

FRICION RIDGE IDENTIFICATION PROCESS - 'A.C.E. – V' WORKSHEET

INCIDENT # _____ DATE: _____
TYPE OF INCIDENT: _____
SOCO: _____ MENTOR: _____ INVESTIGATING OFFICER: _____
PRINT # _____

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ANALYSIS:

Clarity Rating

Quality of observable details of the 3 dimensional friction ridges which have been recorded in the 2 dimensional print: *1st level detail*– Is the overall friction ridge pattern observable?; *2nd level detail*– Quantity and quality of observable major ridge formations?; *3rd level detail* – Are there any observable intrinsic ridge & pore formations? Clarity rating dictates the level of tolerance for discrepancies.

Substrate Distortion

Material upon which the matrix is deposited may cause distortion e.g. creases in plastic. Can the substrate material be determined ? What is the condition of the substrate? (e.g. dirty, soft, shape, flexible)

Matrix Distortion

Matrix is the substance deposited by the friction ridges e.g. sweat contaminated with oil & dirt. Are the characteristics of a wet print observed?

Development Medium

Each development medium (e.g. Chemical reagent) reacts with a specific material(s) known to be present in the latent fingerprint residue resulting in a change to its appearance (i.e. colour). What is the appearance of the developed friction ridge impression? E.g. white or black powder?...ninhydrin?...cyanoacrylate?

Transfer Pressure Distortion

Relates to distortion created by pressure exerted by the individual's hand or digit on the substrate e.g. downward pressure or vertical weight being placed on friction ridges (generally changes the friction ridge shape by flattening or broadening each ridge) OR distortion on a lateral or horizontal plane (usually accompanied by sideways sliding of the friction ridges and a smearing of the ridge matrix). Does it appear that the deposition pressure is consistent with the circumstances surrounding the deposition of the matrix? Flexibility of friction skin taken into consideration? Skin cannot be distorted in more than one direction at once...two prints involved rather than one?

Red Flags

Any indicators or 'red flags' present? E.g. ridge disturbances, sudden differences in appearance of matrix or development medium, lines through pattern area, misaligned ridges, extra thick ridges, hatch ridges, crossovers, angular joints, similar shaped major ridge path deviations in close proximity, substrate artifacts, lack of harmony in distortions, matrix smears or double taps.

Ridge Path Configuration

Establish the route of each ridge path. ('run' the ridges and then 'run' the furrows) Independent ridge paths should be discernable; their flow should be in concert. Unless 3rd level detail is visible, ridge breaks should be treated as if the ridge is continual.

Intrinsic Ridge Formations

Third level detail such as ridge shape and thickness and pore size, shape and position.

Anatomical Factors

Digit determination or distinguishing what part of the palmar or plantar surface deposited the matrix. Is information describing the physical spatial aspects of where the print was located on the substrate available? Can any time frame of likely deposition be established based on location e.g. after glass was broken?

COMPARISON:

Description of how the unknown print is compared to the known (or poorest quality print to best quality print). Broken down into 3 basic levels of comparison. Is it in agreement and within tolerance?

UNKNOWN PRINT

KNOWN PRINT

Overall Friction Ridge Pattern

*Specific Ridge Path Formations
(incl. scars, flexion creases)*

Intrinsic Shapes of Friction Ridges

EVALUATION:

Is there an agreement of the friction ridge formations present in the unknown and known prints?
Is there sufficient uniqueness to individualize this one donor as the only possible source?

Completed by: _____ **Date:** _____

VERIFICATION (separate A.C.E. worksheet to be completed & attached):

Completed by: _____ **Date:** _____