The Two NPIC Zapruder Film Events: 
Signposts Pointing to the Film’s Alteration

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Most Americans don’t know anything about the two significant events involving the famous Zapruder film of President Kennedy’s Assassination that took place back-to-back, on successive nights, at the CIA’s National Photographic Interpretation Center (NPIC)---in Washington, D.C.---on the weekend immediately following JFK’s assassination. But anyone even remotely interested in what is perhaps the key piece of film evidence in the Kennedy assassination---what for decades was viewed as the “bedrock evidence” in the case, the “closest thing to ground truth”---needs to become acquainted with what happened to Abraham Zapruder’s home movie of JFK’s assassination during the three days immediately following President Kennedy’s death. Why? Because the hottest debate raging within the JFK research community for the past several years is about whether the Zapruder film in the National Archives is an authentic film from which sound, scientific conclusions regarding JFK’s assassination can be divined, or whether it is an altered film indicative of a government cover-up, which yields tainted and suspect information, and leads us to false conclusions, about what happened in Dealey Plaza. The resolution of this debate hinges on the answers to two essential questions: First, is the film’s chain of custody immediately after the assassination what it has been purported to be for many years, or is it, in reality, quite different? Second, are there visual indications within the film’s imagery which prove it has been tampered with, i.e., altered? If the film’s chain of custody has been misrepresented for decades, and if the opportunity and means existed that weekend to alter the film, then suspect imagery within the film takes on a crucial new level of importance, and is not simply of academic interest.

This paper will first, and primarily, address questions about the chain of custody of the Zapruder film immediately following President Kennedy’s assassination, for new scholarship teaches us that the actual chain of custody of Abraham Zapruder’s home movie, from November 23rd-25th, 1963, is not anything close to what it was represented to be for years, and in fact indicates an extremely high level of interest in Abraham Zapruder’s home movie by the U.S. government during the three days immediately following President Kennedy’s assassination in Dallas on Friday, November 22, 1963. The relatively new chain of custody evidence presented here will not only prove that the camera original Zapruder film was in the custody of the CIA and Secret Service---not LIFE magazine---from late Saturday evening through Monday morning that weekend, but is of such a provocative nature that it strongly suggests---indeed, virtually proves---the original film was altered that weekend, prior to the publication of any of the film’s frames in LIFE magazine, and prior to its use by the Warren Commission. After the startling new facts about the Zapruder film’s actual chain of custody are thoroughly explored, I
will summarize briefly some of the key evidence indicating that the film’s imagery has been altered.

**Backstory**

I served on the staff of the Assassination Records Review Board (ARRB) during the last 3 years of its 4-year lifespan, from August 1995-September 1998. I was hired as a Senior Analyst on the Military Records Team, and was promoted midway through my tour to the position of Chief Analyst for Military Records. In addition to working with military records on Cuba and Vietnam, I was privileged to work extensively with the JFK medical evidence, and on all issues related to the Zapruder film. Before launching into the story of the two NPIC events with the Zapruder film the weekend of the assassination, and my personal involvement in interviewing all three of the key NPIC witnesses, it’s essential that the reader gain some familiarity with the historical background of the Zapruder film.

Even though Time, Inc. (more commonly referred to in this instance as *LIFE* magazine) had purchased the Zapruder film on November 25, 1963 (the Monday following JFK’s assassination) for $150,000.00, it was never shown publicly by Time, Inc. or *LIFE* as a motion picture. (Only selected still frames were published by *LIFE*, from time to time, on special occasions, when the magazine deemed it appropriate.) The Warren Commission staff studied a grainy, second-generation FBI copy of the film for seven days during late January and early February of 1964; again in April of 1964; and viewed the purported original *on one day only*—February 25, 1964—when it was brought over by *LIFE* magazine, at the Commission’s request. On March 6, 1975 a bootleg copy of the Zapruder film was shown on television, for the very first time, by ABC and the host of its program *Good Night America*, Geraldo Rivera; in the ensuing uproar about the film’s 12-year suppression as a motion picture, Time, Inc. decided to rid itself of the albatross, and sold the film, and all rights, back to Abraham Zapruder’s heirs for one dollar on April 9, 1975. Zapruder’s heirs (the LMH Co.) subsequently placed the film in courtesy storage at the National Archives on June 29, 1978 so that it would be protected in a low temperature (25 degrees Fahrenheit), low humidity environment specifically designed for archival film storage. The legal status of the film became uncertain with the passage of the President John F. Kennedy Assassination Records Collection Act on October 26, 1992, since the goal of the “JFK Records Act” was to seek out assassination records and place them in the National Archives, in a permanent new collection. Zapruder’s heirs failed in their attempt to remove the film from courtesy storage on March 15, 1993, when the Archives decided that the terms of the courtesy storage agreement signed with the LMH Co. on July 10, 1978 were in possible conflict with the requirements of the JFK Records Act—namely, securing assassination records for the American people in a special collection at the National Archives. The impasse was finally resolved on April 24, 1997, when the Review Board formally voted to designate the Zapruder film as an “assassination record,” and to implement a legal “taking” of the film in order to preserve it in perpetuity, for the American people, as part of the JFK Records Collection. The “taking” was to be implemented on August 1, 1998. (The film never left the custody of the National Archives; August 1, 1998 was simply the date the film would be formally transferred from courtesy storage, and officially become part of
the JFK Records Collection.) Well after the sunset of the ARRB’s operations at the end of September 1998, a Justice Department binding arbitration panel decided on June 16, 1999 (by a split vote of 2-1) that Abraham Zapruder’s heirs should be given sixteen million dollars in “just compensation” for the taking of the film by the U.S. government, and the U.S. Congress obediently ponied up the money. 1 Strange---and inappropriately, in view of its windfall profit---the LMH Co. (Zapruder’s heirs) was allowed by the Justice Department to keep the copyright, and all of the legal control over use of the film’s images that comes with the copyright. On December 30, 1999 the LMH Co. contractually transferred the copyright for the Zapruder film, and all of its film holdings (including large format transparencies and various copies of the motion picture film), to the Sixth Floor Museum in Dallas, Texas. 2

Prior to the implementation of the taking on August 1, 1998, the Review Board---at my recommendation---commissioned a limited authenticity study of the Zapruder film (based primarily on examination of its edge print, the markings and script imposed on the film at the factory where it was produced, and at the developing plant after it was exposed). The ARRB staff first approached the Eastman Kodak Co. for film assistance and advice in 1996, and asked in 1997 if Kodak would perform the Zapruder film study pro bono; Kodak agreed, and hired a noted retired Kodak film chemist, Mr. Roland Zavada, as a paid consultant to perform the one-man study. Mr. Zavada studied the film’s edge print; perceived anomalies in the bleed-over imagery in the intersprocket area of the film; its forensic chain of custody on the day of JFK’s assassination; and educated himself on the basic characteristics of Zapruder’s Bell and Howell movie camera by purchasing several models and experimenting with them---but at our request, he did not study the film’s image content. Zavada’s report was signed out on September 25, 1998, and arrived in Washington, D.C. on September 28th, two days before the ARRB shut down its operations on September 30th.

The Key Witnesses

During the summer of 1997, following the announcement that the film would be “taken” by the government, and while the authenticity study by Kodak was effectively already underway, the ARRB staff became aware that there were two former CIA/NPIC employees who had, in 1963, worked with the Zapruder film at the Agency’s National Photographic Interpretation Center (NPIC) immediately after JFK’s assassination: their names were Homer A. McMahon (the former Head of the NPIC Color Lab), and Morgan Bennett (“Ben”) Hunter (his assistant at the time). The ARRB staff interviewed each man three times that summer, and I was present at all of those interviews. 3 I was the lead interviewer at the one interview that was recorded on audiotape---this was my questioning of Homer A. McMahon at Archives II, in College Park, Maryland on July 14, 1997. The tape of that interview has been available to the American people through the JFK Records Collection at Archives II since November of 1998; I finally produced a long-overdue verbatim transcript of the interview in May of 2012, which I make available on request to anyone who is interested. ARRB staff interview reports---written summaries---were produced after each interview of these two NPIC employees, and those interview reports are also available to the public in the JFK
Records Collection at Archives II. The activity McMahon and Hunter were involved in on the weekend following President Kennedy’s assassination was the making of photographic enlargements from individual frames of the Zapruder film; the purpose of this activity was to support the creation of “briefing boards” that would be assembled by others at NPIC, using the color prints they made, for purposes and audiences unknown. The customer requesting the activity was the U.S. Secret Service. Homer McMahon, following the instructions of a person who identified himself as Secret Service agent “Bill Smith,” presided over this “briefing board event” at NPIC. Unknown to the ARRB staff at the time, this round of interviews with Homer McMahon and Ben Hunter was only the first half of the story of what happened at NPIC the weekend of the assassination. I would not become aware of the second half of the story until 2009, about eleven and one-half years later.

Then, in February of 2009, I was contacted by JFK researcher Peter Janney of Massachusetts (author of *Mary’s Mosaic*, 2012), who had just commenced a long series of interviews with a third former NPIC employee who had also participated in an NPIC “briefing board event” the weekend following JFK’s assassination. This witness, who had spoken only briefly and cursorily to a few other JFK assassination researchers, was the prestigious Dino A. Brugioni, who had served as the Chief Information Officer (the “briefing board czar”) at NPIC for about two-and-a-half decades; Mr. Brugioni was, and remains today, the world’s foremost living expert on the U-2 and SR-71 aerial reconnaissance imagery, and on the Corona and early Keyhole satellite reconnaissance imagery; and when first contacted by Peter Janney, was already the author of several books, including *Eyeball to Eyeball* (an account of aerial reconnaissance during the Cuban Missile Crisis), and *Photo Fakery*. At Peter’s request, I helped him develop an evolving list of questions for Mr. Brugioni, and also helped him evaluate the answers as they came in following each interview. Peter Janney conducted an exhaustive series of MP3-recorded telephonic interviews of Dino Brugioni throughout the late winter and spring of 2009 (seven interviews altogether, beginning on January 30th and ending on June 27th), and the upshot was that without any doubt whatsoever, Mr. Brugioni presided over a distinctly different “briefing board event” at NPIC the weekend following JFK’s assassination, using a distinctly different Zapruder film. Mr. Brugioni, like Mr. McMahon, also presided over the making of enlargements---blowup prints---from individual frames of the Zapruder film, which were then mounted on briefing boards. But his work crew was entirely different than McMahon’s; the numbers of enlargements made differed significantly; the number of briefing boards made was different; and the format of the briefing boards made at Brugioni’s event was distinctly different. Most significantly, the format of the Zapruder film delivered at Brugioni’s NPIC event was distinctly different from the format of the Zapruder film delivered at McMahon’s NPIC event. Yet each man believed, without any doubt, that he was working with the original film. And the two events occurred only one day apart. Mr. Brugioni was contacted again in 2011, and the information that he had previously provided in 2009 was reconfirmed by Peter Janney in an MP3-recorded interview at Mr. Brugioni’s home on April 28, 2011; as well as in a four-hour-long HD video interview conducted by me on July 9, 2011. Mr. Brugioni’s memory remained sharp, and his credibility high---very high. Indeed, his good memory and credibility is recorded for posterity on the HD video recording.
What the two NPIC events point to, the weekend immediately following President Kennedy’s assassination, is a compartmentalized operation, in which the first NPIC work crew (Brugioni’s) made briefing boards, using enlargements of individual frames from the true camera original Zapruder film; and in which the second NPIC work crew (McMahon’s) also made briefing boards, the very next night, using enlargements of frames from an altered Zapruder film, masquerading as the camera original. I characterize the operation as compartmentalized because neither group was aware of the other group’s activity that weekend, nor were they intended to be. At the time, back in 1963, both McMahon and Brugioni were each led to believe they were working with the “original film,” but clearly, only one of them could have been. Fantastical, you say? Certainly. But all true. The evidence will be clearly laid out before you, below, along with an analysis of what the evidence likely means, and why.

Before I present to you a detailed summary of what happened at each of the two NPIC “briefing board events,” let us examine what we thought we knew, before the two NPIC events were made known to us, about the Zapruder film’s chain of custody during the critical four days following JFK’s assassination. This short digression is vital to understanding the significance of the differences between the two versions of the Zapruder film delivered to NPIC the weekend following the assassination.

The Traditionally Understood Zapruder Film Chain of Custody, from Friday, November 22nd, 1963 through Tuesday, November 26th, 1963

Here is the commonly-agreed-to chain of custody for the camera-original Zapruder film, as it was known prior to our new understanding of the implications of the two NPIC events:

Friday, November 22nd: Zapruder’s home movie of the assassination was developed at the Kodak Plant in Dallas. When developed, it was a 16 mm wide, 25-foot-long “double 8” film, with sprocket holes running along both outside edges, and was unslit. What does this mean? Simply put, as shot in the camera, and then as developed, all “double 8” home movie films consisted of two 8mm wide image strips going in opposite directions, and upside down when compared to each other. The normal practice immediately following developing was for the developing lab to “split,” or slit, the 16 mm wide film in half, vertically, and then join the two sides of the movie (known as the A side and the B side) together with a splice, so that it could be projected in an 8 mm home projector. A “double 8” movie that has been slit only has sprocket holes on one side (the left side), and is 50 feet long (instead of 25). In the case of the Zapruder film, the A side (family scenes) and the B side (the Kennedy assassination) were not initially split, or slit apart, so that Mr. Zapruder could get three copies (contact prints) exposed at another lab (the Jamieson film lab in Dallas), in Mr. Jamieson’s 16 mm contact printer. That is, the 16 mm out-of-camera format (with opposing image strips going in opposite directions) was temporarily preserved on Friday afternoon, so that Zapruder’s film could be copied.
Before departing for the Jamieson lab to have three contact prints exposed, the 16 mm wide, out-of-camera original was viewed once by the Production Supervisor (Mr. Chamberlain) and Mr. Zapruder, on a Kodak 16 mm processing inspection projector, at twice the normal projection speed---to simply ensure that Zapruder had indeed captured the assassination on film.\(^5\)

Following his return from the Jamieson lab with the three exposed contact prints, all three contact prints were developed at the Kodak Plant in Dallas. After the three dupes were found satisfactory, the original film was slit down the middle to 8 mm in width, and the two halves of the movie spliced together, end-to-end (per normal procedure). The original film, now 8mm in width, was viewed at least twice on an 8 mm projector by several laboratory personnel (including Production Supervisor Phil Chamberlain, and Customer Service Manager Dick Blair), Mr. Zapruder, and his attorney.\(^6\) At least one of the three dupes was also viewed, and was noted to have a “softer” focus than the original film (as would be expected).

Zapruder departed Kodak’s Dallas Plant at about 9 PM, and turned over two of the three “first day copies” to the Secret Service. One was sent to Washington, D.C.—to Secret Service Headquarters—by Dallas Secret Service agent Max Phillips, who placed it on a commercial flight late Friday night. It arrived in Washington after midnight, and sometime before dawn, on Saturday, 11/23/63. The second “same day copy” relinquished to the Secret Service by Zapruder on Friday night was loaned by the Secret Service to the FBI in Dallas the next day, on Saturday; and then flown by the Dallas office of the FBI to FBI headquarters, in Washington, on Saturday evening.\(^7\)

Zapruder went home Friday night with the camera-original film, and one of the “first day copies” in his possession. He was contacted on the phone late Friday night by Richard Stolley, LIFE magazine’s Pacific Coast editor out of Los Angeles, and Zapruder agreed to meet with Mr. Stolley and discuss the film’s potential sale the next morning in his office.

We have now accounted for the whereabouts of all three “first day copies” that weekend. However, the primary focus in this paper should remain on the original film. ARRB consultant Roland Zavada’s formal conclusion in his report was this: “After the dupes were found satisfactory, the original film was slit to 8 mm.”\(^8\) There was absolutely no doubt in his mind about this, for he had interviewed the surviving employees from the Kodak Plant in Dallas, and both high level supervisors present that day concurred in this.

**Saturday, November 23rd:**

Abraham Zapruder met with Secret Service officials and Mr. Stolley of LIFE in his office on Saturday morning, 11/23/63, and projected the original film for them on his 8 mm projector.\(^9\)

He then struck a deal with Richard Stolley, selling to LIFE, for $50,000.00, worldwide print media rights to the assassination movie (but not motion picture rights). Zapruder
agreed in this initial contract that he would not exploit the film as a motion picture, himself, until Friday, November 29th. Zapruder immediately relinquished the camera-original film to LIFE for a six day period, and kept in his possession the one remaining “same day copy.” By the terms of this initial contract with LIFE, Zapruder was to have the original film returned to him by LIFE on or about November 29th, and in exchange he was then to give LIFE the remaining first day copy.\(^\text{10}\)

Richard Stolley immediately put the film on a commercial flight bound for Chicago, where LIFE’s principal printing plant was located.\(^\text{11}\) The presses for the November 29th edition had been stopped on Friday, the day of the assassination, and the plan was to make major use of the imagery from Zapruder’s film as the issue was reconfigured.

Now, here is the doubtful part of the chain of custody story that will require modification after we study the two NPIC events the weekend of the assassination: the traditional belief, for decades, was that the original Zapruder film remained with LIFE in Chicago from early Saturday evening, until Tuesday, November 26th, when the first issues of the reconfigured November 29th issue began to appear on local newsstands. The principal reference supporting this traditional view of the Zapruder film’s chain of custody, from Saturday through Tuesday, has been pgs. 311-318 of Loudon Wainwright’s 1986 memoir, titled The Great American Magazine: An Inside History of LIFE. In his book, Wainwright recounts hearsay passed along to him from others at LIFE about how the film was processed in Chicago---who was on the team that prepared the use of blowups from the film, how they worked on the layout, etc.\(^\text{12}\) The magazine was actually printed at Chicago’s R. R. Donnelly and Company printing plant; prior to the actual layout and graphics work at the printing plant, numerous 8 x 10 inch prints were run off at a separate Chicago photo lab.\(^\text{13}\) We shall further discuss the activities in Chicago, and what was actually published in the November 29th issue, toward the end of this article. The only part of the Chicago story that is subject to doubt is the exact timing of when the LIFE editorial and technical team actually performed its layout of the Zapruder frames for the November 29th issue: was it actually Saturday night, or was it really Sunday night, or perhaps even early Monday morning before dawn?

**Sunday, November 24th:** On Sunday evening, Richard Stolley, on behalf of LIFE, approached Abraham Zaprunder on the phone and requested that they meet to negotiate LIFE’s acquisition of additional rights to the film. “Something” had happened that caused the magazine to seek all rights to the film, including motion picture rights, and outright ownership of both the original film, and all copies. These additional rights would prove extremely expensive to Time, Inc., LIFE magazine’s parent company.

**Monday, November 25th:** After the conclusion of President Kennedy’s funeral on Monday---the funeral ended at about 2 PM Dallas time (CST), with Air Force One flying over the gravesite at 2:54 PM EST, and with the former First Lady, Jacqueline Bouvier Kennedy, lighting the eternal flame at 3:13 PM EST---Stolley, Zaprunder, and his attorney for this purpose, Sam Passman, met to renegotiate the sale contract for the film. Earlier that day, LIFE’s publisher, C.D. Jackson, had relayed to Stolley the formal approval of the Board of Time, Inc. for him to renegotiate the contract.\(^\text{14}\)
For a renegotiated total price of $150,000.00 ($100,000.00 more than the original contract signed on Saturday), Time, Inc. now gained all rights to the Zapruder film’s imagery (domestic and foreign; and newsreel, television, and motion picture); and permanent ownership of the original and all three copies of the “8 mm color films,” thus erasing any doubt that the original and the copies had been slit to 8 mm on Friday. In addition, the new contract stipulated that Time, Inc. would pay to Zapruder an amount equal to one half of all gross receipts for use of the film, above and beyond the new $150,000.00 sale price. (The contract stipulated that Time, Inc. would also own the two “first-day copies” that Zapruder had loaned to the Secret Service, once they were returned; they never were returned.)

Tuesday, November 26th: The first newsstand copies of the November 29th issue of LIFE began to trickle out; the issue displayed a total of 31 fuzzy, poor resolution, black-and-white images of blowups from individual frames of the film. Twenty-eight of them were quite small; two were medium sized; and one was a large format reproduction. What is hard to understand, in retrospect, is why LIFE magazine published such muddy, indistinct images of a film that its parent company, Time Inc., had spent an additional $100,000.00 to repurchase. We will revisit this question following our examination of the two NPIC “briefing board events,” below.

NPIC EVENT # 1 (Presided over by Dino Brugioni)

The summary below recapitulates information gleaned from the seven recorded (MP3) Peter Janney-Dino Brugioni interviews in 2009; an eighth recorded (MP3) Peter Janney-Dino Brugioni interview on April 28, 2011; and my own HD video interview of Mr. Brugioni on July 9, 2011.

Time and date: This event commenced about 10 PM, EST, on Saturday evening, 11/23/63, when two Secret Service officials (estimated to be in their late 30s or early 40s) brought an 8 mm home movie of the JFK assassination to the CIA’s National Photographic Interpretation Center, located in building 213 in the Washington Navy Yard. (At no time could Mr. Brugioni recall either of their names.) They had not yet seen the film themselves, and Mr. Brugioni is of the distinct impression that they had just gotten off of an airplane and had come directly to NPIC from the airport. They did not volunteer where they had come from, or where the film had come from. The event at NPIC went on all night long, until about dawn on Sunday, November 24th. [Note: The home movie of the assassination brought to NPIC by the two Secret Service officials was not copied as a motion picture that night; nor did NPIC even have the capability to do so.]

How notified: Dino Brugioni was the Duty Officer at NPIC that weekend, and was personally notified about the impending visit by NPIC’s Director, the legendary Arthur C. Lundahl. Lundahl, in turn, had been notified by CIA Director John McCone that the Secret Service would be bringing in a film, and would require NPIC’s assistance.
Work crew called in (and not called in): Mr. Brugioni personally notified and called in, as his primary assistants, Mr. Bill Banfield (the Head of the Photography and the Graphics Departments), and Ralph Pearse, the Lead Photogrammatrist at NPIC. Bill Banfield had in turn ordered in 3 or 4 photo technicians, and 2 or 3 people from the graphics department, to assist in the work that evening. During the course of several interviews, Mr. Brugioni was asked whether any of the following people were present, and he emphatically stated that they were not: neither Captain Pierre Sands, U.S. Navy; Homer A McMahon; nor Morgan Bennett (“Ben”) Hunter was present that night, according to Mr. Brugioni. He was quite certain, and unequivocal, about this. When asked if he had sighted, and knew, the photography and graphics technicians assisting the management team that night, he affirmed that he had indeed seen them that night, and that none of them were either Homer McMahon, or Ben Hunter. (Brugioni knew both men, and knew Ben Hunter particularly well.)

Format of film delivered: Mr. Brugioni clearly recalls that the film delivered was an 8 mm film. He is positive about this because one member of his team had to go out that night and, through special arrangement, purchase a brand-new 8 mm projector, so that the film could be viewed as a motion picture. [NPIC had a state-of-the-art 16 mm projector installed in its briefing room, but had no 8 mm movie projectors.] He clearly recalls that the film strip only had sprocket holes down one side, which is consistent with a slit, 8mm wide “double 8” film. He is also positive in his own mind that it was the original film, and not a copy. Mr. Brugioni personally owned an 8 mm “double 8” camera in 1963, and was familiar with the differences in quality between an original film and a copy film. He recalls that the images on the film were extremely sharp. Furthermore, the extreme nervousness and anxiety demonstrated by the two Secret Service officials convinced him that he had the original film, since they were terrified he would damage it when projecting it. All factors he observed, Brugioni insists, pointed to the film being the camera-original.

The Secret Service Couriers—the Customer: The two Secret Service officials, after examining the film at least 4 or 5 times as a motion picture, wanted it timed with a stopwatch, to gain an appreciation of time between perceived shots. They were warned by the NPIC personnel that this would not yield precise or reliable results, since the Bell and Howell movie camera used was a spring-wound camera, and hence its frame rate, or running speed, would have varied throughout the filming of the assassination. The customer persisted in this desire, however, and therefore the NPIC crew complied. After viewing the film as a motion picture several times, the Secret Service officials requested that specific frames be enlarged and blown-up as photographic prints, and that the prints be mounted on briefing boards. The two segments of the film they focused on were the limousine on Elm Street as it went behind, and emerged from behind, the Stemmons Freeway sign; and the head shot. Mr. Brugioni could not remember any specific conclusions reached that night as to the number of shots fired, but he says the agents came with no pre-conceptions about this, for they had not yet seen the film.

Briefing Boards created: After the customer selected individual frames to be enlarged and printed, the NPIC work crew made internegatives of each of those frames using a
precision, high-quality enlarger, and then made two photographic prints from each internegative. Between 12 and 15 frames on the home movie, total, were selected for enlargement, and two small prints, about 4 x 5 inches in size, were printed from each internegative. Using these prints, two sets of briefing boards were made at NPIC, one for the customer (the Secret Service), and one for CIA Director John McCone. (It was standard procedure for the CIA Director to receive duplicates of briefing boards made for other customers within the Federal government.) The two briefing board panels that constituted each set were 22 x 20 inches in size, and joined by a plastic hinge in the middle, that allowed each briefing board set to be folded in half for easier transportation; thus, the overall size of each briefing board set was 44 inches wide from left to right, and 20 inches tall. (Mr. Brugioni had originally estimated in 2009 that the conjoined, two panel briefing boards were each about 6 feet wide by 3 feet tall; but prior to the 2011 HD video interview, he had refreshed his recollection by examining old photos of NPIC staff members holding standard briefing boards used at NPIC; and in July of 2011, he more accurately recalled that the standard size of each pre-cut briefing board was 22 x 20 inches----and modified his answers accordingly.) The only textual information that Mr. Brugioni recalls being posted on each briefing board set was: (1) the magnification factor, listed at the top of each panel; and (2) the frame number of each print, displayed above each print. [In 2009, Brugioni recalled the frame numbers being posted below each print.]

Accompanying Textual Material: Mr. Brugioni personally prepared and typed a one page set of notes for Mr. Arthur Lundahl, NPIC’s Director, to use when delivering the two sets of briefing boards to CIA Director McCone, and briefing him, on Sunday morning. The set of notes contained the names of all the NPIC people involved; the NPIC’s admonition against using a stopwatch to time shots depicted on a film shot with a spring-wound camera; and other technical information about how the briefing boards were prepared. Two sets of notes were prepared, one to go with each briefing board.

The departure of the Secret Service officials: The two Secret Service officials departed at about 3 AM on Sunday morning, or 4 AM at the latest, as soon as they had seen what one of the blowup enlargement prints looked like, and were satisfied with its quality and resolution. They departed without the briefing boards, for the boards were not even close to being completed when they departed. The only textual material the two officials took with them was a list they had requested of Brugioni, listing the names of all of the NPIC employees involved in the briefing board event. The two Secret Service officials took the film with them, and departed without saying where they were going.

Mr. Lundahl’s role on Sunday: Brugioni notified Mr. Lundahl by phone about 7 AM on Sunday morning that the work was finished, and Mr. Lundahl arrived at NPIC at about 8 AM to pick up the two sets of briefing boards; the two sets of briefing notes; and deliver them to Director McCone. Lundahl briefed McCone on Sunday morning, November 24, 1963. It would be up to McCone, as per standard procedure, to deliver one set of briefing boards and one set of briefing notes to the customer. Mr. Brugioni assumes that John McCone personally delivered one briefing board set and one set of notes to the Secret Service.
End of the event: Mr. Brugioni went home shortly after Mr. Lundahl departed to deliver the two briefing board sets to Mr. McCone, and was never notified again that weekend about any other activity at NPIC, of any kind. He said that if there had been additional activity, as Duty Officer that entire weekend (including Monday, the day of President Kennedy’s funeral), he should have been the person notified.

Briefing Boards placed in the National Archives by the CIA in 1993 are not the briefing boards prepared by Dino Brugioni’s team: In 1993, the CIA’s Historical Review Group (HRG), as required by the JFK Records Act, deposited with the National Archives one set of briefing boards identified in 1975 at NPIC—a four panel set (four loose panels, not joined to each other in any way)—mounting frame enlargements of the Zapruder film. In both 2009 and 2011, Mr. Brugioni was shown good photographs of each of these four briefing board panels (which together constitute one set) and he consistently and emphatically denied that the four panels in the JFK Records Collection (in Flat 90A) are the ones he made in 1963. His reasons were as follows: first, the frame numbers his group placed above each print, and the magnification factor his group placed at the top of each board, are not present; second, this briefing board set consists of four loose panels, not two conjoined panels; third, the four panels together contain 28 prints, not the 12 to 15 prints he recalls making for his briefing boards; fourth, each panel in the Archives is labeled “Panel I, Panel II, Panel III, and Panel IV,” which is not what was done on his briefing boards, where there were no identifying numbers placed on each panel; and fifth, the four briefing board panels at the Archives contain different information, and a different layout, than placed on his briefing boards.

Working notes associated with the four briefing board panels at the Archives were not produced by Mr. Brugioni’s team at his event: There are five (5) pages of NPIC working notes (also identified in 1975) stored with the four briefing board panels at the National Archives, in Flat 90A; one is a half-sheet of yellow legal pad paper with writing on both sides; one page is a typewritten summary of the prints (by frame number) on each of the four briefing board panels; and the three other pages consist of a shot and timing analysis of shots that may have hit President Kennedy and Governor Connally (three possible scenarios), keyed to frame numbers and taking into account the amount of time between postulated shots in each scenario. [The first of the three scenarios is the one written about in the December 6, 1963 issue of LIFE magazine.] Mr. Brugioni, in both 2009, and again in 2011, denied having anything to do with these notes, and said he had not ever seen them until 2009, when Peter Janney first showed them to him. He furthermore volunteered that his group would not have had the time to conduct such a shot and timing analysis at the event he presided over, commencing late on 11/23/63, so busy were they simply counting frames, making internegatives, printing photographic enlargements, and creating the two briefing boards from the photographic prints.

A startling revelation in 2011—the “head explosion” seen in the extant Zapruder film, in the National Archives today, is not at all consistent with the head explosion seen by Mr. Brugioni in the Zapruder film he viewed on the evening of November 23, 1963: During the follow-up interview at Dino Brugioni’s home on April 28, 2011, Peter Janney showed Mr. Brugioni a good image of frame 313 from the extant Zapruder
film—the so-called “head explosion”—scanned from a 35 mm dupe negative of the film obtained from the National Archives. [The provenance of the frame used therefore unquestionably represents what is in the National Archives today.] Mr. Brugioni was quite startled to find out that this was the only frame graphically depicting the “head explosion” in the extant film, which the National Archives has characterized as “the original film.” He insisted that the head explosion he viewed multiple times on 11/23/63 was of such a great size, and duration (in terms of time), that there should be many more frames depicting that explosion than “just the one frame” (frame 313), as shown in the Zapruder film today. Furthermore, he said the “head explosion” depicted in the Zapruder film today is too small in size, and too low in the frame, to be the same graphic depiction he recalls witnessing in the Zapruder film on Saturday, November 23rd, 1963 at NPIC. Mr. Brugioni viewed the Zapruder film as a motion picture several times during the HD video interview I conducted with him on July 9, 2011—using the 1998 MPI DVD product, Image of an Assassination, made by the LMH Co. in 1997 from the film in the National Archives—and reiterated those comments that he made on April 28th to Peter Janney, insisting that “something was missing” from the film in the National Archives today. While viewing the video on July 9, 2011, Mr. Brugioni also stated that the head explosion he viewed was a large “white cloud” that surrounded President Kennedy’s head, and was not pink or red, as shown in the extant Zapruder film. The words below are excerpted from Dino Brugioni’s April 28, 2011 interview with Peter Janney, as he recounted what he recalled seeing when he watched the head explosion in the Zapruder film on 11/23/63:

“…I remember all of us being shocked…it was straight up [gesturing high above his own head]…in the sky…There should have been more than one frame…I thought the spray was, say, three or four feet from his head…what I saw was more than that [than frame 313 in today’s film]…it wasn’t low [as in frame 313], it was high…there was more than that in the original…It was way high off of his head…and I can’t imagine that there would only be one frame. What I saw was more than you have there [in frame 313].”

In repeatedly viewing the Zapruder film as a motion picture during his July 2011 video interview, Dino Brugioni definitively confirmed that it was indeed the Zapruder film he was working with at NPIC on 11/23/63, even though the Secret Service couriers did not refer to it by that name; they simply referred to it as a “home movie.” But Brugioni confirmed to me unequivocally that it was the Zapruder film he was working with, and not some other film. Aside from the head shot, he recalled one other thing about the extant film that was inconsistent with what he saw on 11/23/63: prior to viewing the film on July 9, 2011, he had independently recalled Secret Service agent Clint Hill either physically striking, or violently pushing Jackie Kennedy to force her from atop the trunk lid, back into the rear seat of the limousine. Brugioni spent a considerable portion of the interview attempting to find evidence of Clint Hill “striking Jackie” in the extant film, to no avail. He was quite mystified.
NPIC EVENT # 2 (Presided over by Homer McMahon)

As stated earlier, as a member of the ARRB staff, I interviewed Homer McMahon and Ben Hunter three times each between June and August of 1997. A written call report was produced following each interview; additionally, the second of three Homer McMahon interviews---on July 14, 1997---was tape recorded, and that recording may be obtained from the National Archives, along with all of the written interview reports. In May of 2012, I completed a verbatim transcript of the audiotaped interview with Mr. McMahon on July 14, 1997. The summary below recapitulates the totality of the information provided by McMahon and Hunter over the course of all of their interviews in the summer of 1997.

**Time and date:** The strong and final consensus of opinion between the two men was that the NPIC event they participated in took place “about two days after” JFK’s assassination, and “before the funeral.” [The funeral was Monday afternoon, November 25th.] They both agreed that their NPIC activity took place before the funeral of the 35th President. McMahon initially recalled the event as taking place 1 or 2 days after the assassination, and Hunter initially recalled it as taking place 2 or 3 days after the assassination; but both men consistently agreed that their NPIC activity definitely occurred prior to President Kennedy’s funeral. The work commenced after dark, and lasted all night long. [Note: The home movie of the assassination brought to NPIC for McMahon and Hunter to work with was not copied as a motion picture; nor did NPIC even have the capability to do so.]

**How notified:** Homer McMahon did not recall specifically how he was notified to go into work, but during his tape recorded ARRB interview, he stated, “I was not contacted.” [By this he meant, in my opinion---based upon the context of the questioning---that he was not called in by the Duty Officer at NPIC---that is, he was “not contacted” by the normal procedure.] Ben Hunter recalled a Navy Captain named “Sands” being present, but did not initially recall a Secret Service agent being present, only someone in civilian clothes; Homer McMahon did not independently recall Captain Sands, but when informed of Hunter’s recollection, McMahon did subsequently remember the presence of a Navy Captain, who had met the customer and granted him access to NPIC. Homer McMahon vividly remembered that the “customer” at NPIC that night was a single Secret Service agent named “Bill Smith.” This was a very strong recollection of McMahon’s, and although Ben Hunter never remembered this name, McMahon was most persuasive and credible in this regard. (See the repeated references to Bill Smith in the May 2012 transcript of the ARRB-McMahon interview.) In subsequent interviews, Ben Hunter did recall the presence of a Secret Service official, after I asked him that question.

**Work crew called in (and not called in):** The only NPIC employees present for the making of internegatives and prints from the Zapruder film delivered to NPIC by “Bill Smith” were McMahon (the Head of the Color Lab) and Hunter (a new-hire trainee fresh out of the Air Force, who assisted McMahon that evening). McMahon and Hunter did not make any briefing boards themselves, but they were aware that others in their building were going to create briefing boards mounting the enlargements, i.e., the
photographic prints that they were running off from internegatives they had made from individual frames from the assassination film. Captain Sands was present that night to allow the Secret Service courier/customer to gain entry, but Sands did not participate in the making of internegatives or prints. [It was Dino Brugioni who revealed in both 2009, and 2011, that Captain Pierre Sands, U.S. Navy, was the NPIC Executive Director—the number-two man in the chain of command—in November of 1963. This has been confirmed by referencing an online internet biography of “Pierre Sands, U.S. Navy.”] No mention was made during the 1997 interviews, by either McMahon or Hunter, of Dino Brugioni; Bill Banfield; Ralph Pearse, or any other NPIC personnel. In his second interview, McMahon remembered one young man who was assigned to assist in the making of the actual briefing boards after he and Hunter ran off the photographic enlargements, but could not remember his name; in his third interview, McMahon told me that he now remembered who made the briefing boards, but that he wasn’t going to reveal his name to me. [McMahon was afraid that that employee might still be “current,” and was therefore being very protective of his name.]

**Format of film delivered:** Homer McMahon vividly and independently recalled during his first interview that an **unslit, “double 8” home movie film**, 16 mm wide, was delivered to him at NPIC by “Bill Smith” of the Secret Service. This was confirmed by him during his second, tape-recorded interview. He remembers being told by Bill Smith that the unslit double 8 movie was the **camera-original film**, and he believed this, because of its unslit format, as well as because of the sharpness of the image. He remembered seeing opposing image strips going in opposite directions on the 16 mm film, with one of the image strips upside down when the other was right side up. McMahon definitely remembered himself, Ben Hunter, and Bill Smith projecting a version of the home movie using an installed 16 mm projector in a briefing room, but was unsure whether the movie projected was the unslit double 8 film, or a dupe of that film. He **definitely** remembered seeing an unslit, “double 8” film in his 10x20x40 precision enlarger that night as he was making internegatives from individual frames on the home movie. He also remembered that Bill Smith told him that dupes had been run off, and repeatedly said that it may have been a dupe that was projected using the 16 mm projector in the NPIC briefing room.

**The Secret Service Customer—Bill Smith—and what he reported about the film’s provenance:** Homer McMahon said he was told by Bill Smith that a patriotic citizen in Dallas had donated the camera-original film to the Secret Service out of a sense of duty, and that the individual did not want to make any money off of the film, and so had given it to the Secret Service for free. Bill Smith told McMahon he had personally couriered the **undeveloped film** himself to a Top Secret Kodak film lab called “Hawkeyeworks,” which McMahon knew to be in Rochester, N.Y. at Kodak Headquarters; that it had been developed there; and that the personnel at the Top Secret lab had subsequently referred Bill Smith back to his home base of Washington, D.C., to NPIC, for the making of individual frame enlargements and briefing boards, since those specific tasks could not be performed at the lab in Rochester. McMahon was extremely sensitive about the code-name “Hawkeyeworks” during the interview, and regretted mentioning it. [NOTE: In 1997, the CIA’s HRG asked the ARRB staff to expunge the use of the code-word from our written interview reports, and from the audiotape of the interview to be released to
the public. Thus, in 1998, a sanitized (i.e., redacted) tape was provided by the ARRB staff for public release by the JFK Records Collection at NARA, and the Archives placed the unredacted, original tape recording under lock and key, for automatic release not later than 2017, in accordance with the JFK Records Act. The point is now moot, for the code-name “Hawkeyeworks” has since been effectively declassified, per the mention of this facility (“Eastman Kodak’s Hawkeye Film Processing Facility in Rochester, N.Y.”) in Dino Brugioni’s 2010 book, *Eyes in the Sky*, which was thoroughly vetted and approved for publication by the CIA. Furthermore, Dino Brugioni himself repeatedly mentioned the “Hawkeye Plant,” and the capabilities of that state-of-the-art, high-tech laboratory, during his interviews with Peter Janney and me in 2009 and 2011.] McMahon explained that the government had classified contracts with Kodak in 1963, and that both the CIA and Kodak had their best people working together on classified projects. He was absolutely certain that the film had been developed at Rochester, and had come from Rochester, for Bill Smith had indicated this by using the unique code-word (“Hawkeyeworks”) that unmistakably referred to the “other Top Secret lab” in Rochester, to the exclusion of all other locations. (The “Hawkeyeworks” lab and its capabilities, as defined by Dino Brugioni, will be further discussed later in this article.)

**Opinions About the Assassination of JFK Expressed by Bill Smith of the Secret Service:** According to Homer McMahon, Bill Smith came to NPIC in Washington, D.C., having already examined the home movie, expressing the opinion that only three (3) shots had been fired at the occupants of President Kennedy’s limousine on Elm Street, and that they had all been fired from the Texas School Book Depository by Lee Harvey Oswald. Homer McMahon, who had been a trick-shot artist as a child, and a champion in NRA shooting competitions as a teenager, felt otherwise, and told Jeremy Gunn and me during our interview of him, on July 14th, 1997, that he believed 6 to 8 shots had hit President Kennedy, and that they had been fired from at least three directions. But he could not change Bill Smith’s mind; for as McMahon said to me, “Oh yes, I expressed my opinion---but you know, it, it, it was pre-conceived. That’s the way I felt about it---it was pre-conceived, so you don’t fight City Hall. I wasn’t there to fight ‘em, I was there to do the work.” In truth, Bill Smith did not want Homer McMahon or Ben Hunter to do any analysis whatsoever; he only wanted them to make internegatives and blowup prints, or enlargements, for the frames he selected during his visit to NPIC.

**Photographic Products created at NPIC:** With the full understanding that they were going to be used in briefing boards created by their colleagues “upstairs” at NPIC, McMahon and Hunter created internegatives of frames selected by “Bill Smith,” using a full immersion “liquid gate” procedure in the optical precision 10x20x40 enlarger. Each internegative created was of a “40x” magnification, and three (3) each contact prints of about 5 x 7 inches in size were then made from each 40x internegative. Ben Hunter initially recalled a very limited number of frames selected---perhaps as few as only eight (8). Homer McMahon recalled that somewhere between 20 and 40 internegatives were made from the home movie of the assassination. Bill Smith selected all of the frames for which internegatives were made, and enlargements were later printed. Smith told McMahon that the work was to be treated as “above Top Secret;” that it was on a strictly “need-to-know” basis; and that not even Homer McMahon’s boss was to know anything
about it. McMahon and Hunter were instructed that they could not even answer questions about why they were putting in for overtime, and that any such questions from their immediate supervisors would have to be referred to Captain Sands. McMahon reported that Bill Smith took custody of all discards, and all scraps and trash that night, and that he and Hunter were not allowed to throw anything into the burn bags, or classified trash receptacles.

The Four Briefing Board Panels at NARA are examined: Both McMahon and Hunter agreed that the prints mounted on the four briefing board panels in the National Archives were indeed the prints they made the night of their “NPIC event.” Neither man had seen the completed briefing boards before, but they both agreed that the 28 prints mounted on the four panels were the prints they had made. McMahon stated that the prints had been trimmed down to a slightly smaller size from what had been printed. McMahon also noted, with dispassionate professional interest, that the prints had deteriorated badly over time, due to the instability of the dyes. When McMahon examined the 28 prints mounted on the four panels, he immediately expressed the opinion that some of the prints they had made were missing from the briefing boards, and had not been used---most likely additional views of the limousine before it went behind the Stemmons Freeway sign, and additional views of Clint Hill mounting the vehicle after the head explosion. Neither McMahon nor Hunter had any direct or indirect knowledge of how the four briefing board panels were used. McMahon could only speculate that they may have been used to brief the Warren Commission, but this was not something told to him by Bill Smith; indeed, there was no Warren Commission yet created when Bill Smith visited NPIC. [The Warren Commission was not even created by President Lyndon B. Johnson until Friday, November 29th, 1963.]

The five pages of NPIC “working notes” are examined: Neither McMahon nor Hunter had seen four of the five pages of notes that are found in Flat 90A at the Archives, along with the four briefing board panels. (Specifically, they said they had never seen the three-page shot and timing analysis, nor the typewritten summary of briefing board panel contents.) The one page that they both agreed contained their handwriting was the half-sheet with writing on both sides. Of particular interest to McMahon was the back side of the half sheet, which contains the following pencil notations: “shoot internegs, one-and-a-half hr; proc and dry internegs, two hr; print test, one hr; make three prints (each), one hr; proc and dry prints, one-and-a-half hr;” and the total is listed as “seven hrs.” McMahon stated with assurance that these notations were in his handwriting; and that they referred to the time required to create the internegatives from the Zapruder film frames, and to make the contact prints. [Note: In my judgment, the prints mounted on the four briefing board panels are clearly from the extant version of the Zapruder film, for they appear to match the Zapruder film frames published throughout the years in numerous books. So clearly, McMahon and Hunter were also working with a version of the Zapruder film, just as Brugioni was during his “briefing board event,” even though the assassination film was not identified through the use of Zapruder’s name by Bill Smith.]
ANALYSIS AND IMPLICATIONS OF THE TWO NPIC EVENTS

So what does all this mean? Let us explore the obvious implications, and let us not pull any punches.

Brazen Deception by “Bill Smith” of the Secret Service:

“Bill Smith” of the Secret Service (and yes, Homer McMahon did express some degree of whimsical, bemused doubt about his true identity)\(^\text{20}\) “lied his eyes out” to Homer McMahon about the origins of the assassination film he brought to NPIC with him from “Hawkeyeworks” in Rochester, New York. We know definitively from the examination of the four briefing board panels by both Homer McMahon and Ben Hunter, in the summer of 1997, that Bill Smith did bring with him to NPIC a version of the Zapruder film, and not “some other film.” This is crucially important, for from this basic fact we know that “Bill Smith of the Secret Service” lied to Homer McMahon and Bill Hunter about a number of things: (1) he lied when he said a private citizen donated the assassination film out of patriotism because he did not want to make any money on it; for Abraham Zapruder was determined to make as much money as he could off of the film, and did; (2) he lied when he said he carried the undeveloped film to Rochester and had it developed at “Hawkeyeworks;” for it is well documented that the camera-original Zapruder film was developed at the Kodak Plant in Dallas on Friday, November 22, 1963; (3) clearly, the film brought to NPIC from “Hawkeyeworks” by Bill Smith was created there, but it was not just “developed”---it was a re-creation of the Zapruder film after its alteration at that facility, intended to masquerade as an original out-of-camera, unslit (16 mm wide), “double 8” film. It had to have been produced in an aerial-imaging optical printer with an animation stand affixed, such as that shown in Figures 9.4 and 9.5 of Professor Raymond Fielding’s seminal 1965 textbook, *The Technique of Special Effects Cinematography* (Focal Press, Fourth Edition, 1985). The technique undoubtedly used---aerial imagery---was widely employed in Hollywood during the 1950s and 1960s, and can be read about on pages 224-232.

Those orchestrating the Zapruder film cover-up the weekend of the assassination were determined to call in a different work crew when the altered film (now “reassembled” optically in an “aerial imaging” optical printer as an unslit, 16 mm wide “double 8” film again) was returned to NPIC the night after Brugioni’s “briefing board event.” The goal was obviously to make a “sanitized” set of briefing boards, from the “sanitized” film, which would now necessarily be absent the more egregious evidence of frontal shots, and therefore of crossfire, and conspiracy. This need is the only reasonable explanation for calling in a different work crew and telling them that the work was “need-to-know” and “above Top Secret,” and that not even their bosses were allowed to know what activity they had been involved in. Simply put, it was easy to fool McMahon and Hunter and whoever assembled the four panel briefing boards using their prints; the hard part, and the necessary part, was to keep the Brugioni team ignorant of the activity of the McMahon team. This succeeded remarkably well because of the culture of secrecy within the Agency, and Brugioni never found out about the second NPIC event until 2009. McMahon, who cannot be located today in 2012, and who is presumably deceased,
never found out about it. This does not speak well for Arthur Lundahl, or Navy Captain Pierre Sands, however, who both must have understood the Big Picture, and known what was afoot at the facility they managed.

So the operative question remains, did the “Hawkeyeworks” facility have the capability to perform aerial imaging? Was there an optical printer with an aerial imaging animation stand installed, present at Hawkeyeworks?

“Hawkeyeworks” Explained:

After the Homer McMahon interview was released in 1998, JFK researchers loyal to the concept of an authentic Zapruder film that is “ground truth” in the Kennedy assassination downplayed the importance of the “Hawkeyeworks” story, either doubting its existence because there was no documentary proof, or alternately saying that the “Hawkeyeworks” lab was solely dedicated to U-2 and Corona satellite photography. But these critics were wrong on both counts.

First, Dino Brugioni, during his 2009 and 2011 interviews with Peter Janney and me, not only confirmed the existence of the state-of-the-art Kodak lab in Rochester used by the CIA for various classified purposes, but confirmed that he visited the place more than once, including once prior to the JFK assassination. (He also confirmed its existence in his recent book, Eyes in the Sky, on page 364.) Second, Dino Brugioni made clear to me, when I interviewed him in July of 2011, that the “Hawkeye Plant” (as he called it) was an enormous state-of-the-art private sector laboratory founded and run by Kodak, which performed far more tasks than “just” Corona satellite and U-2 “special order” film services. He said that the Hawkeye Plant was involved in developing new film products and in manufacturing and testing special film products of all kinds, including new motion picture films, and that it definitely had the capability to process motion pictures. He did not see such equipment himself, but was told by Ed Green, a high-ranking Kodak manager at “Hawkeyeworks” with whom he had a relationship of trust, that the “Hawkeye Plant” could, and did, definitely process motion pictures. When repeatedly questioned about this capability by Peter Janney throughout the 2009 interviews, Brugioni said with great reverence, on several occasions, “They could do anything.”

The CIA refused to provide me with any information about “Hawkeyeworks” when the Agency finally responded to my September 12, 2009 Freedom of Information Act (FOIA) request on February 7, 2011. But that was hardly surprising, since over one year earlier, on January 27, 2010, the CIA wrote to me, cautioning: “The CIA Information Act, 50 U.S.C. Section 431, as amended, exempts CIA operational files from the search, review, publication, and disclosure requirements of the FOIA.” What this meant, in rather blunt language, was that if the CIA was running an “op,” such as the alteration of the Zapruder film immediately after JFK’s assassination, then they didn’t have to search for those records or tell me about it, in any way. So the failure by the CIA to answer any of my many questions about “Hawkeyeworks” means literally---nothing.
The plain facts are these: (1) **the 8 mm (already slit!) camera-original Zapruder film** was delivered to NPIC late on Saturday evening, 11/23/63, and the two Secret Service officials who brought it to NPIC for the making of briefing boards *left with the film at about 3 AM Sunday morning*; and (2) a **16 mm, unslit version of the Zapruder film** was returned to NPIC the next night, after dark, on Sunday evening, 11/24/63; and its courier (“Bill Smith”) said *it had been processed at “Hawkeyeworks,”* and that he had brought it directly to NPIC in Washington, D.C. from Rochester (using the unmistakable code word “Hawkeyeworks”) himself.

“Double 8” home movies which have already been slit at the processing facility do not miraculously “reassemble” themselves from two 25-foot strips 8 mm in width, and connected with a splice in the middle, **into 16 mm wide unslit double 8 films.** A new Zapruder film was clearly created at “Hawkeyeworks” in Rochester, in an optical printer. Bill Smith *told the truth* when he said the film he carried had been *developed* there at “Hawkeyeworks;” *he lied* when he said that it was the **camera-original film** taken by the photographer in Dallas.

If “Hawkeyeworks” truly had the physical capability “to do anything,” as Ed Green informed Dino Brugioni, then all that would have been required that weekend would have been to bring in some experienced personnel---an animator or two, and a visual effects director---experienced in the “black arts” of Hollywood. Those personnel, if not already on-site, employed at “Hawkeyeworks,” could have been brought into Rochester on Saturday, November 23rd, the same day the JFK autopsy photographs were being developed in Washington, D.C. at Naval Photographic Center, Anacostia. The JFK autopsy photos developed on Saturday (per Robert Knudsen’s 1978 HSCA deposition transcript) would have provided the guide for the image alteration necessary on the Zapruder film the next day, on Sunday. The JFK autopsy photos document the massive head wound created by clandestine, post mortem surgery on JFK’s head wounds at Bethesda Naval Hospital, and would have provided a rough guide for the massive head wound in the top and right side of the skull that had to be painted onto selected Zapruder film frames the next day, on Sunday. No such parietal-temporal-frontal wound was seen at Parkland Hospital in Dallas by any of the treatment staff the day Kennedy was shot and treated there, but it had to be added to selected Zapruder film frames, *to match the illicit post mortem cranial surgery at Bethesda that was being misrepresented in the autopsy photos as “damage from the assassin’s bullet.”* In addition to painting on a false wound, of course, the forgers at “Hawkeyeworks” would have had to obscure---black out---the real exit wound, in the right rear of JFK’s head, that was seen in Trauma Room One at Parkland Hospital. (More on this below.)

What is undeniable is that there are undisputed “facts on the ground” which indicate that an optically edited Zapruder film---a re-creation---arrived at NPIC in Washington, D.C. on Sunday night, 11/24/63, after the film had been in Rochester, at “Hawkeyeworks,” all day long. Remember, the two Secret Service officials who had the original 8 mm camera-original film departed NPIC with the film at about 3 AM (4 AM at the latest) on Sunday morning. They may have been at “Hawkeyeworks” with the film as early as 6 AM; and since the Zapruder film did not reappear at NPIC until well after dark on
Sunday evening, approximately 12 hours (or more) may have been available to those at “Hawkeyeworks” who were engaged in its alteration.

A final comment here: those who insist upon injecting “Hollywood” expertise into the equation here, must respect “the facts on the ground.” The film that arrived at NPIC Sunday night did not come from anywhere else other than Rochester, N.Y.---it was not couriered from Hollywood, or New York City, or anywhere else other than Rochester---it came from “Hawkeyeworks,” per the words of the courier who brought it to NPIC Sunday night, Bill Smith. And the code word “Hawkeyeworks” meant one thing only---the state-of-the-art, Top Secret Kodak lab located at Kodak Headquarters, in Rochester, New York. Hollywood talent may very well have been involved in altering the Zapruder film, but if so, it was talent employed at the Kodak facilities at “Hawkeyeworks” in Rochester. Anyone who suggests otherwise is not employing the necessary intellectual rigor, for it is undeniable that the camera original film was developed on 11/22/63 in Dallas; undeniable that Zapruder took it home with him Friday night; undeniable that he projected the camera-original film himself on an 8 mm projector in his office Saturday morning, and that he then struck a deal with LIFE; and undeniable that Richard Stolley of LIFE magazine then put the camera original film on a plane for Chicago on Saturday afternoon. This timeline does not allow for alteration in Hollywood or New York City, based on what we now know about the film’s true chain of custody on 11/23/63, for we know without a doubt that the original film showed up at NPIC at about 10 PM on Saturday night, 11/23/63.

The Chicago Timeline Reconsidered:

It is obvious to me, in view of what happened at the “Dino Brugioni event” at NPIC, that the camera-original Zapruder film was intercepted, either at the Chicago airport as soon as it arrived from Dallas, or as soon as it arrived at the offices of LIFE, by the Secret Service. In my view this explains the very late arrival (about 10 PM) of the film at NPIC in Washington, and its delivery by two Secret Service officials who had not yet seen it projected. In his July 2011 video interview with me, Dino Brugioni expressed the opinion that the two Secret Service officials had just gotten off of an airplane, and had come directly to NPIC.

This is a very important fact, for it reinforces the extremely high likelihood that the film brought to Brugioni truly was the original film, and not a copy. Let us reexamine where the three copies were that day, on Saturday, 11/23/63. One “first day copy” remained with Zapruder in Dallas; one had been loaned to the FBI in Dallas by the Secret Service in Dallas, and was flown to FBI headquarters in Washington, D.C. on Saturday night, via the Baltimore airport; and the third “same day copy” had been flown to Secret Service headquarters in Washington, D.C. on Friday night, and had arrived sometime between midnight and dawn. Let us assume that the Secret Service copy in the nation’s capital had arrived by sunrise (a conservative estimate), and that officials at Secret Service headquarters had spent all morning Saturday reviewing it. Even if those conservative timelines were the case, then if it were the film brought to Brugioni for the briefing board work, WHY WAS IT NOT DELIVERED AT NOON, OR ONE O’CLOCK PM ON
SATURDAY? The fact that the film delivered to him arrived at 10 PM, and the fact that it had not been seen by the two men who couriered it to NPIC, mitigates against the film he worked with having been the “first day copy” sent to Washington by the Dallas Secret Service (Max Phillips) on Friday night.

That is most unlikely for another reason, as well. Enlargements of tiny 8 mm frames for briefing boards would not have been made from a copy film if the original film were available. Furthermore, Dino Brugioni himself would have noticed the soft focus if he had been working with a copy film, instead of an original.

So in my view, it is clear that the camera-original Zapruder film was intercepted in Chicago by Federal agents identifying themselves as Secret Service late on Saturday afternoon or early Saturday evening, and then flown directly to Washington D.C., and taken immediately to NPIC, in the Navy Yard, from Washington National Airport.

What this means is that the timing of the activities in Chicago reported by Loudon Wainwright in his memoir (mentioned above) was simply off by 24 hours. No doubt he got all the names of those involved correct, and their various roles in preparing the layout in the November 29th issue correct, but was just off by one day in recounting when it happened. After all, he was not present at those events, and was reporting hearsay.

We know that the alteration at “Hawkeyeworks” was finished sometime before the middle of the evening on Sunday, November 24th. We know that because the altered film, now in 16 mm wide, “double 8” format again, arrived at NPIC Sunday night, after dark. We even know that “dupes” of the film were made at “Hawkeyeworks,” according to Bill Smith.24

And there is strong evidence that such dupes---or at least one such dupe---known in the trade as “dirty dupes,” were run off as black and white copies at “Hawkeyeworks,” and then rushed to Chicago Sunday night so that the magazine could begin its layout for the revised November 29th issue. Three such “dirty dupes”---all unslit, 16 mm wide, “double 8” versions of the Zapruder film---surfaced in January of 2000 when the LMH Co. materials were physically transferred to the Sixth Floor Museum, in Dallas. They are all black and white products (as are the 31 poor quality blowup prints of the Zapruder film published in the November 29th issue of LIFE). As noted by author Richard Trask, one of them, a “reversal black-and-white positive,” does contain markings that “…appear to be markings used to determine selected images for inclusion in LIFE magazine.”25

Unfortunately, both Roland Zavada and Richard Trask (who has endorsed Zavada’s view) have gotten carried away by the discovery of these three black-and-white “dirty dupes,” and have drawn entirely the wrong conclusion from these materials discovered about twelve-and-one-half years ago. They have both concluded that the camera-original Zapruder film was not slit after all, at the Kodak Plant in Dallas, the day of the assassination. This absurd conclusion flies in the face of the expert testimony collected by Zavada himself in 1997 and 1998 as he repeatedly interviewed and corresponded with the surviving managers and technicians who worked at the Kodak Plant in Dallas on the
day of JFK’s assassination; flies in the face of the manuscript written by Mr. Phil Chamberlain (the Production Supervisor of the Kodak Plant in Dallas) in the late 1970s; and flies in the face of the many witnesses who saw Mr. Zapruder project his 8 mm camera-original film, using an 8 mm projector, on Saturday, November 23rd.  

I have an alternative, and more reasonable, explanation for the origin of these “dirty dupes”---one more in line with Occam’s Razor, and which respects expert eyewitness testimony (instead of disregarding it). I believe that at least one of the three unslit “double 8” Zapruder film “dirty dupes” found at the Sixth Floor Museum in January of 2000, among the donated materials from the LMH Co. (that once belonged to LIFE magazine), was run off in a contact printer at “Hawkeyeworks” on Sunday evening after the alteration of the Zapruder film was completed. It was then, I believe, rushed to Chicago from Rochester so that LIFE magazine, now behind schedule, could get going on its layout for the delayed November 29th issue. Arrival of just one “dirty dupe” at the Donnelly printing plant on Sunday night would have provided the imagery necessary for the first mail-out issues of the magazine to be ready for mailing Monday afternoon, November 25th, and would also have been consistent with the first newsstand issues hitting the shelves on Tuesday, November 26th, as reported by Trask. In his 2005 book, National Nightmare on Six Feet of Film, Trask writes (on p. 117): “The cardboard container associated with the 16 mm films included a printed address reading ‘Allied Film Laboratory, 306 W. Jackson, Chicago 6, Illinois.’” In my view, this might merely indicate that one “dirty dupe” was received from “Hawkeyeworks,” and that the lab in question ran off two more copies of the first “dirty dupe” after it arrived in Chicago Sunday night. Or it might indicate nothing at all related to the provenance of the dupes. Even if the box does indicate a connection between Allied Film Laboratory and the dupes, the presence of the box alone does not indicate that all three of the dupes were run off in Chicago, nor does it tell us that they were copied from the camera-original film.

As Trask himself says, Kodak lab personnel interviewed in “recent years” (presumably he means the 1980s through 2005, when his own book was published) “…seem to recall that in 1963 all four films were slit into 8 mm format.” Yes, that’s what they have recalled, because that is what happened---all four films (the camera-original, and the three first-day copies) were all slit down to 8 mm on Friday night in Dallas, after the three copies were developed, and before Zapruder departed the Kodak Plant. There is no serious or believable reason to doubt their consistent recollections.

In conclusion, a highly significant fact about the November 29th issue of LIFE, and the four briefing board panels at NARA, that even many “alterationists” have not dealt with adequately, is that the frames in that early issue of LIFE that depict JFK’s head wound appear to show the same head wound seen in the extant film today. [This makes perfect sense to me; no cabal at “Hawkeyeworks” in charge of altering the film to hide evidence of shots from the front would have dared to allow LIFE to have a print of the movie before the film was altered.] My main point here, though, is that the prints posted on the four briefing board panels at the Archives (from the McMahon event) are also consistent with the frames published in LIFE on November 29th, and have frame numbers assigned to them in the NPIC working notes that are consistent with the frame numbers used
today in association with those same frames in the extant film. About five or six of the frame numbers denoted in the NPIC notes (which describe the photos mounted on the four briefing board panels) are off by one frame (denoting human fallibility---obvious counting errors attributable to fatigue, or haste that night), but the frame numbers and images associated with the briefing boards are consistent with the extant film today. That is to say, there are no major deviations, or patterns in the frame numbering indicating that the film McMahon worked with was structured differently than the one we know today. The obvious implication of these facts discussed above is that at least the major alterations to the Zappruder film (such as frame excisions and deletions, and alterations of the head wound images) were completed by Sunday night, 11/24/63---and that perhaps all of the alterations were completed by Sunday night, when the film left “Hawkeyeworks,” on its way to NPIC in Washington, D. C.

**Rockefeller Commission Issues:** In 1975, President Gerald Ford appointed the President’s Commission on CIA Activities Within the United States---headed by Vice President Nelson Rockefeller---in response to allegations in the media of widespread illegal CIA domestic activities, including mind-control-drug experiments upon unsuspecting American citizens; illegal mail opening; and illegal surveillance of domestic political groups. On March 24, 1975, an American citizen named Paul Hoch (a Berkley, California computer programmer) submitted a long list of interrogatories to the Rockefeller Commission, one of which was the timely question---in the immediate wake of the airing of the bootleg copy of the Zapruder film by the ABC television network on March 6, 1975---“…what use did the Agency make of the Zapruder film?”

This one simple question from Paul Hoch resulted in a series of exchanges in May of 1975 between Rockefeller Commission Senior Counsel Robert B. Olsen, and the CIA, about the Zappruder film. These exchanges quickly drew Dino Brugioni of NPIC and the new NPIC Director, John Hicks, into the search for Zappruder film records, and forced the CIA to: (1) admit to the Commission, in writing, on May 14, 1975, that it still possessed four surviving briefing board panels mounting Zappruder frame enlargements that had been created sometime in late 1963; and (2) to turn over the previously mentioned six pages of NPIC working notes (along with a handwritten memo from NPIC Director John Hicks) to the Rockefeller Commission, in response to Senior Counsel Robert Olsen’s oral request on May 8, 1975 for textual materials about the Zappruder film that may have been provided to the Secret Service by the CIA. These working notes (referred to above in this article) were finally, belatedly released to the public in 1978 under FOIA, and based on the long, administrative FOIA document number assigned by the CIA, became commonly known to JFK researchers by the shorthand of “CIA Document 450.” The notes created a significant stir among JFK researchers, since they indicated a high level of CIA/NPIC interest in the Zappruder film shortly after President Kennedy’s assassination.

But of significant interest here is the very first response sent by the CIA to Senior Counsel Robert B. Olsen, on May 7, 1975, for the story surrounding this response---what it said, and what it did not say---involves deep levels of duplicity, both within the CIA, and between the CIA and the Rockefeller Commission’s staff. And that duplicity
surrounds the first set of briefing boards---briefing boards made from the original, unaltered, camera-original Zapruder film---those made by Dino Brugioni at the Zapruder film “briefing board event” over which he presided, commencing late on 11/23/63 at NPIC.

It went down like this. After the Rockefeller Commission forwarded the Paul Hoch list of questions to the CIA, it stimulated a massive search within the Agency for ways to “come clean” and satisfy the Rockefeller Commission, so that the Commission would eventually leave the Agency alone and publicly report its cooperation with the Commission. Sometime in late April or early May of 1975, in response to the Commission’s inquiries about domestic activities (and more specifically, the Paul Hoch memo asking about the Zapruder film), Dino Brugioni reported to the NPIC Director, John Hicks, that he possessed one of the two-panel briefing boards he had made during his Zapruder film event at NPIC; the board had been returned to NPIC when John McCone retired, and the then-Director of NPIC, Arthur Lundahl, had given it to Dino Brugioni and told him to lock it up, saying that no one was to see it except for Lundahl or Brugioni. Since that time, Arthur Lundahl had retired.

Dino Brugioni not only informed John Hicks about the existence of the two-panel briefing board; he showed it to him. Hick’s response was both profane, and violent. Hicks said to Brugioni, when shown the two-panel briefing board made from the unaltered Zapruder film: “Goddammit, what the hell are you doing with that?” Hicks followed with immediate instructions: “Get the Goddamn thing out of here!” A shaken Dino Brugioni, who is still mystified today about the anger expressed by Hicks, wrapped up the two-panel briefing board, sent it over to the office of CIA Director William Colby, and never saw it again.

Mr. Hicks, the key player in this drama, then proceeded to withhold from the Rockefeller Commission the existence of the two-panel briefing board, and to withhold from Dino Brugioni the fact that a four panel briefing board (different form Dino’s) had also been found at NPIC, along with working notes indicating substantial NPIC activity with the film. This was peculiar behavior, since Brugioni was the Chief Information Officer at NPIC, and in this capacity was the “briefing board czar” for Mr. Hicks.) Not only was Hicks maintaining the compartmentalization put in place at NPIC the weekend following the assassination, but he is the one and only persuasive candidate who fits the bill as the “probable author” of what can only be viewed as an intentionally misleading communication sent to the Rockefeller Commission about the NPIC Zapruder film activity.

On May 7, 1975 Mr. E. H. Knoche, an intelligence officer who was a special assistant to CIA Director William Colby, signed out a letter to Senior Counsel Robert B. Olsen, which forwarded an unsigned “addendum” (one typewritten page) which summarized Zapruder film activity---the making of briefing boards---at NPIC “in late 1963.” Not only does the addendum provide no specific dates for the activity, but the two separate briefing board events have been conflated into one event, and as described in the addendum, there was only one briefing board event that took place with the Secret
Service (which we now know is not true). Mention is made of the creation at NPIC of two sets of briefing boards (consistent with the Brugioni event), but the addendum also states that those two sets consisted of four panels each (which we now know is consistent only with the McMahon event). The addendum also states that Secret Service representatives (plural, and consistent with the Brugioni event, but not with the McMahon event) left with the film and one set of briefing boards. We now know that this is not true, for Brugioni was clear in his interview with me that the Secret Service left with the film, but not with the briefing boards, which had not been completed yet. Secret Service agent “Bill Smith,” at the McMahon event, probably did leave with his briefing board products, so concerned was he with secrecy and tight security. The addendum also states that Mr. McCone retained one set of boards; while this is true, the set of boards he retained was a two-panel set joined with a hinge in the middle (made from an unaltered Zapruder film), not the four panel set that the CIA would soon acknowledge having to the Rockefeller Commission. It is my considered opinion, after my four-hour interview with Dino Brugioni in July of 2011, that Mr. Hicks wrote the addendum forwarded by Mr. Knoche to Olsen on May 7th, and that Hicks’ intention in writing the addendum in the way that he did was to hide the fact that there were two compartmentalized operations with the Zapruder film at NPIC the weekend of President Kennedy’s assassination. If, for example, it became known that Dino Brugioni had retained a briefing board set returned by Mr. Cone, Hicks could explain that away to outsiders by showing them the four panel briefing board set made at the second event. His failure to inform Dino Brugioni, who was supposedly his right-hand man, about the discovery of the four panel set (the set in the Archives today), or the NPIC working notes, speaks to his duplicity within his own organization. 29

Wrapping up this tale, it was the Knoche letter to Olsen of May 7th (and its intentionally confusing addendum about NPIC activity in support of the Secret Service) that stimulated Olsen’s oral request on May 8th to receive copies of “any memoranda or other textual information provided to the Secret Service by CIA after NPIC’s analysis of the Zapruder film.” Hicks wrote a handwritten internal memo on May 13th, admitting that NPIC had the four briefing board panels and the working notes, but withholding the fact that a two-panel briefing board panel had been found, and shown to him, by Brugioni. It was this Hicks memo and the six pages of notes that were forwarded to Olsen by Knoche on May 14, 1975. In doing so, the CIA (Hicks and Knoche) withheld from the Rockefeller Commission the existence of a different set of briefing boards, and refused to divulge that two different Zapruder film “briefing board events” occurred at NPIC the weekend of the assassination. [Hicks even briefed Olsen in person, at NPIC on May 14th, so presumably Olsen was shown the four briefing board panels which, of course, contain the same image frames seen in the extant Zapruder film today.30] So I am forced to conclude that NPIC Director John Hicks (the replacement for the eminent Arthur Lundahl), the engineer of all this legerdemain, must have known that there were two compartmentalized operations at NPIC on November 23rd and 24th, 1963, and that if he were to reveal that, he would be revealing that the Zapruder film had been altered at Hawkeyeworks by the CIA and Kodak and the Secret Service, all working together on the project. It must have been for this reason that Hicks felt the Rockefeller Commission did not have a “need-to-know” about the two-panel briefing board retained by Brugioni; and it must have been for this
reason that Hicks felt Brugioni did not have a “need-to-know” about the four panel briefing board set which Hicks was showing to Olsen on May 14th. One final thought: since Brugioni sent the two-panel briefing board back to the CIA Director’s office by special CIA courier, and since Mr. E. H. Knoche worked as a special assistant to the Director of CIA in 1975, and had been working in that capacity at the time of the JFK assassination under Director John McCone, Mr. Enno Henry “Hank” Knoche may very well have known about the compartmentalized operations at NPIC in 1963 as well, and may have been willfully cooperating with Hicks in deceiving the Rockefeller Commission.

SUMMARY OF VISUAL INDICATIONS OF ALTERATION

The two NPIC “briefing board events” the weekend following President Kennedy’s assassination have together definitively proven: (1) that the film’s chain of custody is not what we thought it was for decades; and (2) that the film was located that weekend in a facility where the means almost certainly existed to alter its image content.

First, based on Dino Brugioni’s very clear recollections of his NPIC “briefing board event,” the camera-original, 8 mm Zapruder film was not in Chicago, at the LIFE printing plant, on the Saturday night following JFK’s assassination; but rather, was in Washington, D.C. at NPIC on Saturday, 11/23/63, from about 10 PM that night, until 3 or 4 AM the next morning, on Sunday, 11/24/63.

Second, the statements of the Secret Service courier who brought the altered, and reformatted 16 mm wide, unslit, “double 8” Zapruder film back to NPIC on Sunday night, 11/24/63---“Bill Smith”---revealed to Homer McMahon that the Zapruder film delivered to him for the making of prints had been processed at “Hawkeyeworks,” a state-of-the-art, world class photo laboratory at Kodak headquarters, that was regularly used in support of classified CIA contracts. The two major classified CIA-Kodak contracts at the time were in support of “special orders” for U-2 high-altitude and Corona satellite photography, but the overall physical capabilities of the “Hawkeye Plant” went well beyond these two areas, and included much work in the motion picture field, according to what Mr. Brugioni was told by the Kodak employees who managed the Rochester lab, and who were his points of contact there.

We know from the historical record that the two key statements made by “Bill Smith” about the Zapruder film were outright fabrications---to wit, the original film was not donated to the government for free by Mr. Zapruder; and the camera-original Zapruder film was not developed at “Hawkeyeworks” in Rochester, as Smith had claimed. [Zapruder had negotiated an initial sales contract with LIFE magazine for $50,000.00 on Saturday morning; and the camera-original film had been developed in Dallas, not at “Hawkeyeworks” in Rochester.]

Dino Brugioni’s knowledge of the “Hawkeyeworks” facility in Rochester, gained from Mr. Ed Green of Kodak and others whom he knew at the facility, was that it could indeed process motion picture film, and that the Kodak technicians at the Top Secret laboratory
“could do anything” with film. Because “Bill Smith” of the Secret Service delivered a Zapruder film to NPIC on Sunday, 11/24/63, whose format had miraculously been transformed, within 24 hours, from a **slit, 8 mm wide** “double 8” film, to an **unslit, 16 mm wide**, “double 8” film, it is reasonable to conclude that the Zapruder film’s image content was indeed altered on Sunday, 11/24/63, and that the alteration occurred at “Hawkeyeworks,” from whence Bill Smith had come with the film, which he readily admitted had been processed at that facility.

For all of the foregoing reasons, it is therefore appropriate to briefly review three of the major indicators that the Zapruder film’s imagery has undergone alteration.

**The Head Explosion:**

As discussed earlier in this paper, Dino Brugioni opined during his July 9, 2011 interview with the author that the head explosion seen today in the extant Zapruder film is **markedly different** from what he saw on 11/23/63, when he worked with what he is certain was the camera-original film. The head explosion he recalls was much bigger than the one seen today in frame 313 of the extant film (going “three or four feet into the air”); was a “white cloud” that did not exhibit any of the pink or red color seen in frame 313 today; and was of such a duration that he is quite sure that in the film he viewed in 1963, there were **many more frames than just one** graphically depicting the fatal head shot on the film he viewed in 1963. Mr. Brugioni cannot, and does not, accept frame 313 of the extant Zapruder film as an accurate or complete representation of the fatal head shot he saw in the camera-original Zapruder film on the Saturday evening following President Kennedy’s assassination.

He is supported in this view by two other opinions.

Erwin Schwartz, Abraham Zapruder’s business partner, told interviewer Noel Twyman on November 21, 1994 that when he viewed the original film on Friday, November 22, 1963, he saw biological debris from the head explosion propelled to the left rear of the President when he viewed the film. This debris pattern is not visible on the film today, but dovetails with the consistent recollections of motorcycle officer Bobby W. Hargis, who was hit with great force at the time of the head shot by debris travelling to the left rear.  

Similarly, professional surveyors Robert West and Chester Breneman performed the first of several site surveys of Dealey Plaza that they participated in on Monday, November 25, 1963---for **LIFE** magazine. Breneman was quoted in the **Fort Worth Star-Telegram** on April 14, 1978 as saying that in using the color prints of individual Zapruder frames provided by **LIFE**, he could see in some of the prints “large blobs of blood and brain matter flying from Kennedy’s head to the rear of the car.” Whether his remembered date for the **LIFE**-sponsored survey is precisely accurate or not, the important factor here is that he saw **debris traveling to the rear of the President** in enlargements made from individual frames of the Zapruder film---imagery that is not seen in the extant film today. If his recollection that those images were provided by **LIFE** was correct, it suggests
covert collusion between some at *LIFE* magazine and the U.S. government—namely, a joint effort to determine exactly what did happen in Dealey Plaza, apparently using frames from the unaltered Zapruder film.

Given the decades-long ties between *LIFE*’s publisher, C. D. Jackson, and the U.S. Intelligence Community, such collusion would not be surprising, particularly given *LIFE* magazine’s history of false reporting in its December 6, 1963 issue about the imagery in the Zapruder film, and its suppression of the film as a motion picture for almost 12 years.34 It seems clear to me that David Wrone got it all wrong in his book when he assessed *LIFE*’s primary motive in its dealings with the Zapruder film as *profit-driven*. On the contrary, spending an additional $100,000.00 dollars on Monday, November 25th (beyond the original $50,000.00 spent on Saturday, November 23rd) to secure motion picture rights and total ownership of the film, and then *never exploiting the film commercially as a motion picture for twelve years*, speaks to *suppression* as the primary motive, rather than profit.

*Altered Head Wound Imagery:*

California resident Sydney Wilkinson purchased a 35 mm dupe negative of the Zapruder film from the National Archives in 2008—a third generation rendition, according to the Archives—and with the assistance of her husband, who is a video editor at a major post-production film house in Hollywood, commissioned both “HD” scans (1920 x 1080 pixels per scan) of each frame of the dupe negative, as well as “6K” scans of each frame. Because the Zapruder film’s image, from edge to edge, only partially fills each 35 mm film frame obtained from the Archives, the so-called “6K” scan of each frame is therefore ‘only’ the equivalent of a “4K” image, i.e., 4096 x 3112 pixels, for each Zapruder frame *imaged*. Each Zapruder frame scan still constitutes an enormous amount of information: 72.9 MB, or 12.7 million pixels per frame. These “4K equivalent” scans of the Zapruder film used by this couple to conduct their forensic, scientific study of the assassination images are 10-bit *log color* DPX scans, otherwise known in common parlance as “flat scans.” These *logarithmic color* scans bring out much more information in the shadows than would the *linear color* normally viewed on our television screens and computers. Therefore, much more information in each Zapruder film frame is revealed by these *logarithmic scans*, than would be revealed in a *linear color scan* of the same frame.

As reported in the author’s book, numerous Hollywood film industry editors, colorists, and restoration experts have viewed the “6K” scans of the Zapruder film as part of the couple’s ongoing forensic investigation. In the logarithmic color scans there are many frames (notably 317, 321, and 323) which show what appear to be “black patches,” or crude animation, obscuring the hair on the back of JFK’s head. The *blacked-out areas just happen to coincide precisely with the location of the avulsed, baseball-sized exit wound in the right rear of JFK’s head seen by the Parkland Hospital treatment staff, in Dallas, on the day he was assassinated.* In the opinion of virtually all of the dozens of motion picture film professionals who have viewed the Zapruder film “6K” scans, the dark patches do not look like natural shadows, and appear quite anomalous. Some of these film industry professionals—in particular, two film restoration experts accustomed
to looking at visual effects in hundreds of 1950s and 1960s era films---have declared that
the aforementioned frames are proof that the Zapruder film has been altered, and that it
was crudely done.\textsuperscript{35} If true, this explains \textit{LIFE}'s decision to suppress the film as a
motion picture for twelve years, lest its alteration be discovered by any professionals
using it in a broadcast.

The extant Zapruder film also depicts a large head wound in the top and right side of
President Kennedy’s skull---most notably in frames 335 and 337---\textit{that was not seen by
any of the treatment staff at Parkand Hospital}.

The implication here is that if the \textit{true exit wound} on President Kennedy’s head can be
observed in the Zapruder film through use of \underline{aerial imaging} (i.e., self-matting animation,
applied to each frame’s image via an animation stand married to an optical printer)---as
revealed by the “6K” scans of the 35 mm dupe negative---then the same technique could
be used \textit{to add a desired exit wound}, one consistent with the cover story of a lone shooter
firing from behind.

The apparent alteration of the Zapruder film seen in the area of the rear of JFK’s head in
the “6K” scans is consistent with the capabilities believed to have been in place at

In a recent critique of the author’s Zapruder film alteration hypothesis, retired Kodak film
chemist (and former ARRB consultant, from 1997-1998), Roland Zavada, quoted
professor Raymond Fielding, author of the famous 1965 textbook mentioned above on
visual special effects, as saying that it would be impossible for anyone to have altered an
8 mm film in 1963 without leaving artifacts that could be easily detected. I completely
agree with this assessment attributed to professor Fielding, and I firmly believe that the
logarithmic color, “6K,” 10-bit, DPX scans made of each frame of the 35 mm dupe
negative of the Zapruder film have discovered just that: \textit{blatant and unmistakable
artifacts of the film’s alteration}.

Critics of this ongoing forensic investigation in California have tried to dismiss the
interim findings by displaying other, dissimilar images from the Zapruder film that have
been processed in \underline{linear color} (not logarithmic color), and in some cases are also using
inferior images of the Zapruder film of much poorer resolution than the 6K scans, or
images from the film in which the \underline{linear color} contrast has been adjusted and
manipulated (i.e., darkened). Saying that “it just isn’t so” is not an adequate defense for
those who desperately cling to belief in the Zapruder film’s authenticity, when the
empirical proof (the untainted and raw imagery) exists to back up the fact that it is so.
Anyone else who purchases a 35 mm dupe negative of the Zapruder film from the
National Archives for $795.00, and who expends the time and money to run “6K” scans
of each frame, will end up with the same imagery Sydney Wilkinson has today, for her
scans simply record what is present on the extant film in the National Archives; she and
her husband have done nothing to alter the images in any way. Their scans simply record
what is present on the extant film.
The Missing Car Stop:

One final imagery-related indication that the Zapruder film has likely been altered is the simple proof that about sixteen persons in Dealey Plaza indicated that the President’s limousine stopped, very briefly (for approximately one-half second to one-and-a-half seconds), during the head shot sequence on Elm Street. No such “car stop” is seen on the extant Zapruder film. And yet, many of the witnesses who claim the limousine stopped were those closest to President Kennedy when he was killed, including Jean Hill, Hugh Betzner, Bill Newman, Mary Woodward, Roy Truly, Phil Willis, Alan Smith, DPD patrolmen Earle Brown and J. W. Foster, and DPD motorcyclists Bobby W. Hargis and James Chaney. (Incidentally, none of them recalled seeing the violent back-and-to-the-left “head snap” seen in the extant Zapruder film today, which reinforces the likelihood that it is an optical artifact in the extant film, created by the removal of several exit debris frames during optical editing at “Hawkeyeworks.”)

If Abraham Zapruder was really operating his movie camera at 48 frames per second (the accelerated frame rate required to play back the film in “slow motion” on a home movie projector---three times the normal speed), vice 16 frames per second (the normal frame rate), then anyone engaged in altering the film would have had a much easier time optically excising frames of exit debris, and removing the car stop, through use of an optical printer. All that was required to operate Zapruder’s Bell and Howell camera at the accelerated frame rate of 48 fps was a slight downward pressure on the trigger with the operator’s index finger.

It could have happened this way---consider this: the extant film (that is, the assassination movie, not the Zapruder family scenes present on the two Secret Service copies) in the National Archives (not counting leader) consists of a strip of film 8 feet, 10 inches long (of which only 6 feet, 10 inches contains the imagery of the assassination film, and 2 feet, 7 inches is black, unexposed film with no image showing); then there is a physical splice; then there is a segment of black film containing no imagery that is 19 feet, 3 inches long; then there is another physical splice; then there is another segment of black film containing no imagery which is 5 feet, 8 inches long. Summarizing, after the first splice at the end of the assassination segment, there are a total of just over 24 feet of black film with no image showing. If the camera-original film had actually been shot at 48 frames per second---three times normal speed---then conceivably it would have required approximately three times the length of film in the present assassination segment (i.e., 3 x 6 feet = 18 feet). Currently, there is more than 18 feet of black film that is not contiguous with the assassination movie---that is, there is actually 24 feet of black film that has not been shot, but the problem is, it is not physically connected to the assassination film. The rhetorical question becomes, how do we know the actual, camera-original Zapruder film wasn’t shot at 48 frames per second, and then edited down to normal speed during the alteration process by removing two thirds of the frames when the new film was created in an optical printer? The answer is, we don’t know that---there is room for subterfuge here---because the black, unexposed film on the reel of the extant Zapruder film has been attached with a splice.
SUMMATION

**An indefensible position:**

In his 2003 book, *The Zapruder Film: Reframing JFK’s Assassination*, author David Wrone wrote the following on page 125:

> “Regarding the CIA, no scrap of paper, legitimate witness, or indirect source of any merit places the agency or any of its surrogates indirectly or directly in connection with the film on November 22 or the following two days.”

In view of the two NPIC events discussed above, this statement is demonstrably wrong in every particular. Homer McMahon (Head of the NPIC Color Lab in 1963) and Dino Brugioni (Chief Information Officer at NPIC) were certainly “legitimate witnesses” and “sources of merit,” as was Ben Hunter, a CIA career man who was still working for the Agency when the ARRB staff interviewed him in 1997. The CIA’s code name “Hawkeyeworks,” referring to the Top Secret lab at Kodak headquarters in Rochester, N.Y., with which the CIA had a close association through several classified contracts, was where the second Zapruder film delivered to NPIC, on 11/24/63, had been processed; thus “Hawkeyeworks” certainly qualifies as one of “the CIA’s surrogates.” The “thoroughly documented lack of official interest in the Zapruder film” that David Wrone writes about on page 125 is a figment of his imagination. The two NPIC events detailed by Brugioni (event # 1, commencing 11/23/63) and McMahon and Hunter (event # 2, commencing 11/24/63) indicate a great deal of interest, indeed, by the U.S. government, immediately following the assassination of President Kennedy, and precisely within the two-day period that David Wrone so falsely characterized. Two compartmentalized operations took place on the weekend of November 23-25, 1963, at the CIA’s National Photographic Interpretation Center (NPIC) in the nation’s capital. Secret Service couriers were shuttling the Zapruder film to Washington, D.C. from Chicago, and then the next day from Rochester, New York, back to Washington again. Even as late as 1975, Mr. Hicks, the Director of NPIC, was withholding important information from one vital and trusted employee (Dino Brugioni), and was withholding other important information from the Rockefeller Commission, in an attempt to keep the lid on what had happened with the Zapruder film at NPIC.

The two NPIC events are indeed “signposts” to the Zapruder film’s alteration. The only way in which the two NPIC events can be properly understood or explained is in the context of the film’s alteration at “Hawkeyeworks” on the very weekend immediately following President Kennedy’s assassination.

**Why Do So Many in the JFK Research Community Resist the Mounting Evidence that the Zapruder Film is an Altered Film?**

I do not include here, in this question, those who have written books defending the Zapruder film’s authenticity; their obstinacy and closed-mindedness is related to ego,
reputation, and to lifelong defense of their established turf. The old orthodoxy always resents the new paradigm that threatens established ways of thinking.\(^\text{38}\)

There is a bigger problem within the JFK research community, and it revolves around the following question commonly posed by perplexed members of the “old guard,” first-generation JFK researchers, to whom the concept of an altered Zapruder film seems dangerous heresy. They usually ask, **“Why would anyone alter the film, and yet still leave evidence of conspiracy in the film?”** (By this they usually mean the “timing problem” in the extant film which makes the single bullet theory impossible; and the “head snap” of JFK’s upper torso and head to the left-rear after frame 313—–which they equate with a shot, or shots, from the right front, and not from the Texas School Book Depository.)

The answers to this valid question are clear to me: (1) those altering the Zapruder film at “Hawkeyeworks” on Sunday, November 24, 1963 were extremely pressed for time, and could only do “so much” in the twelve-to-fourteen hour period available to them; (2) the technology available with which to alter films in 1963 (both the traveling matte, and aerial imaging) had limitations—there was no digital CGI technology at that time—–and therefore, I believe the forgers were limited to basic capabilities like blacking out the exit wound in the right-rear of JFK’s head; painting a false exit wound on JFK’s head on the top and right side of his skull (both of these seem to have been accomplished through “aerial imaging”—–that is, animation cells overlaid “in space” on top of the projected images of the frames being altered, using a customized optical printer with an animation stand, and a process camera to re-photograph each self-matting, altered frame); and removing exit debris frames, and even the car stop, through step-printing.

In my view, the alterations that were performed were aimed at quickly removing the most egregious evidence of shots from the front (namely, the exit debris leaving the skull toward the left rear, and the gaping exit wound which the Parkland Hospital treatment staff tells us was present in the right-rear of JFK’s head). I believe that in their minds, the alterationists of 1963 were racing against the clock—they did not know what kind of investigation, either nationally or in Texas, would transpire, and they were trying to sanitize the film record as quickly as possible before some investigative body demanded to “see the film evidence.” There was not yet a Warren Commission the weekend following the assassination, and those who planned and executed the lethal crossfire in Dealey Plaza were intent upon removing as much of the evidence of it as possible, **as quickly as possible.** As I see it, they did not have time for perfection, or the technical ability to ensure perfection, in their “sanitization” of the Zapruder film. They did an imperfect job, the best they could in about 12-14 hours, which was all the time they had on Sunday, November 24, 1963, at “Hawkeyeworks.” Besides, there was no technology available in 1963 that could convincingly remove the “head-snap” from the Zapruder film; you could not animate JFK’s *entire body* without it being readily detectable as a forgery, so the “head-snap” stayed in the film. (The “head snap” may even be an inadvertent result—*an artifact of apparently rapid motion*—caused by the optical removal of several “exit debris” frames from the film. When projected at normal speed at playback, any scene in a motion picture will appear to speed up if frames have been
Those altering the film may have believed it was imperative to remove the exit debris travelling through the air to the rear of President Kennedy, even if that did induce apparent “motion” in his body which made it appear as though he might have been shot from the front. The forgers may have had no choice, in this instance, but to live with the lesser of two evils. Large amounts of exit debris traveling toward the rear would have been unmistakable proof within the film of a fatal shot from the front; whereas a “head snap” is something whose causes could be debated endlessly, without any final resolution.

Those who altered the Zapruder film knew that the wound alteration images in frames 317, 321, 323, 335, and 337, for example, were “good enough” to show investigators the film on a flimsy movie screen coated with diamond dust, but they also knew the alterations were not good enough to withstand close scrutiny. That is why I believe C.D. Jackson---the CIA’s asset at LIFE and its best friend in the national print media---instructed Richard Stolley to again approach Abraham Zapruder on Sunday night, and to offer a much higher sale price for Zapruder’s movie, in exchange for LIFE’s total ownership of the film, and all rights to the film. By Sunday night, the name of the game at LIFE was suppression, not profit-making. By Sunday night, November 24th, C. D. Jackson was wearing his CIA hat, not his Time, Inc. businessman’s hat. After striking the new deal with Time, Inc. on Monday, Zapruder received an immediate $25,000.00, and the remainder of his payments ($25,000.00 per year, each January, through January of 1968), were effectively structured as “hush money” payments. His incentive to keep his mouth shut about the film’s alteration would clearly be his desire to keep getting paid $25,000.00 each January, for the next five years.

The alterationists in 1963 also had a “disposal” problem, for they had three genuine “first day copies” of the Zapruder film floating around which threatened to proliferate quickly, unless they could get them out of circulation immediately, replaced with new “first generation copies” struck from the new “Hawkeyeworks” master delivered to NPIC on Sunday night.

For them, speed was of the essence, not perfection. I believe that once the new “master” was completed at “Hawkeyeworks” early Sunday evening, three new first generation copies were struck from it, as well as at least one “dirty dupe” for the LIFE editorial crew standing by in Chicago. Only after these products were exposed at Rochester, early Sunday evening, was the “new Zapruder film” (masquerading as an unslit, 16 mm wide camera-original “double 8” film) couriered down to NPIC by “Bill Smith,” who took his cock-and-bull story along with him, to his everlasting discredit.

Of course, the cock-and-bull story worked, since Homer McMahon and Ben Hunter knew nothing about the event with the true camera-original film at NPIC the previous night. McMahon and Hunter had no reason, on Sunday night, 11/24/63, to disbelieve “Bill Smith” when he told them that he had brought “the camera-original film” with him, after it had been “developed” at Rochester. After all, the product handed to them looked like a camera-original “double 8” film: it was a 16 mm wide unslit film, with sprocket holes on
both sides, and exhibited opposing image strips, upside down in relation to each other, and going in reverse directions.

I am quite sure that by Tuesday, November 26th, all of the original “first day copies” had been swapped out with the three replacements made at “Hawkeyeworks” Sunday night from the new “original.”

NPIC finished up with the new “original” Zapruder film by some time Monday morning, November 25th, or perhaps by mid-day Monday at the latest. McMahon went home after the enlargements (the 5 x 7 prints) were run off, but the graphics people at NPIC still had to finish assembling the three sets of four panel briefing boards.

And the rest is history. Now, through the magic of high resolution digital scans—technology undreamed of in 1963, in an analog world—the forgery and fraud of November, 1963 is being exposed, slowly but surely. Alterations that were “good enough” to hold up on a flimsy, portable 8 mm movie screen back in 1963, look quite bad—very crude—today, under the magnifying glass of today’s digital technology.

The two back-to-back “briefing board events” the weekend of President Kennedy’s assassination at the CIA’s National Photographic Interpretation Center (NPIC) in Washington, D.C.—compartmentalized operations bracketing the Zapruder film’s alteration at the “Hawkeyeworks” lab in Rochester, N.Y.—are the signposts that illuminate for us, like two spotlights piercing the night sky, the hijacking of our nation’s history almost 49 years ago.

The Zapruder film was altered by the U.S. government, using clandestine, state-of-the-art Kodak resources in Rochester, to remove the most egregious evidence within the film of shots that came from in front of JFK’s limousine. The true exit wound in the rear of his head was blacked out in many frames; frames showing exit debris from the fatal head shot propelled violently to the left rear were removed from the film; and a false “exit wound” was added to many of the image frames, in an attempt to support the lone assassin cover story. The altered film is one of the strongest proofs of a massive government cover-up following President Kennedy’s death, and the intelligence community’s third party surrogates are doing all they can, today, to deny that the film was ever altered, and discredit this story. I believe the facts speak for themselves.

I will close now with this cautionary quote for those skeptics, unwilling to let go of a discredited paradigm, who still feel compelled to defend the Zapruder film’s authenticity:

“It is misleading to claim that scientific advances and scholarly experiments can cause all photo fakes to be unmasked. Questions about authenticity remain. Many photos that once were considered genuine have recently been determined to be faked.”

---Dino Brugioni, author of Photofakery: the History and Techniques of Photographic Deception and Manipulation, 1999
The panel voted its decision on June 16, 1999, but did not announce its decision publicly until August 3, 1999, due to its sensitivity over the death of John F. Kennedy Jr. in a plane crash.


3 Horne, 2009, p. 1220-1226

4 Ibid., p. 1231.

5 Roland J. Zavada, *Analysis of Selected Motion Picture Photographic Evidence* (September 25, 1998), Attachment A1-8 (Meeting Minutes of Discussion between Roland Zavada, Phil Chamberlain, and Dick Blair), and Attachment A1-11 (Phil Chamberlain’s original manuscript regarding events related to the handling and processing of the Zapruder film at the Kodak Plant in Dallas).


8 Zavada, 1998, Study 1, p. 27.


11 Trask, 2005, p. 131; and Wrone, 2003, p. 34-35.


20 ARRB interview of Homer A. McMahon conducted on July 14, 1997 by Douglas Horne.


23 Trask, 2005, p. 122.

24 ARRB interview of Homer A. McMahon conducted on July 14, 1997 by Douglas Horne.


27 HD Video interview of Dino Brugioni conducted on July 9, 2011 by Douglas Horne.

28 Ibid.

29 Ibid.

30 Handwritten Memo for File written by H. Knoche on 5/14/1975.


32 Horne, 2009, p. 1295-1296

33 Ibid., p. 1296.

34 Ibid., p. 1201-1205.
Ibid., p. 1352-1363.

Ibid., 1299-1302.

Zavada, 1998, Attachment A1-1C, “Film Map of Original Zapruder Film” (prepared by ARRB staff member Douglas Horne following examination of the extant Zapruder film on April 4, 1997, at the National Archives)