secret Service agent Clint Hill, riding in the backup car, responded rapidly, running to reach JFK's car just in time to mount the rear bumper and push the first lady back inside. At that moment, Greer slammed on the accelerator and sped out of Dealey Plaza.

A good many witnesses saw the shooter, and in every instance they identified the same location: the southeast corner of the sixth floor of the Texas School Book Depository. But the witness who saw more than any other was construction worker Howard Brennan. He was leaning against a 4-foot-high retaining wall on the corner of Houston and Elm, directly across the street from the depository (Brennan is visible in Abraham Zapruder's film—he was 93 feet from the window). Before the motorcade arrived, he saw an "unsmiling and calm" young man in the window. After the first shot rang out, he looked at the window again and saw the same young man, this time with a rifle: "Then came the sickening sound of a second shot. . . I wanted to cry, I wanted to scream, but I couldn't utter a sound." After the final shot, Brennan hit the ground, afraid there would be more gunfire. He looked up at the window one last time: "To my amazement the man still stood there. . . He didn't appear to be rushed. There was no particular emotion visible on his face except for a slight smirk. . . a look of satisfaction. . . Then he simply moved away from the window."

"DO YOU KNOW THIS MAN?"

Brennan went to a uniformed policeman in front of the depository and told him what he saw. He repeated his account a few minutes later to a police inspector, and at 12:45, only 15 minutes after the assassination, the Dallas police dispatcher broadcast the first description of the suspect: "Attention all squads, attention all squads. At Elm and Houston, reported to be an unknown white male, approximately 30, slender build, height 5 feet, 10 inches, 165 pounds—reported to be armed with what is believed to be a 30-caliber rifle."

After firing the final shot, Oswald slipped through the narrow gap he had



Why is Jean Hill (center, in red coat) visible here if her story is true?

A SHAGGY-DOG STORY

? Not one witness gave a contemporaneous statement about a second gunman at Dealey Plaza. Not *one*. However, ever since that day, new witnesses have stepped forward, sometimes many years later, claiming to have seen the real assassin. Some people have even confessed to being the phantom "grassy knoll shooter" themselves.

Perhaps no witness to the grassy knoll shooter has gotten more ink than Jean Hill, who was standing on the southern side of Elm Street as Kennedy's car passed. Cited in books and articles and the author of her own book, "The Last Dissenting Witness," Hill often speaks on television and at Kennedy assassination forums. She used to carry calling cards bragging that she was the "closest witness" to the president at the time of the fatal head shot. Oliver Stone gave her character a prominent role in "JFK."

"A trail of blood." On the day of the assassination, she gave a statement to the sheriff's office saying that the president and the first lady had had "a white, fluffy dog" between them, that some men in plain clothes had returned fire once the shooting began (no one, in fact, returned fire) and that she saw a "man running to-

ward the monument" on the other side of the plaza and had started running after him (she said nothing of seeing any weapon). Over the years that portion of her story has changed dramatically. She soon was saying that when she chased the man her attention was drawn "to a trail of blood in the grass." She followed it, she said, in the belief that the man had been shot by a policeman. At the time, investigators found nothing more notable than drops left by a Sno-Cone of flavored crushed ice.

Photographs taken by Wilma Bond, another Dealey witness, undermine this account. One photo shows a large bus at the tail end of the motorcade passing out of the square. Most of the entire motorcade had left, yet Hill can be seen still in her original position, not yet having taken a step to cross the road to chase anyone as she claimed. What's more, Hill was interviewed within a half-hour of the assassination by a local television crew. Asked if she saw anybody or anything that drew her attention, she said, unequivocally, "No." Over the years, her story changed. By 1986, she was saying, "I saw a man fire from behind the wooden fence. I saw a puff of smoke and some sort of movement on the grassy knoll where he was." In 1989, she added "a flash of light" to her scenario.



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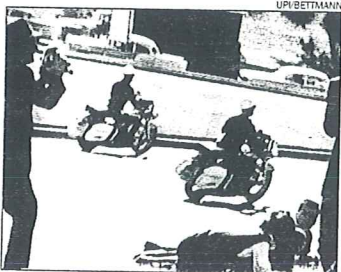
THREE MEN IN A GREEN PICKUP

? Conspiracy buffs have gotten a lot of mileage from the statement of Julia Ann Mercer, a motorist caught in traffic at Dealey the morning of the motorcade. She noticed two men in a green Ford pickup. One took a gun case from the truck, she said, and disappeared onto the grassy knoll. She later said Jack Ruby was the driver and Oswald was the man with the rifle. But subsequent investigation found that the truck, which had stalled, belonged to a local construction company and had carried

three men, who took tools from the rear to fix it. They were under constant surveillance by three Dallas policemen. The Mercer story was fully discredited a little more than two weeks after the assassination. Yet that did not stop Mark Lane from beginning his 1966 book, "Rush to Judgment," with an excerpt from Mercer's statement. Recent bestselling authors who have also cited the Mercer story, unchallenged, include Jim Garrison in 1988 in "On the Trail of the Assassins," Jim Marrs in 1989 in "Crossfire: The Plot that Killed Kennedy" and Charles Crenshaw in 1992 in "JFK: Conspiracy of Silence."

RADIO DAZE ON CAPITOL HILL

? Despite overwhelming earwitness testimony that there were only three shots, the House Select Committee on Assassinations concluded in 1979 that there was a 95 percent certainty that a fourth shot had been fired from the grassy knoll. The assertion rested



A motorcycle misled investigators.

on an analysis of a static-filled dictabelt recording of Dallas police channels in use on November 22. A police motorcycle had its radio switch stuck in the "on" position for more than five minutes around the time of the assassination. All the sounds within the range of that open microphone were inadvertently recorded. The committee speculated that if the open mike had happened to be in Dealey Plaza, it might have recorded the shots.

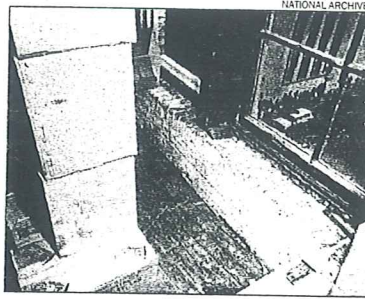
No sounds of gunfire could be heard on the dictabelts, but sound experts found several unusual inaudible "impulse patterns." An "acoustical reconstruction" was done with a Carcano rifle fired from both the depository and

the grassy knoll. The "impulses" were then compared with those on the original dictabelt. One group of experts found a 50 percent chance of a grassy knoll shot; a second group upped the probability to 95 percent. All that was needed was "proof" that the open mike was in Dealey Plaza. Only two days before the committee was scheduled to finish its work, H. B. McClain, an ex-policeman who rode in the motorcade, testified that his mike was often stuck in the open position but he didn't know whether it was stuck that day. That was enough for the committee. Its final report concluded that McClain's cycle had had the open mike.

Wrong bike. The committee refused to let McClain hear the dictabelt, however. When he finally did hear it, he knew immediately that the sounds were not from his cycle. As soon as the shots were fired, he had raced off on his motorcycle, accompanying the president's car at high speed to Parkland Hospital. Yet there were no sirens on the dictabelt until nearly two minutes after the supposed shooting. And there was no crowd noise. Dallas Sheriff Jim Bowles eventually determined that the open mike was on a motorcycle at the Trade Mart, where the president's luncheon reception was scheduled and where the sounds of the assassination could not be heard. Further acoustical analysis suggested that the sound impulses of "bullet shots" were picked up a full minute after the actual assassination. A special panel of the National Academy of Sciences declared the committee's acoustical work "seriously flawed," finding that there "was no acoustic basis for" the claimed fourth shot.

CASE CLOSED

created between the cartons of books. He hurried diagonally across the sixth floor toward the rear staircase. Next to the stairs, Oswald dropped the rifle into an opening between several large boxes. He rapidly descended the stairs until he heard the sound of footsteps running up, then ducked off at the second floor and dashed into the adjoining lunchroom. Suddenly a voice called out, and when he turned, he was face to face with a policeman carrying a drawn revolver. Marrion Baker, a motorcycle policeman, had recognized the first shot as coming from a high-powered rifle, "and it sounded high." Looking up, he had seen a flock of pigeons fly off the School Book Depository. He rushed



The sixth-floor sniper's nest

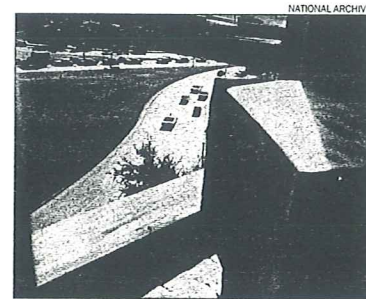
into the building, where he and Roy Truly, the building manager, were soon sprinting up the stairs. Confronting Oswald, Baker asked Truly, "Do you know this man—does he work here?" When Truly said yes, the policeman continued up the stairs.

Oswald went to the soda machine and purchased a Coke as he decided how to depart the depository. His choice to leave by the front was propitious. Guards had been placed at the rear entrance, but the building's front entrance was not covered for at least 10 minutes. Oswald passed a worker who told him, "Oh, the president has been shot, but maybe they didn't hit him." He mumbled some kind of reply and then walked out of the depository, less than three minutes after firing the final shot, and for the first time saw the pandemonium he had created. His actions after that are unquestionably those of someone in flight. After his arrest, Oswald maintained that when he learned of the shooting, his immediate thought was that there would be no more work for the day, so he simply went home. Although politics was his favorite subject, he was not interested, apparently, in whether the president had been hit or whether

the assassin had been caught. Instead, he headed for his rooming house.

'HE LOOKS LIKE A MANIAC'

Waiting for a bus on Dealey Plaza was clearly too risky, so Oswald walked east on Elm Street, away from the depository toward the nearest bus stop. He boarded one that ran within several blocks of his address, pounding on the bus door for entry in the middle of the block. Among the passengers was a landlady who had previously rented him a room. "Oswald got on," she recalled. "He looks like a maniac. His sleeve was out here [indicating]. His shirt was undone . . . he was dirty . . . he looked so bad in his face, his face was so distorted." Traffic soon came to a



Oswald's field of fire was nearly perfect.

standstill. The driver of the car in front got out and walked back to inform the bus driver that the reason for the delay was that "the president has been shot." He said it loud. At that announcement, Oswald stood up, asked for a transfer and got off.

Two blocks away at the Greyhound bus station, Oswald hopped in a taxi and gave the driver an address several blocks away from his rooming house. "The police cars, the sirens was going, running, crisscrossing everywhere," the driver remembered. "I said, 'What the hell. I wonder what the hell is the uproar.' And he never said anything. So . . . I never said anything more to him."

Oswald went past his landlady "walking pretty fast . . . all but running" into his room. Although it was too warm for a jacket, he took one to hide the revolver he had tucked into the waistband of his pants. He zipped up the jacket as he rushed out of the house a couple of minutes later. Running was the only chance he had left. Within minutes the police would begin making a series of discoveries at the depository, finding his makeshift sniper's nest and his rifle, finding three shells that the FBI would determine had been fired by his rifle

THE CORSICAN CONNECTION

? Two oft-quoted witnesses to the existence of a grassy knoll shooter did not go public with their assertions until 1978 when the House Select Committee on Assassinations was stirring the pot with its assassination investigation. One of them was Gordon Arnold, who said that on November 22 he was a 22-year-old soldier home in Dallas on leave. His story: Shortly before the assassination, he ran into men with CIA identifications behind the grassy knoll. During the shooting, he was standing only feet in front of the picket fence when a bullet whizzed past his left ear. He knew it was live ammunition being fired directly behind him, and he hit the ground. Arnold claimed that he had a camera and that after the assassi-

ground, photo enhancements show no such person.

Ed Hoffman, a deaf-mute, supplied an even more fascinating scenario that conspiracy writers have feasted on ever since 1978. Unaware that shots had been fired, he saw a man in a suit and tie running with a rifle behind the grassy knoll, he says. The gunman then tossed the rifle to a man disguised as a rail yard worker, and the second man disassembled it, put it in a sack and walked off. When the mute saw the wounded president speed past in the motorcade, he ran to a policeman but could not communicate what he had seen.

Freighted vision. Back in 1967, 3½ years after the assassination, Hoffman told a different story to the FBI, one in which the two men he saw were running from the rear of

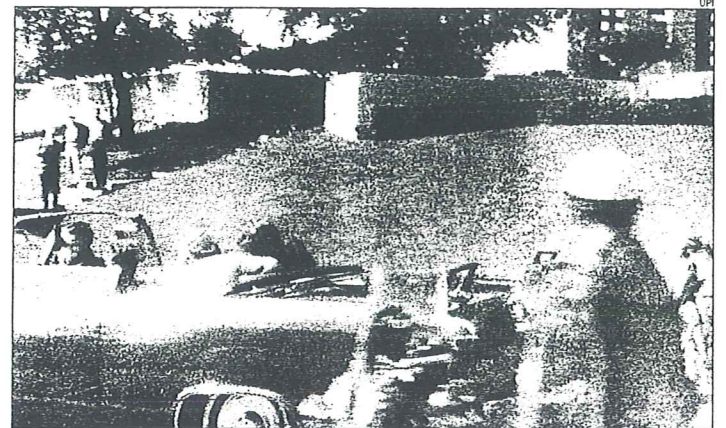


Photo of the grassy knoll fails to show Arnold under the tree where he said he was.

nation a man in a police uniform pulled a shotgun on him and confiscated his rifle.

Arnold fled back to Alaska and did not tell his story for a decade and a half. He then became a main figure in a documentary alleging that Kennedy was killed by a team of Corsican mercenaries, and his story is repeated in recent books. But it appears that Arnold was not even at Dealey Plaza on the day of the assassination. The people on the grassy knoll, near where Arnold maintains he was, are clearly visible in the pictures taken of the knoll. Although Arnold says that he is not visible because he was lying flat on the

the Texas School Book Depository (which the FBI found could not be seen from the Stemmons freeway, where Hoffman supposedly stood). The grassy knoll version of his story is equally flawed. Dallas policeman Earle Brown, who was stationed on the freeway as security, said no civilians were on the freeway. And even if Hoffman had been there, it would have been almost impossible for him to see what he described on the grassy knoll, 750 to 900 feet away. Photos and independent testimony revealed that four large railway freight cars stood over the Elm Street tunnel that day, obstructing the view of the grassy knoll.

THE 'UMBRELLA MAN'

? On the day of the assassination, a man near the presidential motorcade opened and closed a black umbrella as the shots rang out. Some conspiracy buffs, such as Robert Cutler, publisher of the *Grassy Knoll Gazette*, averred that the umbrella contained a poisoned fléchette (a small dart) that struck the president in the throat and neutralized him



Louis Witt and his umbrella at the Capitol in 1978

while a team of five assassins went to work and finished the job. Jim Marrs and filmmaker Oliver Stone suggest that the "umbrella man" gave a signal to the team of assassins waiting in ambush.

Rain on the parade. The truth is less melodramatic—and has been a matter of public record since 1978. The House Select Committee on Assassinations located the umbrella man after publishing a drawing made from photographs (he is glimpsed on the Zapruder film) and asking for public assistance in finding him. Louis Witt did not even know he was the subject of such controversy, still had the same umbrella and explained that he had gone to Dealey Plaza to heckle the president with an accessory that had been a symbol of appeasement since the rainy day in 1938 when Neville Chamberlain returned from his disastrous negotiation with Hitler in Munich.

THAT 'PUFF OF SMOKE'

? Did Sam Holland see "a puff of smoke" on the grassy knoll that might have come from a second gunman? Many conspiracy writers cite the Warren Commission testimony of Holland, an elderly railway signal supervisor: "There was a shot, a report, I don't know whether it was a shot. . . . And a puff of smoke came out about 6 or 8 feet above the ground."

Others on the triple overpass with Holland, such as Frank Reilly, Royce Skelton and Dallas policeman J. W. Foster, saw no smoke. Yet, Edward Jay Epstein, in "Inquest," writes that "five of the witnesses on the overpass said they had also seen smoke rise from the grassy knoll area." Epstein's citation lists only four names, one of which is Holland. The other three do not support the proposition that the smoke resulted

from gunfire. James Simmons said he thought the shots came from the School Book Depository and that he saw "exhaust fumes" from the embankment. Clemon Johnson saw white smoke but told the FBI that it "came from a motorcycle abandoned near the spot by a Dallas policeman." Austin Miller thought the smoke he saw was "steam."

Fresh air. Because modern ammunition is smokeless, it seldom creates even a wisp of smoke. Moreover, on the day of the assassination, there was a stiff wind gusting up to 20 miles an hour—a puff of smoke would not have risen from a rifle and hung stagnantly in the air. It is likely that any smoke seen was in fact steam. A steam pipe ran along the wooden fence near the edge of the triple overpass. A Dallas policeman, Seymour Weitzman, burned his hands on that pipe when searching there immediately after the shots were heard.

CASE CLOSED

and lifting his palm print and fingerprint from a box next to the window, other Oswald fingerprints from the brown paper sack that had concealed the weapon and his palm print from the rifle itself.

At about 1:15, as Oswald walked briskly east along 10th Street, he was spotted by patrolman J. D. Tippit. The description of the assassin had been broadcast four times within 30 minutes. Tippit, a 10-year veteran, pulled his patrol car to the curb and called Oswald over. Tippit got out of the car and started to walk around the front toward Oswald. Apparently not positive he had found a suspect, he did not draw his gun. Oswald, however, whipped out his revolver and began shooting.

'POOR . . . COP'

Tippit was killed instantly. Oswald then ran back in the direction from which he had come, emptying shells from his revolver along the way. More than a dozen bystanders witnessed these events. A number of people saw either the murderer himself or Oswald fleeing down the street with a gun in his hand (six picked him out of a lineup that same night). William Scoggins, a taxi driver eating lunch in his cab, heard Oswald twice mutter "poor damn cop" or "poor dumb cop" as he hurried by.

Oswald loped through a gas station and headed west on Jefferson Avenue. Police squad cars, their sirens blaring, were speeding east on Jefferson toward where Tippit was murdered. Oswald ducked into the foyer of Hardy Shoes. The store's manager, Johnny Calvin Brewer, who was listening to radio reports about JFK's death, remembered that Oswald's "hair was sort of messed up . . . he looked scared . . . he was standing there staring." As soon as the squad cars passed, Oswald left the store, dashed 50 yards down the block and slipped into the Texas Theater without stopping to buy a ticket. The ticket clerk, Julia Postal, who had heard the sirens and noticed "a panicked look" on Oswald's face, telephoned police, saying she thought the man they were looking for was in the theater.

At 1:46, a police dispatcher announced, "Have information a suspect just went in the Texas Theater on West



Dallas policeman J. D. Tippit

500 miles from nowhere, it'll give you a cold drink or a warm burger...

NASA space flights inspired this portable fridge that outperforms conventional fridges, replaces the ice chest and alternates as a food warmer.

Recognize the ice cooler in this picture? Surprisingly enough, there isn't one. What you see instead is a Koolatron, an invention that replaces the traditional ice cooler, and its many limitations, with a technology even more sophisticated than your home fridge. And far better suited to travel.

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Thermo-electric temperature control has now been proven with more than 25 years of use in some of the most rigorous space and laboratory applications. And Koolatron is the first manufacturer to make this technology available to families, fishermen, boaters, campers and hunters—in fact anyone on the move.

Home refrigeration has come a long way since the days of the ice box and the block of ice. But when we travel, we go back to the

spoiled food. No more! Now for the price of a good cooler and one or two seasons of buying ice, (or about five family restaurant meals), all the advantages of home cooling are available for you electronically and conveniently.

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You're cruising comfortably in your car along a busy interstate with only a few rest stops or restaurants. You guessed it... the kids want to stop for a snack. But your Koolatron is stocked with fruit, sandwiches, cold drinks, fried chicken... fresh and cold. Everybody helps themselves and you have saved valuable vacation time and another expensive restaurant bill.

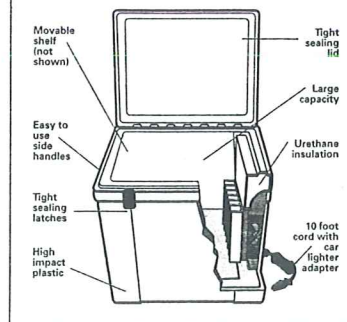
Hot or cold. During a moderate temperature period (70 or cooler) it will even keep your ice frozen indefinitely. With the switch of a plug, the Koolatron becomes a food warmer for a casserole, burger or baby's bottle. It can go up to 125 degrees.

And because there are no temperamental compressors or gasses, Koolatron works perfectly under all circumstances, even upside down. Empty, the large model weighs only 12 pounds. Full, it can hold up to 40 12-oz. cans.

Just load it up and plug it in. On motor trips, plug your Koolatron into your cigarette lighter; it will use less power than a tail light. If you decide to carry it to a picnic place or a fishing hole, the Koolatron will hold its cooling capacity for 24 hours. If you leave it plugged into your battery with the engine off,

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The secret of the Koolatron Cooler/Warmer is a miniature thermo-electric module that effectively replaces bulky piping coils, loud motors and compressors used in conventional refrigeration units. In the cool mode, the Koolatron reduces the outside temperature by 45 degrees F. At the switch of a plug, it becomes a food warmer, going up to 125 degrees.



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Koolatron (P24A) holds 30 quarts.....\$99 \$12 S&H
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Shortly before 2 p.m.: After Oswald scurries into the Texas Theater and tries to shoot another policeman when he is confronted at his seat, arresting officers subdue him and (above) escort him to an unmarked car through an angry mob that had formed on the sidewalk.

Jefferson." Within minutes, more than six squad cars sealed the theater's front and rear exits. Police armed with shotguns spread into the balcony and the main floor as the lights were turned up. Officer M. N. McDonald began scrutinizing the dozen patrons scattered in the theater. He stopped at Oswald and ordered him to stand. Oswald rose slowly, raised both hands and yelled, "Well, it is all over now." In the next instant, he punched McDonald in the face, sending the policeman's cap flying backward. McDonald lurched forward just as his assailant pulled a pistol from

his waist. They tumbled over the seats as other policemen rushed to subdue the gunman. The gun's hammer clicked as Oswald pulled the trigger, but the pistol did not fire.

'I PROTEST THIS POLICE BRUTALITY'

After he was handcuffed, Oswald shouted, "I am not resisting arrest. Don't hit me anymore." A crowd of nearly 200 had gathered in front of the building as a rumor circulated that the president's assassin may have been caught. "Let us have him, we'll kill him! We want him!" people cried as police came out. Oswald

smirked and hollered back, "I protest this police brutality!" Several policemen formed a wedge, and Oswald was hustled into an unmarked car. It screeched away and headed downtown. "What is this all about?" Oswald asked. He was told he was under arrest for killing J. D. Tippit. "Police officer been killed?" he asked. The car was silent for a moment, then Oswald said, "I hear they burn for murder." Officer C. T. Walker, sitting on his right side, tried to control his anger: "You may find out." Again, the suspect smirked. He said, "Well, they say it only takes a second to die." ■

THE NUMBERS GAME

Almost every conspiracy theory that proposes more than one assassin suggests that four or more shots were fired, yet the writers seldom disclose that fewer than 1 in 20 witnesses heard that many shots. Of the nearly 200 witnesses whose testimony or statements are in the National Archives or the volumes of the Warren Commission, more than 88 percent claim they heard three shots, 7 percent heard two or fewer and less than 5 percent heard four shots or more.

Echo patterns in Dealey Plaza made it difficult to locate the direction of the shots, but, significantly, only four witnesses, 2 percent, be-

lieved that shots came from more than one location. The last figure is a critical weakness in most conspiracy scenarios because those alleging a second gunman or even a third or more generally place them in front of and to the right of the president's limousine, on the grassy knoll.

The fudge factory. How many witnesses thought the shots had come from the grassy knoll? Conspiracy writers have long drastically distorted the figures. Many of them cite Josiah Thompson's 1967 book, "Six Seconds in Dallas," as a basis for saying that 52 percent of witnesses selected the grassy knoll. At a March 3, 1992, conference in Texas, researcher Joe West said that 76 percent of 290 witnesses

at Dealey had selected the grassy knoll. In a room of 50 other assassination researchers, no one challenged his "fact." Jim Marrs writes in "Crossfire: The Plot that Killed Kennedy": "One fact seems inescapable—most of the witnesses in the crowd believed shots came from the grassy knoll."

A hefty dose of truth is long overdue. The House select committee reviewed 178 witness statements and found that 44 percent of the witnesses could not determine where the shots came from. Of the remainder, the largest block, 28 percent, indicated the Texas School Book Depository as the location, and just 12 percent (which is less than 8 percent of all witnesses) pinpointed the grassy knoll.

PART II

The Magic Bullet

By Gerald Posner

CONSPIRACY BUFFS HAVE YEARNED FOR 30 YEARS for a witness able to supply conclusive evidence about what happened in Dealey Plaza. We now have that witness, thanks to technological advances. Computer enhancements of the famous home movie of JFK's motorcade by Abraham Zapruder, as well as scale re-creations using computer animation, have settled key issues with a precision unattainable by the Warren Commission in 1964 or the House Select Committee on Assassinations in 1978. They establish—

- That Oswald had ample time to fire three shots.
- That one of the shots—dubbed the “magic bullet” by skeptics—did indeed pass through both John Kennedy and John Connally.
- That no second gunman, on the grassy knoll or anywhere else, fired any shots into Kennedy or Connally.

The first issue is timing. In 1964, the FBI's test firing of Oswald's Mannlicher-Carcano rifle determined that a minimum of 2.25 to 2.3 seconds was necessary between shots to operate the bolt and re-aim. Since the first bullet was already in the rifle's chamber and ready to fire, that meant Oswald had to operate the bolt action twice. According to the Warren Commission, the fastest he could have fired all three shots

was 4.5 seconds. The House select committee, in its 1977 reconstruction tests, reduced the time necessary for three effective shots to 3.3 seconds.

The home movie made by Zapruder, a Dallas dressmaker, serves as a time clock for the assassination. By figuring when the first and last shots took place, it is possible to know how much total time the shooter had. The third shot is the easiest to pinpoint. On the Zapruder film, the president is hit in the head at frame 313. No matter what number of shots they heard, the witnesses were almost unanimous that the head shot was the final one.

Determining the time of the first shot—the start of the assassination clock—is hard-

ADAPTED FROM THE FORTHCOMING BOOK “CASE CLOSED: LEE HARVEY OSWALD AND THE ASSASSINATION OF J.F.K.” BY GERALD POSNER. © 1993 BY GERALD POSNER. PUBLISHED BY RANDOM HOUSE INC.



Bullet that hit JFK and Connally: true size

N O V E M B E R

2 2 , 1 9 6 3

er. The Warren Commission was unsure when it was fired, or if it even hit Kennedy or Connally. Yet, because the commission thought the first shot would be the most accurate, it implicitly favored the theory that it was the first bullet that struck Kennedy in the base of the neck.

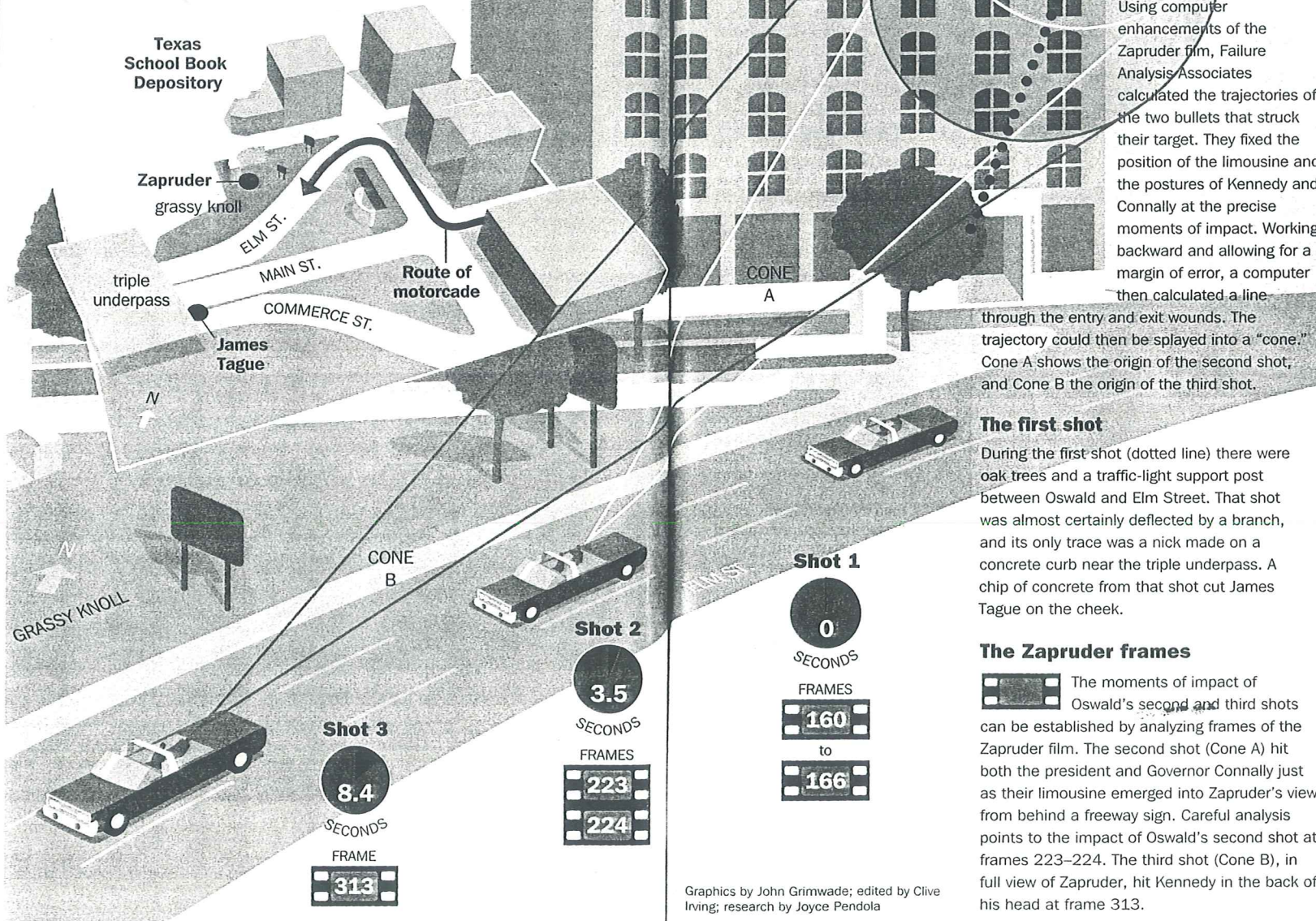
The critics have consistently interpreted the commission's work to give Oswald as little time as possible to fire all three shots. In most conspiracy books, the commission's position is presented as though the first shot came between frames 210 and 225 (while the president's car is obscured on the Zapruder film by a highway sign). Under this scenario, the second shot missed and the third was the fatal head wound at frame 313, giving Oswald very little time to fire all three shots, a minimum of 4.8 seconds and a maximum of 5.6 seconds. Although the commission admitted this was the "minimum allowable time to have fired the three shots," it concluded it was "possible" for Oswald to have done it.

But the assumption that the first shot struck the president is wrong. Earwitness testimony, in combination with the Zapruder film, indicates that the first shot actually missed—and was fired earlier than frame 166. At least seven witnesses pinpointed it as coming just after the president's car turned from Houston onto Elm. Secret Service agent Glen Bennett, riding in the follow-up car, wrote in notes made only five hours later that the first shot sounded like a "firecracker" but made him look at the president: "At the moment I looked at the back of the president I heard another firecracker noise and saw the shot hit the president about 4 inches down from the right shoulder." Bennett said the third shot "hit the right rear high of the president's head." When he made his notes, it was not known that the president had been hit in the rear neck/shoulder.

The girl in red. The commission did not rely on these witnesses in resolving the issue of whether the first shot missed. Since there was also testimony from several witnesses who thought the second shot missed, the commission refused to decide between them. But new Zapruder enhancements confirm that an early shot missed the president and the governor. At frame 160, a young girl in a red skirt and white top, who was running along the left side of the president's car down Elm Street, began turning to her right. Not 1.5 seconds later, she had stopped, twisted completely away from the motorcade, and was staring back at the School Book Depository. The girl, 10-year-old Rose-

The three shots

The first of Oswald's three shots missed. The origin of the second and third shots is established by the projection of the cones (right). The 120-degree turn from Houston Street onto Elm Street slowed the motorcade to under 10 mph. In Oswald's line of fire the president was a simple shot.



Oswald's sniper's nest

The cones

Using computer enhancements of the Zapruder film, Failure Analysis Associates calculated the trajectories of the two bullets that struck their target. They fixed the position of the limousine and the postures of Kennedy and Connally at the precise moments of impact. Working backward and allowing for a margin of error, a computer then calculated a line

through the entry and exit wounds. The trajectory could then be splayed into a "cone." Cone A shows the origin of the second shot, and Cone B the origin of the third shot.

The first shot

During the first shot (dotted line) there were oak trees and a traffic-light support post between Oswald and Elm Street. That shot was almost certainly deflected by a branch, and its only trace was a nick made on a concrete curb near the triple underpass. A chip of concrete from that shot cut James Tague on the cheek.

The Zapruder frames

The moments of impact of Oswald's second and third shots can be established by analyzing frames of the Zapruder film. The second shot (Cone A) hit both the president and Governor Connally just as their limousine emerged into Zapruder's view from behind a freeway sign. Careful analysis points to the impact of Oswald's second shot at frames 223–224. The third shot (Cone B), in full view of Zapruder, hit Kennedy in the back of his head at frame 313.

THE 'JET EFFECT'

At the moment Kennedy was struck in the head by a bullet from the rear, he can be seen on the Zapruder film jerking violently backward.

Conspiracy buffs see this as vivid confirmation that the bullet came from the front—and was fired by a second gunman positioned on the grassy knoll. In fact, medical experts say it proves nothing of the kind.

The backward movement is the result of two factors. First, when the bullet destroyed the president's cortex, it caused a neuromuscular spasm that sent a massive discharge of neurologic impulses from the injured brain shooting down the spine to every muscle in Kennedy's body. "The body then stiffens, with the strongest muscles predominating," says Dr. John Lattimer, a New York surgeon with long expertise in the case.



JFK's head snapped back

The muscles contract, lurching the body upward and to the rear. Kennedy's back brace likely accentuated the movement, preventing the president from falling forward.

At the same instant, the bullet exploded out of the right side of his head. Dr. Luis Alvarez, a Nobel Prize winning physicist, focused on that to discover the second factor that drove the president's head back with such force. Dubbed the "jet effect," Alvarez established it both through physical experiments that re-created the head shot and through extensive laboratory calculations. He found that when the brain and blood tissue exploded out of JFK's head, it carried forward more momentum than was brought in by the bullet. That caused the head to thrust backward—in an opposite direction—as a rocket does when its jet fuel is ejected. Dr. Lattimer did 12 experiments confirming Alvarez's work. In each instance, the jet effect, on a mock-up of a human head struck from the rear by a 6.5-mm bullet, caused the specimen to rocket back toward the shooter.

Graphics by John Grimwade; edited by Clive Irving; research by Joyce Pendola

CASE CLOSED

mary. Willis, asked why she stopped, said, "I stopped when I heard the shot... within maybe one tenth of a second, I knew it was a gunshot. ... I think I probably turned to look toward the noise, toward the book depository."

At the same time that Rosemary Willis slowed and started turning, the enhanced film shows that President Kennedy, who was waving as the car had turned the corner, suddenly stopped waving. He looked to the right toward the crowd, and then back to his left to Jacqueline, as if to be reassured that everything was all right. As the president began waving again, Mrs. Kennedy's head abruptly twisted from her left to the right, the general direction of the School Book Depository. Connally's recollections and actions confirm the shot. "We had just made the turn, well, when I heard what I thought was a shot," he told the Warren Commission. "I instinctively turned to my right because the sound appeared to come from over my right shoulder." The film reveals that the governor's head turned from midleft to far right in less than half a second, beginning at frame 162, when the Willis girl started turning around and the president stopped waving.

"Jiggle analysis" provides additional evidence. Tests have shown that gunshots produce detectable motion on film made with a hand-held camera. The presence of a jiggle or a blur, of course, could be caused by many other factors. While sudden movement of Zapruder's camera may not prove a shot was fired, its absence is good evidence there was no shot. The House select committee determined that there were four such noticeable movements, any of which could be evidence of a shot. The first significant blur was at frames 158-160, just as Oswald would have had to fire to avoid losing his target under a tree that would block his view for several key seconds. The largest spastic movement by Zapruder came at frames 313-314, the moment of the head shot. All told, there is strong evidence that Oswald fired the first shot at frame 160.

Since the last shot, to JFK's head, was at frame 313, that translates to 8.0 to 8.4 seconds total shooting time. That is enough time for even a mediocre shooter to operate the bolt twice and aim for three shots.

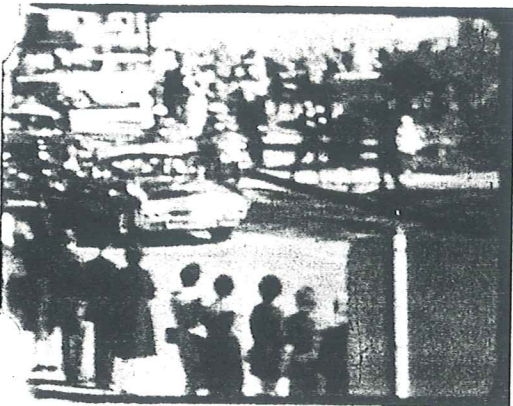
After the assassination, two large bullet fragments were found in the front floorboard of the limousine, and a nearly intact bullet on a Parkland Hospital stretcher. Neutron activation tests done on the whole bullet and the fragments show they represent only two bullets. No part of a third bullet was ever found. So

most 2.5 seconds. According to a second firearms expert, Robert Kraus, "if [the bullet] hit [a] branch head-on, it might have separated the bullet from the jacket" (the bullets Oswald fired had lead cores and copper jackets).

Virgie Rachley worked at the book depository and watched the motorcade from its front steps. Just after the car passed, she heard the first noise: "I saw a shot or something hit the pavement. ... It looked just like you could see the sparks from it and I just thought it was a firecracker." Whatever it was, she was certain she saw it before she heard a second shot. Five hundred twenty feet from the book depository, in a straight line from the sniper's nest and the tree, James Tague had stopped his car and was standing at the southern end of the triple underpass. After the assassination, a deputy sheriff asked him why he had blood on his face. "I remembered something had stung me during the shooting," he recalls. The two crossed the street and on the edge of a curb found a bullet mark. A fragment had struck the curb, sending a chip of concrete into Tague's cheek. What is likely is that after the bullet fragmented against a tree branch, the stable lead core continued moving in a straight line from the depository and struck the curb more than 500 feet away. The destabilized copper jacket hit the pavement, giving

Virgie Rachley the impression of sparks. Neither fragment was recovered. If the first shot was near frame 160 and the third one at 313, when was the middle shot? And was it possible for that second bullet to have caused both the president's neck wound and all the governor's wounds, the so-called single bullet theory? On the unenhanced version of the Zapruder film, when the presidential car emerges from behind the road sign, at frame 225, President Kennedy's right arm appears to be rising in response to a bullet wound. Governor Connally does not appear to show any reaction to his wounds until his mouth opens at frame 235. That difference of 10 frames is slightly more than half a second between the reactions of the two men. But the Warren Commis-

**FIRST SHOT
FRAME 162**



A running girl, Rosemary Willis (upper right) begins to stop, and Connally starts turning to the right.

how was it possible that Lee Oswald, who put one bullet into President Kennedy's neck, and another into his head, missed not only the occupants of the car with his first shot, but even the car itself?

WHY THE FIRST SHOT WENT ASTRAY

The Warren Commission did not try to resolve the issue, although it was close to unraveling the mystery when FBI firearms expert Robert Frazier was asked where the missing bullet could have gone. Frazier said, "I have seen bullets strike small twigs, small objects, and ricochet for no apparent reason except they hit and all the pressures are on one side and it turns the bullet and it goes off at an angle." But the commission never studied the large oak tree that blocked the sniper's view for al-

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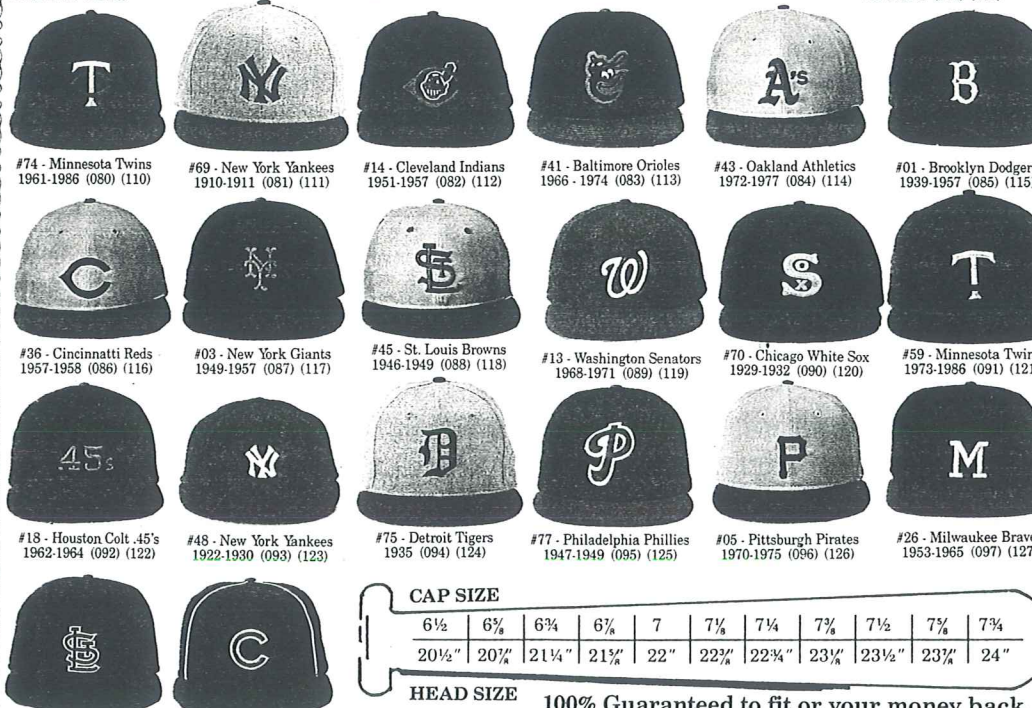
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CASE CLOSED

sion was not able to pinpoint the exact frame at which the president and the governor were hit, instead giving only a range from frames 210 to 225.

Conspiracy buffs used the earliest possible time, frame 210, and then argued that since Connally did not show a clear reaction until frame 235 (a difference of 25 frames, or 1.4 seconds), his reaction was too slow for him to have been hit by the same bullet that hit Kennedy. If Connally was hit by another bullet, it had to have been fired by a second shooter, since the Warren Commission's

own reconstruction showed that Oswald could not have operated the bolt and re-fired in 1.4 seconds. The House select committee actually increased the discrepancy. It said Kennedy was wounded at frame 190 and the earliest they saw a marked difference in Connally's posture and facial expressions was frame 226. If the same bullet struck both men, the committee's difference of 36 frames meant that the governor sat unfazed in his seat for nearly 2 seconds after being wounded.

Telltale images. Further enhancements of the film clear up the confusion. They show that before the president disap-

peared behind the sign at frame 200, he was waving to the crowd with his right hand. Even when the car and his body are obscured by the road sign, the top of his right hand can sometimes be seen waving. By frame 224, the car is back in view. In frame 225, the president is almost in full view, and his hand is lower. He was bringing it down from a wave. By 226, Kennedy has started raising his arm again. At 227, the president's elbow is jerked off the car. He was in full reaction to the bullet that hit him from the rear and exited his throat.

Working backward from JFK's reaction, it is possible to pinpoint the precise

The shattered myth

Oswald's second shot, the first to strike, is the most contentious. It is variously called the "magic" or "pristine" bullet by conspiracy theorists, who contend that no single bullet could have so seriously wounded both men. The bullet

needed no magic and was not pristine. Its trajectory, based on the Failure Analysis computations and the Zapruder film, is reconstructed here.

BULLET SPEED
1,700—1,800 feet per second

Entry wound in the back 6.5 mm in diameter

Exit wound in throat

Bullet grazed tip of a vertebra in the neck, slightly splintering the bone.

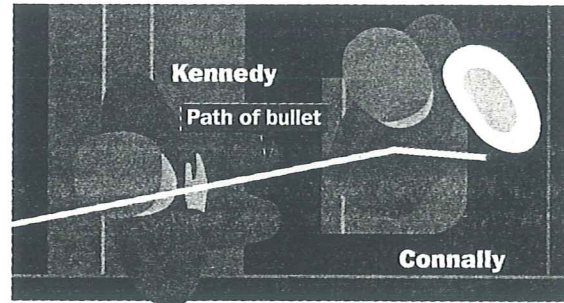
Cavity momentarily caused by bullet's passage



Kennedy



By frame 226 the president began to show a neurological reflex—known as the Thorburn position—to spinal injury. His arms jerked up to a fixed position, hands nearly at his chin, elbows pushed out.



Kennedy

Path of bullet

Connally

View from above

The trajectory, plotted in accordance with the exact postures of both men, was not significantly altered until the bullet was slightly deflected by Connally's rib.

Entry wound in right shoulder was 1.25 inches long—the exact length of the bullet—indicating the bullet was tumbling end over end.

Bullet tumbling

Traverses chest and shatters fifth right rib

Entry wound at top of right wrist was ragged and irregular. The bullet, now traveling backward, fractured the radius bone.

When the bullet came to rest in Connally's left thigh, having lost nearly 80 percent of its velocity, it was just able to penetrate skin.

1,500–1,600 feet per second

900 feet per second

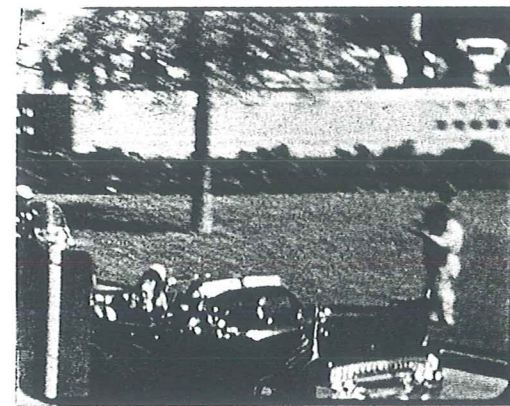
400 feet per second

Connally

Exit wound below the right nipple was large—nearly 2 inches in diameter—and ragged; the bullet was still tumbling.

Stetson hat

**SECOND SHOT
FRAME 224**



Connally's lapel leaps as bullet passes through, supplying a vital timing confirmation.

time of the second shot. The Warren Commission was not aware that the president's spine was damaged by the bullet that entered the base of his neck, since the autopsy physicians did not examine the spine and did not use the X-rays in preparing their final report. When Dr. John Lattimer, a renowned New York surgeon and a medical and ballistics expert, examined the autopsy X-rays in 1972, he found "blast injury" trauma near the sixth cervical vertebra. Such a spinal injury is significant because it can cause an instantaneous reaction called Thorburn's position (Thorburn was an English physician who first noted the phenomenon over 100 years ago). The victim's arms jerk up into a fixed position, almost parallel with the chin, with the hands gathered near the neck and the elbows pushed out to the sides. That is exactly the position the president started assuming at frames 226-227.

Most observers of the Zapruder film, as well as eyewitnesses that day, incorrectly thought the president was grabbing at his throat in response to the bullet that hit him. The enhanced film shows that the president's hands never touch his throat. Kennedy's Thorburn response at frames 226-227 would have come be-

tween one and two tenths of a second after the bullet hit, which translates into 1.8 to 3.66 Zapruder frames. That means he was wounded at frames 223-224, or just before he was visible from behind the road sign. That is 3.5 seconds after Oswald had fired his first shot near frame 160, more than enough time for him to cock the bolt, re-aim and fire again.

The focus now moves to Governor

Connally. When does he show evidence of being shot? Is there enough of a delay to raise the possibility that a separate bullet, from a second gunman, struck him? The Zapruder film at its normal speed provides a misleading impression. The enhanced film shows several reactions that reveal exactly when the governor was hit. At 224, the right lapel of the governor's suit flies away from his chest. The jacket movement was discovered in a 1992 computer enhancement by Failure Analysis Associates, which specializes in computerized reconstructions for litigation. It may be one of the most important timing confirmations in the case, as it establishes the moment the bullet hit him. This is the exact area where the governor's suit and shirt have a bullet hole, as the missile passed through his right shoulder blade and out under his

right nipple. Since Kennedy and Connally were less than 2 feet apart, the bullet passed through them almost simultaneously at frame 224.

Connally's reaction, while slower than Kennedy's, was still very fast. He showed signs of physical stress (the Stetson hat in his right hand flipped up) within a tenth of a second, and he reacted visibly to pain (his mouth opening and cheeks expand-



"Mr. President, you can't say Dallas doesn't love you," Mrs. Connally said as the crowd roared. The first shot came seconds later.

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SPECIAL REPORT

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CLOSED**

ing) only two thirds of a second after he was hit. Connally told the Warren Commission that the first shot could not have been the one that wounded him "because I heard the sound of the shot. . . . When I heard the sound of that first shot, that bullet had already reached where I was, or it had reached that far, and after I heard that shot. . . I started to turn to my left before I felt anything. It is not conceivable to me that I could have been hit by the first bullet, and I felt the blow from something which was obviously a bullet, which I assumed was a bullet, and I never heard the second shot, didn't hear it. I didn't hear but two shots. I think I heard the first shot and the third shot." Doctors familiar with gunshot wounds say it is normal for the shock caused by the wound to block the sound from the victim. Yet the Warren Commission still leaned toward the theory that it was the first bullet that hit Kennedy and Connally.

Connally had another difficulty with the Warren Commission conclusion about the sequence of shots. Although convinced he was struck by the second bullet, he thought the president was hit by the first shot. This was primarily because of the testimony of his wife, Nellie, who was beside him in the car. She told the Warren Commission that when she heard the first shot, "I turned over my right shoulder and looked back and saw the president as he had both hands at his neck. . . . Then very soon there was a second shot which hit John." In her testimony, there is a key sentence that the commission and subsequent researchers have overlooked. Mrs. Connally said, "As the first shot was hit, and I turned to look at the same time, I recall John saying, 'Oh, no, no, no.' Then there was a second shot and it hit John." However, she could not have heard her husband say "Oh, no, no, no" at the first shot. He was clear in his testimony: "I immediately, when I was hit, I said, 'Oh, no, no, no.' And then I said, 'My God, they are going to kill us all.' Nellie pulled me into her lap, she could tell I was still breathing and mov-

ing, and she said, 'Don't worry. Be quiet. You are going to be all right.'" When Mrs. Connally turned to look at the president, she did indeed see his hands up near his neck, but it was in reaction to the bullet that struck him at frame 224, the same bullet that forced her husband into her arms a second later. The conclusive evidence is again found in the Zapruder film. The enhancement shows Mrs. Connally, despite her recollection of turning to her right after the first shot, actually turning at 227-228, a split second after the second shot. When

then people who were the exact height and weight of the two men were placed into the seats in the positions shown in the film. To achieve precision of placement, a sonic digitizer was used to make measurement of the bodies from the two-dimensional Zapruder film and to convert them into three-dimensional space. Once the automobile was filmed, it was placed into animation and located at the exact spot on Elm Street that it had occupied when the second shot was fired, at frame 224. Then the wounds on the president and governor were measured and extended into the animation.

The computer was now ready to answer two questions. The first was whether one bullet could cause all the wounds, and the answer was yes. The bullet punctured Kennedy's upper back, exited his throat, and on a straight line trajectory entered Connally's right shoulder. It continued on a downward angle and exited under his right nipple. Because he had turned in his seat, the governor was slightly to the right. His right forearm was held against the lower portion of his chest, and when the bullet exited it was deflected down through his right wrist and then went into his left thigh.

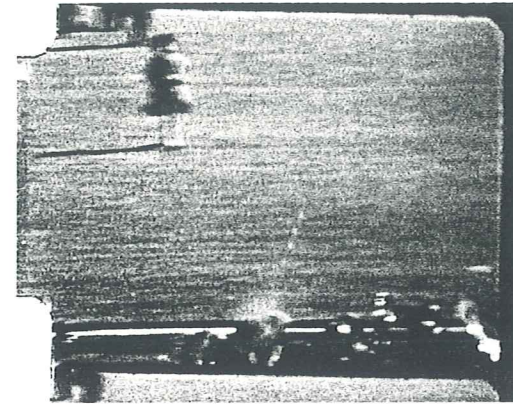
The second question resolved by the re-creation was where the sniper would have to be to achieve this trajectory.

The computer worked backward to provide a "cone" within which the sniper must be. "In this case," says Dr. Robert Piziali, who supervised the tests, "the cone is almost centered on the sixth floor of the Texas School Book Depository. The shot could only have come from within that cone."

COMMISSION EXHIBIT 399

The final issue on the single bullet is whether CE399, the bullet found on the stretcher at Parkland Hospital within 90 minutes of the assassination, could have inflicted the wounds to both men and remained only partially deformed. CE399, designated the "magic bullet" by buffs, is described as "pristine" in conspiracy books. In fact, although it is not fragmented or crushed, it is somewhat

THIRD SHOT FRAME 313



With the limousine almost at a standstill, the fatal last bullet visibly shatters Kennedy's head.

some of the new evidence was presented to Governor Connally in 1992, he admitted: "It may well be that Mrs. Connally was mistaken. . . . The second bullet could have hit both of us."

Was it possible for one bullet to have inflicted the neck wound on President Kennedy and all of the wounds on Governor Connally? To find out, Failure Analysis Associates used a technique called reverse projection. First, they created a full-size model of the presidential limousine. Then a camera was placed in relation to where Zapruder was standing and the lens was set to the same focal length, so the view of the car was identical to that afforded in the film. Using the Zapruder film, the images of Kennedy and Connally were sketched into the car, and

SPECIAL REPORT

CASE CLOSED

flattened. The Warren Commission's test bullet, fired into a cadaver's wrist to simulate Connally's wrist wound, emerged with a badly smashed nose. Does this indicate that 399 could not have passed through both Kennedy and Connally, as critics suggest?

"The Warren Commission did not conduct the proper experiments," says Dr. Lattimer. "They fired a 6.5-mm shell traveling at over 2,000 feet per second directly into a wrist bone. Of course you are going to get deformation of the bullet when it strikes a hard object at full speed. If Governor Connally's wrist had been hit on the straight fly by that bullet, CE399, the bullet would be in much worse shape, and so would his wrist. . . . The bullet slowed as it passed through the bodies, and it never hit a hard surface, like bone, on its nose. First, it went through Kennedy's neck. When it exited the president, it began tumbling [rotating] and that is evident by the elongated entry wound on the governor's back [the bullet entered sideways]. It continued tumbling through his chest and struck a glancing blow to his rib, knocking out several inches. The gaping hole under his right nipple shows the bullet left his chest sideways, entered the wrist while tumbling backwards, and exited with just enough strength to break the skin on his thigh."

"Entirely consistent." Dr. Michael Baden, a member of the House select committee's medical panel, says that when the bullet struck the wrist bone, "it was not deformed since its velocity was so low." Dr. Martin Fackler, president of the International Wound Ballistics Association, finds the condition of CE399 "entirely consistent" with a bullet that inflicted the seven wounds on the two men. "It's a long bullet [1.25 inches], and I would expect it to be flattened on the side, just like you had flattened it in a vise." In 1992, Failure Analysis reduced the charge on a 6.5-mm bullet so it traveled at 1,100 feet per second, approximating the speed of CE399 when it struck Connally's wrist. The test bullet was shot into a cadaver's wrist, and emerged in better condition than 399.

Finally, there is the question of the flakes of metal (less than 2 grains from a

161.2 grain bullet) recovered from Connally's wrist and thigh. Did these come from the bullet found on Connally's stretcher? The House select committee engaged Dr. Vincent Guinn, one of the country's most respected experts on neutron activation, to explore that issue. Guinn discovered that the bullets

fired—and the stretcher bullet proved to be indistinguishable, both in antimony and silver, from the fragments recovered from the governor's wrist.

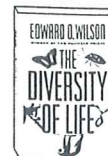
For those seeking the truth, the facts about the assassination of John Fitzgerald Kennedy are incontrovertible. They



Jack Ruby rushes forward to shoot Oswald as he is led from police department basement.

made for Oswald's Mannlicher-Carcano rifle were so lacking in uniformity that he was able to match fragments with a degree of certainty that is normally impossible. He concluded that "there is no evidence for three bullets, four bullets or anything more than two." Bullet fragments from Kennedy's brain matched three testable fragments found on the floorboard of the limousine, meaning they were all part of the third shot

can be tested against credible testimony, documents, and the latest scientific advances. Chasing shadows on the grassy knoll will never substitute for real history. Lee Harvey Oswald, driven by his own twisted and impenetrable furies, was the only assassin at Dealey Plaza on Nov. 22, 1963. To say otherwise, in light of the overwhelming evidence, is to absolve the man with blood on his hands, and to mock the president he killed. ■



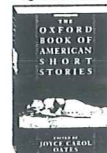
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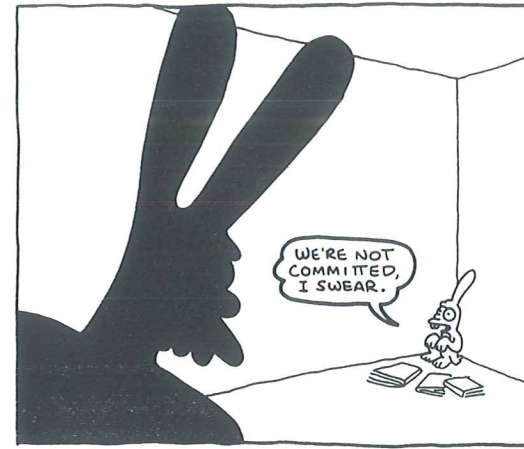


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