

Letter to the Editor: "Tracking the 'Magic' Bullet in the JFK Assassination,"
 by L. Haag, AFTE J, Vol 46, No 2, Spring 2014, pp 104-113; "President Kennedy's Fatal Gunshot Wound and the Seemingly Anomalous Behavior of the Fatal Bullet,"
 by L. Haag, AFTE J, Vol 46, No 3, Summer 2014, pp 218-223; and
 "President Kennedy's Fatal Head Wound and his Rearward Head 'Snap,'" by L. Haag, AFTE J, Vol 46, No 4, Fall 2014, pp 279-289

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Dear Editor,

As physicians who have had an abiding interest in JFK's assassination for decades, we write to thank the journal for devoting so much space – three articles by Mr. Lucien Haag spanning three issues - to this important topic.^{1,2,3} We also write to point out that there has been much evidence, both old and new, that was apparently overlooked by Mr. Haag, evidence that we believe would be of interest to both AFTE readers and the wider public. We wholeheartedly agree with Mr. Haag that "one should start with what is known and not likely to be in dispute."⁴ However, we don't always agree with what Mr. Haag considers settled evidence, as we hope to demonstrate.

Our principal areas of concern are fourfold:

#1. The claim that Neutron Activation Analysis (NAA) has established that #399, and all the recovered bullet fragments, trace to but two bullets firearms matched to Lee Harvey Oswald's Mannlicher Carcano rifle, to the exclusion of all other weapons in the world. NAA (often referred to as "comparative bullet lead analysis," or CBLA) was said to be able to match bullet fragments by precisely measuring the trace amounts of chemical "contaminants" found in the

lead of recovered fragments. Relevant to the JFK case, Mr. Haag argues that Professor Vincent P. Guinn, testifying for the House Select Committee,⁵ and professor Ken Rahn and Mr. Larry Sturdivan, have shown that NAA matches prove scientifically that only two bullets are in evidence in the Kennedy case, and both trace to Oswald's rifle.⁶

How? Principally by the level of the trace element, antimony, which is used as a hardening element in bullet lead. The antimony concentration in the lead from #399 supposedly matches that found in John Connally's wrist fragments, thus proving the "Single Bullet Theory" – the theory that the bullet that hit JFK in the back also hit the Governor. In addition, the antimony concentration in the lead found in the bullet fragments from the floor of JFK's limousine matches that measured in the two fragments removed from JFK's brain during the autopsy - proving that the second bullet struck JFK's skull, broke apart, with the bulk of the bullet ending up on the floor. Mr. Haag supports this conclusion with citations to a 2004 paper written by Kenneth Rahn, Ph.D. and Larry Sturdivan, MS,⁷ as well as to a book published by Larry Sturdivan in 2005, "The JFK Myths."⁸ However, CBLA (NAA), which the FBI used for decades in prosecutions, has long been discredited and abandoned by the FBI.⁹

Perhaps the first assault against CBLA was a devastating critique by Lawrence Livermore Lab scientist Eric Randich, Ph.D. and former FBI Chief Metallurgist William Tobin that appeared in 2002 in a peer-reviewed paper published in Forensic Science International.¹⁰ In 2004 the National Research Council of the National Academy of Sciences published the research report, "Weighing Bullet Lead Evidence" that further impugned the validity of CBLA.¹¹ Those findings were quickly publicized, most notably in a February 11, 2004 *Chicago Tribune* article entitled, "Study Shoots Holes in Bullet Analyses by FBI."¹² In consequence of that paper and other research on CBLA,¹³ the FBI formally announced on September 1, 2005 that it had abandoned NAA.¹⁴

Relevant to the JFK case, Lawrence Livermore Lab scientists Erik Randich Ph.D. and Patrick M. Grant Ph.D. debunked claims that NAA had proved there was no evidence for more than two bullets in a peer-reviewed paper published in 2006. They wrote, "We therefore assert that, from perspectives of standard metallurgical practice and statistical assessment of the fundamental NAA measurements (and despite the opinion of Rahn and Sturdivan that their assessment is definitive and puts the matter to rest) (sic), a conclusion of material evidence for only two bullets in the questioned JFK assassination specimens has no forensic basis ... Moreover, the fragments need not necessarily have originated from MC ammunition. Indeed, the antimony compositions of the evidentiary specimens are consistent with any number of jacketed ammunitions containing unhardened lead."¹⁵ (In contrast to Mr. Rahn and Mr. Sturdivan, who have long argued against an assassination conspiracy, Drs. Randich and Grant have no opinion on whether there was a conspiracy in JFK's death.) (NAA defender, Kenneth Rahn, Ph.D., wrote an online rebuttal to the Randich and Grant article that seems no longer to be available on the web. The only evidence for its prior existence that the authors can find is an on-line response to Rahn written by Pat Grant, Ph.D.¹⁶)

The Guinn-Rahn-Sturdivan case for NAA in the JFK case was further discredited in a peer-reviewed article from the Institute of Mathematical Statistics that was published in *The Annals of Applied Statistics* in 2007. "In this paper," the authors wrote, "we show that (the NAA) evidence used to rule out a second assassin is fundamentally flawed."¹⁷ Mr. Haag may have reasons to continue to support NAA in the face of the tsunami of contrary findings, but by neither acknowledging nor addressing the recent evidence, the reader is left in the dark.

#2. The claim that the entrance back wound of #2nd supposed victim of #399, Governor John Connally, clearly represented a wound caused by a "tumbling" bullet after it had passed through JFK because the wound was not a small, puncture-type wound, like a typical entrance wound, but instead was a large, oval wound - a "yawed entry" wound. It measured 3-cm, the full length of #399, indicating (it was claimed) that it was traveling sideways, not point-forward, when it hit Mr. Connally.

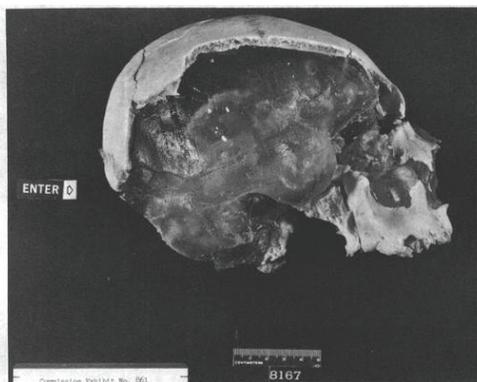
Accurately citing the Parkland Hospital surgical record,¹⁸ Mr. Haag writes that treating surgeon, Robert Shaw, MD, reported that Governor Connally's back wound was an "elongated entry wound, 3cm (ca. 1.2 inches) (sic) in its longest direction," and so "is entirely consistent with a destabilized bullet" Confusingly, Mr. Haag then offers the accurate, but seemingly contradictory, testimony of FBI Examiner Robert Frazier

regarding the Governor's jacket. "In Volume V of the Warren Commission testimony," Mr. Haag writes, "he (Frazier) reported a 5/8-inch (1.5-cm) elongated hole in this garment confirming a destabilized, yawing 'magic' bullet as the source of the governor's upper torso wound."¹⁹ Thus the entrance wound in the Governor's back supposedly measured 3-cm, about 1.2-inches, while the corresponding hole in his jacket measured but 1.5-cm, or 5/8th inches. A simple reading of Dr. Shaw's Warren Commission testimony and evidence from the House Select Committee quickly resolves the conflict.

As researcher Milicent Cranor first pointed out,²⁰ the Governor's back wound measured 1.5 cm in its largest diameter when Dr. Shaw first examined him,²¹ exactly the size of the "entrance wound" in his jacket. In testimony to the Warren Commission and to the House Select Committee, Dr. Shaw repeatedly explained that 3-cm was the size of the wound *after* he had surgically debrided it.²² The House Select Committee offered a clear explanation. Dr. Shaw, it reported, had said, "The rear entrance wound was not 3 centimeters [in diameter] (sic) as indicated in one of the operative notes. It was a puncture-type wound, as if a bullet had struck the body at a slight declination [i.e., not at a right angle] (sic). The wound was actually approximately 1.5 centimeters in diameter. The ragged edges of the wound were surgically cut away, effectively enlarging it to approximately 3 centimeters."²³ The wound's true size was further corroborated by the HSCA's finding that the entrance defect in the back of the Governor's shirt, much like that in his jacket, measured .8-cm by 1.3-cm.²⁴

Thus the "wounds" in the Governor's shirt, jacket and back mutually corroborate a fairly small "puncture-type wound," one that resulted, as Dr. Shaw put it, as "if a bullet had struck the (Governor's) body at a slight declination." It is to be expected that bullets not striking perfectly perpendicular to their targets will leave an ovoid wound, just as the wound in JFK's scalp did. The autopsy report discloses that, like Connally's back wound, Kennedy's scalp wound measured 1.5 by .6 cm,²⁵ and it has never been suggested that the penetrating bullet that caused JFK's ovoid scalp wound had hit something else first.

#3. The assertion that duplication human skull-shooting tests conducted by the Biophysics Laboratory at the Edgewood Arsenal for the Warren Commission in 1964 closely replicated the wounds that JFK sustained. Borrowing from the Larry Sturdivan book, "The JFK Myths," Mr. Haag writes that "[t]he skull simulations were conducted by firing bullets at a range of 270 feet (82m) (sic) ... the distance estimated by the Warren Commission, between the sixth floor corner window of the Texas School Book Depository and the President at the time of the fatal head shot." The target skulls, Mr. Haag says, "were positioned so that the entry and exit of the bullet would



COMMISSION EXHIBIT 861



COMMISSION EXHIBIT 862

Figures 1 and 2. Warren Commission Exhibit 861 and 862 – photographs from “duplication” skull-shooting tests conducted at Edgewood Arsenal in 1964.²⁹

be approximately in the locations indicated in the Warren Commission drawings of the path of the bullet ... High-speed movies were made of the shots that show the skulls to have shattered in a manner very similar to the damage observed in the President's skull."²⁶

Mr. Haag accurately describes the tests, and the reported results of those tests, as given to the Warren Commission in 1964 by Mr. Sturdivan's colleague at Edgewood Arsenal, Alfred Olivier, DVM. Describing two photographs of a blasted skull from his tests, Dr. Olivier told the Warren Commission, "This particular skull blew out the right side in a manner very similar to the wounds of the President ... We found that this bullet could do exactly – could make the type of wound that the President received."²⁷ With that testimony, Dr. Olivier presented the following images to the Commission, Warren



Figure 3. Rydberg diagram, originally published by the Warren Commission, was prepared by an artist under the direction of the autopsy surgeons and depicts JFK's head injuries.³¹



Figure 4. JFK autopsy photograph. This image, a bootleg copy of an original autopsy photograph, was first published by author David Lifton in his 1980 book, "Best Evidence," and is widely available on the web.

Commission Exhibits 861 and 862.²⁸ (Figures 1 and 2.)

The skull damage to Dr. Olivier's test skull involved the loss of most of the right frontal bone, the right eye socket and much of the right cheek bone. No such damage was reported to JFK's skull in the autopsy report, nor depicted in the Rydberg diagram, an artist's depiction of JFK's skull prepared for, and approved by, the Warren Commission under the direction of the autopsy surgeons. (Fig. 3)³⁰ Nor is it visible in the official autopsy photographs at the National Archives. (Fig. 4) (Both

authors have examined the still-restricted, official autopsy photographs at the National Archives by special permission of the Kennedy family.)

The gross discrepancies between the official autopsy report, the Rydberg diagram and autopsy photographs, as compared with the photographs of the "experimental duplication," require no particular expertise to appreciate. While they apparently escaped the notice of the Warren Commission and its expert, Dr. Alfred Olivier, AFTE readers should compare the official images of the tests skulls with the other evidence and decide for themselves if indeed the test skulls shattered "in a manner very similar to the damage observed in the President's skull."

#4. The claim that JFK's rearward head snap after the fatal shot from behind can be explained either by a "jet effect," as demonstrated in melon-shooting experiments by Nobel Laureate Luis Alvarez, or by a "neuromuscular reaction" as Mr. Haag suggested on the basis of evidence presented by Mr. Larry Sturdivan in his book "JFK Myths." The authors agree with Mr. Sturdivan that the momentum from any "jet effect" would have been insufficient "to move the President's torso backward into the seat of the car,"³² as is seen in the Zapruder film in the frames following the head shot at frame 313. But the "neuromuscular reaction" explication Mr. Sturdivan offers for JFK's rearward jolt also seems unlikely to have been sufficient.³³

In his book "The JFK Myths" Larry Sturdivan shows a series of still photographs of a goat-shooting experiment done by the Army in 1948. Mr. Haag (and Mr. Sturdivan) maintains that JFK's recoil backward was analogous to the goat's backward-arching "neuromuscular reaction" to being shot through the skull with a .30 caliber bullet. Describing the reaction of the goat, Mr. Sturdivan writes, "His (the goat's) back arches, his head is thrown up and back, and his legs straighten and stiffen for an instant before he collapses back into his previous flaccid state."³⁴ (Figs. 5, 6)

Mr. Sturdivan buttresses his case with another supposed example of this same phenomenon. He reproduces a 1936 photograph purportedly showing a man reacting to being shot in the head during the Spanish Civil War. "The neck and back are arched backward," he writes, "and the arms are shown fully extended and angled slightly backward as the more-powerful triceps and back muscles predominate over the biceps and the muscles of muscles of the abdomen and chest."³⁵ (Fig. 7)

In both examples, Mr. Sturdivan maintains that when the skull is blasted there is an instantaneous, and simultaneous,



Figures 5 (top) and 6. Images of a goat being shot in the head, per Larry Sturdivan. Figure 6 shows the goat's immediate reaction to being shot. His back arches, his upper and lower limbs splay outward and backward.



Figure 7. Image of a man supposedly reacting to being shot in the head during the Spanish Civil War.

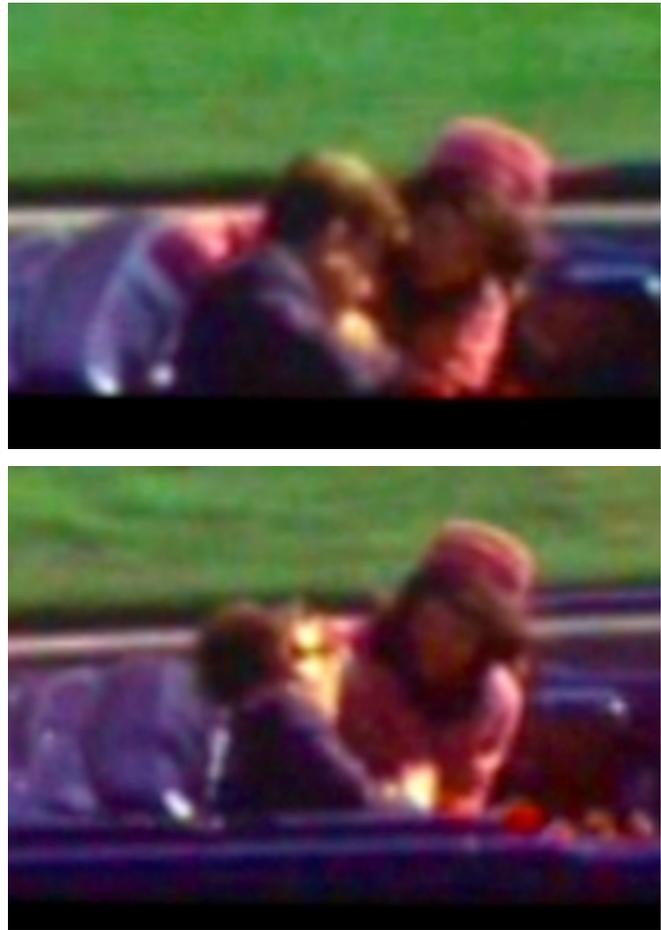
discharge of all muscle-stimulating nerves. The action of the stronger, extensor muscles, predominate, and so the back, triceps and hamstrings cause backward arching for a moment before total collapse. Mr. Sturdivan argues that JFK's reaction to the fatal shot demonstrates this same reaction.

In testimony he gave to the House Select Committee in the late 70s, Mr. Sturdivan said, "... since all (of JFK's) motor nerves were stimulated at the same time, then every muscle in the body would be activated at the same time. Now, in an arm, for instance, this would have activated the biceps muscle but it would have also activated the triceps muscle, which being more powerful, would have straightened the arm out. With leg muscles, the large muscles in the back of the leg, are more powerful than those in the front and, therefore, the leg would move backward. The muscles in the back of the trunk are much stronger than the abdominals and, therefore, the body would arch backward."³⁶

There are numerous problems with this "neuromuscular" theory. With respect to the example of the alleged human victim in 1936, Robert Capa's famous "Fallen Soldier," it's now widely believed that the photograph was likely *not* taken of a head shot victim in a war zone, where Mr. Capa claimed he'd taken it. Instead, it's likely the photograph was staged, far from any battle action.³⁷ But even if "Fallen Soldier" is valid, the image, like those of the goat, depicts reactions distinctly different than what we see when JFK is fatally struck.

Mr. Sturdivan's describes the neuromuscular reaction of the victim in "Fallen Soldier," thus: "The neck and back are arched backward and the arms are shown fully extended and angled slightly backward as the more-powerful triceps and back muscles predominate over the biceps and the muscles of the abdomen and chest ... The back is almost fully arched ... The unfortunate victim was evidently sitting or squatting with his thighs flexed when shot. The thighs are lagging a bit behind the arms in the process of violent extension ... (that) lifts him bodily off the ground."³⁸ The goat displays a similar reaction: the back arches and both fore and hind limbs extend backward.

That's not what happens to the President. The instant before he's struck at Zapruder frame 312, Kennedy is leaning somewhat forward and to his left. The film then shows Kennedy's head moving rapidly backward, with his arms and back following limply, not arching backward. Kennedy's arm is not straightened out, as was the case with the goat and "Fallen Soldier," and as Mr. Sturdivan suggests it should have. Nor is there a trace of bodily movement indicating that JFK's legs reacted with "in a process of violent extension," as the goat's did and as "Fallen Soldier's" is said to have done. The



Figures 8 (top), Zapruder frame 312, 1/18th second before bullet impact, and 9, Zapruder frame 323, 11/18 seconds later.³⁹ In the one half second that elapsed between the first photograph and the second, Kennedy's skull can be seen jolting backward, his back and upper arms following. There is no backward splaying of JFK's upper arms or his back. Unlike "Fallen Soldier," his upper arm is not extended, but remains bent at the elbow.

President's reaction is precisely the opposite of the backward splaying of the upper and lower limbs and the backs of the "Fallen Soldier" and the goat. (Figures 8, 9)

Since neither the "jet effect" nor a neuromuscular reaction explain JFK's sudden backward lurch, what might? Though beyond the scope of this discussion, if a bullet fired from the right front had tangentially struck the top right front portion of JFK's skull, it might well have imparted sufficient momentum to the skull to rock it backward, as we see, with the bulk of the bullet being deflected upward and out of the skull, while

leaving the trail of fine fragments Mr. Haag outlined nicely on the image of JFK's lateral X-ray, a trail that lies very near the top of the President's skull.⁴⁰

Sincerely,

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(Endnotes)

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²¹ * Warren Commission testimony of Robert Shaw, MD, 4H104 (Dr. Shaw: Governor Connally's back wound "was a small wound approximately a centimeter and a half in its greatest diameter." http://www.historymatters.com/archive/jfk/wc/wcvols/wh4/html/WC_Vol4_0056b.htm

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²² Warren Commission testimony of Robert Shaw, MD, ("The skin surrounding the (back) wound was removed in an elliptical fashion, enlarging the wound to approximately 3 centimeters.") 6H88: http://www.history-matters.com/archive/jfk/wc/wcvols/wh6/html/WC_Vol6_0049b.htm

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²⁹ 17H854: http://www.history-matters.com/archive/jfk/wc/wcvols/wh17/html/WH_Vol17_0440b.htm

³⁰ Rydberg Diagram - 16H984: http://www.history-matters.com/archive/jfk/wc/wcvols/wh16/html/WH_Vol16_0504b.htm

³¹ Rydberg Diagram - 16H984: http://www.history-matters.com/archive/jfk/wc/wcvols/wh16/html/WH_Vol16_0504b.htm

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³³ IBID, p. 165.

³⁴ IBID.

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all motor nerves were stimulated at the same time, then every muscle in the body would be activated at the same time. Now, in an arm, for instance, this would have activated the biceps muscle but it would have also activated the triceps muscle, which being more powerful, would have straightened the arm out. With leg muscles, the large muscles in the back of the leg, are more powerful than those in the front and, therefore, the leg would move backward. The muscles in the back of the trunk are much stronger than the abdominals and, therefore, the body would arch backward."]

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³⁹ "Costella Combined Edit (of Zapruder) Frames": <http://assassinationresearch.com/zfilm/>

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