

The National Archives Switches Shells in Midstream

by Publius Valerius, Draft of 11/22/2016

Preface

The provenance of a work of art or historical artifact is a grave concern of the archivist. Items which have been uniquely crafted and have historical value are preserved for future generations. If a work of art has a troublesome period in which it is "lost," its provenance may be questioned, and its value may decrease. Artifacts of dubious provenance may be interesting enough for a circus sideshow, but irreplaceable works of art and artifacts should be maintained under strict security.

The National Archives and Records Administration (NARA) is responsible to the American people to preserve and protect historical artifacts, documents, and the artwork that has been acquired by our country. I am writing this paper to scrutinize a particular egregious error that NARA has as yet ignored. I expect a written response to my research from the Archivist of the United States. I also expect an investigation which should be assisted by appropriate non-governmental researchers. The National Archives needs to clean up its act and take steps to prevent the problems that I describe here.

Serious JFK assassination researchers expect the National Archives to maintain the records and artifacts entrusted to them. NARA limits assassination researchers' access to many parts of the JFK assassination holdings. These limits may include a written request, proof of a specific need, or a strict prerequisite to see the material. Even when materials are approved for viewing, the researcher must undergo numerous security checks and restrictions. Should not we also expect NARA to take its archival and preservation roles seriously?

Introduction

I have recently had a casual interest in the John F. Kennedy Assassination. I can summarize it as having watched some YouTube videos about different assassination theories. I got interested enough to watch and read about some of the research done in the past 20 years or so. This research supports widely varying conclusions about the assassination and the events surrounding it.

One of the interesting videos that I saw was produced by Barry Krusch, entitled “Recent Photos From the National Archives Prove – Lee Harvey Oswald was Framed.”¹ This was probably one of dozens of videos that I saw, but it eventually led me to write this research paper. In the video Mr. Krusch shows a number of photos taken by a staff member of the National Archives in 2012.² These photos were taken of Warren Commission exhibits CE 543, CE 544, and CE 545. Mr. Krusch was comparing the markings on the 2012 photos to the Warren Commission witness testimony found in the 26 volumes of the Hearings and Exhibits.³ As we can tell by Krusch’s title for his video, he discovered what seem to be discrepancies in the exhibits.

The exhibits in question, CE 543, CE 544, and CE 545, are the three expended rifle cartridges found on the 6th floor of the Texas School Book Depository on November 22, 1963.⁴ These shells, or “hulls” as they were known by Texas law enforcement, were considered by the Warren Commission as evidence that a shooter had fired three shots at the President of the United States and Texas Governor John Connally.⁵

As I saw what Mr. Krusch was showing me, it gave me a good reason to look further into the exhibits. After all, if the National Archives has evidence that say one thing, and the testimony from 50 years ago says another thing, then it seemed like Mr. Krusch had a reasonable point. *Was there really something wrong?* I followed a link to his website⁶ and found that he had written a book on the topic of the assassination. It was free to download, so I decided to check it out.

I read the book. It was the first book I read on the assassination. It’s called *Impossible: The Case Against Lee Harvey Oswald*, © 2012, 2015. In it Mr. Krusch spends quite a large amount of effort on how the three expended rifle cartridges, the shells, found their way into the evidence against Oswald. He endeavors to discover the “chain of custody” of the shells—from the floor adjacent to the 6th floor window of the Texas School Book Depository to the man who eventually testified about them before the Warren Commission: Robert Frazier of the FBI Laboratory in Washington, DC. The journey for two of the shells took roughly 18 hours. Another shell didn’t arrive at the FBI Lab until three days after the death of Oswald.

¹ “Recent Photos From the National Archives Prove – Lee Harvey Oswald was Framed.” Barry Krusch, 2013, <https://www.youtube.com/watch?v=25QiW5K9U9c>

² Barry Krusch phone conversations of October 11, 2012 and October 26, 2012 with Amy DeLong of the National Archives. Listen at http://krusch.com/jfkshell/story_content/external_files/Amy_Delong_Identifies_Q_ARC_Identifier_305149+13018371891_11_Oct_2012_09_36_26_BK.mp3 and http://krusch.com/jfkshell/story_content/external_files/Amy_Delong_2d_Phone_Conversation_rec_+13018371891_26_Oct_2012_12_08_32.mp3. Also see the cropped and edited photos at http://krusch.com/jfk/Shells_National_Archives.zip.

³ The Warren Report is available online in numerous places, including the National Archives and the Mary Ferrell Foundation website. The Hearings and Exhibits are also available online, including The Mary Ferrell Foundation and History Matters.

⁴ See Warren Report, p. 85 and footnote 146. “After examination of the three cartridge cases found on the sixth floor of the Depository, Frazier and Nicol concluded that they had been fired in the C2766 Mannlicher-Carcano rifle to the exclusion of all other weapons.” Footnote 146 refers to “3H415 (Frazier) ; 3H505 (Nicol) ; CE 543-545.”

⁵ “Nevertheless, the preponderance of the evidence, in particular the three spent cartridges, led the Commission to conclude that there were three shots fired”. Warren Report, p.111

⁶ Either <http://krusch.com/jfkshell/story.html> or <http://krusch.com/jfk/>

The arrivals in Washington and the original designations

While at the FBI Lab, these shells were treated as “Questioned” evidence and received “Q” numbers. There was also a category for “Known” evidence, which would have been logged as “K” numbers.⁷ And when an item became “Confirmed” evidence, the FBI would give the item a “C” number, even if it already had a “Q” number.^{8 9} Therefore, as each piece of evidence arrived at the FBI Laboratory from the Dallas Police, it was marked individually to uniquely identify it.

For a rifle shell, this mark is an indelible engraving that would be highly visible. People handling the shells often engrave marks, usually their initials, to identify the evidence later.¹⁰ If the FBI did their job correctly, the three shells should each have a unique Q number inscribed into the brass, and it would still be readily visible. This engraved number is used “for identification purposes” by the FBI Lab.¹¹

The first two shells and a live round arrived on November 23, 1963, delivered by Special Agent Vince Drain, FBI. The arrival time was approximately 7:30 am.¹²

- The first shell logged was **Q6**. It has the unique property of having a noticeable dent on the lip of the cartridge where the bullet attaches. It is a 6.5 mm Carcano shell made by the Western Cartridge Company.¹³
- The second shell logged was **Q7**. I know of no major identifying characteristics of this cartridge except that it is clearly marked Q7 by the FBI. It is a 6.5 mm Carcano shell made by the Western Cartridge Company.
- The unfired shell found in the Carcano rifle, found on the 6th floor, was logged as Q8. It is a 6.5 mm Carcano shell made by the Western Cartridge Company with a copper-coated lead bullet.

After Oswald was killed, the last of the three shells made its trek to the FBI Lab in Washington.

- The third shell, which Joseph D. Nichol later testified as the “lone one,”¹⁴ was logged as **Q48**. Its whereabouts in the interim are somewhat sketchy, but Captain Fritz of the Dallas Police Homicide Bureau released it to Vince Drain, “I believe on the night of November 27.”¹⁵ This corresponds closely to a note written by Robert Frazier of the FBI Laboratory that indicated that his fellow technician, Cortlandt Cunningham, received Q48 on “11/27.”¹⁶

This cataloguing of the evidence is best illustrated in Commission Document 1, the FBI report on the assassination.¹⁷ **Figure 1** represents Exhibit 22 of the FBI report, showing all three shells.¹⁸

⁷ 3H500, the testimony of Joseph D. Nichol.

⁸ “Frazier Speaks,” John Hunt, 2005, <http://www.history-matters.com/essays/frameup/FrazierSpeaks/FrazierSpeaks.htm>

⁹ 3H474, the testimony of Cortlandt Cunningham. “In other words, to facilitate reporting in the Laboratory, we usually give these items a Q or a K number. A Q number is a questioned item, like a bullet from a body, and a known is a gun, the K is a known, like a weapon. That is for reporting purposes. But since this case began, we have so much evidence, and we have received so much evidence, it was considered practical to reassign a C number by us—like Mr. Eisenberg said, they are C-253, C-262, and C-251. They also have a Q number. Q-13 is C-13.”

¹⁰ 3H505, the testimony of Joseph D. Nichol.

¹¹ 3H399, Testimony of Robert Frazier.

¹² Hunt, *op. cit.*

¹³ 3H416, Testimony of Robert Frazier.

¹⁴ Warren Commission Hearings and Exhibits, Volume 3, p. 505. Abbreviated as 3H505 hereafter.

¹⁵ 7H404, Affidavit of J. W. Fritz, June 9, 1964.

¹⁶ See Figure 2 of <http://www.jfkclancer.com/hunt/mystery.html>. I have interpreted the “CC” to represent Cortlandt Cunningham, under the assumption that Robert Frazier was off duty when this item was delivered to the FBI Lab. In open testimony, Mr. Frazier confirms this date by saying, “And the other one I received on November 27, 1963, which was delivered by Special Agents Vincent Drain and Warren De Brueys...”

¹⁷ The FBI produced their 4 volume “Investigation of Assassination of President John F. Kennedy November 22, 1963” and 1 volume “Investigation of Killing of Lee Harvey Oswald Dallas, Texas November 24, 1963,” for the use of the Warren Commission. It is available at <https://www.maryferrell.org/showDoc.html?docId=10402>. This is referenced hereafter as CD 1.



Figure 1: The FBI's original designations for the shells: Q6, Q7, Q48. Take note of the dented shell, Q6, on the left. No other distinguishing marks are otherwise present in these photographs.

From this point, the FBI and the DPD shared possession of the evidence for some time, passing the shells to and from Washington and Dallas.¹⁹ As I show in Figure 1, the designations above were current as of December 9, 1963, when the FBI delivered to the Warren Commission the large 5 volume report known as Commission Document 1.²⁰

¹⁸ CD 1, Vol. 2, p. 22.

¹⁹ An example of this back-and-forth evidence shuffling is reported in 3H474, where Mr. Cunningham stated, "By the way, [Q13] was returned to Dallas, and then it was returned to the Laboratory, delivered again by Special Agent Vincent Drain, of the Dallas office, also, Special Agent Warren De Brueys. They delivered our Q-13 a second time on November 27th." Many other transports of evidence were undertaken for various reasons between the Dallas PD and the Washington FBI Lab. Q13 was also known as C13.

²⁰ See Commission Documents – "Microfilm Introduction," Marion W. Johnson, National Archives, 1980, p. 2, <https://www.maryferrell.org/showDoc.html?docId=10400#relPageId=3>.

The “Confirmed” designations

As the investigation progressed and the shells were analyzed, the FBI confirmed them as evidence in the JFK assassination. The shells, now “Confirmed” by the FBI, received new designations.

- The first shell, **Q6**, was reassigned **C6**.
- The second shell, **Q7**, was reassigned **C7**.
- The third shell, **Q48**, was reassigned **C38**.

This author is unaware at what specific time the shells were re-designated or how consistent they were. The new designations were in use by the time Special Agent Robert P. Gemberling, FBI, submitted his 100-10461 report from the Dallas Office on March 4, 1964.²¹ However, the old designations were still in use, so these “Confirmed” designations may have been recent. In a Warren Commission hearing on April 1, 1964, Mr. Nicol was still using the *old* designations Q6, Q7, Q48.²² He used these because the FBI had been using the old designations on March 24, 1964 when Nicol examined the shells.²³ Since the old designations were clearly engraved on the shells, it’s plausible that the “Q” numbers were more convenient.

However, the new designations were seen in a few documents submitted to the Warren Commission and testimonies prior to Mr. Nicol. When Robert Frazier testified the day before Mr. Nicol on March 31, he was using some of the *new* designations, including C-7, to refer to the shells and C-14 to refer to the rifle.²⁴ And the witness prior to Nicol on April 1, Cortlandt Cunningham, used various “Confirmed” numbers alongside “Questioned” numbers when discussing both the JFK and J.D. Tippit homicide evidence.²⁵

²¹ Commission Document 735, or CD 735. When this document was photographed by the National Archives for microfiche storage, the pages referred to are on p. 1, p. 81, p. 82 of CD 735. See <http://www.maryferrell.org/showDoc.html?docId=11133#relPageId=1>, <http://www.maryferrell.org/showDoc.html?docId=11133#relPageId=80>, <http://www.maryferrell.org/showDoc.html?docId=11133#relPageId=82>

²² 3H505, 3H508

²³ *Ibid.*

²⁴ 3H425, the testimony of Robert A. Frazier, in which CE 563 was admitted as photographic evidence of his analysis. In this exhibit, C-7 refers to the second shell, Q7. And C-14 refers to K1, the FBI’s designation for the C2766 Carcano rifle.

²⁵ See 3H469 to 475, etc.

The Warren Commission designates the shells as “Commission Exhibits”

The President’s Commission obtained the shells from the FBI sometime prior to the oral testimony of Mr. Frazier on March 31, 1964. Three shells were handed to Mr. Frazier and introduced as “Commission Exhibits 543, 544, and 545.”²⁶ In order to determine which shells were designated a particular Commission Exhibit, we will need to correlate the FBI’s “Questioned” or “Confirmed” designations with an exhibit number. One of the most obvious ways to identify them is to look at Mr. Frazier’s testimony of when he received the shells. As we can see in the list above, Q7 and Q8 were received by the FBI Lab on 11/23/63 and Q48 was received on 11/27/63. This is all the information we need, because Frazier testifies that he “received the first of the exhibits, 543 and 544, on November 23, 1963, and the other one I received on November 27, 1963.”²⁷

To further corroborate this, Mr. Nicol plainly identified Q48 with Commission Exhibit 545 (hereafter abbreviated as CE 545).²⁸ Nicol also stated that Q6 was CE 543²⁹ and Q7 was CE 544.³⁰

Therefore, as of April 1, 1964, the shells had obtained new designations again. These “CE” numbers are the ones which they are mostly known by. The House Select Committee on Assassinations (HSCA) would later use the Warren Commission “CE” numbers for referring to the shells.

Here is a summary of the alternate designations of the three shells. I also included the live round, which is not a particular concern for us except for reference and comparison purposes.

- The first shell: the FBI’s **Q6**, reassigned **C6**, the Warren Commission’s **CE 543**
- The second shell: the FBI’s **Q7**, reassigned **C7**, the Warren Commission’s **CE 544**
- The third shell: the FBI’s **Q48**, reassigned **C38**, the Warren Commission’s **CE 545**
- The live round: the FBI’s **Q8**, reassigned **C8**, the Warren Commission’s **CE 141**

The author is not aware of any good quality photos of the shells produced for the Warren Commission.³¹ The photos of CE 543, 544, and 545 that appear in the book of exhibits are dark and grainy.³² What is clear about the three exhibits is that they received simple masking tape labels on which their CE number is written in ink. This, we will see, poses a problem for long term archival.

When the Warren Commission ended its work in 1964, practically all of the exhibits, considered evidence and now artifacts of the assassination, were handed over to the National Archives (NA) for storage.³³ From about 1965 to 1976, JFK assassination researchers and authors would search the National Archives for documents not available in the Warren Report or the 26 volumes of Hearings and Exhibits. While at the NA, the shells received new control numbers. I do not list them here, but are available on [archives.gov](https://www.archives.gov).

²⁶ 3H399

²⁷ 3H414. My conclusion is due to the fact that Q6 has a dented lip, and so this testimony is sufficient to identify all three.

²⁸ 3H505

²⁹ 3H508

³⁰ 3H509

³¹ Josiah Thompson sent me some scanned photographs of the Warren Commission photos of CE 544 and CE 545, but they are not particularly useful. These photos do, however, confirm the C7 and C38 designations of the shells.

³² 17H241

³³ Reference to this is apparently not available online, but appears to have been completed by 1967. See “Transfer Of Warren Commission Evidence And Exhibits To The National Archives And Records Service,” Record No. 191-10001-10032, 08/18/1966 and Availability Of Warren Commission Materials At Archives, Record No. 191-10003-10060, 03/06/1967.

The HSCA investigation

After a renewed interest in the Kennedy assassination, fueled by the public viewing of the Zapruder film on TV in 1975, the US House of Representatives conducted a new investigation from 1976 to 1978. Part of the HSCA investigation included an examination of the ballistics evidence from the John F. Kennedy assassination.

Members of the “Firearms Panel” examined the three empty shells and other aspects of the evidence held at the National Archives. For parts of their study, certain materials were sent to “the Metropolitan Police Department Firearms Laboratory here in the District of Columbia.”³⁴ During the time in which the materials were outside of the National Archives, “Public access to the firearms evidence at the National Archives was denied during this time.”³⁵ “A member of the Archives staff accompanied the evidence while it was examined at the Archives or removed and examined at the laboratory.”³⁶

The HSCA gave the three shells new identifiers, however there is little evidence that they were used extensively. In practically every instance where HSCA “F” exhibit numbers were used, the CE exhibit number was used to correlate it to.³⁷

- The first shell: the FBI’s **Q6, C6**, the Warren Commission’s **CE 543**, HSCA **F-277**
- The second shell: the FBI’s **Q7, C7**, the Warren Commission’s **CE 544**, HSCA **F-278**
- The third shell: the FBI’s **Q48, C38**, the Warren Commission’s **CE 545**, HSCA **F-279**
- The live round: the FBI’s **Q8, C8**, the Warren Commission’s **CE 141**, HSCA **F-281**

The HSCA did a decent job of photographing the shells. See **Figure 2**, **Figure 3**, and **Figure 4**, below. It is from this time that we can start to see some deterioration of the artifacts, as attested to by the Firearms Panel report. The Firearms Panel only offered three recommendations, all of which tackled the poor condition of the ballistics evidence. This turned out to be a prescient notice of the lack of preservation effort undertaken by the National Archives. Here is their first recommendation, with some emphasis added by me:

“Recommendations of the firearms panel

The panel found that the firearms evidence had not been maintained in proper condition. It strongly recommended that the firearms evidence—cartridges, cartridge cases, bullets and fragments—be permanently [sic] sealed. More specifically:

1. All foreign material should be removed from the exhibit with a mild solution of saline or hemosol [sic].³⁸
2. After cleaning, they should be handled with cotton gloves to prevent oxidation from body fluids
3. They should then be sealed in airtight plastic containers.”

³⁴ Volume I, p. 444 of the Hearings and Appendices of the HSCA, hereafter abbreviated as 1 HSCA 444.

³⁵ This was confirmed by a December 13, 1977 letter from the National Archives. See 7 HSCA 415.

³⁶ 7 HSCA 364, The Firearms Report.

³⁷ 1 HSCA 450-459.

³⁸ By “hemosol” the Firearms panel means “Haemo-Sol,” which is a brand of cleaners used in crime labs and hospitals.

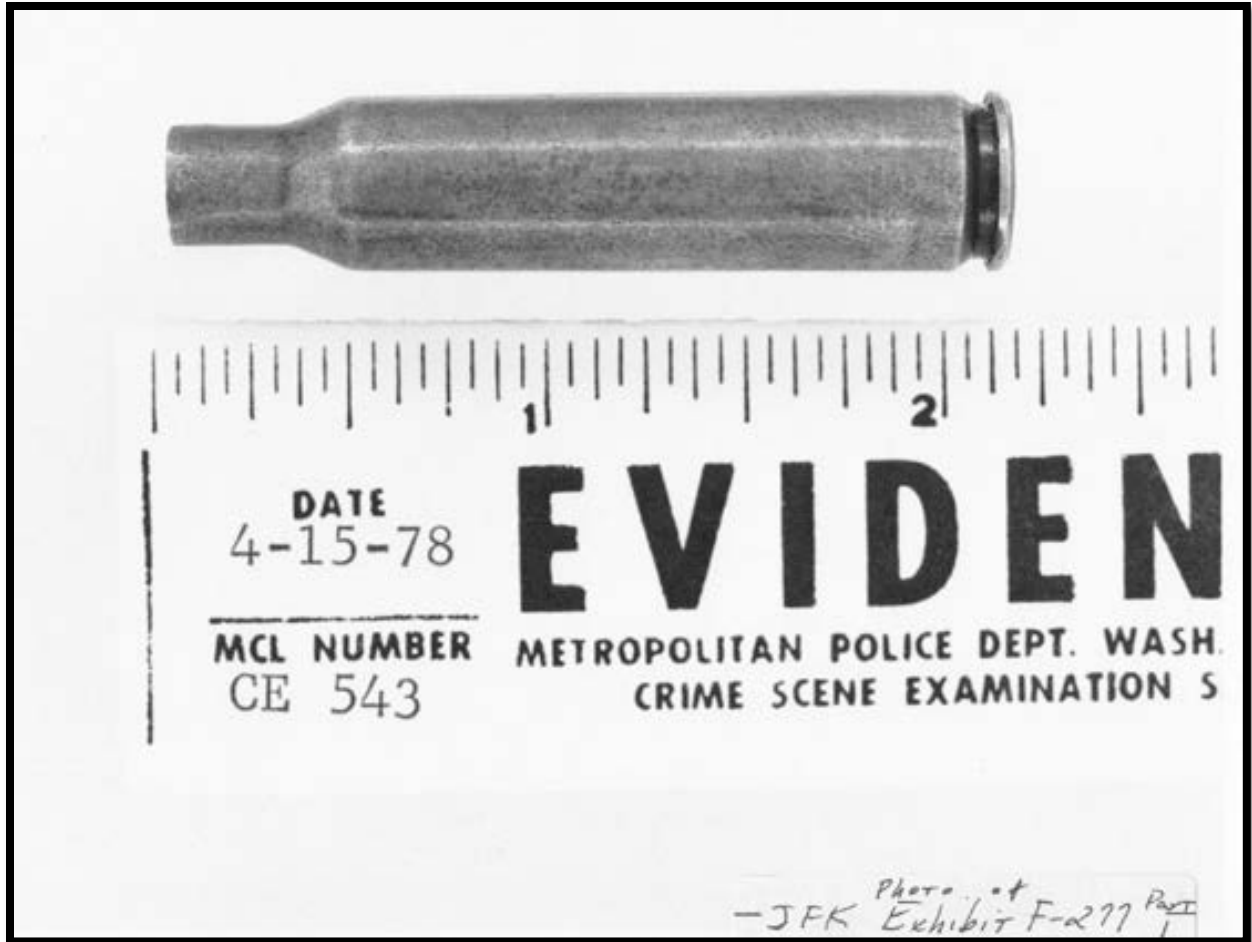


Figure 2: CE 543, the dented shell, in 1978.

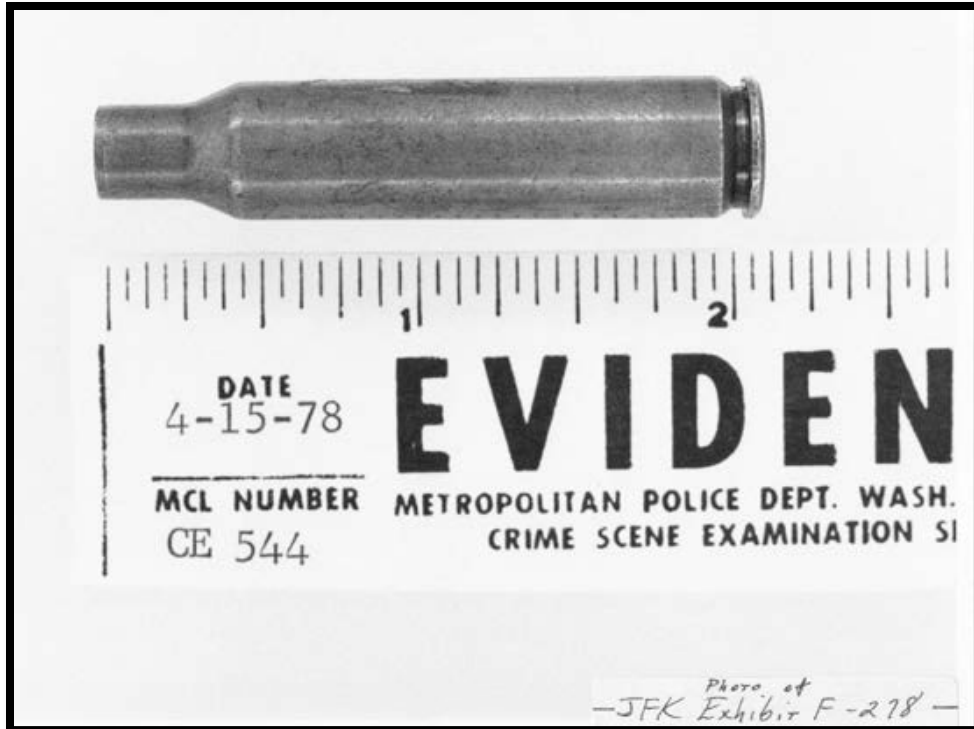


Figure 3: CE 544 in 1978. Notice residue at the top of photo and numerous distinguishing marks on the shell.

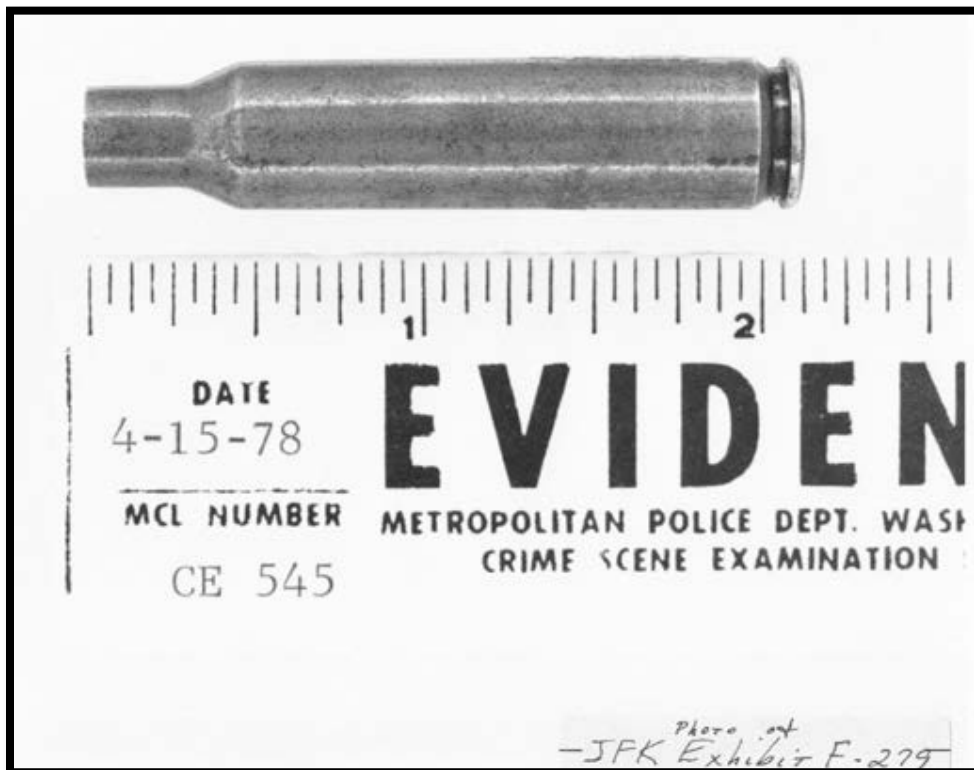


Figure 4: CE 545 in 1978. Some obvious blemishes on this cartridge will help to distinguish it from others.

Preliminary Analysis: the 2012 Photos

As I watched the Barry Krusch video originally, I had no independent way of knowing that there was any problem with the shells in the National Archives. But after reading his book and looking into some of the source documents on the Kennedy assassination, I began to agree that something may be wrong. It needed a little more research to conclude anything.

Mr. Krusch initially got the photographs of the shells to see if he could identify marks on them. His inability to find those marks eventually provided impetus to find out why.

A lot of the debate surrounding the shells centers on the fact that the National Archives has kept the originals in storage for over 50 years. I didn't realize it at the time, but Mr. Krusch had his suspicions that "this shell was originally given a different evidence number."

Indeed, that is what I realized, too. The photos taken by Ms. DeLong at the National Archives in 2012 indicate that two of the shells have been switched at some point in time.

The National Archives and Records Administration has some explaining to do.

Here are some of the photos that Mr. Krusch received from the National Archives. A cropped version of the shell labeled "CE 544" appears in **Figure 5** and "CE 545" appears in **Figure 6**. As can be immediately seen, the shell labeled CE 544 has a "Q4" followed by a "7" that was altered to say "8." This "typo" is, based on my research, supposed to say "Q48." I am not entirely sure why Frazier or Cunningham got their numbers confused, but my theory is that this was an honest mistake made on November 27, 1963.

Further analysis will show that the shells in Figure 5 and Figure 6 have the wrong labels.

I also show in **Figure 7** a 2012 photo of CE 543 as a control. The obvious part of this photo is that it exhibits a different type of masking tape label. It is my theory that this type of scissor-cut masking tape label represents the original label applied during the Warren Commission hearings.³⁹ The square-cut "543" label is likely to be dated to Robert Frazier's oral testimony before the Commission on March 31, 1964. My impression of it is that the writing is in blue ink.

Just as I noted above when discussing the HSCA's Firearms Panel recommendations, the 2012 photos indicate that the shells have undergone dramatic changes in appearance over the last 50 years or so since the assassination. The current state of the shells is poor, and most certainly worse than their condition in 1978.

³⁹ This is also visible in "They Killed the President," Alan Stang, *American Opinion*, Feb. 1976, p. 5.



Figure 5: The CE 544 shell is *supposed* to be Q7, not Q48. Notice the "7" has been overwritten by an "8" in perhaps history's strangest typo. This is one of the many out-of-focus, grainy photos obtained by Barry Krusch. National Archives photo, 2012.

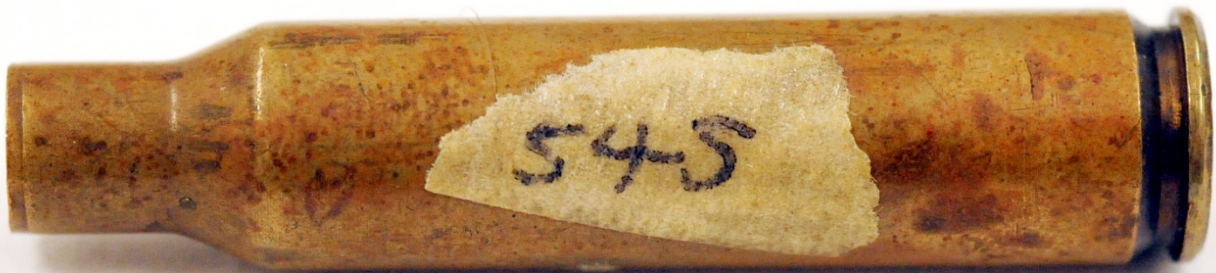


Figure 6: We see what is *supposed* to be CE 545. Take note of the masking tape label, torn by hand, and written with black ink. Poor lighting contributed to many indecipherable details on this shell. I conclude later that this is CE 544 in disguise. National Archives photo, 2012.



Figure 7: CE 543, the dented shell, facing away from the dent. This has a 49-year-old masking tape label, cut with scissors, written in blue ink. National Archives photo, 2012.

Early photos of the shells

At this point I decided to write this paper and conduct an investigation. Was the National Archives at fault? Perhaps an author or researcher in the 1960s or 1970s had switched the shells? I started collecting photos of the shells taken at different times. But besides the “official” ones and the ones that Mr. Krusch had received in 2012, there didn’t seem to be very many. Although I was sure that some of the older researchers would have taken photos of the shells at one point or another, these photos may be sitting in a shoebox in their basement for all I know. I later realized that the National Archives may not allow researchers access to the shells for photography.⁴⁰

I found an early photo of the three shells online, but it were unattributed. This photo, in the highest resolution I have found, was obtained from the website of Gilbert Jesus. By the time I found the article, his website was no longer available through the normal means, but an Internet Archive (Wayback Machine) copy existed.⁴¹ **Figure 8** is that photo, altered by this author to encircle the handwritten 543, 544, and 545 numbers at the top.

Subsequent research has established that this photo was taken on or about January 16, 1968 by the National Archives. The photo was originally obtained by author Howard Roffman.⁴² I am grateful to Gary Murr for his assistance in this. Mr. Murr is a respected JFK assassination researcher with a lot of information about ballistics, and the ammunition in particular.

As I tried to verify the photo in Figure 8, I contacted a few more JFK researchers. One of them was Josiah Thompson, another respected first generation researcher. Mr. Thompson was the first author to cover some of the issues with the three empty shells. In his 1967 book, *Six Seconds in Dallas*, he shows a photo of the three shells alongside the unfired shell. He was kind enough to scan in his original photo and email it to me. **Figure 9** is a higher resolution of the photo appearing in *Six Seconds in Dallas*.⁴³ The source of this photo is also the National Archives, taken in either 1966 or 1967.⁴⁴

⁴⁰ While the NARA website states that the shells’ “Access Restriction(s)” is “Unrestricted,” there is also a confusing “Specific Access Restriction” which describes a convoluted and de facto access restriction. See <https://catalog.archives.gov/id/305148> for one example.

⁴¹ See http://web.archive.org/web/20111201055906/http://www.giljesus.com/jfk/rifle_shells.htm

⁴² The source, date, and origin of this photo is attested by Gary Murr, e-mail to the author, 10/26/2016.

⁴³ See *Six Seconds in Dallas*, Josiah Thompson, 1967, p. 145 for the photo that was published.

⁴⁴ The source, date, and origin of this photo is attested by Josiah Thompson, e-mail to the author, 10/29/2016. The original print has a National Archives stamp on the back.



Figure 8: The three shells in 1968. Small amounts of corrosion on the shells will permit identification later. On the far right side of CE 545, there is a light colored area which may be the edge of its masking tape label.

This National Archives photo shows excellent depth of field and good focus.



Figure 9: The 1966/7 photo of the three shells. The order, left to right, is CE 543, CE 141, CE 544, and CE 545. Original scanned by Mr. Thompson, then sharpened slightly to bring out a few details. Due to the poor lighting of this photo, extreme enhancement will be necessary to observe the right side of each shell. National Archives photo.

I decided to do a comparison between the 1968 photo (Figure 8) and the 1966 photo (Figure 9) to determine if they were both in the same order, left to right. My analysis was only conducted on one shell, CE 544, due to the poor lighting of Figure 9. If this shell matched, then the 1968 photo can be used for further analysis.

For my analysis I cropped the CE 544 photo from Figure 9 and brought it alongside CE 544 from Figure 8. I did it twice. It just so happens that these two photos show almost the same side of each shell, likely because the masking tape labels were on the back at this time. The high resolution scan of Figure 9 enabled me to enhance the shadowy portions of the shell dramatically with Adobe Photoshop. This enhanced photo has much lower contrast, but it shows some distinguishing flaws on the surface of the shells. See **Figure 10** for this comparison. As you can see, the two photos of CE 544 match in critical areas.



Figure 10: The author's comparison of Figures 8 and 9. This is a match. The enhanced photo shows 4 matches, while the sharpened image shows three.

When were the shells switched?

When I compare the 1968 photo (Figure 8) with the HSCA photos (Figures 3 and 4), I believe that the masking tape labels were removed and replaced. As a consequence the photos produced by the HSCA are on a different side. Recall that the CE 544 image, Figure 3, seems to show some masking tape residue on it. A logical conclusion is that there is a possibility that the HSCA Firearms panel mixed up the shells in 1978. But I rule this out in my analysis. Since Mr. Krusch obtained multiple angles of the shells in 2012, I was able to determine that the switch occurred sometime after 1978.

I examined both CE 544 and CE 545. My first two comparisons are between the 1968 photo (Figure 8) and the 2012 photos. This can be seen in **Figure 11** and **Figure 12**. I show 6 matches for each. Take notice of the fact that the paper labels are obviously different for these shells.

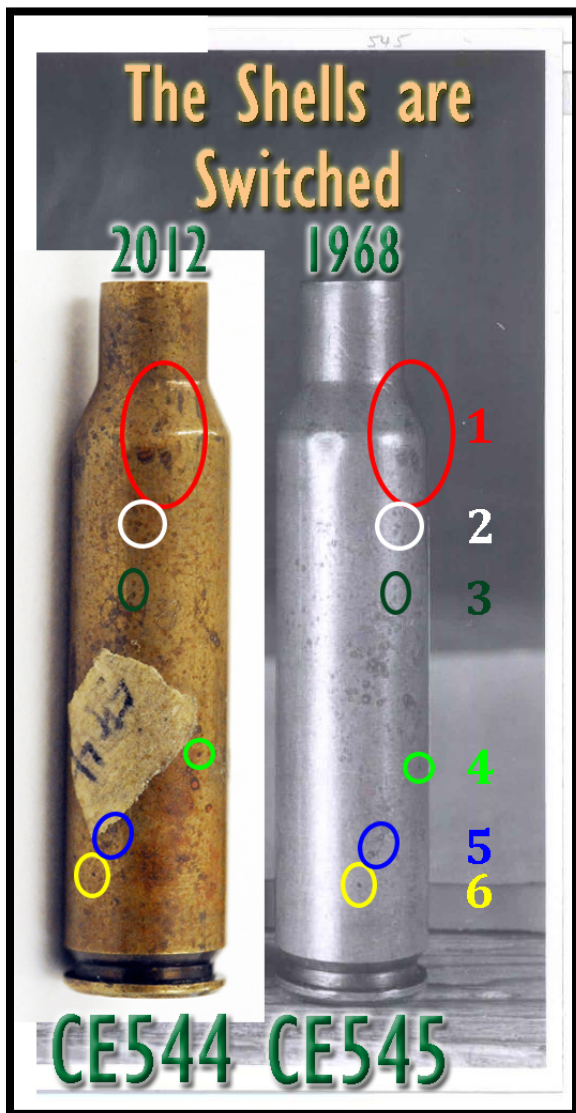


Figure 11: CE 544 matches CE 545.
Author's comparison.

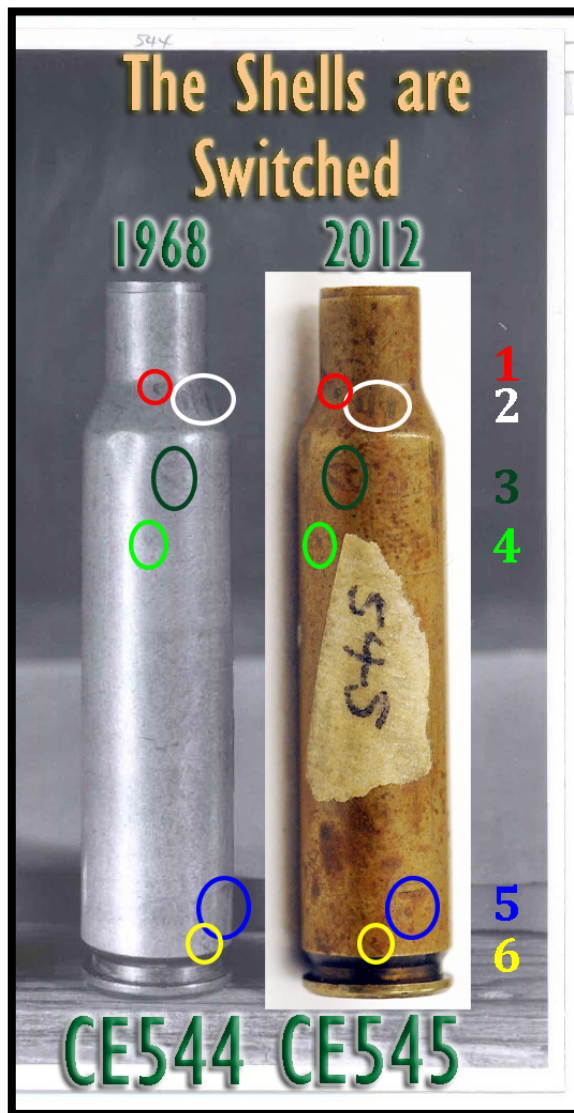


Figure 12: CE 544 matches CE 545.
Author's comparison.

I also did the comparisons to the 1978 shells. The same pattern appears. The old CE 545 always matches the new CE 544, and vice versa. In **Figure 13** and **Figure 14**, I show evidence of switched shells since 1978.

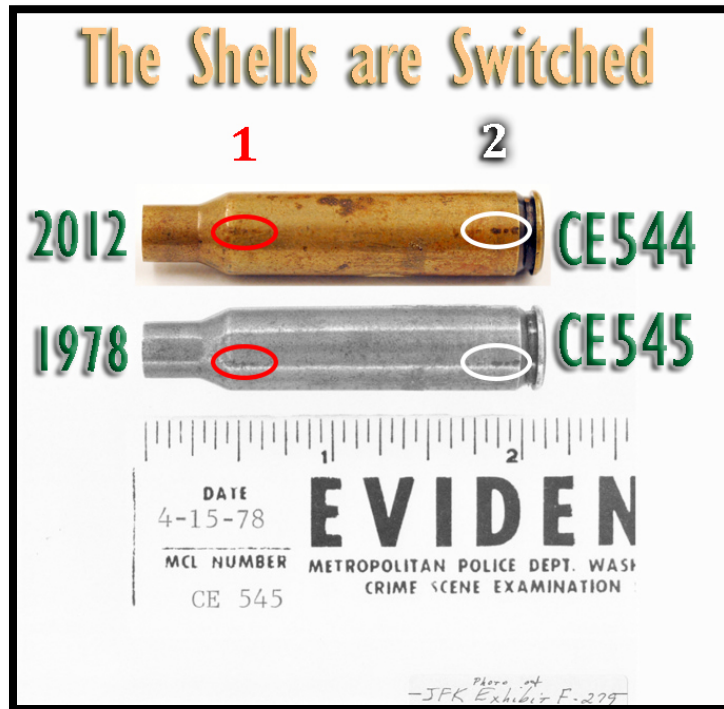


Figure 13: The 1978 CE 545 matches the “new” CE 544.

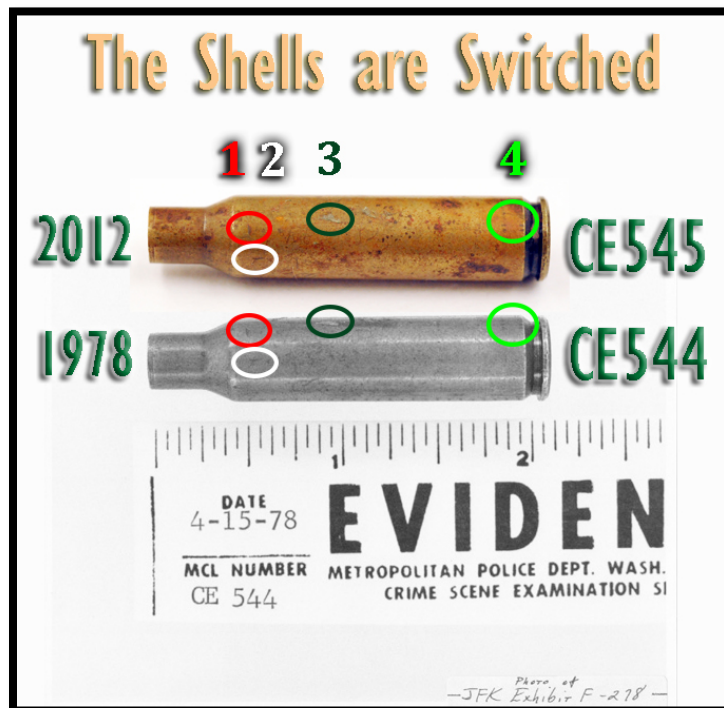


Figure 14: The 1978 CE 544 matches the new CE 545.

I can now make a guess as to when the shells were switched. The best evidence that I can see is the masking tape and the 1978 photos as a reference. The tape labels on CE 544 and CE 545, as seen in the 2012 photos, are clearly newer than the tape on CE 543. But when I look at close-ups of the 2012 shell photos, it is readily apparent that this tape had aged considerably, too. Based on my own experience with masking tape, I would judge the tape to have been 20 or 30 years old in 2012. This would place the “switch” in the 1982 to 1992 time frame. It’s not out of the question to place the “switch” in 1978, when the National Archives took the shells back for storage.⁴⁵

For my final comparison, I used the “official” photo of CE 545 published on the National Archives website.⁴⁶ But there are more mistakes. On this page the NA has made 2 photos available of CE 545, only one of which is a side view. But whoever produced these photos did not do their due diligence determining the FBI exhibit number, calling it “C8.” As I have established, CE 545 is FBI Exhibit **Q48**, which was re-assigned **C38**.

Incidentally, the “C8” designation is for CE-141, the live round. Curiously enough, they correctly identified their photo of CE 141 as “FBI Exhibit C8.”⁴⁷

See **Figure 15** for a composite of CE 545. This composite shows that the 2012 photo and the “official” photo of CE 545 are of the same shell. And since CE 545 is supposed to say Q48 and it has a legible Q7, *the official photo of CE 545 is evidence that the shells have been switched.*

And so we now have a final word on the “switch.” The CE 544 and CE 545 shells were switched prior to the time the official website photo was taken, but after the HSCA photo of 1978.

I shall contact the National Archives and ask them when their “official” photo was taken.

⁴⁵ Besides this direct evidence of masking tape switching, I also have produced some indirect evidence of the location of the tape. If we go back and look at Figure 3 and 4, we can assume that any masking tape labels must be on the side facing away from the camera. This can also be seen in the author’s comparisons in Figure 13 and 14. This is indirect evidence that the paper labels since 1978 have been on the same side of the shells.

⁴⁶ See <https://catalog.archives.gov/id/305149> photo 1

⁴⁷ See <https://catalog.archives.gov/id/305136> photo 1



Figure 15: The National Archives' "official" photo of CE 545 is clearly showing the wrong shell. CE 545 should say Q48. This is a composite of the NA's website photo (top) and a 2012 photo (bottom) with some enlargements to show detail. The National Archives made a typo (C8 should say C38).

Poor photography: the details

In the many photos that we have seen of the shells, one glaring problem is the lack of good photography from the National Archives. In the 1966/7 National Archives photo, the lighting is so harsh as to make the photo nearly unusable. The 1968 National Archives photo is relatively sharp and in focus, but it does suffer from bright highlights that indicate harsh indoor lighting.

The photos available at the NARA website for the three shells have effectively been “posterized” by converting them to 256-color GIF files. This poor choice of image formats is incompetent and makes the photos practically worthless for observing details. The typos on the CE 545 photos are unacceptable.

The “high resolution” photos taken in 2012 were taken with a professional digital camera⁴⁸ by a staff member. However, the photos were taken with a narrow depth of field. So when we look at these photos, only a tiny section of the shells near the center is in focus.

The depth of field for Figure 6, for example, is around a half millimeter⁴⁹ and it appears to be the same in all of the 2012 photos. The poor lighting caused unacceptable noise,⁵⁰ especially in the darker portions of the photo. Since Mr. Krusch was interested in the dark areas of the photos, and specifically in fine details, the photos were of limited usefulness.

When looking at the 2012 photos, Mr. Krusch was correct when he said, “Apparently, someone got their shells switched.”⁵¹

Indeed. But what about his conclusion that the shells in the National Archives do not have the identification marks that should be there? Mr. Krusch had a genuine interest in the inscriptions on the shells, yet the technical aspects of the photos he received, like lighting and focus, made a full analysis impossible. The details are simply not on the 2012 photos. I believe that Ms. DeLong’s examination of the shells was cursory and inconclusive for research purposes. There are marks on the shells where Ms. DeLong did not notice them.⁵²

When a JFK assassination researcher requests to physically see or examine many of the Warren Commission evidence items, the request will often be denied by NARA. They will instead ask about photographs, and whether the researcher can do their work without physical access. If not, NARA will offer to photograph the evidence. In other words the National Archives considers the Kennedy assassination exhibits to be restricted. It is restricted to the people who get a paycheck from the government, apparently. Of all of the photos of the shells, I know of none that were taken by anyone except NARA, the Warren Commission, or HSCA. But if their photos do not satisfy, can we get some better ones?

Due to all of this, I believe that there are many details on the shells which have yet to be photographed or studied by anyone. I also believe that NARA personnel, even with good photographic equipment, are not a substitute for actual researchers examining the shells.

⁴⁸ A Nikon D700 with a 105 mm lens, according to EXIF data.

⁴⁹ For the photo in Figure 6, Ms. DeLong was using a Nikon D700, focal length 105 mm, (effective) aperture f/9, and a 40 cm focusing distance. The calculated depth of field at 42 cm is 0.48 mm. See <http://www.photopills.com/calculators/dof-macro>.

⁵⁰ “Image noise” is the spotty, random, discolored parts of a digital photo which are not present in the subject being photographed. The low lighting in the room forced the camera to use an ISO 5000 setting as indicated by the EXIF data from the image. While the Nikon D700 is an excellent digital camera, its performance at ISO 5000 is unacceptable for detail work.

⁵¹ *Op. Cit.*, Krusch, 2013, at 13:35.

⁵² This is shown at the end of Krusch’s video. *Ibid.* at 14:20.

Concluding remarks and appeal

This study bears out why masking tape should never be physically attached to an artifact except briefly. Its adhesive is too strong, and the paper it's made from is too weak for archival purposes. The adhesives in the tape can attack the artifact at the molecular level. Using a masking tape label for identifying an artifact in long term storage is foolish, as it can release, and be lost. And once the tape is removed, there is often a residue of the tape left behind where the paper separated from the adhesive.

What will NARA do in the succeeding years to these shells? Will they replace the tape, at intervals of 30 years, as it falls off? At this rate of deterioration, the shells will be black from corrosion, covered with old masking tape residue, and unrecognizable in a generation.

Why is there masking tape on these items? Why were the Firearms Panel's recommendations ignored, if not by the National Archives, by the House of Representatives? These artifacts are in extremely poor condition and deteriorating. And I have just scratched the surface with the shells. Surely if these brass shells have undergone such dramatic changes in 50 years, many of the other items from the Warren Commission have been irrecoverably ruined.

Is this kind of problem systemic?

I say, yes, this kind of issue is systemic within the National Archives and its collection of JFK assassination exhibits. If NARA needs more funds to support the public's needs for archival and preservation, then surely this could be discussed with the Congressional Budget Committee.

Is the Carcano rifle⁵³ being oiled and cleaned frequently?

These artifacts need cleaning. They need maintenance. The adhesive tapes have become brittle. The original oil on the guns has dried up.

In 1966, a gun collector named John King sued the U.S. government for \$5 million when it was seized as an assassination record.⁵⁴ Would Mr. King have taken better care of the rifle? Perhaps it would be on display somewhere today, rather than locked up in the National Archives where it rusts away in oblivion.

Is that a crass, vicious rumor about the condition of the Carcano?

Yes. It is easily the most famous rifle in the world, yet I have a gut feeling, looking at the 2012 photos of the shells, that it is being mismanaged. I hope that I am wrong.

We need photographs of the JFK exhibits in the archives. Good ones. Few of them have been seen by the public in over 50 years. Can NARA or an outside researcher go through and take detailed photos of them? Researchers at least deserve usable pictures.

Good photography of each shell will take attention to detail and a few extra minutes of time for improved results. To get this right, the photographer should use better light and have a knowledge of

⁵³ A Carcano bolt-action rifle was found on the 6th floor of the Texas School Book Depository. It is CE 139, which is FBI K1 and C14.

⁵⁴ *King v. U.S.*, 292 F.Supp. 767, 775 (D.C. Colo. 1968).

macro photography: use a tripod, move the camera back away from the subject, use a lot of diffuse light, stop down the aperture, and use manual focus. Rotate the shell 6 to 10 times to capture it all.

I would like to see that the National Archives get help with their systemic problems. For the JFK archives, there may be a good reason to look to outside researchers who could provide expertise. There is still a handful of first generation researchers who might be called upon. And some of the same individuals who assisted the HSCA and ARRB⁵⁵ investigations might be able to help. Is it time for Congressional oversight? How about an independent audit? It may be reasonable to expect that the overseers of the archives need some overseers themselves.

I would definitely encourage NARA to respond with an investigation of their own on the “switch.” I think the public would like to know who wrote these new labels and stuck them on the wrong artifact. *Just who is running around the secure areas of College Park with masking tape and a black pen?*⁵⁶

I am prepared for a response from NARA. I hope it doesn’t say that they feel it necessary to continue preserving artifacts with masking tape on them. Hopefully their response indicates a renewed focus on the preservation of an item which can be degraded without the proper care. I would like to see an acute focus on maintaining the Carcano rifle by having a firearms expert examine and oil it periodically.

Now that my research is at an end, I am disturbed that the access to the JFK assassination evidence is restricted beyond what is necessary, and perhaps beyond what is legal. I am led to believe that it’s not to be seen or touched. It’s not being audited. And access can be denied based on an internal policy decision.

What are the rules? Can a senior scientist see the evidence? A university professor? An award-winning author or reporter? A firearms expert? How about on a case-by-case basis? Can a member of Congress see the evidence? *Sorry, no one sees the Commission Exhibits except the staff of NARA.* At least that is my impression. Does it take a literal Act of Congress to see the Warren Commission exhibits?⁵⁷

So my question to NARA is innocent enough.

*By what authority do you prevent public access to the Warren Commission exhibits?*⁵⁸

While I was researching this story, I did ask some researchers about the question of access. I found out that NARA used to permit access to the Warren Commission exhibits.

Both Mr. Thompson and Mr. Murr had good reports of their experience with NARA. According to Josiah Thompson, Marion Johnson of the National Archives treated him “extremely well” back in 1966 and 1967. He was permitted to handle CE-141, the 6.5 mm Carcano rifle and “work the action” during his 1966 or 1967 visit. Vince Salandria and Arthur Schatz were with him during some of these visits.⁵⁹

⁵⁵ The Assassination Records Review Board.

⁵⁶ Certainly not JFK assassination researchers.

⁵⁷ See the President John F. Kennedy Assassination Records Collection Act of 1992, Public law 102-526. This mainly dealt with records, not physical evidence. However, this panel essentially looked at all records, classified and otherwise, to attempt to make public the vast majority of them by the late 1990s. Very few documents are now undisclosed, with the remaining ones due to be released before October 26, 2017.

⁵⁸ And why is this authority not listed, as required, in the record? NARA explains here

https://www.archives.gov/research/catalog/lcdrg/authority_lists/specificaccesslist.html that this authority usually comes from somewhere.

⁵⁹ E-mail from Josiah Thompson to the author, 11/2/2016.

Gary Murr, for his part, also has a positive opinion of the way the National Archives treated his requests. When his research dealt with Connally's clothing, he had to get permission from both the Texas State Library and Archives Commission and the National Archives. This slowed his access somewhat, but Mr. Murr was able to inspect them. He also examined the CIA briefing boards and CE 399.⁶⁰ Mr. Murr makes the unequivocal statement that he "was never refused access to any materials I requested to inspect."⁶¹

When I proposed that NARA was too restrictive, he did concede that "all of the items I was allowed access to see/handle - and understandably I had to wear thin white cotton gloves while doing so - occurred before 911."⁶²

That is a good point. *Did NARA get more restrictive in the last 15 years?*

This author's impression is that Mr. Murr's access was a bit more restricted than Thompson's. That brings us to the most recent researcher, Mr. Krusch, who was denied physical access to the shells. He, too, has a positive view of NARA's role in the archival of the shells. As he pointed out to me, "It's nothing sinister; they just don't want these valuable artifacts in the hands of the public at any time."⁶³

I agree in part, and dissent in part.

My understanding of NARA's role is that it's complicated; they need to both to secure the artifacts from theft and damage and yet preserve them for the benefit of the public. I contend that they are neglecting their role of preservation. They are both letting the shells deteriorate from bad archival practices (over 51 years), and they are not making the materials available for researchers (over the last 15 years).

Their role in preservation is being undermined by neglecting to maintain the artifacts and by focusing too heavily on security restrictions.

ARRB opened up most "assassination records" in the 1990s. We should open up the "assassination evidence," too. I would like to appeal to others in the JFK research community to ask Congress for permission to see and inspect the physical evidence held by the National Archives.

So I am concerned, if not alarmed, that the National Archives are restricting access to the artifacts without a legal framework. There may be an innocent explanation for the restricted access. But rather than presume that NARA is doing something right or doing something wrong, I would like to ask for some outside the situation to investigate this. I would like for NARA to address these concerns and to publish their internal guidance on the issue.

Finally, these three shells need help. Perhaps NARA could consider a way to identify the shells without masking tape, like the "airtight plastic containers" suggested 38 years ago?⁶⁴ And before putting them in storage again, could someone please clean them up? I'd like to see them preserved for generations to come.

⁶⁰ The CIA Briefing boards are blow-ups of Zapruder Film frames. CE 399 is widely known as the "Magic Bullet" or "Pristine Bullet."

⁶¹ E-mail from Gary Murr to the author, 11/2/2016.

⁶² By "911," Murr refers to the events of 9/11/2001. E-mail from Gary Murr to the author, 11/2/2016.

⁶³ E-mail from Gary Murr to the author, 11/1/2016.

⁶⁴ Surely an archivist would know that air, and oxygen in particular, is the reason for the deterioration of the shells?



The three shells, in situ, on the 6th floor.