



FEDERAL FORENSIC ASSOCIATES, INC.

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July 12, 2001

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RE: Minovitch v. Battin, et al.

EXHIBITS

A-1 Log book No. 5, 17701-20700, July 1960 to November 1961, from the Draper Laboratory

A (2 & 3) 2 single sheets of computer paper containing printed material

B A series of original negatives within cellophane envelopes, 18831-18836 and 18937, and others randomly selected

C binder labeled "Astronautical Guidance 16.46 Lecture Notes, Richard H. Battin

D series of glass slides numbered from 14929-2 to 18937-1

REPORT OF LABORATORY EXAMINATION

A physical examination, including microscopy and photography, was conducted upon the above referenced exhibits at the Draper Laboratory. At that examination various samples were removed and subsequently subjected to chemical testing, including thin layer chromatography (TLC). The following results and observations were noted.

1. The page of Exhibit A-1, which contained the notations for slides 18831-18836 and 18937, pages 58 and 62, were found to contain a single blue-black fountain pen ink. Comparison of this ink formulation with a standard reference collection yielded results indicative of the ink formulation of Exhibit A-1 being manufactured by the Sheaffer Pen Company and first commercially available in 1954. This is consistent with the dates that appear on the pages referenced above.
2. A comparison of the printed material, informative text, appearing on Exhibits A (2&3) yielded results consistent with a single type style and a single ink formulation. This indicates production of the exhibits with the same type of printing mechanism, but does not indicate the timeliness of the production of the exhibits. Exhibits A (2&3) contained red printed numbers on their reverse side. These numbers were coincident with the edge the exhibits would have in common were they once attached. An examination of these numbers yielded

- several interesting observations. Exhibit A-2, which contains approximately 18 lines of information, contained the red numerals "276" and Exhibit A-3, which contains the date 01-26-61, contained the red numerals "56". In combining the exhibits along the common perforation the red numerals form the sequence "56276". Several factors suggest that these pages were not originally attached in this manner. (1. Exhibit A-3 contains remnants of red ink, similar in appearance to the ink used for the numerals, on the edge adjacent to Exhibit A-2, but in positions inconsistent with the numeral "2", the numeral from Exhibit A-2 which would be adjacent to Exhibit A-3. (2. The perforations of the exhibits do not appear to coincide in either placement or condition, which would be expected if the exhibits were previously attached. (3. Due to the large disparity in numeral ranking, 56 vs. 276, the exhibits could not have been coincident pages attached in another sequence. Attachment A is an illustration of the above referenced conditions.
3. An examination of Exhibit B yielded the presence of photographic negatives of approximately 4 7/8 by 3 7/8 inches in cellophane envelopes. The negatives were labeled 18831-18835 and 18937 in blue ink and the same labels existed on the cellophane envelopes in black ink. The envelopes of the negatives 18831-18836 were also stamped with the date 2-7-1961 and of 18937 with the date 2-16-1961. The disparity of ink color between the envelopes and the negatives is of concern, and in light of what appears to be a chemical treatment of the area which contains the numbers on the negatives, a suggestion of removal of prior numbering is supportable. Due to the nature of the material of the negative a chemical examination of the blue ink was not conclusive as to manufacturer or commercial availability date. The black ink was found to match a standard reference ink formulation manufactured by the Sanford Company and first commercially available in 1971. Another curious feature of the above referenced negatives is the manner and equipment used in their production. Negatives of this size and content are normally produced by attaching the subject matter to a support by means of tape. In the instance of the referenced negatives the support bears the name "Consolidated International Equipment and Supply Co", while other examined negatives do not contain this name or reference. This would suggest production of the negatives in a manner and at a location different from other examined negatives. The absence of any reference to the MIT Instrumentation Laboratory would suggest the referenced negatives were prepared outside this location.
 4. Exhibit C contains 4 different packets of paper consisting of preprinted documents and handwritten notes. No evidence could be found to indicate any substitution of pages within the various packets. The handwritten notes were examined chemically and compared with our standard referenced collection of ink formulations. A single black ball pen ink formulation was

found among the examined entries. This ink formulation was similar to standard ink formulations manufactured by both the Parker Pen Company and Formulabs, Incorporated. The commercial availability date for these ink formulations dates to the middle 1950's.

5. Exhibit D was a series of glass slides which approximated the images of the negatives of Exhibit B, numbers 18831-18836 and 18937. These glass slides were approximately 4 by 3 ½ inches with an image area of 2 7/8 by 1 ¾ inches and an image consisting of both colored and, black and white components. Each slide was numbered with the corresponding negative number (Exhibit B) in blue ball pen ink on a piece of masking tape. A chemical examination of the blue ball pen ink from slide numbered 18831-2 in comparison with a standard reference collection of ink formulations resulted in a similarity to standard ink formulations manufactured by the Bic Pen Company and Formulabs, Incorporated. The commercial availability date for these ink formulations dates to the middle 1950's.

Conclusions: The presence of inconsistent markings and perforations on Exhibits A (2&3) is indicative of separate preparation and not simultaneous preparation. These exhibits were more probably than not, prepared during two different and distinct time periods. The original negatives, numbered 18831-18836 and 18937 (Exhibit B), were most probably labeled in 1971 or later, not 1961, as indicated by the date. This suggests that the negatives referenced in Exhibit A-1 were removed and Exhibit B was substituted. The manner and location of production of the negatives of Exhibit B is inconsistent with other negatives which were produced in the MIT Instrumentation Laboratory. Other evidence obtained was not conclusive regarding the date of preparation or production of the examined exhibits.



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