

to make it possible to separate these samples into two groups. Apart from these few microscopic details I found that an amazingly faithful reproduction of the so-called Hiss machine had been fabricated in almost every respect.

I made a similar examination of further samples which Mr. Lane sent to me on December 31, 1951, and reached the same conclusion. I separated the samples into two groups and informed Mr. Lane of my results. Again I felt that I had successfully differentiated the typing of the two machines, but only on the basis of a few specific characteristics. Except for these subtle details, I found that the microscopic variations on one machine had been duplicated on the other so faithfully that I might not have believed it possible if I had not been informed that two machines were involved.

After these preliminary experiments Mr. Lane informed me which specimens were typed by one machine and which from the other (confirming the conclusions I had already reached), and on January 7, 1952, provided me with some identified samples from both machines which were typed by the same typist using the same ribbons and a similar variation of pressures for both sets of samples. I thereupon took twelve characters appearing in each set and made eight to twelve photomicrographs (7.6X) of each, using a different imprint for each exposure of the same character, some made by one machine and some by the other.

These photomicrographs (7.6X), which are included herewith as Series A, were made with a Leitz Ultropak microscope, a fluorescent microscope table lamp, and a Land Polaroid camera. Each of the series of letters included was photographed under identical conditions of magnification, illumination, and photographic processes and no further enlargement was made of these magnified details. Orthochromatic Polaroid Film No. 36 was used. The precision controls of the automatic printing and developing processes in the Land Polaroid camera and film allowed for a series of similar letters from various documents to be photographed under conditions as nearly identical as is possible. By taking the photography of these details through a microscope it was possible to obtain a magnified image of each letter without the usual kind of distortion which is inherent in most types of photographic enlarging and copying processes.

Duplicate prints of Series A were also copied with a Polaroid camera and Polaroid film. This was done without any further enlargement of the photomicrograph, and made it possible for all duplicate prints to be made with the same precision controls of printing and developing as the originals. However, it will be noted that the duplicates (as in all photographs of photographs) do not show some of the fine details which can be seen on the original photomicrographs.

The original set of these photomicrographs of similar characters from both machines is attached to the original of this affidavit and a set of the duplicates is attached to an executed carbon hereof.

I have not indicated which machine was used to type these individual characters in Series A. However, each of the photographs is identified by a number and I have carefully noted the machine used for its typing and the document from which the detail was made in a code book which is in my possession.

After this experiment was made Mr. Lane suggested that I read the testimony given by the Government's expert, Mr. Ramos C. Feehan, in the second trial in the Hiss case, and familiarize myself with the