Erroneous Analysis of Laterally Reversed Latent Prints Due to Development Methods

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July 27, 2017
Double Loop Podcast

Episode 117 – Hodge Podge #6

Glenn and Eric throw out a number of topics including how the podcast helps to solve crime and discussions from OSAC meetings.
Analysis:
- Left slant loop
- Sufficient information

Comparison:
- Manual to named subject
- Database search

Evaluation:
- Not the fingerprint of named subject
- No identification
Analysis:
- Right slant loop
  - Sufficient information

Comparison:
- Manual to named subject
- Database search
Evaluation:

- The fingerprint of named subject
- Identification
Two Types of Lateral Reversal Due to Processing Methods
Surface to Surface Transfer

Surface A

Original

Laterally Reversed

Surface B
Surface to Surface Transfer

- Rubber lifts

1. Application of adhesive
2. Adhesive application
3. Rubber lift
4. Transfer to paper
5. View of transferred print
6. Completed transfer
Surface to Surface Transfer

Publications:

- Superglue on plastic substrate
Surface to Surface Transfer

Publications:
- Transparent tape
- Stamp (adhesive side)
Surface to Surface Transfer

Publications:
- Textbook/Notebook
- Transfer from one page to another
- Ninhdyrin
No Transfer Between Surfaces

“Bleed Through”

Original

Laterally Reversed

paper
No Transfer Between Surfaces: Case Example #1

Back of notebook paper

Front of notebook paper
No Transfer Between Surfaces: Case Example #2

Back of paper

Front of paper
No Transfer Between Surfaces:
Case Example #3

Front of paper

Back of paper
No Transfer Between Surfaces: Case Example #4

Front of receipt

Back of receipt
Next Steps: Primary

• Education
  – Double Loop Podcast
  – NIST Error Management Symposium
  – Article (In review)

• Training
  – Need to include examples of “bleed through” prints in Analysis training
  – Examiners, technicians, photographers
Next Steps: Secondary

• Research
  – How often does this happen?
  – Why does this happen?
    • Almog et al. examined the Fingerprints’ Third Dimension: Depth and shape of Fingerprints Penetration into Paper – Cross Section Examination by Fluorescence Microscopy
Next Steps: Tertiary

• Quality Assurance Measures
  – Should prints be searched in two positions when using amino acid reagents?
  – Competency/proficiency testing?
  – Unsolved cases re-examined?
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