

MEMORANDUM

June 8, 1998

TO: Jeremy Gunn

FROM: Doug Horne

SUBJECT: Kodak *Pro Bono* Work With Autopsy Images: Input for Staff Medical Memo
(Corrected Copy: error in paragraph 2, on page 4, corrected)

Per your e-mail tasking of 5/04/98, following submission of my Draft # 5 of the Staff Medical Memo, you directed me to henceforth work solely on the Kodak *Pro Bono* work with JFK autopsy images, as a submission for the ending portion of the memo, as envisaged in my Staff Medical Memo outline.¹ Here is that input:

[Cut and paste all content below this point]

Kodak *pro bono* work with autopsy images of President Kennedy 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 (both photographs and x-rays, although principally photographs). Provided below is a synopsis of the evolution of those discussions and negotiations, culminating in a description of the actual work performed by Kodak with autopsy images of President Kennedy. [Zapruder film issues, and Kodak's involvement in attempting to clarify questions raised regarding the film, are addressed in more detail, as a separate subject, in Chapter 6 of the ARRB's Final Report.]

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

¹Draft # 5, page 11, dated May 4, 1998.

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.² 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.

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.³ 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.⁴ 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.

²See Douglas Horne Call Report dated August 8, 1996.

³See ARRB-generated subject outline titled: "Topics for Discussion Between ARRB and Kodak, September 11, 1996"

⁴See Douglas Horne Meeting Report dated September 11, 1996.

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.

Anticipating the probable need to transport JFK autopsy images from Washington to Rochester for evaluation, ARRB Chair John R. Tunheim signed out a letter on June 10, 1997 to Mr. Burke Marshall (Kennedy family Deed-of-Gift Executor), requesting permission to transport autopsy materials to Rochester for evaluation. On July 10, 1997, a favorable reply was signed out by Burke Marshall, allowing permission for subject materials to be moved to Rochester, providing the existing Deed-of-Gift provisions remained in effect for all new images, and that steps were taken by all concerned to prevent unauthorized purloining and publication of autopsy images.

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.⁵ 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.⁶ 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

⁵See topic outline titled: "Assassination Records Review Board-Kodak Meeting of August 21, 1997"

⁶See Douglas Horne Meeting Report dated August 22, 1997.

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.⁷ (Various Zapruder films were examined on September 8, and autopsy photographic images and x-rays were examined on September 9, 1998.)

The remainder of September, and all of October 1997, were devoted to working out the mechanics of safely transporting, handling, copying and enhancing selected autopsy images of President Kennedy among the ARRB, NARA, Kodak, and Mr. Burke Marshall. Many telephone calls were made, and important correspondence was exchanged⁸ between all parties, that culminated in a joint tasking to Kodak by the ARRB and NARA, approved by Burke Marshall, to *both* digitally copy selected raw images for posterity (without enhancement), *and* also digitally enhance key autopsy images during the first week in November, 1997 in Rochester, New York. Instrumental to the success of these coordinating efforts were (1) Mr. Steven Tilley of the National Archives, who played a vital role during September and October in facilitating multi-party communication and understanding of each other's needs among NARA, Kodak, the ARRB, and Mr. Burke Marshall, and (2) Mr. Jim Toner of Eastman Kodak in Rochester, who demonstrated the utmost in flexibility and customer focus during these negotiations.

⁷See Douglas Horne Meeting Report dated September 15, 1997.

⁸See NARA ltr from Michael J. Kurtz to T. Jeremy Gunn (ARRB), dated Oct 6, 1997; ARRB ltr from T. Jeremy Gunn to Michael J. Kurtz (NARA), dated October 16, 1997; ARRB ltr from T. Jeremy Gunn to Mr. Burke Marshall, dated October 22, 1997; NARA ltr from Michael J. Kurtz to Mr. Burke Marshall, dated October 28, 1997; and finally, Burke Marshall reply ltr to Mr. Steven D. Tilley (NARA), dated October 30, 1997.

The physical implementation of the Kodak evolution involving the digital preservation and enhancement of autopsy images of President Kennedy actually commenced on Sunday, November 2, 1997, and was completed on Friday, November 7, 1997.⁹ Summarizing, all 51 camera-original images (either black-and-white negatives, or color positive transparencies) were digitally scanned and preserved, and 19 selected images out of the 51 total were digitally enhanced. The raw digital images and enhanced digital images were stored on JAZ cartridges; for both the raw scans, and enhanced images, there is both an original, and a copy, of that particular JAZ cartridge. In addition, the three very dark, "latent" images found on a roll of 120 film from the autopsy were preserved on JAZ cartridges in enhanced-only format. A total of 26 JAZ cartridges were created during this project: 10 containing original raw-scans, plus ten copies; and 3 containing enhanced images, and 3 copies. In addition, for convenience, a total of 89 enhanced images were printed on color paper, as follows: 19 were full-frame images, and the remainder were either various magnifications, or repeats.

Selected

x-rays of President Kennedy, although not copied digitally, were visually examined by a Kodak expert and his comments were recorded by an ARRB staff member contemporaneously in a data log.

Kodak produced both a technical report, and three associated working data logbooks, created during the work done the first week in November, 1997, as a record of what each image represents.¹⁰

All images produced during this process are subject to the same Deed-of-Gift provisions as the other Kennedy autopsy materials.

The value of Kodak's *pro bono* work to posterity cannot be overestimated. All film images, no matter how well preserved, eventually deteriorate. When this eventually happens to the autopsy images of President Kennedy, theoretically perfectly preserved digital raw scans of all of the images, and enhanced scans of selected images, will already be on hand, with the image condition as of November, 1997 recorded for future historians and researchers. Kodak's estimate of the value of the autopsy image work alone (separate from their study of Zapruder film edge print and Zapruder camera operation) is that the goods and services received were worth approximately \$ 55,000.00.

⁹See Douglas Horne Meeting Report dated November 13, 1997 (Corrected on January 22, 1998) for full details.

¹⁰See Kodak Technical Report, Kodak Accession Number 317089P, dated 2/6/98; and the following three black cloth-bound data logs: Nos. BB 7851, BB 7856, and BB 7857.

