

Stamped Impression/Dry Seal Examinations

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Stamped Impression/Dry Seal Examinations

1 INTRODUCTION

This procedure is intended to be utilized by trained personnel to ensure consistency and transparency of methods employed during the examination of impressions, dry seals, and other mechanical devices on evidence received in the Questioned Documents Unit (QDU).

2 SCOPE

These procedures will be used by a forensic document examiner to conduct examinations of impressions from stamps, dry seals, and other mechanical devices. Stamps and dry seals may be produced from an array of materials to include rubber, wood, plastic, photo polymers, metals, and wax.

3 EQUIPMENT

- 150-watt tungsten halogen light, or comparable equipment
- 30-watt transmitted light box, or comparable equipment
- Hand magnifier (minimum magnification, 4X)
- Stereomicroscope (minimum magnification, 6.3X), or comparable equipment
- Keyence VHX-2000E Digital Microscope, or comparable equipment
- Foster and Freeman Video Spectral Comparator (VSC), or comparable equipment
- ChemImage Hyperspectral Imager (HSI) Examiner 200 QD, or comparable equipment

4 PROCEDURE

- If both questioned and known items have been received at the same time, the questioned item(s) will be assessed in the following steps prior to assessing the known item(s).

4.1 Analysis

4.1.1 Impressions

- A. Visually examine the questioned and/or known stamped impression(s) using lighting and magnification sufficient to allow fine detail to be distinguished.
 - Note at a minimum, the class characteristics of the impression(s), which include:
 - Design
 - Format
 - Size
 - Wording
 - Alignment may be a class characteristic depending on the manufacturing process of the stamp(s) or seal(s)
 - Characteristics of a stamped impression include:
 - Uneven ink coverage

- Ring of darker ink outlining the individual letter(s) (i.e., the “squeegee effect”).
 - This is a result of the relief of the printing area squeezing the ink out to the edge of the ink line. It may be difficult to observe if the entire character is heavily inked.
- Absence of any indentations in the line of ink
- Rounded beginning and ending of letters
- Ink filling in sharp angles and intersection points of two lines
- Uneven outline of the letter(s) may be observed
- Some patchy areas within the inked impression may be observed
- Some bleeding of ink through the paper may be observed
- Characteristics of a dry seal impression include:
 - Embossing of the paper
 - The impression may not be uniform
 - This depends on the mounting of the plates in the press, the pressure exerted, or the type of document being embossed.
 - Pressure variation may be observed
 - This may be due to variation in the depth of the letters on the seal itself, warping, unusual wear or misuse, or by the pressure exerted during the embossing process
- B. Examine the impression(s) macroscopically and microscopically, using direct and oblique lighting, to determine whether any non-print areas, extraneous markings, or alignment problems are present.
 - These are usually considered defects and may be identifying characteristics.
 - Note at a minimum the size, shape, and location of the defects.
 - If the impression is from a dry seal, ensure that the front and back of the impression are examined.
- C. If the comparison of the impressions (questioned to questioned or questioned to known) reveals inconsistencies in class characteristics, this indicates exclusion. Discontinue this procedure and report accordingly.

4.1.2 Devices

- A. If a known stamp or seal is received, note at a minimum the class characteristics of the known stamp(s) or seal(s), which include:
 - Design
 - Format
 - Size
 - Wording
 - Alignment may be a class characteristic depending on the manufacturing process of the stamp(s) or seal(s).
- B. If the known stamp(s) or seal(s) is not consistent in class characteristics with the questioned impression(s), this indicates exclusion. Discontinue this procedure and report accordingly.

- C. If the known stamp(s) or seal(s) is consistent in class characteristics with the questioned impression(s), examine the stamp(s) or seal(s) visually and note at a minimum its condition (e.g., clean, dirty, worn, damaged).
- D. Examine the known stamp(s) or seal(s) macroscopically and microscopically, using direct and oblique lighting, to determine whether any defects are present.
 - o These defects may be identifying characteristics.
 - o Note at a minimum, the size, shape, and location of the defects.
 - o Defects can be transitory or permanent.
 - Care should be taken in the handling of the stamp(s) or seal(s) to preserve any transitory defects.

Transitory Defects include:

- Dirt and debris
- Paper
- Hair
- Fiber
- Accumulated ink
- Alignment defects from stamps prepared from loose rubber molded type

Permanent Defects include:

- Nicks
- Cuts
- Edge wear and breakdown
- Stamp distortion
- Air bubbles
- Trimmed edge(s)
- Surface texture of the sponge backing
- Wood block impressions

- E. Photograph and/or otherwise record the condition, to include any transitory defects observed, of the submitted known stamp(s) or seal(s).
- F. Make known impressions with the stamp(s) or dry seal(s) as received using materials similar to the questioned item(s), if possible.
 - o Known impressions should be made using varying pressures and/or rolling techniques.
- G. After impressions have been made with the stamp(s) or dry seal(s) as received (to include transient defects), clean the stamp(s) or seal(s) and make an additional set of known impressions.

4.2 Comparison

Conduct a side-by-side comparison of the questioned and/or known impressions or the impression(s) and the known stamp(s) or seal(s) using sufficient lighting and magnification to allow fine detail to be distinguished. The digital microscope or VSC may be useful.

- A. Compare and evaluate identifying characteristics accordingly.
 - o Identifying characteristics include:
 - Impression/die defects – wear and age
 - Foreign matter or dirt on stamp or seal
 - Stretching or distortion of die when pulled from mold matrix
 - Alignment
 - Stamps prepared from loose rubber molded type
 - Extraneous marks
 - Trimmed edge(s)

- Surface texture of the sponge backing
 - Wood block impressions
 - Air bubbles
- B. Make notations in the examination records.

4.3 Evaluation

- A. Evaluate the similarities, differences, and limitations. Determine their significance individually and in combination.
- B. Once examinations have been completed, reports may include one or more of the following types of conclusion(s), opinion(s), and other findings, as applicable:

4.3.1 Conclusions When Comparing a Questioned Impression(s) to a Stamping Device/Dry Seal

- Identification
 - The determination that the questioned impression(s) was prepared by a particular stamping device/dry seal due to agreement in identifying characteristics. No differences that would preclude an identification were observed.
- May Have Prepared
 - A less than definitive determination that a particular stamping device/dry seal, or its duplicate, was used to prepare the questioned impression(s). There is a correspondence in characteristics between the device/seal and the questioned impression(s); however, there is limited agreement in identifying characteristics and limitations are present.
 - This opinion requires explanation of the limiting factors.
- No Conclusion/No Determination
 - No determination can be reached whether the stamping device/dry seal was or was not used to prepare the questioned impression(s). There may be correspondence in class characteristics between the device and impression(s); however, there are factors that significantly limit meaningful examinations. These factors can include:
 - Absence or limited quantity of identifying characteristics in the questioned and known impressions
 - Non-original items
 - Lack of sufficient quantity of items
 - Prior destructive examinations
 - Lack of detail and clarity in the impression
 - This opinion requires explanation of limiting factors.
- May Not Have Prepared
 - A less than definitive determination that a particular stamping device/dry seal was not used to prepare the questioned impression(s). There is a lack of correspondence in characteristics between the device/seal and questioned impression(s). Some inconsistencies are noted but limitations are present.
 - This opinion requires explanation of the limiting factors.
- Elimination

- A determination that the questioned impression(s) was not prepared by a particular stamping device/dry seal due to sufficient disagreement in class and/or identifying characteristics. Significant differences are observed.

4.3.2 Conclusions When Comparing an Impression(s) to an Impression(s)

- Items Share a Common Source
 - A determination that the impressions originated from a common source due to agreement in identifying characteristics. The common source may include the same stamping device/dry seal, duplicate stamps, or any of the components used to create the device/seal (e.g., artwork). No differences that would preclude a definitive conclusion were observed.
- May Share a Common Source
 - A less than definitive determination that two or more impressions originated from a common source. The common source may include the same stamping device/dry seal, duplicate stamps, or any of the components used to create the device/seal (e.g., artwork). The comparison of the impressions reveals no significant, reproducible, or inexplicable differences. There is significant agreement in all observable aspects of the results; however, limitations are present.
 - This opinion requires explanation of limiting factors.
- No Conclusion/No Determination
 - No determination can be reached whether the items originated or did not originate from a common source. There may be correspondence in class characteristics between the impressions; however, there are factors that significantly limit meaningful examinations. These factors can include:
 - Absence or limited quantity of identifying characteristics within the impression
 - Non-original items
 - Lack of sufficient quantity of items
 - Prior destructive forensic examinations
 - Lack of detail and clarity in the impressions
 - This opinion requires explanation of limiting factors.
- May Not Share a Common Source
 - A less than definitive determination that two or more impressions did not originate from a common source. Common source may include the same stamping device/dry seal, or any of the components used to create the device/seal (e.g., artwork). The comparison of the impressions reveals reproducible and inexplicable variations. Inconsistencies are observed; however, limitations are present.
 - This opinion requires explanation of the limiting factors.
- Do Not Share a Common Source
 - A determination that the impressions did not originate from a common source (to include the stamping device/dry seal, or any of the components used to create the device/seal) due to sufficient disagreement in class and/or identifying characteristics. Significant differences are observed.

4.4 Records

- Records include at a minimum any:
 - Printouts, photographs, or drawings of any class, identifying, and/or eliminating characteristics
 - Other observations made during the examination process that were used to support your conclusion(s)

5 LIMITATIONS

- The following factors could affect the examination process and/or the results rendered:
 - Non-original items
 - Poor condition of the stamped impressions and/or known stamp(s) or seal(s)
 - Insufficient quantity of original material submitted for examination
 - Prior destructive forensic examinations such as latent print processing
 - Lack/limited number of sufficient suitable identifying characteristics
 - Change in the state of stamp/seal between time of questioned impression(s) and additional impressions (questioned and/or known) (e.g., removal of transient defects, warping or distortion of device)
 - Possibility of a duplicate stamp(s) made from an impression, device, or any of the components utilized to create a stamp/seal

6 SAFETY

Standard precautions should be followed for the handling of documents contaminated with chemical and biological materials. These documents are potentially hazardous and will be handled and processed in specifically designated areas within QDU space. QDU personnel may refer to the [FBI Laboratory Safety Manual](#) for additional guidance.

7 REVISION HISTORY

| Revision | Issued | Changes |
|----------|------------|------------------------------------|
| 06 | 01/14/2022 | Updated to format to new template. |