Purpose: Procedure for Indentation Examinations

This SOP provides guidance for forensic document examiners regarding the examinations and comparisons involving visualization and recording of indentations. When sheets of paper are in direct or indirect contact with one another, impressions on the top sheet can produce indentations on the sheet(s) below. These procedures are essentially non-destructive in nature; however, pencil writing and single-strike ribbon typing can be partially lifted from the document by ESDA. Although this effect can be minimal, adequate documentation of the evidence should precede ESDA processes.
Paper fiber disturbances caused by erasures or present in torn paper edges may also be visualized using these procedures. Electrostatic detection device examinations may be useful in developing other types of impressions on paper items (for example, typewritten material, shoeprints and latent prints).

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. Electrostatic Detection Apparatus
4. Measuring devices
5. Scanners
6. Cameras

Procedure:

1. Examine subject document(s) using oblique illumination and photograph any visible indented impressions and/or image. In some instances, the use of side lighting in a room with subdued light may provide better visualization of indentations.

Document any indentations observed on the QR DOC-2 or QR-IM1 (imprint examination) and/or in case notes. If indentations are not observed, document the lack of visible indentations.

2. Determine whether the item is suitable for ESDA examination. The size, shape, density or condition of an item may make it unsuitable for the ESDA portion of the procedure (for example, some book covers, large file folders and items that have been wet or damaged after indentations were made).

   Certain items submitted for examination may have inherent limitations that can interfere with the procedures in this standard. Limitations should be noted and recorded on the QR DOC-2 and/or in the case notes.

   Items should be handled as little as possible prior to ESDA examination to prevent contamination.

3. A complete examination involves the use of both the optical and ESDA portions of the procedure. All indentations may not be revealed if the optical and ESDA portions of the procedure are not conducted.

   The results of prior storage, handling, chemical testing for latent prints may interfere with the ESDA results. Indentation examinations should be conducted prior to any chemical processing. Items should be handled appropriately to avoid compromising subsequent examinations (for example, with clean gloves).

4. Prior to beginning the ESDA process, the unit will be checked to ensure that it is operating correctly. Check the condition of the cascade toner beads utilized in ESDA examinations. They can deteriorate with use, affecting the quality of the developed ESDA image. The ESDA shall be operated and maintained utilizing the instructions provided in the operating manual. Damaged ESDA equipment shall be taken out of service pending repair and re-validated before use.

5. Pre-treat documents in a humidifier chamber (65-70%) for approximately 2 minutes prior to processing with (ESDA). Record humidity level on worksheets (QD DOC-2 or QR-IM2). Distilled water shall be utilized in the humidifier chamber.

6. Prior to processing the evidence with the ESDA, run a control. This control will consist of a piece of paper that has been folded over and written on one side. The control is considered positive when the indented writing is identified on the opposite/folded side of the paper. If the control indentation is not successfully visualized, the problem shall be corrected before any further indentation examinations are conducted with that instrument.

   The result of this control check will be recorded in the log book located in the Unit. The control paper will be placed into the case jacket.

7. Process subject document(s) on the Electrostatic Detection Apparatus according to manufacturer's recommended procedures. If indented markings of value are noted, a plastic overlay lift may be made. If indented markings of no value are noted (i.e. consistent with writing on evidence

packaging), this indented writing may be documented with photography and a note may be placed in the case notes/worksheet.

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~~If no indented markings are generated, no plastic lift is retained and the worksheets are annotated to the negative findings.~~

~~8. Plastic overlay lifts showing visible indented impressions shall be appropriately documented, scanned/photocopied, sub-itemized in JusticeTrax. These plastic overlay lifts are treated as evidence and returned to the submitting agency at the completion of the case.~~

8. All lifts whether negative or positive shall be appropriately documented, scanned/photocopied, sub-itemized in JusticeTrax. These plastic overlay lifts are treated as evidence and returned to the submitting agency at the completion of the case.

It should be noted that repeated processing with the ESDA can lead to the development of degraded images.

Reporting of Results:
The basis and reason for the conclusion(s), opinion(s), or finding(s) should appear in the examiner's documentation and may also appear in the report. In some cases, it might be helpful for the submitting agency to have an image embedded in the report of the indented writing.

Once examinations and evaluations have been completed, reports may include the following types of conclusion(s), opinion(s), or finding(s):

1) Whether indentations were observed.
2) Whether decipherable indentations were or not observed.
3) The text of deciphered indentations.
4) Information as to the source of indentations.

References:
SWGDOC Standard for Indentation Examinations ver. 2013-1
ESDA 2 Electrostatic Detection Apparatus User Manual 14-06