

Chapter 6, Part X: Zapruder Film (Draft # 1, As of June 15, 1998)

A. Kodak studies of Zapruder film edge print identification, and other “provenance-related” issues pertaining to the Zapruder film designated by NARA as the out-of-camera original, and those copies believed to be first-generation; as well as Kodak evaluation of the mechanical and optical operating characteristics of Zapruder’s Bell and Howell 8 mm home movie camera, grew out of wide ranging discussions of a host of photographic issues between the ARRB staff and Eastman Kodak officials. As discussions progressed, they narrowed, over time, to two principal topics: Zapruder film issues and issues related to autopsy images. Provided below is a synopsis of the evolution of those discussions and negotiations, culminating in a description of the anticipated report the Review Board expects to receive from Eastman Kodak regarding Zapruder film and other (non-autopsy) film issues. [Kodak *pro bono* work with autopsy images of President Kennedy is discussed in detail in the ARRB Staff Medical Memo.]

Following tentative telephone discussions in the Spring of 1996 between ARRB staff (who initiated the contact) and Eastman Kodak officials regarding possible examination by Kodak of a very broad range of assassination-related films, a face-to-face meeting was held at the ARRB offices on June 11, 1996 between key ARRB staff members in this area (David Marwell, Jeremy Gunn, Tim Wray, and Douglas Horne) and Mr. Fred Williamson of the Eastman Kodak Company, Director of Imaging Technology Policy for Federal Government Relations. At the request of Mr. Williamson, ARRB staff prepared a letter that defined in writing our broadest possible range of potential interests, and forwarded to Kodak previous photographic reports prepared by consultants and research institutions for the HSCA. This ARRB letter, dated July 26, 1996, was forwarded by Mr. Williamson to Eastman Kodak Technical and Laboratory personnel in Rochester, New York for study.

Subsequently, on August 8, 1996, Mr. Jim Milch, Director of the Imaging Science Division Research Laboratories for Eastman Kodak in Rochester, contacted ARRB staff and suggested that the ARRB consider digitizing and placing several motion picture films of the assassination on CD ROM format for preservation purposes; he also said that he had located a retired Kodak 8 mm film expert who would be available to answer any 8 mm film questions the Review Board staff might have.¹ During this phone conversation, ARRB staff extended an invitation for Kodak technical personnel from Rochester to come to Washington to discuss film issues in greater detail. Kodak agreed.

¹See Douglas Horne Call Report dated August 8, 1996.

It was during Kodak's subsequent September 11, 1996 visit to Washington that Kodak and the ARRB staff (David Marwell, Jeremy Gunn, Doug Horne, and Dave Montague) narrowed discussion to three major areas of interest: the Zapruder film; autopsy images; and films and photographic images provided to the ARRB for examination by Robert Groden in response to subpoena.² That day, the two Kodak officials (Mr. Milch, and the retired 8 mm film expert, Mr. Roland J. Zavada) and ARRB staff examined the following items at NARA: the original Zapruder film; Zapruder Secret Service Copy # 2; JFK autopsy images # 15, 16, 42, 43; JFK post-mortem x-rays # 1 and 2; superior and inferior brain images in the Deed-of-Gift collection; the roll of 120 film in the Deed-of-Gift collection; Abraham Zapruder's Bell and Howell movie camera; and some of the Robert Groden material loaned to the ARRB.³ Kodak concluded during this visit that there *were* scientific techniques that could be applied to study of the original Zapruder film, and the autopsy images, to respond to questions and concerns raised over the years by some researchers and authors about authenticity, and that these tests would *not* repeat procedures performed previously by the HSCA.

On January 7, 1997, Kodak sent a letter to the ARRB in which they presented some preliminary results following their film examinations on September 11, 1996, and offered to contribute up to \$ 20,000.00 of labor and materials to the ARRB, equivalent to roughly 35 man-days of effort.

The ARRB responded to Kodak with a letter dated February 6, 1997 that defined, and prioritized, work items deemed of importance.

Eastman Kodak responded in writing in a letter dated April 14, 1997, that itemized by cost the expense of conducting the various tests identified by the ARRB staff in its letter of February 6, 1997. It became clear following receipt of this letter that the ARRB could not conduct every evolution on its "wish list" within the \$ 20,000.00 maximum cap for *pro bono* work so graciously offered by Eastman Kodak, and that further selectivity would be required by the ARRB, unless large sums were to be expended on photographic evolutions.

²See ARRB-generated subject outline titled: "Topics for Discussion Between ARRB and Kodak, September 11, 1996"

³See Douglas Horne Meeting Report dated September 11, 1996.

On August 21, 1997 ARRB staff members David G. Marwell (Executive Director) and Douglas Horne (Supervisory Analyst) met with Kodak officials in Rochester, New York to discuss, and attempt to finalize, *pro bono* work to be done for the ARRB by Eastman Kodak.⁴ At this meeting, Mr. Jim Toner, Laboratory Head of the Imaging Science Resources Lab, Imaging Sciences Division, was identified as the principal working point-of-contact for the ARRB staff for all matters related to digital enhancement work with autopsy images, and possible digital reproduction of the original Zapruder film. *Mr. Rollie Zavada, rehired by Kodak as a consultant, was identified as principal point-of-contact for all questions about operation of the Zapruder Bell and Howell camera, and perceived anomalies in the Zapruder film.* The results of this meeting are summarized in some detail in an ARRB Meeting Report.⁵ During this visit to Rochester, Kodak demonstrated techniques that would be used to obtain the best possible digitization of the Zapruder film (if such a tasking was ordered by the ARRB); discussed physical security and computer information security safeguards that would be used to safeguard autopsy images; discussed specific autopsy images that might be enhanced in order to study them in greater detail; *discussed edge-print analysis to be conducted on the original and first generation Secret Service copies of the Zapruder film, and possible tests that would explain the operation of Zapruder's camera.*

At the invitation of the ARRB staff, Mr. Jim Toner (Kodak Laboratory Head) and Rollie Zavada (retired Kodak 8 mm film expert) traveled to Washington and examined various films in the Archives on September 8 and 9, 1997, in preparation for Kodak's *pro bono* work for the ARRB.⁶ (Various Zapruder films were examined on September 8, and autopsy photographic images and x-rays were examined on September 9, 1998.)

It was during this visit, in September, 1997, that Kodak retiree Mr. Roland J. Zavada resumed his work as a Kodak part-time consultant studying Zapruder film "provenance" issues (film age, generation, and authenticity, as spoken to by date code, factory edge print, processing lab edge print, and punched code applied by the processing lab in the carrier strip), film optical "anomaly" issues, and the mechanical and optical operation of Zapruder's Bell and Howell 8 mm home movie camera. [The study of perceived optical "anomalies" in the original Zapruder film, and the mechanical and

⁴See topic outline titled: "Assassination Records Review Board-Kodak Meeting of August 21, 1997"

⁵See Douglas Horne Meeting Report dated August 22, 1997.

⁶See Douglas Horne Meeting Report dated September 15, 1997.

optical operating characteristics of the camera, go hand-in-hand. The question before Kodak was, "did normal operation of the camera cause the perceived optical anomalies in the film, or not? If so, how? If not, what are the implications?" It was agreed that in addition to performing certain specified work with the autopsy images (a subject dealt with in detail in the ARRB Staff Medical Memo), Mr. Zavada's work would be performed for the ARRB on a *pro bono* basis by Eastman Kodak, via the vehicle of a technical report written by him for his employer, Eastman Kodak.

The formatting of the technical report being prepared by Mr. Zavada for Eastman Kodak underwent considerable evolution. As of mid-June, 1998, Mr. Zavada's technical report was anticipated to have four major sections:

- (1) Edge print (manufacturing markings) analysis and supporting technical information (on markings applied by the processing laboratory) for the following Zapruder films: film designated by NARA as out-of-camera original, and all films designated as first-generation copies (USSS copies #1 and #2, the LMH Co. First-generation copy);
- (2) Edge print analysis of two 35 mm format films (Nix film and Muchmore film) provided to the ARRB for examination by Robert Groden in response to subpoena;
- (3) Study of the printing process--that is, the copying of the original Zapruder film and creation of the first-generation copies, namely: what printer was used; what were its characteristics; what should we expect to see on the first-generation copies; do we see those results, etc.? Studying film density and emulsion orientation, in concert with characteristics of the printer used, is essential to this analysis;
- (4) Features and Imaging Characteristics of Zapruder's Model 414 PD Bell and Howell Zoomatic Director Series 8 mm home movie camera.

ARRB staff requested in June, via Mr. Zavada, that Kodak prepare 4 each copies of Mr. Zavada's report (complete with enclosures).

B. An ARRB staff member interested in Zapruder film issues for many years (Douglas Horne), after familiarizing himself with both the purported early chain-of-custody of the film and its first generation copies (between November 22, 1963 and November 25, 1963), as well as the purported "optical anomalies" seen by some people in various portions of the film, received permission from the ARRB staff's then-Associate Director for Research and Analysis (T. Jeremy Gunn) to visually examine, in the National Archives, the film designated by NARA as the out-of-camera original film,

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as well as various copies (of differing generations) donated by the Secret Service, FBI, and Time, Inc.

The purpose of these examinations (approximately 5 in number) was not to reach any conclusions regarding authenticity, but rather, to accurately record, in data charts and memos, observations made that may pertain to authenticity issues, in the hopes that others could use the data in the future. Attention soon focused on the film designated as the out-of-camera original (placed in the Archives in a courtesy storage agreement by its owners, the LMH Co., in 1978), and the two copies at NARA believed to be first generation, Secret Service copies #1 and #2. Two key memos written that recorded Mr. Horne's observations are:

- “Examination of Zapruder Films Held by National Archives,” dated August 2, 1996 (with 7 attachments), ARRB file number 4.0.2 (Zapruder Film) ; and
- “Examination of Zapruder Film Original and Selected Copies at the National Archives,” dated April 9, 1997 (with 15 attachments), ARRB file number 4.0.2 (Zapruder Film).

Other memos related to Zapruder film issues that were written by Mr. Horne include:

- “Examination of LMH Company Zapruder Films in the Office of Jamie Silverberg on April 10, 1997, dated April 15, 1997 (with 2 attachments), ARRB file number 4.0.2 (Zapruder Film);
- “Rationale for Having an Independent Third Party Examine the Authenticity of the Zapruder Film,” dated August 6, 1996, ARRB file number 4.0.2 (Zapruder Film);
- “Topic Outline: Reasons Why Some Researchers Doubt the Authenticity of What Is Purported to be the Original Zapruder Film (prepared at the request of Jeremy Gunn),” dated March 28, 1997, ARRB file number 4.0.2 (Zapruder Film).

C. In response to FOIA leads from the 1970s provided at ARRB's request by Mr. Paul Hoch, namely, the FOIA release titled “CIA document 450,” ARRB staff located and interviewed two former employees of the CIA's National Photo Interpretation Center (NPIC), in an attempt to clarify the meaning of this document. It should be noted that the CIA's Historical Review Group (HRG) released this document in full--the two previous FOIA releases had some redactions--in 1993, and the original document, which consists of working notes written by hand, and a typed summary of the contents of four photo briefing boards, are in the JFK Collection in the National Archives. [One remaining set of 4 each Zapruder Film briefing boards--that is, four panels--is also in the JFK Collection, in the same flat that contains the original NPIC notes.]

The two individuals located by the ARRB staff, with the assistance of Mr. Barry Harrelson of the CIA's HRG (see June 17, 1997 Doug Horne Meeting Report), who remembered working with the

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Zapruder film at NPIC shortly after the assassination, and who remembered creating *part of* (although *not all of*) these notes, were Mr. Homer McMahon, who was in charge of the NPIC color still photography lab in November 1963; and Mr. Morgan Bennett Hunter (Ben Hunter), his assistant in the color lab at NPIC. Following initial telephone contacts, each man was interviewed in-person by the ARRB staff, as follows:

<u>Interviewee</u>	<u>Date Interviewed</u>	<u>Audiotaped?</u>	<u>Date of Meeting Report</u>
Ben Hunter (at HRG)	June 17, 1997	No	June 17, 1997 (Final Edit June 20, 1997)
Homer McMahon (at NARA, with original notes and briefing boards)	July 14, 1997	Yes	July 14, 1997
Both Ben Hunter and Homer McMahon (at NARA, with original notes and briefing boards)	August 14, 1997	No	August 14, 1997

A brief summary of the points upon which the two men agree is provided below:

- they exposed and developed color prints from individual frames of the Zapruder film the weekend of the assassination, prior to President Kennedy's funeral;
- they *did not* reproduce the film as a motion picture, nor did they have the capability in their lab to do so. The reference in the NPIC notes that reads: "shoot internegs...print test...make three prints @," refers only to the production of internegatives and color prints from selected individual frames of Zapruder's movie--not to reproduction of the motion picture itself, as some had speculated over the years;
- both of these men remembered creating some portion of the notes relating to the production of prints for briefing boards, but both men said they did *not* create the briefing boards themselves, nor did they create the portions of the notes that seem to equate with the shot-and-timing analysis in the December 6, 1963 issue of Life Magazine.

On other points, the memories of these two men are less certain. For example, Mr. McMahon recalled that the "customer" for this work was the Secret Service, and Mr. Hunter did not. Mr. McMahon *believed* (although he was not unequivocal about it) he was working with the original film, and that it had been delivered to him from Rochester, New York by the Secret Service, but Mr. Hunter recalled hearing nothing about Rochester, and recalled working with a 16 mm format film that was *not* an unslit "double-8," *i.e.*, the original film. Mr. Hunter recalled a "Captain Sands," a military officer at NPIC, delivering the film, whereas Mr. McMahon initially recalled "Bill Smith" of the Secret Service delivering the film to NPIC.

As a result of the ARRB's efforts, the NPIC notes on the Zapruder film have been demystified to some extent, although some uncertainties still remain: who constructed the briefing boards, and who conducted the shot-and-timing analysis, and exactly when, remains unknown.

D. ["Fate of the Zapruder Film"--this section can probably only be written by the General Counsel. I do not know of anyone else who has the corporate knowledge or legal expertise to draft this section.]