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Memora: Topic:	ndum JFK Assassination The cause of the dent on the mouth of cartridge case CE 543. (Note: This memo is written under the assumption that the reader is familiar with the topic discussed in Josiah Thompson, <u>Six Seconds in Dallas</u> ,
From: Date:	R. Bernabei Dept. of Classics Queen's Univ. Kingston, Ontario, Canada 21 May 1969

Reid 5/26/69

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Physical tests with a Mannlicher-Carcano rifle conclusively establish that the dent on the case mouth of CE 543 occurred in the course of normal ejection of the cartridge case from the rifle.

The following drawing depicts the location of certain parts of the rifle which enter into the discussion of how the dent occurred:

LOCATION OF CARTRIDGE CASE ROL1 TIME OF EJECTION. LOBATION OF EJECTOR (BEHIND MAGAZINE, UNDER BOLT) BACK OF

RECEIVER

When the bolt is drawn backward with naturally vigorous force, the ejector deals a sharp blow to the base of the cartridge case and thereby casts it more or less directly to the right of the rifle and parallel to the ground. By the same action, the ejector imparts a rapid spin to the cartridge case and whirls it away from the rifle like a tiny propeller. During the first whirl, the case mouth swings around bumps the steel receiver on the right side immediately behind the magazine. The point of contact is marked "X" on the drawing.

Although results may vary from rifle to rifle, the case mouth normally strikes the receiver with sufficient force to cause a dent which in every essential respect resembles the dent on the case mouth of CE 543.

Observation of the rifle before and after case ejection provides confirmation that the dent on CE 543 was caused in the manner described above. When the case is ejected, it leaves a trace of brass at the point where it bumps the receiver.

A dent on the case mouth may be produced by one other means associated with the mechanical operation of the rifle, but the character of the dent produced in this alternative manner differs significantly from the dent on CE 543. The alternative means is to thrust an <u>empty</u> cartridge case from the rifle clip into the rifle chamber. Under this condition, the case mouth strikes the steel barrel near the entrance of the chamber, and is dented there.

This alternative method often produces dents that resemble the dent on CE 543, but it always causes a slight mashing of the brass at the leading edge of the case mouth, a feature that does not occur on CE 543 or on any cases dented in the course of normal ejection. The following drawing roughly illustrates the character of the dents:



The mashing may consist of no more than a hair-line of disruption in the normally flat surface at the edge of the case mouth, but even slight mashing is significant, for CE 543 is not mashed. perioheral

The reader should be informed of a personal matter that bears significantly both on the determination of the cause of the case mouth dent and on the character of Josiah Thompson's consideration of the dent.

FBI firearms identification expert Robert A. Frazier introduced into evidence two test cartridge cases which together bear the designation CE 557. One of the two test cases (I designate it CE 557A) bears a dent on the case mouth which in all respects resembles the dent on CE 543.

Since Thompson describes in detail other minute features of the two test cases, and because he admits **EXPERIMENTAL ADDRESS** (p. 145), it is clear that he observed them closely and knew that one of the test cases was dented in precisely the same manner as CE 543, the case about which he makes such an unwarranted fuse.

Thompson was obliged to consider either that the dent on CE 543 was produced by some normal means, or that Frazier had introduced an illicit exhibit. Instead, Thompson declined to mention the dent at the mouth of Frazier's cartridge case. There is not the least reference to it in Thompson's discussion, although he accurately describes other tiny features of Frazier's test cases.

It is difficult for me to understand why Thompson should attribute **xigntfirmum** suspicious and important significance to the dent on CE 543, but fail to attribute the same significance to the dent on Frazier's test. I urge the readers of this memo to ponder Thompson's action, and to explain it to me if **hexame** they can. I regret that I have not yet been addition able precisely to determine the cause of the dents that occur on the case shoulders of CEs 544, 545, 141, and 557, although I have had partial (but indefinite) success by a cartain means.

Physical tests failed to produce kank shoulder dents in the couse of ejection; for that and other xname, reasons, I am inclined to reject the possibility that the shoulder dents were caused during ejection. I welcome your suggestions, for I greatly desire to resolve this problem.

Dick Bernaber

(For help and encouragement in the resolution of the question concerning the dent on CE 543, I am indebted to Dr. John Michols and to Harold Weisberg)