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The Injuries to JFK

To the Editor.—The article featuring Drs Humes' and Boswell's^{1,2} explanation of the events surrounding the autopsy of John F. Kennedy was certainly timely and should clear up many misconceptions.

After reading urologist Dr John Lattimer's³ explanation of JFK's wounds in a medical journal some years ago, I never seriously doubted that the former president was struck from above and behind by two bullets. However, the Warren Commission stated that the first bullet that traversed President Kennedy's neck also caused all the wounds in former Texas Governor John Connally. If the Zapruder film is to be believed, this bullet, after exiting President Kennedy's neck, would have had to make sequential sharp right and then left turns and literally to hover in midair between its victims for about 1½ seconds, since the film first shows Kennedy in distress apparently reaching for his throat while Connally sits unperturbed raising his white hat in his right hand. It is not until approximately 35 frames later that Connally appears hit and drops his right hand (his wristbone was fractured by the bullet).

Connally always maintained that he had heard the first shot before he was hit. In addition, since the second bullet struck President Kennedy in the back of the head just to the right of midline and exited from the right side of the head and since it was fired from above and to the right, the President's head would have had to be turned significantly toward the left. Yet, the Zapruder film appears to show the slain President in profile on the frame immediately before impact (1/18th of a second before impact). This widely published interpretation of the critical frames of the Zapruder film continues to cause consternation. Since Dr Micozzi⁴ in his Editorial preceding the At Large articles states that he reviewed the Zapruder film frame by frame in New Orleans early in 1992, perhaps he could explain these seeming inconsistencies and allow many of us who have attempted to make sense of the assassination through the years to rest easier.

Arthur J. Wilson, MD
Memphis, Tenn

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.

2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 267:2804-2807.

3. Lattimer JK. Observations based on a review of autopsy photographs, x-rays, and related materials of the late President John F. Kennedy. *Resident Staff Physician*. May 1972;18:33-64.

4. Micozzi MS. Lincoln, Kennedy, and the autopsy. *JAMA*. 1992;267:2791.

To the Editor.—Rather than quell doubts about President Kennedy's autopsy findings, I fear that Drs Humes' and Boswell's^{1,2} remarks in *JAMA* will only serve to heighten the level of disbelief in their observations. Neither Humes nor Boswell addressed their critics on contradictory evidence that subsequent government investigations have consistently revealed, namely, that neither the available photographs nor the roentgenograms support Humes' and Boswell's claims regarding the entrance location of the fatal skull wound. At least three qualified groups have reviewed the roentgenographic and photographic evidence and are unanimous in claiming that Humes' and Boswell's claims in the Warren Commission Report erred in placing the fatal skull entrance wound at the base of the skull just above the hairline ("2.5 cm to the right and slightly above the external occipital protuberance" according to Humes both in the *JAMA* interview,

and before that, in his Warren Commission testimony). The Clark Panel in 1968,³ John Lattimer, MD, in 1972,⁴ and the House Select Committee on Assassinations in 1978⁵ all determined that the fatal entrance wound was 10 cm higher in the cowlick area at the top of the head on the basis of the available roentgenograms and the autopsy photographs.

Humes and Boswell also never reported seeing a round "large metallic fragment which on the antero-posterior film lies 25 mm to the right of the midline"^{2(p11)} measuring 6.5 mm in diameter in the rear of the skull in the autopsy roentgenograms that Humes and Boswell claim to have reviewed during the autopsy.^{1,2} While Humes took pains to describe all the visible bullet fragments in his Warren Commission testimony, this very large fragment was never described and, presumably, was never seen. This large fragment in the rear of the skull, however, was plainly seen and described by all subsequent groups reviewing the roentgenograms. Thus, the "incontrovertible" photographic and roentgenographic evidence appears to directly contradict sworn statements by Humes and Boswell before the Warren Commission that were repeated in their *JAMA* interview.

Humes' contradictory statements, regrettably, have occurred before. When questioned by Dr Charles Petty before the House Select Committee on Assassinations, he was asked where the skull entrance wound was. He replied, "It's below the external protuberance."

"It's below it?" Dr Petty asked incredulously.

"Right," answered Dr Humes.

"Not above it?" pressed Dr Petty.

"No. It's to the right and inferior to external occipital protuberance. And when the scalp was reflected from there, there was virtually an identical wound in the occipital bone." was Dr Humes' unequivocal reply.⁶

Inexplicably, Humes later changed his mind, stating before the House Committee, "Yes, I think that I do have a different opinion," and at that point Humes endorsed the photographic and roentgenographic placement of the wounds at least 10 cm higher at the cowlick area in the parietal bone!⁷ The question of the unmentioned bullet fragment seen by subsequent reviewers in the roentgenograms was not brought to Dr Humes' attention before the House Select Committee, but the question certainly should be answered.

Neither Boswell nor Dr Pierre Finck, the other pathologist present at the autopsy, would change his mind about the location of the fatal entrance wound. They continued to claim that the entrance wound was low, 10 cm below where the House Select Committee panel and Humes then claimed it was.⁸ From the interview, Humes seems to be changing his mind again to agree with Boswell and Finck that the entrance

Guidelines for Letters

Letters will be published at the discretion of the editors as space permits and are subject to editing and abridgment. They should be typewritten double-spaced and submitted in duplicate. They should not exceed 500 words of text. References, if any, should be held to a minimum, preferably five or fewer. Letters discussing a recent *JAMA* article should be received within 1 month of the article's publication. Letters must not duplicate other material published or submitted for publication. A signed statement for copyright, authorship responsibility, and financial disclosure is essential for publication. Letters not meeting these guidelines are generally not acknowledged. We do not routinely return unpublished letters. Also see Instructions for Authors.

Edited by Drummond Rennie, MD, Deputy Editor (West), and Bruce B. Dan, MD, Senior Editor.

wound is low and, presumably, that the roentgenograms and photographs are wrong.

These discrepancies in evidence are far from inconsequential clinically, forensically, or evidentially. A 10-cm "error" just does not occur in a careful forensic autopsy and a 6.5-mm bullet fragment is simply not "missed" on a roentgenogram, particularly when a radiologist, John Ebersole, was present at the autopsy to review the films. If Humes and Boswell's eyewitness observations are right, that the fatal entrance wound was low in the skull and that no rear bullet fragments were visible radiographically, then the repeated claims of evidence tampering by Jerrol Custer and Floyd Riebe,^{9,10} roentgenogram and photographic technicians who were present at the autopsy, are greatly strengthened. Are Humes and Boswell "open" to address these issues? Why has not Finck also come forward to defend the Warren Commission findings, and why was he unavailable for the *JAMA* interview, or even for a brief message of endorsement?

With the distrust many Warren Commission critics have of JFK's military autopsy, *JAMA* might have aided its cause by choosing a public representative other than the well-respected George Lundberg, MD, if only because of his well-known military ties. Humes or Boswell might have been more helpful if either had joined Dr Lundberg for the news conference announcing *JAMA's* publication of the "plain truth" about JFK's autopsy.

Gary L. Aguilar, MD
University of California
San Francisco

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.
2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 267:2804-2807.
3. Clark R. *Clark Panel Report: 1968 Panel Review of Photographs, X-ray Films, Documents and Other Evidence Pertaining to the Fatal Wounding of President John F. Kennedy on November 22, 1963*. in Dallas. Tex. Washington, DC: US Government Printing Office; 1969.
4. Lattimer JK. Observations based on a review of the autopsy photographs, x-rays, and related materials of the late President John F. Kennedy. *Resident Staff Physician*. May 1972;18:33-64.
5. House Select Committee on Assassinations. Washington, DC: US Government Printing Office; 1978;7:114-115, 254-255.
6. House Select Committee on Assassinations. Washington, DC: US Government Printing Office; 1978;7:246.
7. House Select Committee on Assassinations. Washington, DC: US Government Printing Office; 1978;1:323-332.
8. Hurt H. *Reasonable Doubt*. New York, NY: Henry Holt and Company; 1985:53.
9. Livingstone HE. *High Treason II*. New York, NY: Carroll & Graf Publishers Inc; 1992:209-225, 308.
10. King J. JFK autopsy photo called phony: navy technicians charge tampering. *San Francisco Examiner*. April 29, 1992:A8.

To the Editor.—Your recent JFK autopsy report^{1,2} quotes Dr Humes as saying, "In 1963, we proved at the autopsy table that President Kennedy was struck from above and behind by the fatal shot. . . ."

That is not what Humes told the House Select Committee on Assassinations in 1979.³ When asked if the essential findings were two gunshot wounds from above and behind, he said, "I think behind is probably the most one can say from the anatomic findings."

Has Humes made new anatomic discoveries on JFK since 1979 that now permit him to assert that the shots were clearly from above? If so, will he share those findings with *JAMA*? If he was unsure of the superior location of the gunman, how could he be sure, from the anatomic data, that Oswald was on the sixth floor? Or did he conclude this from data outside the autopsy? If so, is he qualified to pass judgment on nonanatomic data?

I trust *JAMA* will permit Humes to clarify this important issue. He may wish to do so simply for the sake of his own credibility.

Patricia L. James, MD
Idyllwild, Calif

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.
2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 267:2804-2807.
3. House Select Committee on Assassinations. Washington, DC: US Government Printing Office; 1979;7:243-255.

To the Editor.—Let me congratulate you on the outstanding service that your interview with Drs Humes and Boswell^{1,2} and the Parkland physicians offers to the reading public. Humes and Boswell are seen at last as the men that they are, eminently capable pathologists. While they are not forensic pathologists, their knowledge of gunshot wounds is indeed impressive. I am delighted that they have finally consented to speak publicly concerning their activities and their observations.

I also congratulate you on remembering to include the Parkland physicians in this medical documentation. Your ability to persuade Dr Rose to give his views is especially illuminating. Earl Rose was one of the clearest thinking individuals in the Parkland emergency room on that fateful November day in 1963. The single largest contributor to the uncertainty surrounding President Kennedy's death must be attributed to the Secret Service's decision to remove the body from Parkland Hospital before an autopsy could be performed. Humes and others were understandably sensitive to the emotional state of the family at that particular time. However, had Lee Harvey Oswald been able to secure anything approaching a fair trial, it is doubtful that he could have been convicted because of the legal uncertainty that would have been created concerning the train of evidence and, perhaps, even the legal admissibility of the autopsy itself. Humes and Boswell performed admirably, but there can be no doubt that an autopsy performed by one of the nation's most experienced forensic pathologists (Rose), accompanied by every physician who had laid hands on the body from the moment it reached the emergency room, would have resulted in documentation of details in a way that would have obviated much if not all of the subsequent speculation.

V. Q. Telford, MD
Dallas, Tex

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.
2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 267:2804-2807.

To the Editor.—I have recently read the articles^{1,2} and the Editorial³ in your May 27, 1992, issue of *JAMA* concerning the John F. Kennedy autopsy controversy. I would say, as a citizen and an attorney, that you have done a signal service in obtaining and publishing the interviews. I feel that the nation owes you a genuine vote of thanks, which you will probably not get. I also feel that the comment that "One might think that all this demonstration of facts and expression of expert medical opinion would end the controversy over the President's autopsy, but one would probably be wrong" is unfortunately very likely to be accurate.

We set ourselves up for conspiracy theories, based on anything from misapprehension to flat-out personal greed, by the failure to be completely open in the handling of the autopsy—but I also think that it was inevitable that mistakes would be made (primarily movement of the body from Dallas prior to autopsy).

We cannot have facts the way we want them instead of the way they are. Dr Robert McClelland, who, despite his own admission that he is not an expert on ballistics, pathology, or physics, persistently rejects the conclusions of those who are. If a man of considerable scientific training cannot accept contrary evidence and opinions, I suppose it is too much to expect those who lack training and expertise to do so.

Clyde W. Howard III
Nacogdoches, Tex

Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.

Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 272:2804-2807.

Micozzi MS. Lincoln, Kennedy, and the autopsy. *JAMA*. 1992;27:2791.

to the Editor.—Drs Humes and Boswell,¹ in their interview with *JAMA* editor Dr George Lundberg, state that it was perfectly obvious that President Kennedy was shot from behind. They decry the “supreme ignorance” of the prevailing doubts about the assassination, blaming money-hungry conspiracy “buffs” for indulging in “ridiculous theories.”

The essence of their statement is that the beveled appearance of the entrance and exit wounds in the President's skull provide an “irrefutable diagnostic fact” that the bullet came from the rear and above. It is curious that so much controversy would remain in the face of such an easily interpretable fact. If the reality is as they state, it would be a simple act to remove all controversy. Rather than provide supportive material, we are asked to believe them simply because they insist it is true.

As I write this letter, I am looking at one of the widely published autopsy photographs of Kennedy.² It shows the rear of Kennedy's skull, with the scalp removed, and a close-up of the bullet wound that Humes and Boswell report is beveled inward. In the photograph, this particular wound appears to be beveled outward, the opposite of what Drs Humes and Boswell would have us believe. A comment on the photograph points to the wound and states, “beveled outward striking fragment.” What makes the book's assertion more believable than Humes and Boswell is that the photo is provided to substantiate the claim of the author.

If Humes and Boswell really want the speculation to end, they should lobby *JAMA* to publish the actual photographs and roentgenograms that show so obviously what they want us to believe. Then the sophisticated readership of *JAMA* can help to bring this truth to the public in a convincing way.

Anthony White, MD
Boston, Mass

Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.
Livingstone HE. *High Treason II*. New York, NY: Carroll & Graf Publishers Inc; 1963:432.

to the Editor.—The congruent skull and scalp defect described by Dr Humes was 400% larger in area than that reported in Dallas. The Dallas wound was more occipital; Humes described chiefly parietal wound. Contemporary sketches prepared from the two sources are remarkably different.

Mr Breo^{1,2} quotes Dr M. T. “Pepper” Jenkins as retracting his 1963 viewing of the cerebellum in Dallas. In fact, Jenkins repeated this for the Warren Commission hearings. Cerebellar tissue was also seen by Drs William Kent Clark, Charles Dexter, James Carrico, Robert McClelland, and reported by Malcolm Perry to the House Select Committee on Assassinations.

The entrance wound, according to Humes, was near the external occipital protuberance. The Clark panel,³ however, stated it 100 mm (sic) superior to this site, i.e., near the hairline area. This 10-cm discrepancy was also confirmed by Dr Michael Baden before the House Select Committee on Assassinations.

In Dallas, of many physicians who stated sizes, only Carrico described the throat wound as possibly larger than 5 mm. All other physicians described a fairly round, clean, smooth wound. In transcripts of his CBS interview,⁴ Perry described an entrance wound three times.

Breo quotes Humes: “Two thirds of the right cerebrum was

missing.” In the Supplemental Autopsy Report, the brain weighed a normal 1500 g.

Humes saw no fractures in the neck. Michael Baden, MD,⁵ however, described a fracture of T1. Would the “magic bullet” (Warren Commission Exhibit No. 399) emerge unscathed after fracturing T1, fracturing Connally's fifth rib, and shattering Connally's radius?

To follow Humes' bullet trajectory within the skull, the head must be extremely anteflexed, far more than seen on any of the Zapruder film frames. Placing Humes' entrance site and the angle of elevation supplied by the Warren Commission (15° 21') on Zapruder frame 313 (impact), a straight trajectory exits through the forehead; only marked deviation permits parietal exit.

Humes' statements mean that there was anterior ejection of brain tissue. Ignoring a Secret Service man, Mrs Kennedy retrieved something from the left rear of the limousine. Breo quotes Jenkins as saying that Mrs Kennedy delivered to him a large chunk of her husband's brain tissues. Police officers Hargis and Martin, to the left and rear, both report being forcibly struck by blood and brain tissue.

The Lattimer experimental model requires JFK to recoil directly toward the proposed gunman, backward and slightly to the right. In fact, multiple eyewitnesses and the Zapruder film show that the lateral movement was abruptly to the left. In this model, Humes' entrance wound requires brain tissue ejection anteriorly near the mid-sagittal plane (analogous to the neck wound). Multiple eyewitnesses confirm left posterior ejection. Furthermore, the anterior, approximately mid-sagittal brain tissue ejection predicted by Lattimer also contradicts Zapruder, which purports to show ejection near the right zygoma. Space constraints prohibit comment on this anomalous Zapruder feature.

Does Humes believe the “magic bullet” theory? To the Warren Commission he said, “I think that is most unlikely.”⁶ If one bullet did not strike both Kennedy and Connally, then an additional bullet is required and an additional gunman is required.

David W. Mantik, MD, PhD
Rancho Mirage, Calif

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.

2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 267:2804-2807.

3. Clark R. *Clark Panel Report: 1968 Panel Review of Photographs, X-ray Films, Documents and Other Evidence Pertaining to the Fatal Wounding of President John F. Kennedy on November 22, 1963*, in Dallas, Tex. Washington, DC: US Government Printing Office; 1969:11.

4. White House transcript 1327-C; Lyndon Johnson Library, Austin, Tex. November 22, 1963.

5. House Select Committee on Assassinations. Washington, DC: US Government Printing Office; 1979:1:199.

6. Warren Commission Hearings. Washington, DC: US Government Printing Office; 1964:2:374-376.

To the Editor.—The two articles in the May 27, 1992, issue^{1,2} of *JAMA* purportedly put the matter of the John F. Kennedy assassination to rest. They do not. On the contrary, I do not recall ever having seen so many erroneous statements in so few pages. That Dr George Lundberg, the editor of *THE JOURNAL*, would give them the cachet of his approval and cooperation is difficult to understand.

Let me point out only a few of the glaringly erroneous assertions in Mr Breo's article:

1. He suggests that Dr Charles Crenshaw wasn't even in the room, so how could he know anything? Yet Crenshaw is identified at least five times in Volume VI of the Warren hearings as one of the attending physicians. He does have reason to know.

2. He says the autopsy provides “irrefutable evidence that

President Kennedy was struck by only two bullets that came from above and behind."

Even on the face of it, the autopsy does no such thing. Drs Humes and Boswell did not follow the path of the bullet entering at the base of the neck and in no way linked this wound to the opening in the throat, which they thought was caused by the tracheotomy performed by the doctors in Dallas. Only the next morning after talking to Dr Malcolm Perry in Dallas did they hear that the tracheotomy had obscured a bullet wound. It was at that point that they presumed this must have been an exit wound. Presumption is hardly irrefutable proof. Further, they presumed too much, which leads us to point 3.

3. The doctors in Dallas have not broken a silence of 29 years. They have talked about the wounds before. In press conferences immediately after the assassination, a number said they thought the throat wound was one of entry. According to Dr McClelland's testimony in the Warren Commission hearings (Volume VI), the initial reaction of all was that it was an entry wound, while the massive wound in the back of the head was one of exit. Subsequently, some came around to saying that the throat wound could have been either entry or exit. Others held to their original judgment that it was entry. But not a single one has ever said that the wound in the throat was an exit wound! Humes and Boswell didn't examine it, so how would they know?

4. The articles note that panels of experts, basing their analyses on the autopsy photos and roentgenograms, have consistently upheld the Warren Commission report. Yes, but the two naval medical technicians who took those roentgenograms and photos have now revealed (in a press conference on May 28) that the photos and roentgenograms sent to the Warren Commission and examined by all subsequent panels were not the ones they took. They are fakes! So much for the conclusions of the panels of experts and the irrefutable nature of the evidence.

There are too many other discrepancies in Breo's articles to cover in the space available. Suffice it to say that the mystery of the Kennedy assassination is as alive as ever.

Wayne S. Smith, MD
School for Advanced International Studies
The Johns Hopkins University
Washington, DC

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.

2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 267:2804-2807.

In Reply.—Like Dr Wilson of the Duckworth Pathology Group in Memphis, Tenn, I never had serious grounds to doubt that President Kennedy was struck from above and behind by two bullets. However, also like Wilson, I was not able to rest easy about the "single-bullet theory"—that a single bullet struck the President and subsequently caused all the injuries to Governor Connally—until my viewing of the video presentation of the Zapruder film by Johann Rush and Michael West at the American Academy of Forensic Sciences meetings in New Orleans, La, on February 19, 1992.

In this film presentation it is illustrated that a first shot was fired from the rear that did not hit anyone. Governor Connally, as he later reported, heard this first shot and is seen in the film leaning backward and looking back over his shoulder to see what was wrong. Within seconds, a second shot was fired that struck the President in the neck causing an involuntary reflex of both arms, which assumed the Thorburn position—arms raised parallel to the chest, elbows flexed, hands clenched—characteristic of cervical spinal cord injury at the level of C6. This bullet passed on through Governor

Connally in a straight trajectory instantaneously striking his right wrist and causing him to reflexly flip the hat in his hand upward, as seen in the film. Connally subsequently slumped in his seat, dropping his arm. The injured President had his head turned to the left when the third and final shot was fired (the second shot to strike the President), causing the fatal head injury, consistent with a shot from above and behind.

I know I will never forget the experience of seeing things clearly for the first time at the American Academy of Forensic Sciences meetings in New Orleans last February. I suggest a viewing of the film presentation to resolve remaining doubts, available from Michael West, MD, Deputy Medical Examiner Investigator, Forrest County Mississippi, PO Box 15846, Hattiesburg, MS 39402.

Marc S. Micozzi, MD, PhD
National Museum of Health and Medicine
Washington, DC

In Reply.—On May 19, 1992, the American Medical Association held a press conference in New York, NY, to announce the publication in *JAMA* of two articles on the assassination of President John F. Kennedy.^{1,2} As I stated at the news conference, their value is this:

"For years the American public has been hearing from people who were not in Trauma Room 1 in Dallas and were not in the autopsy room at Bethesda [Md], and, yet, who have claimed to know what must have happened during the medical care of President Kennedy. What we now have are the reports of the physicians who were on the scene, the physicians who carried the primary hands-on responsibility to, first, try to save the President's life, and, then, only hours later to determine the cause of death. We now have the facts about these critical events in the words of the only people who know these facts—the very facts that the conspiracy theorists have chosen to ignore."

My *JAMA* articles were based on tape-recorded interviews by me and by Dr George D. Lundberg, editor of *JAMA*, with pathologists Drs James J. Humes and J. Thornton Boswell, who did the Bethesda autopsy; by me, with Drs Pepper Jenkins, James Carrico, Charles Baxter, Malcolm Perry, and Robert McClelland, the key people who treated the President in Dallas; and by me, with pathologist Dr Earl Rose, who tried in vain to assert jurisdiction for a Dallas autopsy. These 11000 words of original journalism can be boiled down to a single phrase: two bullets from the rear. However, as the original articles stated, "One might think that all this demonstration of facts and expression of expert medical opinion would end the controversy over the President's autopsy, but one would probably be wrong."

Indeed. To my mind, the only cogent question raised by all the response is this: Why was Dr Pierre Finck (the third autopsy pathologist) missing from the report? That question is now answered in the At Large column beginning on page 1748. Finck makes it unanimous: two bullets from the rear.

Everything else is irrelevant in terms of determining the cause of death. The autopsy documentation is irrefutable and is still available in the National Archives. To argue with other forensic details—*none of which conflict with the essential finding of two bullets from the rear*—is to engage in intellectual dishonesty: mastering the part, dissembling the whole.

All three autopsy pathologists have spoken exclusively with *JAMA* and say they will not do any more interviews. They recommend, and I agree, that the full autopsy documentation should be made available immediately to all appropriate people. I believe that future examiners will discover what the four members of the 1968 blue-ribbon forensic pathology panel unanimously concluded and what the nine members of the 1979 House Select Committee on Assassinations

nation's blue-ribbon forensic pathology panel concluded: two bullets from the rear. That's it, folks.

Dennis L. Breo
American Medical Association
Chicago, Ill

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA*. 1992;267:2794-2803.
2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA*. 1992; 267:2804-2807.

In Reply.—The appearance and location of the President's wounds were exactly as described in the original autopsy report. That report was prepared within 48 hours of the assassination and delivered to the White House physician early in the evening of November 24, 1963. No amount of discussion or debate can alter these facts. We concur with the recommendations that all of the material related to this tragedy should be made available to qualified individuals. We continue to believe that no useful purpose would be served by widespread publication of the very unsightly head wounds and we lament the fact that this has already, to some extent, occurred.

James J. Humes, MD
Ponte Vedra Beach, Fla
J. Thornton Boswell, MD
Rockville, Md

Combined Childhood Immunizations

To the Editor.—The recent article by Clemens et al¹ states the need for care when assessing potential interference in combination of or even simultaneous administration of pediatric vaccines. Their data showed reductions in the response to pertussis antigens, especially when diphtheria-tetanus-pertussis (DTP) and polyribosylribitol phosphate polysaccharide tetanus toxoid (PRP-T) are combined, and are in concert with the reduced response to the PRP-T in the combined vaccine shown by Ferreccio et al.²

However, these conclusions cannot be generalized to other combinations of DTP and *Haemophilus influenzae* type b conjugates since the *Haemophilus* components are different.

We have studied the effect of HibTITER (HbOC; diphtheria CRM₁₉₇ oligosaccharide conjugate vaccine) on the response of infants in the United States at 7 months to each of the components of DTP after vaccination at 2, 4, and 6 months of age. The data showed no effect of simultaneous administration of DTP and HbOC (Table).

We have studied more recently the immunogenicity of a combined DTP/HbOC product (TETRAMUNE) compared with separate administration of DTP and HbOC. The antibody responses to the combined product were equal to or greater than separate administration for all of the antigens (diphtheria, tetanus, pertussis, and *Haemophilus* type b).³

The use of different carriers and different formulations (eg, aqueous for HbOC vs lyophilized for PRP-T) appear to affect the immune response to multiantigen vaccines. However, the currently licensed HibTITER vaccine can be used at the same time as DTP without any detrimental effect on the DTP vac-

Effect of Pediatric Vaccines on Antibody Response of Infants*

Antigen	Antibody Response, Geometric Mean Titer†	
	DTP Alone (n=37)	DTP+HbOC (n=28)
Diphtheria	0.443	0.695
Tetanus	6.0	6.8
Pertussis	43.95	49.51

*DTP indicates diphtheria-tetanus-pertussis vaccine, and HbOC, diphtheria CRM₁₉₇ oligosaccharide conjugate vaccine (HibTITER).
†Titers to diphtheria and tetanus are IU/mL; to pertussis, inverse microagglutination unit.

cine. In November 1991, the Immunization Practices Advisory Committee of the Centers for Disease Control, Atlanta, Ga, reported that the incidence of *H influenzae* type b disease has declined dramatically over the past year in synchrony with the wide distribution (18 million doses) and use of HibTITER. Such success in an infant immunization program has not been witnessed since the advent of polio vaccines and should be carried forward to use of the vaccine in combination with DTP and other important childhood vaccines.

Peter R. Paradiso, PhD
Lederle Praxis Biologics, Inc
Rochester, NY

1. Clemens JD, Ferreccio C, Levine MM, et al. Impact of *Haemophilus influenzae* type b polysaccharide-tetanus protein conjugate vaccine on responses to concurrently administered diphtheria-tetanus-pertussis vaccine. *JAMA*. 1992;267:673-678.
2. Ferreccio C, Clemens J, Avendano A, et al. The clinical and immunologic response of Chilean infants to *Haemophilus influenzae* type b polysaccharide-tetanus protein conjugate vaccine coadministered in the same syringe with diphtheria-tetanus-pertussis vaccine at two, four, and six months of age. *Pediatr Infect Dis J*. 1991;10:764-771.
3. Paradiso P, Hogerman D, Madore D, et al. Safety and immunogenicity in infants of a tetraavalent vaccine composed of HbOC (HibTITER) and DTP (TRIMMUNOL). *Pediatr Res*. 1992;31:174A. Abstract 1028.

This letter was shown to the author, who declined to reply.—ED.

Grammar School: Teat Found for Motherless Clause?

To the Editor.—The only thing more insufferable than a pedant is an incorrect pedant. In his attempt to correct Robert A. Day's review of Dr King's book on expository writing,¹ Dr Goldblatt makes the error of considering the prepositional phrase as the subject in the following sentence: "Very is one of the words that contributes to flabby writing."² He erroneously concludes that the antecedent of "that" is "words," thereby requiring the plural verb "contribute." However, the subject of the sentence determines the form of the verb, and in this case the subject is the word "very," not "words," which is the object of the prepositional phrase describing "one."

When I learned grammar in high school, we were taught that one could eliminate or ignore a prepositional phrase without changing the meaning of a sentence in order to reveal its basic structure. Thus, the sentence becomes: "Very is one (of the words) that contributes to flabby writing." Clearly, the antecedent of "that" is the singular pronoun "one," which requires a singular, present-tense form of the verb "to contribute," "contributes," to be grammatically correct. The pronoun "one" takes the place of the subject "very." Finally, the sentence may be simplified by eliminating the pronoun phrase "is one" and writing "Very contributes to flabby writing," preserving the original of the more complex sentence and illustrating that the subject is indeed singular and King's grammar is indeed correct.

Fortunately, my public-school grammar has withstood the onslaught of 4 years of undergraduate education as well as 4 years of medical education. I am pleased that Goldblatt admits that his letter makes him "sinful too," for there can be few greater sins than promulgating incorrect knowledge in the guise of correcting someone else's error, confusing and leading innocents astray in the process. No wonder students must unlearn half of what they are taught. I freely admit that in my lack of reverence for my elders—especially when they self-importantly and erroneously "correct" an item or fact that needs no such tampering—I, too, am sinful.

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1. Day RA. reviewer. *JAMA*. 1991;266:3487. Review of King LS. *Why Not Say It Clearly? A Guide to Expository Writing*.
2. Goldblatt D. Write wrong, follow the king. *JAMA*. 1992;267:2740.

In Reply.—I have a friend whose father, an English teacher, once stopped his motorcycle in the middle of the Mojave Desert, unhitched the sidecar, and drove off, stranding a fellow teacher with whom he was arguing (heatedly, no doubt)

Closing the Case in *JAMA* on the John F. Kennedy Autopsy

On May 27, 1992, *JAMA* published detailed and objective recollections of J. T. Boswell, MD, and James J. Humes, MD, the principal pathologists who performed the autopsy on President John Fitzgerald Kennedy, and several Dallas physicians who cared for the President.^{1,2} This report by Dennis L. Breo, which generally supported the findings of the Warren Commission, received worldwide media coverage and drew an enormous response.

See also pp 1681 and 1748.

I am pleased that a great deal of the reaction strongly supported the pathologists' findings and the *JAMA* report, which has withstood an onslaught of criticism from numerous conspiracy theorists.

Three legitimate questions remain:

1. Why did the third autopsy pathologist (and wound ballistics expert) Pierre Finck, MD, not participate in the interview, and what would have been his response?
2. Was there really a 29-year silence on the part of these physicians that was first broken by *JAMA* in this interview?
3. What was the actual status of President Kennedy's adrenal glands at autopsy and what other medical evidence is there to support or refute the long-time allegation that he suffered from Addison's disease?

The Silence of Dr Finck

Although we described and pictured three autopsy pathologists, we interviewed only two (Dr Finck remained in Switzerland). This raised the suspicions of some critics who charged that it was part of a coverup or conspiracy. Fortunately, we have rectified that omission. Subsequent to the May 27 *JAMA*, Dr Finck agreed to be interviewed. Mr Breo interviewed Dr Finck in Geneva, Switzerland, on August 19, 1992, and reports their conversation in full in this issue.³

How Long Was the Silence of Drs Humes and Boswell?

Following our best information, Mr Breo reported that Drs Humes and Boswell had not discussed their findings with reporters (outside of the Warren Commission and congressional hearings, of course) in 29 years. We are indebted to Leslie Midgley of Hartsdale, NY, for calling to our attention that a 5-minute interview of Dr Humes was telecast by CBS

in June 1967. The full transcription of that interview, as provided by Mr Midgley, appears below:

CRONKITE: Since the x-rays and films were turned over to the Archives, Captain Humes has reexamined them. And tonight, for the first time, he discusses with Dan Rather what is contained in them.

RATHER: Commander—now Captain Humes, have you had a look at the pictures and x-rays from the autopsy since the time that you submitted them to the Warren Commission?

HUMES: Yes, Mr Rather, we have.

RATHER: And do you have any different conclusion, any different ideas, any different thoughts now, after seeing them again, than you had at that time?

HUMES: No, we think they bear up very well, and very closely, our testimony before the Warren Commission.

RATHER: How many wounds in the President's body?

HUMES: There were two wounds of entrance, and two of exit.

RATHER: And the two wounds of entry were where?

HUMES: Posteriorly, one low in the right posterior scalp, and one in the base of the neck, on the right.

RATHER: Let's talk about those two wounds, Captain. Both of these are blowups from the Warren Commission report, these sets of drawings. Now, there are people who think they see discrepancies in these two drawings from the Warren Commission report, in that this drawing shows the—what you called an entry wound at the base of the neck of the President—shows it to be, or seems to show it to be, in the upper back, near the shoulder blade considerably below the base of the neck. Further, this drawing does show the entry wound to be at the base of the neck. Now could you talk about these, and reconcile that?

HUMES: Yes, sir. This first drawing is a sketch that—in which the outlines of the figure are already prepared. These are on sheets of paper present in the room in which the examination is conducted and are routinely used to mark in general where certain marks or scars or wounds may be in conducting a postmortem examination. They are never meant to be accurate or precisely to scale.

RATHER: This is a routine in—in preparing autopsy reports, to use this kind of drawing, and at this stage for them not to be prepared precisely?

HUMES: No. No precise measurements are made. They are used as an aide-mémoire, if you will, to the pathologist as he later writes his report. More importantly, we feel that the measurements which are noted here at the margins of the drawing are the precise measurements which we took. One states that—we draw two lines, points of reference—from bony points of reference. We note that there were—the wound was fourteen centimeters from the tip of the right acromion, and fourteen centimeters below the tip of the right mastoid. Now the acromion is the extreme outermost portion of the shoulder. The tip of the mastoid is the bony prominence just behind the ear. And where these two lines intersect was, in actuality, where this wound was situated. And if we would try and draw that to scale, which we weren't trying to do as this mark was made, this, I think, would appear a little bit higher.

RATHER: Now, you examined this whole area of the back?

From the Scientific Publications Group, American Medical Association, Chicago, Ill.

Reprint requests to Scientific Publications Group, American Medical Association, 515 N State St, Chicago, IL 60610 (Dr Lundberg).

HUMES: Yes, sir.

RATHER: Were there any other wounds except one at the base of the neck and one up in the skull?

HUMES: No, sir, there were not. Now the second drawing, which I mentioned, was prepared as we were preparing to testify before the Warren Commission, to rather schematically and as accurately as we possibly could depict the story for the members of the Warren Commission.

RATHER: In this drawing you were trying to be precise?

HUMES: Yes, sir, we were. We were trying to be precise, and refer back to our measurements that we had made and noted in the margins of the other drawing. Also, of course, since this time we have had opportunity to review the photographs which we made at that time. And these photographs show very clearly that the wound was exactly where we stated it to be in our testimony before the Warren Commission, and as it is shown in this drawing.

RATHER: Your reexamination of the photographs verify that the wounds were as shown here?

HUMES: Yes, sir, they do.

RATHER: About the—the head wound . . .

HUMES: Yes, sir.

RATHER: . . . there was only one?

HUMES: There was only one entrance wound in the head, yes, sir.

RATHER: And that was where?

HUMES: That was posterior, about two and a half centimeters to the right of the midline, posteriorly.

RATHER: And the exit wound?

HUMES: And the exit wound was a large irregular wound to the front and side—right side of the President's head.

RATHER: Now, can you be absolutely certain that the wound you described as the entry wound was, in fact, that?

HUMES: Yes, indeed, we can—very precisely and incontrovertibly. The missile traversed the skin, and then traversed the bony skull. And as it passed through the skull, it produced a characteristic conical beveling effect on the inner aspect of the skull—which is scientific evidence that the wound was made from behind and passed forward through the President's skull.

RATHER: This is very important. You say the scientific evidence—is it conclusive scientific evidence?

HUMES: Yes, sir, it is.

RATHER: How many autopsies have you performed?

HUMES: I—I would estimate approximately one thousand.

RATHER: Is there any doubt that the wound at the back of the president's head was the entry wound?

HUMES: There is absolutely no doubt, sir.

We regret our omission of this reference. We should have reported 25 years of silence instead of 29 years. But the text of that 1967 interview is wholly consonant with the 1992 JAMA interview and serves as further validation of the autopsy findings. We reprint the entire interview so that it will be available to historians, the medical literature being much easier to access than old television files.

Solving the Puzzle of Kennedy's Adrenals

Based on published and verified clinical information⁴⁻¹³ and verified autopsy findings, we may now make a firm diagnosis of chronic Addison's disease, probably idiopathic, in John Fitzgerald Kennedy.

Much has been written by newspaper columnists, biographers, and others about myriad medical problems experienced by John F. Kennedy from his childhood to his presidency. Diphtheria, scarlet fever, appendicitis, anemia, chronic indigestion, allergies, jaundice, a ruptured disk from football at college, back injuries on PT-109 during enemy action in the South Pacific that resulted in constant back pain, and possible

malaria, among others.^{8,9,14}

But no illness has puzzled more people than the rumor of adrenal insufficiency or even frank Addison's disease. Innumerable references were made to such during and after political campaigns. But biographers generally stop short of confirming this diagnosis.

Shortly after the Warren Commission reported in 1964, JAMA published the official autopsy report¹⁵ without comment. Letters followed from three physicians decrying the absence of any findings about Kennedy's adrenals and were promptly published.^{4,5} The JAMA editors then tried to obtain the autopsy findings, first from "officials" and then from Rear Admiral E. C. Kenney, Chief, Bureau of Medicine and Surgery, US Navy, who forwarded the request to Rear Admiral George G. Burkley, MC, USN, the White House physician. JAMA received no reply.

Two years later, John Nichols, MD, of Kansas, deduced circumstantially that a 37-year-old man with a 7-year history of well-documented and therapeutically controlled Addison's disease who underwent major back surgery on October 21, 1954, at the Hospital for Special Surgery in New York, NY, was John F. Kennedy.^{7,13} Reports in the *New York Times* of October 11 and 21, 1954, and February 26, 1955, were offered as additional evidence but Nichols stopped short of confirmation, calling the diagnosis "strongly presumed."

On August 26, 1992, JAMA confirmed with hospital officials, and on September 10, 1992, with lead author J. A. Nicholas, MD, on the record, that case No. 3 reported in a 1955 *AMA Archives of Surgery* article describing the management of adrenal cortical insufficiency during surgery is that of John Fitzgerald Kennedy.⁶⁽⁷³⁹⁾ This patient was firmly stated by the authors to have suffered from Addison's disease for 7 years and required constant steroid replacement prior to, during, and following surgery.

Any description of the adrenal glands was strangely missing from the autopsy report for the Warren Commission,¹⁵ and I have found no subsequent reviewing group that has diagnosed the adrenals postmortem. Drs Humes and Boswell¹ and now Dr Finck⁸ had, since 1963, consistently declined to describe the adrenals, never explaining why.

The claim in a recent book¹⁶ that at autopsy the pathologists could not find the adrenals grossly, despite careful serial sections of the perirenal fat, has been independently corroborated, on the record, by Robert F. Karnei, MD, of Maryland. Dr Karnei, a retired navy captain and pathologist and immediate past director of the Armed Forces Institute of Pathology at the Walter Reed Army Medical Center in Washington, DC, was a pathology resident at the Naval Hospital in Bethesda, Md, in November 1963. He observed firsthand many aspects of the Kennedy autopsy and verifies that no adrenal tissue could be found grossly on routine dissection.

On August 31, 1992, Dr Boswell confirmed, on the record, that serial sections of the perirenal fat pads demonstrated no gross evidence of adrenal cortex or medulla. Microscopically, Dr Boswell found a few individual adrenal cortical cells immersed in a sea of fat. There was no scarring, inflammation, or granuloma formation. This observation, along with the clinical evidence reported above, is diagnostic of severe Addison's disease, probably idiopathic, almost certainly *not* of tuberculous origin.

The Nixon vs Kennedy presidential election of 1960 was extremely close; a scant 0.17% (114 673) of voters separated

the victor from the loser. The mental and physical health of a presidential candidate in 1992—or in 1960—is of great political concern to the electorate.¹⁷ But had the American people been told that one candidate had suffered for 13 years from an incurable, potentially fatal, although fully treatable disease and that there were potential serious adverse effects of treatment, would the election results have been different?

Wrapping Up the Medical Aspects of This Case

On November 22, 1963, John Fitzgerald Kennedy, the 35th President of the United States, was tragically struck dead by two assassin's bullets. Also, tragically, our country has still not laid the circumstances of that assassination to rest. Conspiracy theories continue to thrive, spawning hundreds of books. Fueling the conspiracy theorists has been our government's decision to keep the original records locked for decades in the National Archives, unavailable for public scrutiny. Contributing to this growth industry has been the preference of those people who best knew the truth not to present their findings publicly. The latter prolonged, self-imposed silence is now over. The several physicians spoke exclusively with *JAMA* in 1992 because it is a respected medical publication. Most had declined official interviews for decades. Drs Humes, Boswell, and Finck state that these *JAMA* interviews are their story and that they will not give further interviews.

Based on solid, unequivocal forensic evidence as reported by Mr Breo in May and October, I can state without reservation that John F. Kennedy was struck and killed by two, and only two, bullets fired from one high-velocity rifle. The first bullet entered the back at the base of the neck and exited the front of the throat. The abrasion and contusion collar of the skin of the back is diagnostic of a wound of entrance. The second bullet entered the back of the head and exploded the right side of the head, destroying the brain with a surely lethal wound. The inward beveling of the bone at the back of the skull and outward beveling at the front is diagnostic of the direction of the bullet's path. Thus, both bullets struck from behind. No other bullets struck the President. A single rifle fired both. These firsthand accounts of the autopsy and the scientific forensic evidence are indisputable.

A series of unbiased experts, forensic scientists, pathologists, and radiologists over the years have reexamined the Kennedy autopsy findings using the written materials, testimony of Humes, Boswell, and Finck, the Zapruder film,¹⁸ photographs, x-rays, and microscopic slides. Support from these experts for the published findings and interpretations of the autopsy team and the Warren Commission has been unanimous, except for Cyril H. Wecht, MD, JD, who now expresses strong dissent. Yet even he stated agreement in 1966 and wrote in 1973 that "all shots were fired from the rear."¹⁹

While the Kennedy autopsy report was far from perfect (no mention was made of adrenals, pituitary, thyroid, parathyroid, larynx, trachea, ureters, urinary bladder, testes, prostate, gastrointestinal tract, spinal column, or dissection of the neck [apparently largely because of limitations placed by the family]) the pathologists got the salient forensic facts right.

Here are further specific points that refute currently popular myths: The body was illegally moved after death from Dallas to Bethesda only over the strong protests of Earl

Rose, MD, the responsible Dallas pathologist and medical examiner, probably because of perceived overriding national security concerns. The pathologists in Bethesda were, military physicians, professionally in charge of the autopsy and made their findings independent of government interference and in good faith. The body was received in Bethesda in a bronze casket, not in a body bag. There is no evidence that anyone altered the state of the body between the Dallas trauma room and the autopsy. Specifically, the tracheostomy site at autopsy was as it was at death. There was no conspiracy with regard to the autopsy, its findings, or its report. The autopsy findings cannot state who fired the rifle, whether there were other shots that missed, or whether Lee Harvey Oswald worked with the New Orleans mob or the Central Intelligence Agency, or anyone else. The most likely explanations for the motivations of the myriad conspiracy theorists are excessive suspiciousness, desire for personal recognition and public visibility, and monetary profit. Current allegations that I, Dennis Breo, the American Medical Association, and reporters of leading US newspapers are now part of the conspiracy are, of course, absurd.

We add our voices to those who petition the government to open the Kennedy materials in the National Archives for serious study and to work with the National Museum of Health and Medicine at the Armed Forces Institute of Pathology²⁰ in Washington to place the relevant Kennedy materials on permanent display near those of President Lincoln for full viewing by anyone and everyone. We hope that on open *JAMA* presentations, Mr Breo's three articles, Dr Miccozzi's Editorial,²⁰ and today's letters and responses will help to calm the ardor of the honest conspiracy theorists who have simply not had access to the facts. We further hope that those who have been fed only "docufiction" on this matter, if it were truth, will cease to be misled.

George D. Lundberg, M

1. Breo DL. JFK's death—the plain truth from the MDs who did the autopsy. *JAMA* 1992;267:2794-2803.
2. Breo DL. JFK's death, part II—Dallas MDs recall their memories. *JAMA* 1992;267:2804-2807.
3. Breo D. JFK's death, part III—Dr Finck speaks out: 'two bullets, from the rear'. *JAMA* 1992;268:1748-1754.
4. Official autopsy report on President Kennedy. *JAMA* 1965;191:602. Letters, editorial comment.
5. Official autopsy report on President Kennedy. *JAMA* 1965;192:63. Letters, editorial comment.
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7. Nichols J. President Kennedy's adrenals. *JAMA* 1967;201:115-116.
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JFK's death, part III—Dr Finck speaks out: 'two bullets, from the rear'

While JAMA spoke with Drs. Humes and Boswell from Bethesda, it interviewed none of the other members [of the autopsy team]. Conspicuously absent was Dr. Pierre Finck, the only trained forensic pathologist at the autopsy. While Dr. Finck was invited to meet with JAMA and his former Bethesda colleagues, he instead remained in Switzerland, where he now lives. It seems strange that a publication of JAMA's size and prestige, on a story this big, would not have flown Dennis Breo to speak to Dr. Finck, or at least interview him by phone. If Breo had done so, he might have learned that Dr. Finck testified under oath at the 1969 Clay Shaw assassination-conspiracy trial that, "As I recall I was told not to..." track a wound in JFK's back for an exit path.

—"Opinions" page
New York Daily News
June 9, 1992

Well, this opinion is absolutely wrong, but we are getting ahead of the point of this article.

Variations of the theme expressed in the *New York Daily News* were the major criticism of this reporter's two May 27, 1992, articles on the autopsy of President John F. Kennedy (*JAMA*, 1992; 267:2794-2807) and of the May 19 New York City press conference that announced publication of the articles. Those articles reported interviews of the key physicians who treated the President in Dallas' Parkland Hospital and of US Navy pathologists James J. Humes and J. Thornton Boswell, who performed the autopsy.

Humes and Boswell concluded that Kennedy was "struck by two bullets from the rear, with the fatal wound entering at the back of the head, slightly to the right and above the external occipital protuberance, traversing the cranial cavity in a back-to-front direction,

and exiting the right side of the head, blowing out portions of cerebrum, skull, and scalp." The Dallas doctors from Parkland Hospital's Trauma Room 1 reported, "Nothing we observed contradicts the autopsy finding that the bullets were fired from behind and above by a high-velocity rifle."

This was damaging news to those who have invested their time in conspiracy theories (and profits). To be plausible, the various conspiracy theories require proof that the bullets came from the front. Otherwise, all the credible evidence points toward Lee Harvey Oswald as the lone assassin who fired the fateful shots from the sixth floor of the Texas School Book Depository.

So, the conspiracy theorists tried to discredit the *JAMA* reports by implying that the absence of Dr Finck is evidence that either he or *JAMA* must be hiding something. These insinuations were made despite the fact that Dr Finck signed his name, along with Boswell and Humes, to the 1963 autopsy report that was included as part of the 1964 Warren Commission Report. There were only three signatures on the autopsy, it should be noted. Ironically, the Swiss-born and Swiss-retired Finck remains a key source in answering a major question about this nation's history—the assassination of President Kennedy.

So, to conclude our report, I traveled to Switzerland to interview Dr Finck. Based upon what follows, students of the assassination and the conspiracy crowd can now forget the possibility that there was disagreement among the three autopsy pathologists. For the benefit of doubters in the news media, and for real historians, Dr Finck is again making it unanimous—two bullets, from the rear.

It was necessary to go to Switzerland because Dr Finck does not do telephone interviews, believing that there is "too much chance of confusion in the talking and too much misunderstanding later in

print." For that matter, he says he has never before given a face-to-face interview about the Kennedy autopsy, except to investigators of the Warren Commission in 1964 and of the House Select Committee on Assassinations in 1978 (the House report was published in 1979). He also did testify at the Jim Garrison conspiracy prosecution of Clay Shaw in 1969. Previously, he has always refused interviews with the news media. However, in the wake of the continuing controversy over the assassination and of his role in it, he agreed to speak with this reporter for *JAMA*.

On August 19, 1992, the now-retired Finck strode briskly into my hotel room at Geneva's Noga Hilton Hotel. Our view was of Lake Geneva and its famous fountain, the Jet d'Eau. Finck speaks with military precision and authority and is not given to expansive comments. He arrived with an agenda—two manila folders, one for each of us, marked "PF" and "DB." The folders included his typed answers to 25 presubmitted questions, the same questions earlier put to Drs Humes and Boswell. His summary of the entire affair, as put on paper, is very simple. It goes like this:

Agrees with *JAMA* article

"The direction of the fatal wound traveled from back to front... the wounds are well described in the *JAMA* article... I have nothing to hide... I am not part of a conspiracy.

"Except for the comments that I was very 'brass conscious,' and that I had 'mistaken perceptions' about an 'alleged military presence in the morgue,' I basically agree with the *JAMA* article. I saw generals, but they did not interfere with the autopsy. There was no military interference."

Since Finck arrived for our interview anxious to have things over and done with, pleasantries provoked prickly reminders to stick to the business at hand.



Pierre Finck, MD, on the waterfront in Geneva, Switzerland: "The fatal wound traveled from back to front . . . the wounds are well described in the *JAMA* article . . . I have nothing to hide . . . I am not part of a conspiracy."

Reporter: "How old are you now?"

Finck: "Why would you ask that? You have my *curriculum vitae* and that is the answer." (He is 68.)

Reporter (scanning the CV and ignoring the slight): "Ah, I notice you were lightweight boxing champion of Swiss Universities as a young man. What was your fighting weight?"

Finck (exasperated): "Sixty-two kilos. Multiply by 2.2 and you have your answer. Let's stick to the agenda—the questions and my answers. This is what I remember and what I have answered. There is nothing to add."

So we stuck to the agenda, at least at

first. With typical precision, Finck begins, "In 1963, lived at 7541 14th Street Northwest in Washington, DC, and received a call at home from Cmdr Humes at about 19:30 [7:30 PM]. I was spending a quiet night at home with my wife and daughter, but as a military officer I was always ready to go on a moment's notice."

In 1963, Finck was an Army lieutenant colonel and chief of the Wound Ballistics Pathology Branch of the Armed Forces Institute of Pathology (AFIP). He was recommended by the AFIP as an expert consultant to Cmdr Humes, who was in charge of the autopsies and of

determining the cause of death. Finck drove his own car to the morgue at the US Naval Medical Center in Bethesda, Md, and says he arrived at about 8:30 PM, or 30 minutes after the four-hour autopsy had begun. Finck makes it clear he was only looking for wounds and missiles—in short, finding the cause of death.

His *written* responses to *JAMA*'s pre-submitted written questions tell the story:

How many gunshots were there—entrances, exits, and locations?

Finck: "There were two missile wounds. The FATAL WOUND [his emphasis]—entry 25 mm to the right of the external occipital protuberance and slightly above. After removal of the brain, the beveling of the internal table [of the skull] indicates this was a wound of entry. [There was] irregular exit, in the right temperoparietal region. The beveling of the outer table identifies an exit. See Warren Commission Exhibit No. 400."

Bullet 'beveling' of bone

(This exhibit, "Perforating Missile Wound of the Skull," is an instructional schematic designed by the AFIP from the data on gunshot head wounds compiled by then-Lt Col Finck. It was admitted as an exhibit by the Warren Commission in 1964. The schematic notes that in through-and-through missile wounds of the skull, "Entrance is often smaller than exit because of bullet 'mushrooming,' 'cratering,' 'beveling,' or 'shelving' of the bone. The diameter of the hole is smaller on the impact side. The same difference of diameter apply [sic] to a glass pane or a wooden panel.")

"THE OTHER WOUND [his emphasis]—entry in the right suprascapular region [where the upper back and lower neck join], exit in the anterior neck. At the time of the autopsy, we did not know that the incision made in Dallas for the tracheostomy included the wound of exit. Examination of the clothing at a later date confirmed an exit in the anterior neck [emphasis added]."

What direction was the skull beveled?

Finck: "The beveling of the wounds of the skull indicates a direction from back to front. Wound tracks [accurately] described in *JAMA* article. Fatal wound was blatantly obvious."

As we proceed with the interview, tape-recording my reading of Finck's written responses to the presubmitted questions, the former military pathologist loosens up a bit and expounds upon the controversy.

"I am very much tired of hearing so much nonsense about the Kennedy assassination," he says. "All of this has been answered before, and this will be

my only interview. I am quite aggravated by having to listen to all the questions that have been answered before—to be asked the same questions and have to repeat the same descriptions simply because of suspicions and fictions. I have answered these same questions during my testimonies before the Warren Commission in 1964, at the National Archives in 1967 [where he saw the autopsy photos for the first time], at the trial of Clay Shaw in 1969, and before the Select Committee on Assassinations of the US House of Representatives in 1978. Because of this, I have always declined to give interviews to the press or television.

"We got it right in 1963 and it still stands in 1992. All these discussions will not change the fact that the conclusion of our 1963 autopsy remains: there were two bullets striking from behind, and there is no evidence for any wounds from the front. In summary, to those who say the wounds came from the front, I say, NO! Also, it is very important that you understand this: the generals did NOT interfere with the autopsy."

'JFK' film a 'fantasy'

As for Oliver Stone's film *JFK*, which has revived many of the old conspiracy theories, Finck says, "I have not seen it, but I understand from discussions and readings that the film got only two things right—the date and the victim! All these fantasies and add-ons create fiction, not history. The danger is that the fiction will be mistaken for history."

Finck emphasized that he did not participate in the earlier *JAMA* interviews only because of time constraints. "I had been traveling," he said, "and did not arrive back in Geneva to read your written requests for an interview until April 6, the date the interviews were scheduled. All I could do at that point was telephone and decline. I have agreed to talk now because there was a hint that I had something to hide. I have nothing to conceal, and I am not the accomplice of a conspiracy."

He says that the "great contribution" of the earlier *JAMA* article was "to state that the conclusions of the autopsy were confirmed four times by independent civilian consultants." His major criticism of the article is that the US Navy photo published by *JAMA* of Humes, Boswell, and Finck is described as having been taken "a few days after" the November 22, 1963, autopsy. Finck whips from his briefcase a photo, sheathed in cellophane, and shows it to the reporter. He then corrects, "Same people, same composition, same photo—it was taken January 26, 1967!"

Clothing confirms autopsy

In confirming the main point of my articles on the autopsy—two bullets from the rear—Finck adds some new insights. It was he who requested x-rays of the President's entire body and not just his head. He also helped direct the photographing of the President's wounds, but he, like Humes and Boswell, did not actually see the photographs until 1967. He wanted to examine the President's clothing, to correlate it with the wounds, and thought it "most unfortunate" to find that the clothing was not available. He and Humes and Boswell did not see this important bit of confirming evidence until they testified before the Warren Commission in 1964. In fact, the three autopsy "prosectors," as Finck likes to call the pathologists, had no information from Parkland Hospital before and during the autopsy.

However, he emphasizes, "Thanks to the telephone call from Dr Humes to Dr Malcolm Perry on Saturday morning, November 23, we found out that we had been prevented from identifying the exit wound in the neck because the incision made in Dallas for the tracheostomy included the wound in the front of the neck."

Asked his view of some best-selling books that purport to show alleged autopsy photos indicating a wound to the front of Kennedy's head, Finck is typically abrupt: "These types of things I disregard. They are merely commercial ventures. I examined the wounds with my own eyes. The fatal wound was frightening—13 cm across at its widest. It was very obvious that it came from the back and exited the front."

He is asked, "Was it a routine autopsy?" His answer: "Not at all. Nobody can say that. It was like no other. I was excited and nervous. It was very difficult because it was the autopsy of a President and we had to get it right." Finck stayed in the morgue until 5 AM on November 23, when the embalming of Kennedy's body was finally completed. He recalls, "As I left, I remember seeing Jackie and Bobby Kennedy standing together outside the hospital. How did they look? They looked quite... quite... [long pause]... how can I answer that?"

Although the Swiss native is not a man to countenance repeated questions or to repeat his answers, he adds, "I will repeat this. There was no military interference with the autopsy. There were many people in the morgue—all very upset—and this made it difficult for us. But there was no military interference."

The impression of generals control-

ling the morgue was presented in the film *JFK*, and, back in 1969, the same impression was pushed by New Orleans DA Jim Garrison during his now-discredited prosecution of Clay Shaw for alleged conspiracy in the death of the President. Finck recalls the Shaw trial with a wince.

"It was quite a horrible experience," Finck says of the trial. "An attorney for the defense called me to say he would be issuing a subpoena for my appearance. I told him that I was still uncomfortable from a recent hernia operation and would prefer not to come. He said I would have to appear. Well, it was my hernia, not his! I was forced to testify for several days, including five hours of cross-examination. Under the circumstances, it was extremely difficult and confusing and very unpleasant. Of course, I supported our original autopsy findings, and any suggestion to the contrary is wrong."

Finck's two days of testimony were widely reported in the news media, which made frequent reference to his habits of referring to the autopsy pathologists as "prosectors"; of defining all dates and times in military nomenclature, such as "22 November, 20:30 hours"; and of spelling out many words in military parlance by distinguishing A as "Alpha," B as "Bravo," C as "Charlie," and so on, all to the amusement of the New Orleans jurors. He also firmly testified to the central fact of two bullets from the rear, and this testimony remained unshaken after cross-examination. And, it was so reported in the news media.

Asked about the comment in the *New York Daily News* about an alleged exit wound in the back and, presumably, a shot from the front, he is flabbergasted. "I do not understand [the insinuation]," he says. "What point is this statement? It is useless. There were two bullets, from the back. The clothing confirmed the neck wound exited in the front, nicking the necktie. There were no exit wounds in the back."

* * * *

Pierre Antoine Finck is an unlikely man to influence the course of US history, a fact he discusses much more enthusiastically than he does the autopsy itself.

Came to US in 1952

His father was a physician and pharmacist; his grandfather, a professor of legal medicine in Geneva, performed in 1888 the autopsy of Elizabeth, Empress of Austria, who was assassinated in Geneva at the Beau Rivage Hotel, a few blocks down the waterfront from where we are talking. In 1948, Pierre Finck graduated from Geneva's medical school, which is also "not very far from this

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Photo Courtesy: JAMA

'I understand that the film *JFK* got only two things right—the date and the victim! All these fantasies and add-ons create fiction, not history. The danger is that the fiction will be mistaken for history.'

hotel." He took up boxing as "a school of character," but cautions, "Today, I would choose something else." Serving his mandatory two years in the Swiss Army, he rose to the rank of first lieutenant. Finck's connection with the JFK autopsy began by way of Memphis, Tenn, when in 1952 he accepted a teaching fellowship in pathology at the University of Tennessee. A workaholic, he doubled up by doing autopsies at Memphis' Children's Hospital. "A wonderful time," he recalls of his Memphis years. "I worked

day and night, but I learned a lot and I was treated very well." However, since Tennessee would not grant medical licenses to Swiss nationals, he relocated to North Carolina in 1955 to obtain licensure. While there, still on an immigration visa, he learned he was subject to the US "doctor draft" and promptly applied for an officer's commission.

Well trained in wound ballistics

From 1955 through 1975, Finck served in the US Army Medical Corps, mark-

ing 10 years at the Armed Forces Institute of Pathology, as well as service in Germany, Lebanon, and Vietnam, before retiring with the rank of colonel. He became a dual citizen of the United States and Switzerland. During this 20-year period, he obtained his board certification in both anatomic pathology (1956) and forensic pathology (1961), two years before the Kennedy autopsy. At this time, the Army Surgeon General granted the prefix "A" to the military occupational specialty of Lt Col Finck, in recognition of his outstanding qualifications in forensic pathology.

He appeared as an expert medical witness before the International Commission of Jurists in Panama in 1964 (proving that gunshot victims were not wounded by American soldiers) and in courts in West Germany during the early 1970s (at the trial of four terrorists of the Baader-Meinhof gang who were convicted of killing a US Army officer with a bomb). He was a consultant in forensic pathology to the FBI and to the commanding general of the US Army Medical Command, Europe; a lecturer at Harvard, the International Police Academy in Washington, DC, and at Army-sponsored courses in medicine and law enforcement held in the US, Europe, and the Far East; and, ironically, in 1968, he served as a consultant in the autopsy of Sen Robert F. Kennedy.

Still, it is his fame and curse to have assisted in the autopsy of President John F. Kennedy, and it is for this reason that the old questions, familiar terrain though they are to him, must, perforce, be plowed again—and again.

Unknown to Finck, I have arrived for the interview armed with 50-plus pages of Freedom of Information material obtained from the Otis Historical Archives of the National Museum of Health and Medicine at the Armed Forces Institute of Pathology. This material includes Finck's testimony before the Warren Commission and, notably, a memo he wrote on February 1, 1965, to his commanding officer at AFIP, Brig Gen Joseph Blumberg, MC, US Army Medical Corps, the man who had recommended his participation in JFK's autopsy. This memo summarizes Finck's notes and recollections of the November 22, 1963, autopsy; his two appearances before the Warren Commission on March 16, 1964, and April 14, 1964; and his overall evaluation and impressions. It is powerful stuff, and I recommend that all students of the assassination and all believers in a conspiracy obtain it (be prepared to pay some minor photocopying costs).

In perusing the pages, I note with interest that the first page includes a

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smudged impression of a bullet similar to the full-patch, copper-jacketed 6.5-mm bullet fired from Oswald's Mannlicher-Carcano Italian short rifle. Photocopied inadvertently and directly above it is the smudged likeness of a paper clip—a likeness somewhat resembling a bullet different from the image below it. Is this more grist for the conspiracy mill? I wonder.

A careful reading of Finck's reports provides two cardinal impressions:

- The perfectionistic Finck, eager to favorably impress his commanding officer, cites the various limitations under which he had to work—no clothing of the deceased at time of autopsy; no photos to view at time of autopsy; no information from Dallas; and his impression that the Kennedy family did not want a "complete" autopsy.

- Most importantly, though, he *invariably* documents the autopsy finding of two bullets from the rear, based upon not only his original examinations in the morgue but also his subsequent review of Kennedy's clothing, the Zapruder film of the assassination, and Oswald's rifle. It adds up to undeniable proof.

Any doubts of Finck's agreement with the autopsy can be resolved by reading page 383 of his testimony before the Warren Commission on March 16, 1964. After Cmdr Humes had testified at great length about the finding of bullets coming from the rear, Cmdr Boswell and Lt Col Finck made brief corroborating testimonies. The following exchange took place between Rep Gerald Ford and Finck:

Rep Ford: "I believe you testified, colonel, that you concurred in the previous testimony by Cmdr Humes and Cmdr Boswell and that you were one of the coauthors of the autopsy. At any time during this process where you were conducting the autopsy, was there any disagreement between any one of you three, any difference of opinion as to anything involved in the autopsy?"

Col Finck: "No, sir."

Rep Ford: "There has been complete unanimity on what you saw, what you did, and what you have reported?"

Col Finck: "Yes, sir."

In 1992, Finck nods his head toward me in agreement with the FOI material, though pleading, "It is endless, these questions. I am awfully tired of it." Still, he consents to the final questions.

A 'complete' autopsy

Was the autopsy "complete"?

Finck looks pained, but backs down from his written assertion to Gen Blumberg that he questioned checking the box for "complete autopsy," as proposed by Cmdr Humes. "After all these years

have passed," he says, "and keeping in mind that the purpose was to determine the cause of death, I think that it was adequate. At the time, it may not have seemed as 'complete' to me as some other autopsies I have done, but for the purposes of history, yes, it was complete. We did not do everything possible in the way of a complete autopsy. For example, we did not dissect the organs of the neck, and it was my impression that this was not done because of the wishes of the Kennedy family. But it was not necessary to dissect the organs of the neck to determine the cause of death. Also, initially, the Kennedy family did not want us to examine the abdominal cavity, but the abdominal cavity was examined. Today, I call it a 'complete' autopsy."

Asked the condition of President Kennedy's adrenal glands, which have widely been rumored to have been destroyed from long-standing Addison's disease, Finck curtly cuts off the question this way, "Don't even ask. There were no wounds in the abdomen; the adrenal glands have nothing to do with the wounds and the assassination of the President."

Still, a paragraph of Finck's summary comments to Gen Blumberg appears to this reporter to *confirm* that Kennedy had Addison's disease, as well as to reflect the general tenor of Finck's impressions and the irrefutable fact of two gunshots from behind. Here is the quote:

"After the publication of the Warren Report, numerous physicians criticized the autopsy protocol that did not describe the adrenal glands of Kennedy *who suffered from adrenal insufficiency* [emphasis added].

"The prosecutors complied with the autopsy permit and its restrictions. I was told that the Kennedy family first authorized the autopsy of the head only and then extended the permission to the chest. Organs of the neck were not removed because of the same restrictions. I feel that the prosecutors accomplished their MISSION [his emphasis] that was to determine the direction of the shots and the cause of death. The head wound was definitely fatal. There were rumors—and even testimonies—that the President had been shot from behind *and* [emphasis added] from the front. I established that Kennedy had two wounds of entrance in the back: one in the back of his head and one in his upper back at the base of his neck. After the completion of the postmortem examination, the Surgeon General of the Navy [Rear Adm Edward Kenney] told us not to discuss the autopsy with anyone, even among prosecutors or with the investigators involved."

The last sentence invites conspiracy

scenarios, so I ask Finck, "Is this ban on discussing the autopsy significant? What else was there to discuss?"

His response: "No cover-up. This request was about normal for the situation. We knew we would be testifying before the Warren Commission." Finck's 1965 report to Blumberg of his actions and testimonies in 1963-1964, expressed in the language he used while his memories were still fresh (all capitalizations and other points of emphasis are as originally written), and as affirmed in our interview of 1992, provide the additional corroboration of two bullets from the rear. Here are representative excerpts:

Finck's notes of the November 22, 1963, autopsy:

"The opening of the large head wound, in the right front fronto-parietal-occipital region, is 130 mm in diameter. I also noticed another scalp wound, possibly of entrance, in the right occipital region, lacerated and transversal, 15x6 mm. Corresponding to that wound, the skull shows the portion of a crater, the beveling of which is obvious on the internal aspect of the bone; on that basis, I told the prosecutors and Adm. [C. B.] Galloway [commander of the US Naval Medical Center] that this occipital wound is a wound of ENTRANCE [his emphasis, here and throughout]. No EXIT wound is identifiable at this time in the skull, but close to midnight portions of the cranial vault are received from Dallas. X-ray films of these bone specimens reveal numerous metallic fragments. Two of the bone specimens, 50 mm in diameter, reveal beveling when reviewed from the external aspect, thus indicating a wound of EXIT. Most probably, these bone specimens are part of the very large right skull wound, 130 mm in diameter and mentioned above. This right fronto-parietal-occipital wound is therefore an EXIT.

"There is another wound, in the region of the right trapezius muscle, at 140 mm from the right acromion and at 140 mm from the tip of the right mastoid process (I took these measurements). The wound is OVAL, 7x4 mm, and shows well-demarcated edges. This wound cannot be probed with the soft probe available. There is subpleural hemorrhage in the right apical mesial region. The apex of the right lung is hemorrhagic, without laceration of the pleura. On the basis that there is a wound possibly of entrance, which cannot be probed through the body, I SUGGEST X-RAY FILMS BE TAKEN, ANTEROPOSTERIOR AND LATERAL OF THE ENTIRE BODY, BEFORE GOING ANY FURTHER WITH THE



'I am very much tired of hearing so much nonsense about the Kennedy assassination . . . the conclusion of our 1963 autopsy remains: there were two bullets striking from behind and there is no evidence for any wounds from the front . . . the generals did NOT interfere with the autopsy.'

AUTOPSY. This radiologic survey does not reveal any major missile in the President's cadaver. There are only numerous metallic fragments in the head, in the sagittal plane. Some of these are recovered and are turned over to FBI agents against receipt. I help the Navy photographer to take photographs of the occipital wound (external and internal aspects), as well as of the wound in the back.

"There is a recent **TRACHEOTOMY** wound [transversal incision] with moderate hemorrhage in the subcutaneous tissue. Thanks to a telephone call from Cmdr. Humes to Dallas, I found out later that the surgeon in Dallas had **EXTENDED THE EXIT WOUND** in the anterior aspect of the neck to make his tracheotomy. . . ."

Finck's appearance before the Warren Commission on March 16, 1964:

"Mr. [Arlen] Specter showed us the **CLOTHING** worn by the President, the bullet recovered from the stretcher of Gov. Connally, and two fragments of

bullet—all showing a copper jacket and all fired by Oswald's rifle. I also had the opportunity to see the ballistics report addressed by J. Edgar Hoover, FBI director to the president of the commission, dated 11 March 1964.

"**CLOTHING:** There is a hole in the back of the President's coat, a portion of which was removed by the FBI for fibers study. The hole is approximately 15 cm below the upper edge of the collar to the right. Another hole is found immediately below the collar taken by the FBI Lab agents, for fiber-control study. The shirt of the President, white with brown stripes, and a Park Avenue shirt-shop label, showed abundant blood in the back and front. There is a bullet hole, in the back and to the right, at 15 cm from the upper edge of the collar.

"Immediately below the upper button of the front is a bullet hole perforating both flaps of the shirt, right and left. There is dry blood on the margins of both holes. The inner-most hole reveals fibers directed outward, which indicates an **EXIT PERFORATION**. The outer-most hole also shows this out-

ward orientation of the bloody shirt fiber, but to a lesser extent. These two anterior holes below the collar button correspond to the exit wound found by the Dallas surgeons at Parkland Hospital and which was extended for tracheotomy purposes. Dallas records show that the trachea had been lacerated by the bullet. **WE DID NOT HAVE THIS INFORMATION AT THE TIME OF AUTOPSY.**

"The tie worn by Kennedy, a blue-silk tie labeled 'Monsieur' Christian Dior, shows a tear of the cloth to the left side of the knot and corresponding to the two anterior holes in the shirt. The tie knot was not perforated but **GLANCED** by the bullet, which is indicated by the fact that the white padding of the tie is visible and that the blue cloth on the internal aspect of the knot is intact, which indicates a tangential path on the left side in relation to the knot.

"**FBI report on CLOTHING:** Perforation of the shirt in the anterior portion below the collar button are typical for an **EXIT WOUND**.

"**MY TESTIMONY:** I testified that Kennedy was shot from behind.

"One bullet entered the back at 14 cm from the right acromion and at 14 cm from the right mastoid process, produced ecchymosis of the dome of the parietal pleura on the right and came out in the anterior neck below the larynx without injuring bones. X-ray films had ruled out bone injuries along the bullet path.

"Another bullet struck Kennedy in the back of the head, at 25 mm to the right of the external occipital protuberance and slightly above. The bullet produced many fragments and an exit wound of 130 mm in the right temporo-parieto-occipital bone. Many metallic fragments were seen on x-ray films, but only two were recovered in the right frontal cerebral hemisphere, elongated and black, representing approximately one-tenth of the bullet mass. These fragments measured 7×2 and 3×1 mm. . . . I also testified that, in my opinion, the oval wound in the right posterior superior aspect of the chest of Kennedy was an **ENTRY**. The edges were fairly regular and there was black fouling of the edges.

"**COLOR PRINTS** [made from the Zapruder film] clearly show how Kennedy slumped forward from a sitting position in the Presidential car. The last frame does not show Kennedy, completely slumped forward, but his wife, Jacqueline Kennedy, climbing on the trunk of the car (a Lincoln, made by the Ford Motor Co.) seeking help for her husband. This sequence of photographs is compatible with a bullet hitting Kennedy in the back and with another

bullet striking him in the head, both from behind."

Finck's appearance before the Warren Commission on April 14, 1964:

"I saw a copy of the 8 mm color motion picture film taken by an amateur [Abraham Zapruder] and sold to LIFE magazine. I saw the movie several times, at 18 frames per second and at slow motion. I also saw the 35 mm color lantern slides made from this movie, frame by frame.

"The movie and the slides show the President slumping forward after being hit in the back. Then it seems that Gov. Connally has a spastic expression on his face, as he had been hit. His thigh is not visible and there is not evidence that blood appeared on his injured right wrist. **THEN CAME THE SHOT THROUGH KENNEDY'S HEAD.** . . .

"I also examined the REPLICAS of the 6.5 mm Italian short rifle that killed Kennedy. Attached to the rifle was a Japanese optical device, magnifying four times and similar to the one used by Oswald."

Finck's summary to Gen Blumberg on February 1, 1965:

"I examined the wounds. The scalp of the back of the head shows a small laceration, 15x6 mm. Corresponding to this lesion, I found a through-and-through wound of the occipital bone, with a crater visible from the inside of the cranial cavity. This bone wound showed no crater when viewed from outside the skull. On the basis of this pattern of the occipital bone perforation, I stated that the wound in the back of the head was an entrance.

"Later in the evening, I examined three bone fragments sent from Dallas and corresponding to the large head wound approximately 130 mm in diameter in the right side of the cranial vault. After identifying their anatomic external and internal surfaces, I noticed that the beveling of the fragments was apparent when viewed from outside. I stated then that these portions of bone were part of a wound of exit. Therefore, the large irregular wound in the right side of the cranial vault was a wound of exit.

"The wound in the upper back of the President, to the right of the mid-line, was oval and had a regular, soiled inverted margin. I stated that this was an entrance. My attempt to probe the path of the bullet was unsuccessful. I examined the tracheotomy skin wound and the trachea and did not find evidence of a bullet wound. Having a wound of entrance in the back and no corresponding exit, I requested a whole body radiographic survey, the results of which

were negative. There was no bullet in the President's cadaver except the metallic fragments seen in the head. It was only after the autopsy that the prosecutors learned, thanks to a telephone call of Cmdr. Humes to Dallas, that the small wound of exit in the front of the neck had been extended by the Dallas surgeons at the time of their tracheotomy.

"When the Warren Report became public on 28 September 1964, I learned that independent experiments made without my knowledge at the U.S. Army Arsenal, Edgewood, Md., with the 6.5 mm rifle of Lee Harvey Oswald and ammunition similar to that of the assassination, had confirmed my opinion regarding the perforating wound of the head and the entrance wound of the back.

"Despite the incomplete or the inaccurate information we had at the time of the autopsy (for example, we were told that a bullet had been found on Kennedy's stretcher whereas it was on Connally's), the autopsy conclusions were verified by other examinations, such as gross, microscopic, and spectrographic study of the clothing (FBI) and by independent experiments such as those conducted by scientists in wound ballistics at the U.S. Army Arsenal, Edgewood, Md.

"Comment: From the viewpoint of wound ballistics, the assassination of President Kennedy illustrates the role of the tissue in the wounding power of a projectile.

"The first bullet that struck Kennedy in the back at a distance of approximately 180 feet [55 meters] and came out in the anterior portion of his neck did not strike bone and did not disintegrate.

"The second bullet that struck Kennedy in the back of the head at a distance of approximately 270 feet [82 meters] disintegrated into numerous metallic fragments.

"The two bullets were within the same range of kinetic energy. The muzzle energy was approximately 1600 foot-pounds [220 kilogram-meters]. The first bullet produced small entrance and exit wounds. The second bullet made a small entrance and a very large exit in the head.

"The 6.5 mm Mannlicher-Carcano bullet made by the Western Cartridge Co. is approximately 30 mm in length and 160 grains [10 grams] in weight. It has a full copper jacket, a round nose, and parallel edges. It has great stability."

Finck closes his summary to Gen Blumberg with this comment:

"More details are available in the Report of the President's Commission on the Assassination of President Kennedy ('Warren Report') and in the 26 volumes of hearings and testimonies, all published

by the U.S. Government Printing Office. See Mail Order Forms attached."

* * * *

At the time of Finck's 1965 summary of how President Kennedy was killed, only 1300 sets of the full 26-volume Warren Report had been sold, and only 140 000 volumes of its summary volume. Then, and now, these are small numbers, compared with the millions who have seen the fictitious film *JFK* and the millions who have bought the myriad best-sellers purporting to "document" a conspiracy to kill Kennedy. Strange as it may seem, the Warren Report got it right, and it's reported in excruciating detail:

The real story—the 'Warren Report'

How Lee Harvey Oswald, a political fanatic and the lone gunman, bought by mail order a surplus World War II Italian rifle from Klein's Sporting Goods in Chicago. With the four-power Japanese sight attached, it cost him \$21.45. Without the sight, the rifle retailed for \$12.98. He bought it with his own money, too, and not with funds provided by the CIA, the KGB, or the MOB, who, certainly, would have provided a more sophisticated weapon. The weapon was mailed to a Dallas post office box number for a "Mr. A. Hidell," which was Oswald's humorous alias for the president of the Fair Play for Cuba Committee, a fictitious organization with only one member—Oswald. Marina Oswald told investigators, "I know Hidell is merely an altered Fidel [Castro] and I laughed at such foolishness." Oswald took the mail-order rifle, disguised in wrapping paper as what he called curtain rods, to the sixth floor of the Texas School Book Depository, where he worked. Truth is stranger than fiction, and the rest is history, as the ex-Marine marksman proceeded to fire the shots that still reverberate around the world.

By now, Pierre Finck is tired of it all. Fully retired, he spends his time with his wife of 35 years, making up for those sudden separations caused by his military career. He also gardens and "does calisthenics 363 days a year." On August 19, 1992, as we lunched on the terrace of the Hilton Hotel, he displays a healthy appetite and eats very rapidly, a trait he says he acquired "in Memphis, when I was always on call and my beeper was always going off." Fussy about what he orders, he gives a mini-dissertation on the merits of the locally bottled mineral waters and insists upon the brand "with medium carbonation." Raising his glass toward Lake Geneva, glistening in the afternoon sun, he proposes a toast: "It is over. No more questions." □