

**QD SOP-11 Procedure for Physical Match of Paper Cuts,
Tears, and Perforations in Forensic Document
Examinations**

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Approved by Director: Dr. Guy Vallaro

Purpose: Procedure for Physical Match of Paper Cuts, Tears, and Perforations in Forensic Document Examinations

This procedure provides guidance that should be used by forensic document examiners for examinations and comparisons to determine whether or not two or more paper fragments were at one time joined to form a single piece of paper. These procedures are applicable whether the examination(s) and comparison(s) is of Questioned and Known items or of exclusively Questioned items. The examination may not be limited to, physical match examinations of paper items. The physical matching or realignment of items of evidence may occur in two or three dimensions.

Limitations can be due to limited quantity of the evidence presented, or comparability, or condition of the items submitted for examination. The condition of a paper sample may make it unsuitable for some types of examinations (for example, items that are water soaked, stained, soiled, charred, or finely shredded paper). Such features are taken into account in these examinations.

The results of prior storage, handling, testing, or chemical processing (for example, for latent prints) can interfere with the examination of certain characteristics in conducting these physical matches. Whenever possible, document examinations should be conducted prior to any chemical processing. Items should be handled appropriately to avoid compromising subsequent examinations.

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. Measuring devices
4. Scanners
5. Cameras

Procedure:

At various points in these procedures, a determination that a particular feature is not present or that an item of evidence is lacking in quality or comparability may indicate that the examiner should

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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 in the case notes.

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 documents. The light sources should be of sufficient intensity to allow fine detail to be distinguished. Natural light, incandescent or fluorescent sources, or fiber optic lighting systems are generally utilized. Transmitted lighting, side lighting, and vertical incident lighting have been found useful.
3. The examiner may have to use other apparatuses to hold the documents in place for the examination of the physical matches. These apparatuses can include clamps, clips, temporary adhesives, and other materials that will not adversely affect the specimen(s).
4. The evidence may be scanned or photographed to preserve the details observed and for incorporation into the case notes.
5. Determine whether or not the specimens are broken or separated.
6. Determine whether or not the specimens are suitable to be physically realigned.
7. Evaluate the specimens for individualizing characteristics.
8. Conduct a side-by-side comparison of the specimens using the following steps:
 - 1) Visual inspection.
 - 2) Manual alignment.
 - 3) Edge-to-edge realignment.
 - 4) Surface markings.
 - 5) Measurements and pattern count.
9. Evaluate similarities, differences, and limitations. Determine their significance individually and in combination. Reach a conclusion and report accordingly.

Reporting of Results

1. The basis and reasons for the conclusion(s), opinion(s), or finding(s) should be included in the examiner's documentation QR DOC-2, case notes and may also be included in the report.

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2. Once examinations and comparisons have been completed, reports may include, but are not limited to, the following types of conclusions and other findings:
 - 1) The paper fragments are consistent with having been at one time joined to form a single piece of paper.
 - 2) Although class similarities were observed, there were insufficient individual features to determine whether or not the paper fragments were at one time joined to form a single piece of paper.
 - 3) The paper samples did not originate from a single piece of paper.
3. As a result of the reconstruction of the paper fragments, additional examinations (for example, latent prints or indentations) may be appropriate. The report may also include information such as the visible text, indentations, and contaminants observed following reconstruction.

Sources of Error: NA

References:

SWGDOC Standard for Physical Match of Paper Cuts, Tears, and Perforations in Forensic Document Examinations ver. 2013-1