

COPY

TO: JOHN NICHOLS

FROM: DICK BERNABET

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John Nichols
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Dear John:

I have reviewed a written account of the action of the M-C rifle. I'll offer a few more suggestions regarding how the dents were caused. Understand that these are only guesses, for I can't go far in my mind unless I eyeball the rifle, clip, and cartridges in action. Even ~~the~~ if I had them in hand, I might have to "play" with it for days.

Cause of shoulder dents

Considering the shoulder dents, I can conceive of no cause except the one I outlined in Exhibit 3 of my diagrams.

If I visualize correctly (you can view this by looking into the magazine from the top), when the nose of the bullet strikes the ramp, the base of the cartridge case slips upward and sideways into the bolt face. I have seen this happen on other rifles, and I now understand why the bolt will not close over a cartridge that is dropped in the chamber--don't bother to explain that further, for I can see it in CE 558 (photo of bolt face). I should have noted this before, for I have seen such an action in motion.

Now, what follows may be the reason why some M-C rifles cause a shoulder dents while others do not: if the extractor is tight, if the claw of the extractor grips the rim of the cartridge base too tightly, the cartridge base will not slide easily into the bolt face, and the case shoulder may then ram the ramp; the bolt may jam at that point in the operation.

The whole issue, then, may have to do with the tightness of the extractor, a factor that will vary from rifle to rifle (or even from occasion to occasion in the same rifle).

Even if a tight extractor admits case bases into the bolt face, it may not be tight enough to cause a complete jam, but may nevertheless cause enough resistance to ram the case shoulder solidly against the ramp.

I think that is the key: the tightness of the extractor.

Tests with M-C Q2766

Regardless of results, physical tests with Oswald's rifle cannot now be conclusive. Every time you fire a rifle, it changes; the changes are slight, but with the things we are now dealing with, they are significant. In using that rifle for so much test firing, Frazier abused it terribly. You cannot now regard it as the same gun that it was, for things have happened to it. It may not do the same things now as it did then.

If ~~the~~ tests with LHO's M-C are positive, that is good corroboration, but not conclusive. If negative, the result is meaningless.

Case mouth dents

I still think that the dent in the case mouth was caused by thrusting the empty case from the clip, but I will allow consideration of one other possibility. Considering the method

of ejection (the ejecting mechanism, I mean), I think this a very, very, slight possibility.

It may be (Keep in mind that I strongly doubt this) that the case mouth was dented during extraction from the chamber, not during insertion. This can happen only if the ejector (which is attached to the receiver, near the back of the magazine, on the left side of the rifle) casts the cartridge prematurely, and causes the case mouth to ram against the receiver just outside the chamber. Here is what happens: the extractor (on the right side of the bolt cylinder) has a grip on the rim of the cartridge base. When the bolt reaches a certain point in its backward stroke, the ejector whallops the base of the cartridge on the ^{left} right side, and throws the case away from the rifle, almost directly to the right-- that is, the case is thrown to the right.

If you lay your right arm on a table and (without moving your elbow) move your arm from left to right, you will get a good idea of the initial movement of the case after the ejector strikes it. The case mouth (your hand) moves from left to right, and the case base (your ^{other} hand) stays pretty much in position (in the bolt face) until the case mouth is clear of the receiver. Now, if ejection occurs prematurely, before the case mouth is fully away from the receiver, it may strike the receiver and become dented. (Put a book to the right of your fingertips; the book is the receiver.)

Check rifles and determine the distance between the case mouth and receiver when ejection occurs normally. If the distance is substantial (I guess 15 mm or more is substantial), then it is unlikely that even a defective ejector would be activated before the case mouth is clear of the receiver.

Anyway, as I visualize the construction of the ejector, and the way it inter-reacts with the bolt, I think a case mouth dent caused by ejection is impossible. The bolt covers the ejector for a certain distance in its backward stroke; if the ejector is triggered at this time, it does nothing more than strike the side of the bolt cylinder. Check distances and determine ~~where~~ the earliest point when the ejector can strike the case base; I think you will find that the case mouth is well clear of the receiver by then.

Here is another possibility, more likely than the last. Suppose that the case mouth was dented by the receiver in the course of inserting the empty case into the chamber. Like this: the empty case ~~is~~ has its base in the bolt face, but it is not rigid, it wobbles. If you do not insert the case gently, if you do not guide the case into the chamber with your fingers, then the case mouth may be thrust against the receiver or some other obstruction.

As I think more on this, it seems like a good possibility.

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Now, what do we have?

It is certain that all three cases were fired in LHO's rifle. And it is certain that none of them contained bullets when they were fired.

Try this. Put an empty case in the clip and insert into the magazine. Put the rifle on your lap. Close the bolt gently with your left hand, but as you do this, reach into the magazine ~~from the side~~ from below with the finger(s) of your right hand. "Tease" the cartridge base into the bolt face. I think that in this way you will be able

to feed the empty cartridge from the clip into the bolt face, and you will not dent the case mouth in this operation.

If it works, we can assert that the empty cases were introduced into the chamber and the bolt closed over them either by removing the bolt from the rifle and inserting the base into the bolt face as you previously described (this is a complicated procedure, one that I regard unlikely), or by the method that I just described.

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Now let's frame Oswald. We'll work back from what we know.

We want to implicate him by leaving behind a rifle that he ordered and cartridge cases that bear microscopic marks indicating that they were fired in that rifle. We know enough about guns to understand that the cartridges must be fired in the rifle in order to leave microscopic marks on the cases. But for some reason we can't get to a convenient place to shoot bullets from the cartridges; or perhaps we don't know enough to realize that only by firing bullets can we mark the cartridges properly, fully. So let's take the bullets out and fire empty cases. That will leave marks, for sure, and the noise of a blasted primer will attract no one's attention; we'll produce only a muffled "pop".

Let me do it alone, for it needs only two hands, and you will just get in the way. I take the cartridge case in my left hand, and (perhaps with a pair of pliers) I extract the bullet with my right. That was easy. I do it to another cartridge, and another. I put CE 543 into the clip, the clip into the magazine, and drive the bolt home. But damn! The case jammed! All right, I'll try it another way. (I don't notice the dented case mouth, or don't recognize its significance). I put the case back in the clip, the clip back in the ~~chamber~~ magazine, and I "tease" the case into the bolt face. Good. I ease the case into the chamber, close the bolt over it, and fire the case. That wasn't bad, so I want to do the same thing with CEs 544 and 545. I am not going to ram them home with a bolt stroke, though; CE 543 jammed when I tried that. So I just tease these as before (and don't dent the case mouth), and fire the cartridge cases.

Nothing to it. Of course, I might have dented the mouth of CE 543 like this: I teased it into the bolt face properly the first time, and did not dent the mouth in the operation. I lined-up the base with the chamber as best I could, and thrust the bolt forcibly forward. But the case jogged, and rammed the receiver. After that experience, I eased all three carefully into the chamber.

I'll review the evidence that deals with multiple feeding of cartridge cases into the chamber, and see if that fits with ~~what~~ the pattern I just described, or if it contradicts it. The evidence on this (as I recall) is either incomplete or confusing; anyway, I was confused by it, and could not determine what it meant. I think Nicol discusses the extractor marks (only on CE 543, I believe) and raises the suspicion that the case was once fed into another rifle. Anyway, there is something important about CE 543 that differs from all other cases known to have been in LHO's rifle-- this includes this includes CEs 544 and 545, the cartridge that was ~~found~~ in the chamber when the rifle was found, and all test cases. It is something very strange, but I think the information on it may not be sufficient to allow a good guess. In a letter to Rankin (CE 2968) Hoover discusses the multiple feeding.

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This is important. Try it on tests now, and on the stuff in the Archives, if you get them in hand.

With a micrometer (get the most exact measurements possible) measure the inside diameters of fired and unfired cartridges, and carefully note the difference. By unfired cartridges I here mean cartridges whose primers were blasted, but did not contain bullets when fired.

Here is what you will find: the cases that have not fired bullets will ~~be~~ consistently have a smaller inside diameter (at the mouth) than cases which did fire bullets.

If the difference is great enough, that will be another means whereby we can positively determine whether the evidence cases fired bullets, presuming they have not been (or will not be) doctored.

I suspect that this is what you will find, but I am not sure. Your cases that have not fired bullets (cases from which the bullets have been manually pulled) will measure slightly less than 6.5 mm; the cases that have fired bullets will measure slightly more than 6.5 mm (this is the part I am not sure of).

In any case, if there is a consistent difference between the inside diameters of the two types of cases, we may have another good evidentiary point-- maybe conclusive.

If you get the three evidence cases and the two test cases in hand, be sure to measure these carefully. If possible, this should be done soon, for it is easy to doctor this merely by stretching the case mouths of the evidence cartridges.

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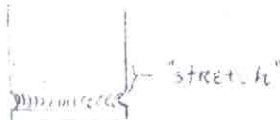
Stretching! Good grief, how can I have forgotten this? If I hadn't just looked up the spelling of "stretch", I might have missed this.

If you get in hand the three evidence cases and the two test cases that Frazier used for comparison (both are in CE 557) look for this important difference (I assume that the two test case fired bullets. Frazier implies this, but I wonder. This can be tested only by microscopic ~~examination~~ ~~with~~ comparison one with the other): rifles that have fired bullets almost invariably display evidence of "stretch"; unfired cases (or cases that have not fired bullets) invariably do not display evidence of "stretch", even though they were introduced into a chamber (no matter how forcibly) and extracted from it. Stretch is very common on old and cheap guns; I can't say for sure about the best modern rifles, but I think you will see it in them, too.

"Stretch" is the only name that I know for this phenomenon; it probably is not the correct technical term.

When the blast occurs in the chamber, the wall of the cartridge case near the base is pressed ~~more~~ tightly against the wall of the chamber, the same as the rest of the case. But the brass on the rest of the case is thinner, ~~more~~ more elastic, and when the pressure drops, the more elastic ~~part~~ part recedes slightly from the chamber wall that it was pressing. The thicker brass near the base does not recede; it continues to grip the chamber wall tightly, even after the pressure drops. Beyond that, I do not know exactly what causes "stretch", but its effect is obvious: the ~~wall~~ side of the case near the base appears polished all around, just as though you had turned the case in a lathe and polished it with fine steel wool. It is a band of polished brass all the way around the case near

the base. The band is about 4 or 5 mm wide, and is conspicuously more polished than the rest of the case wall. Its edge is sharply defined, though the case is not cut, just polished. Here is a drawing:



If "stretch" occurs, it is positive evidence that the case fired a bullet (disregarding doctoring). If it does not occur, it is consistent with the cartridge case not having fired a bullet-- consistent, but not conclusive. If a particular rifle fires one "stretch" case, I would expect all cases fired in that rifle to show "stretch". Evidence of "stretch" may disappear in time, as the brass discolors, but it may not.

Here is the point: if the two test cases (CE557) show "stretch", and the evidence cases do not, I would consider it strong corroboration (not absolute proof) that the evidence cases did not fire bullets. The test cases were fired (I think) on 27 November. The evidence cases were fired (according to the Warren Report) just 5 days earlier, and the rifle was not used (i.e., not significantly altered) in the interim.

All we can gain from "stretch" is corroboration that the evidence cases ~~were not~~ did not fire bullets-- but the corroboration will be strong if the test cases show "stretch".

This is another thing that can be doctored. If they want to fool around, they can put "stretch" on the evidence cases by turning ~~the~~ them in a lathe and polishing them-- the effect is the same.

If you get to see the cases in the Archives, or if you get someone else to see them, let this "stretch" be the first thing to look for; get it absolutely affirmed that there is no "stretch" on CE's 543, 544, and 545. Check the test cases, too.

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If you get hold of the cartridge cases and the two test cases, photograph the hell out of them from close up and try to get a good record of all marks on them.

Even if we can't properly interpret every mark, at least this will be a safeguard against doctoring.

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Determining the cause of the dents is the basic problem to us right now, as far as I can see. That is your baby, all yours.

If you note other pitfalls, please tell me and I'll think on them.

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When I conceived the notion of writing the basic report all by myself, I did not consider that there would be any trouble in determining the cause of the dents, or that any more labor or expense would be required than I could contribute myself. I was wrong, and silly, and I shall be glad to have you contribute to the writing-- especially as regards tests and examinations in which I do not directly participate. I now feel sadly remote from the action, but it is best that

way, for it is so easy to be trapped by your own ideas, your own methods.

My decision to write alone stems from vanity-- not vanity based on a desire for notoriety (for I can do without that), not vanity based on the belief that I am more competent than others (for I know that that is not so), but vanity based (of all things!) on my prose style. I know that this is true, for it happens often. When I lay my mind to a piece of writing on an issue that I consider important, and when I know that others may scrutinize what I write, I cherish it like a newly laid egg; I mother it; I dress it up for its appropriate work, and send it on its way. It's a terrible burden, for I write laboriously-- but I do love it, like the burden of a cow with calf. I lick, lick, lick the afterbirth until it's just the calf that I want..

Too much Cicero, I guess.

Anyway, let's do it together.

Still,

Nick

Bernabei

*P.S. I am sending a copy
of this to Weisberg.*