



11 September 2020

Ref IR-01-20-23846

Mr Paul White  
Email: fyi-request-13547-30784a1d@requests.fyi.org.nz

Dear Mr White

**Police references IR-01-20-23846**

Thank you for your email received by Police on 18 August 23 March 2020 requesting:

“...would like to request a copy of the manual which details the ACE-V method of examination”.

Your request has been considered in accordance with the Official Information Act 1982.

Guidance on Fingerprint analysis particular to the ACE-V methodology, is contained in the Fingerprint Police Manual and the relevant part requested is attached.

You may find additional information in references such as; David Ashbaugh's book 'Quantitative qualitative friction ridge analysis: an introduction to basic and advanced ridgeology

If you have any questions you may contact Tanja van Peer at the email address below.

You have the right to ask the Ombudsman to review my decision if you are not satisfied with Police's response to your request.

Yours faithfully

Manager, National Forensic Services  
Tanja.Van.Peer@police.govt.nz

**Police National Headquarters**

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# Fingerprints

## About fingerprints and identification

### What is a fingerprint?

The term 'fingerprint' is a generic term used to describe the ridged skin on the undersides of the palms, fingers and feet or any impression left by the ridged skin.

### Biological principles of fingerprint identification

These are the two biological principles on which fingerprint identifications are based.

Principle	Description
Permanence	The ridged skin is formed in the first few months of foetal development. This remains unchanged throughout a person's life unless permanent scarring takes place.
Uniqueness	The 'information' contained within a fingerprint is unique to that finger or part of that finger. It is randomly formed due to the effects of genetic and physical pressures while the foetus is in the womb.

### How a fingerprint is left on a surface

Along the tops of the ridged skin are thousands of sweat pores which are constantly exuding perspiration. When the ridged skin comes in contact with another surface, the perspiration is transferred and a reproduction of the skin's surface detail is left on that surface. This impression is commonly called a latent print. It is developed by powders or chemicals and preserved by photography or by lifting with tape and mounting on clear plastic backingsheets.

### Identification requirements

The ridged skin, especially on the ends of the fingers, generally conforms to one of three pattern types:

- whorls
- loops, and
- arches.

Contained within these patterns is the ridge structure, which forms characteristics. Identification is partly based on these characteristics being in agreement and having the same ridge sequence.

Other features considered include ridge flow and ridge deviation, position of pores, the appearance of scars, creases, and the relationship between all of the mentioned features. It is the total of all of these features, characteristics, and relationships on which identification is made.

### Identification methodology

In order to reach a conclusion regarding identity, fingerprint officers use an internationally recognised and accepted scientific methodology (ACE V - Analysis, Comparison, Evaluation and Verification).

Stage	Description						
Analysis	The unidentified fingerprint is <b>analysed</b> to determine the quality and quantity of detail present. If there is enough ridge detail contained within the unidentified print, it is then <b>compared</b> to ridge detail contained within prints from a known source.						
Comparison	<p>The comparison is performed using three levels of detail:</p> <ul style="list-style-type: none"> <li>• Level 1 - the basic overall pattern formed by the ridges</li> <li>• Level 2 - type and position and sequence of ridge characteristics</li> <li>• Level 3 - scars, creases and ridge flow.</li> </ul> <p>Once this is completed an <b>evaluation</b> is performed.</p>						
Evaluation	<p>There will be one of three conclusions:</p> <table border="1"> <tr> <td>Identification</td> <td>that two fingerprints originated from the same source (person)</td> </tr> <tr> <td>Exclusion</td> <td>the prints were made by different people</td> </tr> <tr> <td>Inconclusive</td> <td>there is insufficient detail to reach either of the prior conclusions. Generally resulted as 'unsuitable'</td> </tr> </table>	Identification	that two fingerprints originated from the same source (person)	Exclusion	the prints were made by different people	Inconclusive	there is insufficient detail to reach either of the prior conclusions. Generally resulted as 'unsuitable'
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Exclusion	the prints were made by different people						
Inconclusive	there is insufficient detail to reach either of the prior conclusions. Generally resulted as 'unsuitable'						
Verification	If the print has been <b>identified</b> then the final stage is <b>verification</b> . The identification is verified (peer reviewed) by two other fingerprint officers.						