February 3, 1964

Honorable J. Lee Pankin
General Counsel
The President's Commission

200 Maryland Avenue, N. E.O. Washington, D. C.

Dear fir. Ranking

At the request of members of your staff the FBI daboratory has made a further study of the film speed of the camera used by Er. Abraham Zapruder in filming the eight millimeter motion picture of the President's assassination. You have previously been furnished the results of the Laboratory examination of this camera which places the film speed at 18 1/3 frames per second. The Laboratory was requested to establish, if jossible, the variation between the film speed of the camera when the drive spring is fully wound and when the spring is almost rum down.

This study has been made by checking the film speed of the Zupruder canera at ten second intervals throughout the full running time of a fully wound camera. Several checks were made-on a full roll of film and it was found that the film speed of the conera when fully wound runs at an average speed of from 18.0 to 18.1 frames per second (fps) for the first ten seconds. It gradually increases to 18.3 to 18.5 fps or the next thenty seconds, then gradually decreases slightly o la.1 fps for ten seconds before the final twenty seconds hat run at an average speed of 17.6 to 17.9 frames per second. Ir. Zapruder has stated that the camera was fully wound when ic started filming the President's motorcade. Since all of 'r. Zapruder's assassination film was exposed well within the Hirst half of time the camera will run on one winding, the ru down file speed should not be considered in the calculations Therefore, the above figures result in our previous average frames per second speed for the assassination film of 18 D73 18.3 frames, per second.

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