

**QD SOP-17 Procedure for Examination of Fracture
Patterns and Paper Fiber Impressions on Single-Strike
Film Ribbons and Typed Text**

Document ID: 2196
Revision: 1
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Status: Retired
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Approved by Director: Dr. Guy Vallaro

Purpose: Procedure for Examination of Fracture Patterns and Paper Fiber Impressions on Single-Strike Film Ribbons and Typed Text

This procedure provides guidance that should be used by forensic document examiners for examinations and comparisons involving single-strike film ribbons with typed text and related procedures. These procedures are applicable whether the examination and comparison is of Questioned and Known items or of exclusively Questioned items. This type of evidence may include the examination of lift-off and cover-up correction tapes and sheets, carbon paper and carbon copies or of documents produced with certain non-impact printing devices (for example, printing devices using a thermal imaging transfer ribbon).

By following these procedures, a forensic document examiner can reliably reach an opinion concerning whether a particular single-strike ribbon or lift-off correction tape was used in the preparation of a specific typed text. The reaching of an opinion may be affected by interferences such submission of non-original documents, limited quantity or comparability, or condition of the items submitted for examination (for example, the condition of the ribbon or the paper, or both). The nature of the paper can affect the quality and quantity of fiber impression(s) as well as ink transfer and retention. Results may also be affected by inappropriate prior storage and handling of the evidence items. Previous testing or chemical processing (for example, for latent prints) can interfere with the examination of certain characteristics.

Responsibility:

Forensic Science Examiners assigned to the Questioned Documents Unit or performing casework in the Unit

Equipment:

1. Lighting (natural, fluorescent) and alternate light sources. Lighting may include the use of transmitted, side or vertical lighting to improve the ability to view fine details.
2. Stereomicroscopes with fiber-optic lighting
3. Scanners
4. Cameras

Procedure:

**State of Connecticut Department of Emergency Services and Public Protection
Division of Scientific Services**

Documents outside of Qualtrax are considered uncontrolled.

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The Questioned Document Unit will usually be the first Unit to receive evidence for analysis. In the event that another Unit examined this evidence first, it should be understood that there may be analysis methods that may limit the examination of fracture patterns and paper fiber impressions on this evidence. Prior handling, testing, or chemical processing (for example, for latent prints) or swabbing of this evidence may interfere with the ability of the examiner to see certain characteristics.

1. Beginning of examination: Refer to QD SOP-3 for guidance on transferring, LIMS documentation and evidence identification.
2. During the examination procedure, the examiner may use different types of lighting and magnification (such as stereomicroscopes) to examine the evidence. Natural light, incandescent sources, fiber optic light guides and sources are generally utilized. Transmitted lighting, side lighting, and vertical incident lighting may be utilized to visualize the detail. The documents may be scanned or photographed to preserve the detail that was located and for incorporation into the case notes.

All observations are recorded on the QR DOC-2 or the case notes associated with the examinations.

3. The following procedures should be performed when applicable. These procedures should be performed in the order given. If at any point during the examination, a determination that a particular feature is not present or that an item is lacking in quality or comparability may indicate that the examiner should discontinue or limit the procedure(s). It is at the discretion of the examiner to discontinue the procedure at that point and report accordingly or to continue with the applicable procedures to the extent possible. The reasons for such a decision shall be documented.
4. Determine whether any original typed text is present. If no original typed text is present, a paper fiber examination is not applicable. When the non-original typed text is of sufficient quality, a limited fracture pattern comparison of gross features may be possible.
5. Determine the type of ribbon used to prepare the typed text on the document. If fabric or multi-strike film ribbon, discontinue these procedures and report accordingly.
6. Determine, if possible, whether the ribbon type is consistent with the original typed text (for example, lift-off compatible or permanent).

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7. Determine if the type style on the document is present on the ribbon. A ribbon can contain more than one style of type, if more than one type of print is present, note the differences and record this information with photographs.
8. Determine whether the text on the document is present on the ribbon. This can be determined by visual inspection.
9. Determine whether the text on the ribbon and the text on the document match in all details, including errors and corrections.
10. Determine whether the fracture pattern of characters on the ribbon match those of corresponding characters on the document.
11. Determine whether there are areas of un-transferred ink within the void area of a character on the ribbon that match a void within the outline of the corresponding character on the document.
12. Determine whether there are impression(s) of paper fibers within the void area of a character on the ribbon that match paper fibers within the inked area of a corresponding character on the document.
13. Evaluate fracture pattern and paper fiber matches and discrepancies, and any limitations. Determine their significance individually and in combination.

Reporting of Results:

The conclusion(s), opinion(s), or findings resulting from the procedures in this standard may be reached once sufficient examinations have been conducted. The basis and reasons for the conclusion(s), opinion(s), or finding(s) should appear in the examiner's documentation and may also appear in the report. The following conclusions may be concluded at the completion of the examination:

- 1) **Identification**—When the examination reveals no significant, inexplicable differences between the ribbon and the typed text, and there is significant agreement in all individualizing characteristics, an identification is appropriate.
- 2) **Elimination**—If significant, inexplicable differences between the ribbon and typed text are found at any level of the analyses, an elimination is appropriate.
- 3) **Qualified Opinions**—When there are limiting factors and the examination reveals similarities or differences of limited significance between the ribbon and typed text, the use of qualified opinions can be appropriate. Agreement of typestyle(s) or relevant text, or both shall be reported.

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- 4) **No Conclusion/Inconclusive**—When there are significant limiting factors, a report that no conclusion can be reached is appropriate. This opinion requires explanation of the limiting factors.

Sources of Error: Not applicable

References:

SWGDOC Standard for Examination of Fracture Patterns and Paper Fiber Impressions on Single-Strike Film Ribbons and Typed Text ver. 2013-1

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