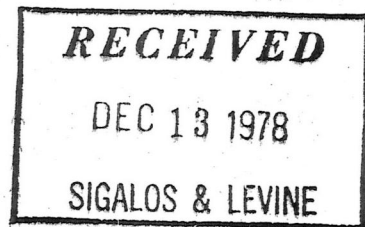


THE AEROSPACE CORPORATION

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11 December 1978



Mr. Michael Goldsmith  
Senior Staff Counsel  
Select Committee on Assassinations  
U. S. House of Representatives  
House Office Building, Annex 2  
Washington, D. C. 20515

Dear Mickey:

On 2 December 1978, a meeting was held at The Aerospace Corporation to view and evaluate a movie film which was taken by Mr. Charles L. Bronson at Dealey Plaza approximately five minutes prior to the assassination of President Kennedy. The meeting was arranged by Ms. Jane Downey of the Select Committee on Assassinations and was attended by Al Hall, Harold Levine, and John Sigalos of the law firm Sigalos and Levine representing Charles Bronson and by the following photographic and Digital Image Processing technical experts: Harry Andrews and David Garber of USC; B. R. Hunt of the University of Arizona; Robert Selzer of Jet Propulsion Laboratory; N. K. Baker, E. A. Larson, C. J. Leontis, J. R. Parsons, D. M. Rosenthal of The Aerospace Corporation; Al Mandl, consultant to Aerospace Corporation; and R. P. Chiralo, formerly with Aerospace Corporation.

Mr. John Sigalos brought an 8 mm color movie film which he said that Mr. Bronson took with a Keystone camera at 12 frames per second, a 16 mm color copy which according to Mr. Sigalos had been generated by Mr. Bob Groden, and a set of 35 mm slides showing the area around the 6th floor window of the Texas School Book Depository Building also made by Bob Groden although Mr. Sigalos did not know whether the slides were made from the 8 mm original or from the 16 mm copy.

Following some brief remarks by Mr. Sigalos regarding the circumstances surrounding the Bronson film and Mr. Groden's involvement, the participants were shown the following:

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- a. Several 35 mm color slides which were enlargements from either the Bronson original 8 mm movie or the 16 mm copy showing the area around the 6th floor window of the Texas School Book Depository Building. In addition to viewing these slides slowly and in rapid succession, several pairs of slides were superimposed on the same screen using two projectors, and they were switched back and forth from one slide to the other in order to enhance any differences between frames and assess whether or not such differences might be attributed to motion behind the window.
- b. A 16 mm copy of the Bronson movie film and 16 mm enlargements of the area around the 6th floor window of the Texas School Book Depository Building. This 16 mm film which Mr. Sigalos identified as the Groden film was projected at a variety of frame rates ranging from stop frame to 24 frames per second.
- c. Several frames of the original 8 mm Bronson film were viewed under a microscope. One frame was selected in which the area around the 6th floor window of the Texas School Book Depository Building was scanned in color in the PDS microdensitometer with a 5 micron aperture and 2 micron line spacing and displayed on the COMTAL with varying degrees of contrast enhancement interactively applied. The enclosed color print which was generated in the Dicomed D-47 display unit shows the exact area of the frame which was scanned and displayed. All this was done in The Aerospace Corporation's Digital Image Processing Laboratory during the 2 December meeting. The experts recommended not to show the 8 mm original film in order to avoid any possibility of damage and because our 8 mm projector could not be operated at variable frame rates. Viewing the film at normal frame rates and without magnification of the area of interest was not considered useful enough to warrant even a small risk of damaging the original film.

Following is a summary of observations and conclusions by the experts present at this meeting:

1. The Bronson film, although taken from a slightly different angle than the Hughes film, shows about the same area around the 6th floor window of the Texas School Book Depository Building, but the Bronson film is of superior quality compared to the Hughes film. This observation is based on viewing the original 8 mm Bronson movie film under a microscope and the 6th floor window portion of a digitized frame on the COMTAL display.

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2. If the Bronson film had been available earlier, the experts would have recommended that it be analyzed along with the Hughes film.
3. Following careful examination of the Groden 35 mm slides and 16 mm movie film, the experts at this meeting could not say conclusively whether or not the frame-to-frame changes in the 6th and 5th floor windows were due to real motion behind the windows. The experts disagree unanimously with Mr. Groden that "you can actually see one figure walking back and forth hurriedly" as he was quoted by The Dallas Morning News on 26 November 1978. A more definitive conclusion may result through computer processing of selected frames from the 8 mm Bronson original. The experts also feel that a good quality 16 mm photographic copy with the area of interest enlarged could be of interest.
4. In viewing Groden's 16 mm copy of the Bronson film and recalling from memory the Hughes film and the computer processed frames of the Hughes film, the experts observed similar dynamics in the two films; i. e., the apparent motion in the windows seems to be random and therefore it is not likely to be due to human motion behind the window. Again, this observation is based primarily on our past experience with the Hughes film. Computer analysis of the Bronson film similar to that applied to the Hughes film may clarify this issue especially since the Bronson film is of superior quality to the Hughes film.

In accordance with our telephone conversation, I am sending a copy of this letter to each participant in the 2 December meeting at Aerospace with the request that they review it and submit corrections or additional comments directly to the Select Committee.

Very truly yours,  
THE AEROSPACE CORPORATION  
*Charles J. Leontis*  
C. J. Leontis, Director  
Optical Systems Department

CJL:peg