105-82555

1 - Mr. Conrad - Encl.
1 - Mr. Belmont - Encl.
1 - Mr. Rosen - Encl.
1 - Mr. Sullivan - Encl.
1 - Mr. Malley - Encl.

February 18, 1964

REC 12 - 2086

By Courier Service

Honorable J. Lee Rankin
General Counsel
The President's Commission
200 Maryland Avenue, Northeast
Washington, D. C. 20002

Dear Mr. Rankin:

Your letter of February 12, 1964, has been received.

Attached hereto is a detailed description of the procedure involved in comparing and in identifying the firearms evidence in this matter. In accordance with your request, this description has been prepared along the lines of testimony as given to a lay jury.

If you desire, a firearms identification specialist can be made available to appear before the Commission to testify concerning his findings.

ENCLOSURE ATTACHED

Sincerely yours,

J. Edgar Hoover

ENCLOSURE

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Enclosure

NOTE: This matter was discussed orally with Mr. David Belin of the Commission to find out specifically what was wanted since the [illegible] was not clear. Belin indicated that the Commission may eventually want testimony in regard to the firearms evidence and desired the requested information for study with [illegible].

RHJ:KO (8)

Tolson
Belmont
Mohr
Casper
Callahan
Conrad
DeLoach
Evans
Gale
Rosen
Sullivan
Tavel
Trotter
Tele. Room
Holmes
Gandy

February 18, 1964

The identification of the bullet and the two portions of bullet jacket is based on a comparison of microscopic marks left on these specimens with microscopic marks left on test bullets fired from Oswald's rifle. The microscopic marks are the result of the bullet scraping over the inside of the barrel of the rifle when it is fired. The marks in the barrel originate as the result of manufacturing processes and as a result of changes in these manufacturers' marks through subsequent use of the weapon and from corrosion of the barrel. In general, when a gun barrel is made, it is bored and reamed. This operation produces circular microscopic marks on the inside of the barrel. Spiral grooves or rifling grooves are then cut or pressed into the barrel, removing some of the circular scratches and in turn leaving minute scratches from the cutting edge or surfaces of the rifling tool. Because of the manner in which the barrel is made, the pattern of scratches in each barrel manufactured will be different. Experience has shown that no two barrels, even consecutive barrels made on the same machine, will produce the same intricate pattern of microscopic marks on the surfaces of bullets fired through them. The marks themselves are not subject to verbal description because of their nature. Further, identifications are based on orientation of the marks as well as on their shape and size rather than on the number of marks present. The bullet, C1, and two portions of bullet jacket, C2 and C3, recovered in connection with the assassination of President Kennedy possessed microscopic marks comparable to those on test bullets obtained from Oswald's rifle. To determine whether or not the microscopic marks on the evidence and test bullets were comparable, a comparison microscope was used. This microscope is so constructed that the fields of view from two microscopes are optically brought together so that the firearms examiner can see the surfaces of two different objects at the same time side by side. In this way the magnified surfaces of two bullets can be directly compared.

The bullet fragment, C3, was placed on the left side of the comparison microscope and a test bullet which had been fired from the gun, C 14, into a cotton-filled box to protect any barrel markings left on it, was placed on the right side of the microscope. Whether or not two bullets were fired from the same barrel can be determined only as the result of a microscopic comparison such as described above by a firearms identification specialist trained in this type of laboratory examination. In this case, independent examinations by

Enclosures (5)

several of the top firearms identification specialists in the FBI Laboratory resulted in identical, independent conclusions that the bullet fragment, C3, was fired from Oswald's rifle.

Similar microscopic examinations were made in which specimens C1 and C2 were compared with test bullets obtained from Oswald's rifle. As a result of these examinations, it was concluded that specimens C1 and C2 were also fired from Oswald's rifle. Enclosed are photographs showing some of the microscopic marks appearing on the C1, C2 and C3 bullet evidence and some of the marks appearing on a test bullet obtained from the C2 rifle. These photographs in no way entered into the conclusion reached by the firearms identification specialists but are enclosed merely for demonstrating the character of the marks present on the specimens.

The identification of cartridge cases as having been fired in a particular weapon is based on the examination of marks left on cartridge cases by the breech face or bolt and by the firing pin of the weapon. The marks on the weapon are impressed into the head of the cartridge due to the pressure of the explosion which forces the cartridge case to the rear. These marks originated in the weapon during the manufacture when the face of the breech or bolt is formed by machining or filing and when the firing pin is shaped in manufacture by filing, machining or polishing or by subsequent wear and corrosion of these parts. It has been found that no two firing pins nor two bolt or breech faces bear the same microscopic marks even though consecutively manufactured. Each cartridge fired in a particular weapon will be marked in such a way that it may be possible to identify the cartridge case with the weapon in which it was fired.

The three 6.5 mm. cartridge cases, C6, C7 and C38, recovered in the Texas School Book Depository Building were compared with test cartridge cases fired in Oswald's rifle. The comparisons were made by placing the three cartridge cases, C6, C7 and C38, individually on the left side of the comparison microscope and a test cartridge case obtained from Oswald's rifle, C11, on the right side of the comparison microscope. The magnified images of the breech face marks and firing pin marks on specimens C6, C7 and C38 were compared with the marks on the test cartridge case. It was concluded as a result of these comparisons that