## 50-50 Chance of a 4th Shot In Dallas, JFK Panel Is Told

By George Lardner Jr. By a Washington 1 at Staff Writer

The House Assassinations Committee was told vesterday that there was a 50-50 chance of a shot having been fired at President Kennedy from the so-called "grassy knoll" in Dallas' Dealey Plaza, but the odds seemed to crumble rapidly under prolonged

questioning.

The chief scientist for the Cambridge, Mass., acoustical firm that studied President Nixon's Watergate tape recordings testified that an accidental police recording of the gunfire in Dallas on Nov. 22, 1963, contained evidence of at least two, probably three, and perhaps four shots.

But the scientist, Dr. James E. Barger of Bolt, Beranek and Newman Inc., refused to go beyond his statement that the odds on a fourth shot were "around 50 percent."

Index questioning by Bon Bohort

Under questioning by Rep. Robert W. Edgar (D-Pa.), Barger also acknowledged he had been more confident that four shots were fired at the presidential motorcade before the committee authorized an elaborate test-firing in Dealey Plaza last month.
"These are very weak tests," Barger

said of earlier studies indicating that four shots may have been fired. "It is not difficult to pass them."

A fourth shot would have required a second assassin. The Warren Commission concluded that only three shots had been fired, all by Lee Harvey Oswald from a "sniper's nest" on the sixth floor of the Texas School Book Depository.

Barger told the committee that the acoustical evidence was full of "false alarms," but emphasized that if a fourth sho was fired, it had to come from the "grassy knoll" that conspirately have been also been als acy buffs have focused on for years as the most likely roost for another as-

"I don't know if it's a false alarm or not," the acoustical appart told the committee of a tape of a test-firing from the knoll last month. Members said the shot sounded distinctly different from those fired by a Dallas police marksman from the Book Deposi-

The tape that provoked all the studies went ignored for years, stored first in a metal filing cabinet outside the Dallas police chief's office and then taken home, with other assassination files, by the head of that department's

intelligence division.

The recording of the sounds of the assassination was made when torcycle patrolman inadvertently left his microphone switch in the "on" position, deluging his transmitting channel with what seemed to be simply a lot of motorcycle noise while the assassination took place. The now-retired officer who had custody of the tape, Paul McCaghren, who had been assigned briefly in 1963 to a special assassination investigation squad, turned it over to the committee last year with his other files.
Using sophisticated techniques and

complicated mathematics that took ail morning to explain, a team of scientists headed by Barger "filtered" out the motorcycle noise and carefully studied what was left, including what turned out to be a carillion bell chiming in the distance.

After a series of preliminary tests that plotted out the sound waves on 234 linear feet of paper, they came up with "audible events" within a 10-second time frame that they felt might be gunfire. At that point, Barger testified, they proposed staging "an acoustical reconstruction" in Dellas to see if they could duplicate the sounds by test-firings with the motorcycle transmitter and the "presidential limousine" in carefully calculated positions.

The result was a series of four-shot sequences with "inpulse patterns" strikingly like the suspected gunfire

on the Dallas police tape.

Under that reconstruction, Barger reported, the first shot came from the book depository (a possible "first shot" from the knoll proved to be a "false alarm"), a second came from the depository 1.6 seconds later, a third seemed to come from the grassy knoll 5.9 seconds after that, and the final shot came from the depository a half second after that.

At first blush, the data suggested that Oswald could have fired only two shots, even if three came from the Book Depository. The Warren Commission, citing FBI experts, said it took a "minimum" of 2.3 seconds to operate his Mannlicher-Carcano, significantly longer than the 1.6 seconds Barger logged between the first and second shots.

The committee's chief counsel, Robert Blakey, reported, however, that preliminary test-firings conducted last weekend indicated that a Mannlicher could be fired much more rapidly, especially if the rifle's iron sights, rather than the telescopic sight, were

That left the possible shot from the grassy knoll, which would have had to have been the third shot, for the committee to deal with. Barger agreed that the evidence for it was the slim-mest of all. He said there were undoubtedly a number of undetected "false alarms" still lurking in the data.

Asked by Rep. Samuel L. Devine (Ohio) what a "false alarm" was, (R-Ohio) what a "false alarm" was, Barger defined it as "an indication in your test that an event occurred when, in fact, it did not occur." Devine replied that he had been 'wondering if it was a convenient way to eliminate the unexplainable."

"There's no way to eliminate the unexplainable that I can explain," Barger countered. 'A false alarm can

mimic a correct detection."

He said One flase alarm was identified by calculations showing that the motorcycle officer would have had to have been going 100 miles an hour for the otherwise plausible test shot to have taken place.

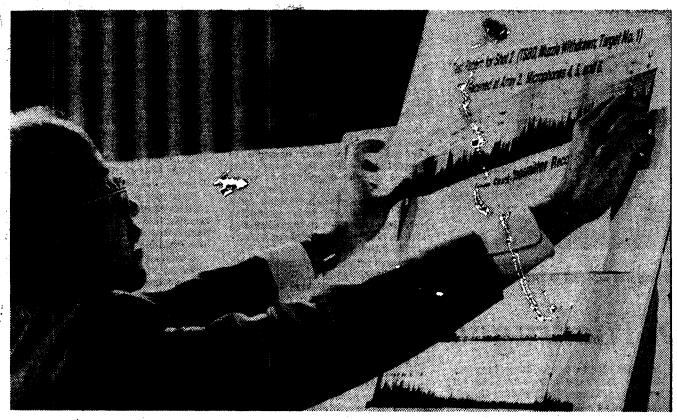
Eventually, under questioning, Barger said the tests showed that the probability of two shots was "very high—95 percent. The probability that there are three that we have detected [on the original tape] is probably between 60 and 70 percent. The probability that there are four is lower than that-around 50 percent."

He steadfastly refused to tell the committee what it should make of this, or even to say what he thought, despite repeated attempts to draw him out.

"I'm somewhat perplexed," Rep. Harold S. Sawer (R.-Mich.) said at one point. After all, he reminded Barger, it was Barger who supervised production of a "reenactment" tape containing four shots. "Do you have an opinion yourself as to whether there were three or four shots fired? Sawyer asked.

"Congressman," he told Sawyer, "I can't add any information by saying that I think there are three or four.

Exasperated, Saywer concluded: "I'd hate to sue anybody, let alone prosecute anybody, on this kind of ev-



By James K.W. Atherton—The Washington Post Acoustical expert Dr. James Barger uses recording test pattern during his testimony on Kennedy assassination.