



VICTORIA POLICE

VICTORIA FORENSIC SCIENCE CENTRE

FINGERPRINT BRANCH

MODULE FOUR

**FINGERPRINT PATTERN
DEFINITIONS**

FINGERPRINT PATTERN DEFINITIONS

Arches

In the arch type the ridges run from one side to the other, making no backward turn: there is ordinarily no delta, but, where there is the appearance of a delta, no recurving ridge must intervene between the core and delta points. For the purpose of classification under the Australian Modification and Extension of the Henry Fingerprint System, arches are divided into four sub-groups, as follows: -

Plain Arch



Where there is an even flow of ridges from side to side of the pattern.

Radial Arch



An arch approximating to the loop type, where there is a delta or the appearance of a delta and the slope

of the ridges is toward the thumb (as described in the definition of loops.) It may have a delta and no recurving ridge, or a delta which is part of a recurving ridge, but when both these features appear in a pattern there must be no ridge count between the core and delta points.

Ulnar Arch

As for radial arch except the slope of the ridges is toward the little finger.

Tented Arch



In patterns of the tented arch type, the ridges near the middle have an upward thrust, arranging themselves, as it were, on both sides of a spine or axis, toward which the adjoining ridges converge. The ridges thus converging give to the pattern the appearance of a tent in outline. In order to demarcate clearly the line, which separates tented arches from those loops whose ridges have a more or less vertical trend, it is held that if on either side of the axis even one ridge recurves it shall be classified as a loop. When a pattern consists of a small ridge only with an upward thrust, the decision as to whether it is a tented arch or not will be made by the extent of the upward thrust of the enveloping ridge immediately above the central spine. The enveloping ridge at this point must have a distinct tent-like appearance. When a pattern has no spine, but has a ridge forming the distinct tent-like

appearance, then it should be classified as a Tented Arch. Where the pattern consists of loop formations thereby giving equal claims to radial and ulnar loops, with or without a central spine or axis, it shall be classified as a Tented Arch.

Loops



In a loop pattern, one or more of the ridges enter on either side of the impression, recurve, touch or cross the line of the glass running from the delta to the core and terminate or tend to terminate on or toward the same side of the impression from which such ridge or ridges entered. There is one delta.

Loops are of two kinds, known as "Radial" and "Ulnar" and are so named according to the terms of anatomy, the Radius and Ulna being the two bones on the fore-arm, Radius joining the hand on the same side as the thumb and Ulna on the same side as the little finger.

New Synopsis Loop



If two or more ridges rise and terminate at approximate equal height on either side of the axis they are considered as joined by an imaginary neck and the impression is classified as a loop: providing that in each case the necessary delta point and ridge count are present, and the meeting of two or more ridges at a sharp angle from their running into each other though not maintaining their parallelism of direction, is not to be confused with recurving.

Whorls



In a whorl some of the ridges make a turn through at least one circuit. There are two deltas. Whorls are sub-divided into plain whorls, central pocket loops, double loops and accidentals.

Composites

Under Composites are included patterns in which combinations of the tented arch, loop and whorl are found in the same print, also impressions which might be deemed to present features requiring their

definition as being loops in respect of the majority of their ridges and whorls in respect of a few ridges at the centre or side. **These are subdivided into central pocket loops, double loops and accidentals.**

Central Pocket Loops



Henry Definition - In many of these impressions the majority of the ridges conform to the loop type pattern in which one or more of the ridges within the loop or surrounding the core, recurve, and when the line of the glass is placed along the axis of the inner delta, it must cross a ridge at approximately right angles. At the point where the line crosses this ridge there must be no appendage, abutting ridge, spur or spike, as any kind of appendage at this point spoils the pattern as a central pocket loop. However, an appendage may be connected to a ridge without spoiling the pattern as a central pocket loop, so long as it does not appear at the point crossed by the line. Patterns having the appearance of being central pocket loops, but in which the ridge or ridges do not recurve so as to be at approximately right angles to a line running through the axis, are to be classified as loops.

New Synopsis Definition



Central Pocket Loops are differentiated from whorl type by placing the line of the glass across the two delta points; such line must not touch or cross any ridge formation within the inner area of the pattern. (The inner pattern is that portion of the print contained inside both deltas).

Double Loop



Double Loop patterns consist of two separate loop formations, with two separate and distinct sets of staples and two deltas. They include the lateral pocket loop and twinned loop types. Only those patterns with two well-defined loops come within this category. In cases where the two sets of staples are joined, but where there is a definite recurving ridge forming each staple the pattern is classed as a double loop; the presence of an appendage on a well-defined loop does not affect the pattern.

Lateral Pocket Loops



Henry described Lateral Pocket Loops as patterns in which the points of core have their exits on the same side of either delta. In twinned loops the

ridges containing the points of core have their exits on different sides.

Accidentals



Under this heading are the relatively small number of patterns too irregular in outline to be grouped under the Central Pocket Loops and Double Loops. They are patterns having two or more deltas and a combination or fusion of two or more types of patterns not including the Plain, Radial or Ulnar Arch. This definition also includes a freak pattern or accidental formation, which does not conform to any conventional type.

Plain Arch Aa

Ridges flow from one side of the pattern to the other.

Radial Arch Zz

Arches approximating to the loop type, where the slope of the ridges is toward the thumb. There may be a delta and no recurving ridge or a delta which is part of a recurving ridge, but when both of these appear there must be no ridge count between the delta and core.

Ulnar Arch Ee

As for radial arch, but the slope of the ridges is toward the little finger.

Tented Arch Tt

Sudden upthrust near centre of pattern giving the appearance of a tent in outline. There must be no recurving ridge between the delta and core or the impression is a loop.

Radial Loop Rr

Ridges enter from the thumb side and recurve, exiting or tending to exit on the same side. One Delta, Recurve, Ridge Count.

Ulnar Loop U

Same as for radial loops, but with the ridges entering and leaving from the little finger side of the pattern.

Plain Whorl W

Some of the ridges complete a full circuit. There are two deltas. Whorls may be circular, oval, spiral, elliptical, almond; kidney shaped or double cored.

Central Pocket Loop C

Majority of the ridges conform to the loop type. Few ridges near centre have whorl appearance and a second inner delta. Test:

Straight line through centre of inner delta must strike recurving ridge at right angles.

Double Loop D

Two separate and distinct loop formations with two separate distinct staples and two deltas. Double cored whorls of double spiral or "s" type are not to be confused with double loops.

Accidentals X

A combination or fusion of two or more patterns of the loop, whorl or tented arch types. May have two or more deltas.