

13 July 2023

Sean Doyle  
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Dear Mr Doyle

**Request for information**

Thank you for your Official Information Act 1982 (OIA) request of 5 May 2023, in which you ask:

*'What forms of impartiality, or bias as it is referred to by the New Zealand Police, and the management of that bias are integrated into forensic training for the Police in New Zealand?*

*What impartiality or bias related forensic training is offered to Police staff who provide forensic services?*

*What resources are employed in that training?*

*Are copies of training materials available publicly?*

*If so, where might they be found?*

*How often is that training updated?*

*How is its continuing fitness-for-purpose (i.e., effectiveness, relevance and accuracy) assessed?*

*What processes and procedures are in place to counter the effects of bias in the work carried out by Police forensic staff?*

*How is this monitored and managed?*

*What reporting or audit is undertaken of these processes and procedures.'*

In response to your request, I can advise that the awareness of the risks of cognitive bias (including contextual and confirmation bias) on forensic findings is integrated into New Zealand Police forensic training courses and standard operating procedures.

Forensic training is delivered by trainers in a variety of settings, including face to face training, discussion groups, Court scenarios, practical scenarios, and self-directed training. There is an emphasis on how bias can manifest using work examples, and how standard operating procedures must be followed to prevent or mitigate bias. Training also includes a focus on the professional and impartial presentation of expert evidence in Court.

Forensic training content is revised when new policy or process changes impact on training currency or content. Fitness for purpose is managed through subject matter expert groups who have responsibility for monitoring and updating training content and standard operating procedures for their respective disciplines.

Forensic training comprehension is managed through knowledge tests and work competency assessments. Compliance with standard operating procedures is also monitored through peer review, quality control and national auditing processes.

The potential effects of bias are managed by:

- ensuring that forensic staff are aware of the implications of cognitive bias; and
- having standard operating procedures which include protocols for checking and peer reviewing results. The procedures also include protocols on how contentious results are managed to mitigate possible bias; and
- the requirement that expert witnesses comply with the High Court Rules 2016.

Standard operating procedures for forensic groups include quality assurance management and auditing by line and national managers.

Attached are the following Police documents that are relevant to your request:

- i) Fingerprint Officer Training Programme Module: Identification 2 Intermediate 1 (15 pages)
- ii) Fingerprint Officer Training Programme Module: Law 2 (24 pages)
- iii) New Zealand Police Fingerprint Section Standard Operating Procedure #2 – Latent Fingerprint Examination and Identification (5 pages)
- iv) New Zealand Police Fingerprint Section Standard Operating Procedure #4 – Independent Evaluation Review: Fingerprint Identification (5 pages)
- v) New Zealand Police Fingerprint Section Standard Operating Procedure #24 – Verification (5 pages)
- vi) Fingerprint Officer Training Programme Intermediate 1 Oral Questions: Identification 2 (2 pages).

I trust this information and material adequately addresses your request.

Yours sincerely



Warren Olsson  
Detective Inspector  
National Criminal Investigations Group  
Police National Headquarters

# Fingerprint Officer Training Programme



Module: Identification 2

Intermediate 1



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# Module Outline

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## Overview

Fingerprint Officers' main role is fingerprint identification.

As you develop your experience in examining and comparing fingerprints, you will need be able to identify more complex prints.

To that end, this module covers three topics:

- Topic 1: Distortion
- Topic 2: Bias
- Topic 3: Forgery and Fabrication.

As you read and review the information and documents, you may wish to make a few notes in your personal learning journal.

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## Required reading

- Ashbaugh D R, *Quantitative Qualitative Friction Ridge Analysis: An introduction to basic and advanced ridgeology*. Boca Raton FLA: CRC Press, 1999. Pp 108-148.
  - Marcel S, Nixon M S, Li S Z, 2014. *The Handbook of Biometric Anti-Spoofing*. Springer. Chapter 2: Forgeries of Fingerprints in Forensic Science, by Champod C, Espinoza M.
  - Harper W W, 1937. Fingerprint Forgery – Transferred Latent Fingerprints. *Journal of Criminal Law and Criminology*, Vol 28, Iss 4, Article 7. Sourced from:  
<http://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=2745&context=jclc>
  - Maceo A, 2009. Qualitative Assessment of Skin Deformation: A Pilot Study. *J For Ident*, 390, 59 (4). (Located in Required Reading folder).
  - Venville N, 2010. *Bias - A Review of Contextual Bias in Forensic Science and its Potential Legal Implications*. (Located in Required Reading folder).
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- Optional reading**
- Edwards H T, 2014. *Reflections on the Findings of the National Academy of Sciences Committee on Identifying the Needs of the Forensic Science Community*. Sourced from: <https://www.justice.gov/sites/default/files/ncfs/legacy/2014/05/13/harry-edwards.pdf>
  - Busey T A, Dror I E, 2014. *Fingerprint Sourcebook*. Chapter 15, Special Abilities and Vulnerabilities in Forensic Expertise. Sourced from: <https://www.ncjrs.gov/pdffiles1/nij/225335.pdf>
  - Expert Working Group on Human Factors in Latent Print Analysis. *Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach*. U.S. Department of Commerce, National Institute of Standards and Technology, 2012. Sourced from: <http://www.nist.gov/oles/upload/latent.pdf>
  - Ferriola, T J, 2002. Scientific principles in friction ridge analysis and applying Daubert to latent fingerprint identification. *Criminal Law Bulletin*. (Located in Optional Reading folder).
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# Topic 1: Distortion

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## Learning objectives

The questions you need to answer for this topic include:

- What are four factors that could result in a fingerprint lift showing distortion?
- What is the concept of ‘tolerance’ with reference to observable differences between a latent print and a fingerprint sample?
- When considering substrate distortion, what are three types of substrate that may influence the appearance of the latent print? What features are likely to be observed in the latent print for each type of substrate?
- With reference to matrix distortion, what are some of the features that may be observed in wet prints?
- With reference to matrix distortion, what are some of the features that may be observed with fingerprints made in blood or paint?
- When considering development media, what are the characteristics or features associated with each of the four development media (powder, ninhydrin, iodine, and cyanoacrylate)?
- What is the difference between deposition pressure and pressure distortion?
- What are six observable ‘red flag’ indicators of distortion in a latent fingerprint?

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## Definition

According to one of Webster’s New World dictionaries, ‘to distort’ is defined as:

“To modify so to produce an unfaithful reproduction; to change or misrepresent; to change the usual or normal shape, form, or appearance.”

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**Distortion**

With reduced quality of latents, distortion is likely to be present. As part of our analysis process, we must be able to discern the nature of the distortion and understand the behaviour of the ridges when they are subjected to these distortive forces. All prints will suffer from some sort of distortion.

According to Ferriola, 2002:

“Distortion could result from a number of sources, including the matrix (residue left behind), which comprises the print; the substrate (surface) on which the print was left; the direction of touch; the pressure of the touch; the reaction of the matrix with the development medium; etc. All of these factors should be assessed during the analysis of the latent print.”

Sourced from:

<http://www.clpex.com/Articles/ScientificPrinciplesbyTomFerriola.htm>

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**Types of distortion**

The types of distortion are:

1. Pressure.
  2. Deposition pressure.
  3. Anatomical aspects.
  4. Development:
    - a. Medium.
    - b. Substrate.
    - c. Matrix.
- 

**Evaluation**

According to Ferriola, 2002:

“During the evaluation phase of the identification process, the examiner must consider all of the differences in appearance between the two images. It is an accepted tenant of fingerprint science that no two prints will ever be exactly the same in all respects.

“First, any ‘touch’ is a contact between a complex curved surface (the skin) and, usually, a flat surface. This touch must necessarily be accompanied by distortion of the skin. Second, the amount and type of matrix (residue left behind) will differ. Third, the angle and pressure of the contact will change from one touch to the next. Fourth, the size of the area of skin coming into contact with the surface will vary.

“Any number of other factors, some subtle and some extreme, may also

contribute to differences in the appearance of two prints that result from two touches by the same region of friction skin. It is not sufficient to look only for similarities and ignore the differences, nor is it proper to look at only some features and ignore others. The fingerprint expert must consider, interpret and understand everything appearing in each image.”

Sourced from:

<http://www.clpex.com/Articles/ScientificPrinciplesbyTomFerriola.htm>

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**Tolerance**

It is at this point that tolerance enters the equation (Ferriola, 2002). Based on an understanding of distortion and its sources, some differences in appearance fall within acceptable limits of tolerance. For example, it is easy to understand and to account for the differences in appearance between a print resulting from a light touch and a print resulting from a heavy touch. The differences in appearance between a fully rolled inked print and a crime scene mark are also easy to understand and easy to account for. These differences would be said to be within tolerance. Sourced from:

<http://www.clpex.com/Articles/ScientificPrinciplesbyTomFerriola.htm>

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**Development media**

1. Powders – abrasive. Collects in pores. Tends to fill in third-level detail.
  2. Ninhydrin – concentration of amino acids are found at the pore openings on the ridges, therefore prints developed with ninhydrin can appear spotty.
  3. Iodine fuming – absorbed into matrix. Non-abrasive so should show third-level detail clearly.
  4. Cyanoacrylate – molecules polymerize with the matrix. The heat plus humidity method leaves a ‘spaghetti like’ matrix. The vacuum leaves a more ‘flaky’ appearance. Lighter coverage.
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**Deposition pressure**

Deposition pressure changes the shape of the ridges by flattening or broadening each ridge, thereby narrowing the furrows. It describes vertical weight placed on the ridges.

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**Pressure distortion**

This is different from deposition pressure. Pressure distortion describes pressure in the lateral or horizontal plane. It is usually accompanied by sideways sliding of friction ridges with a smeared appearance.

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**Problem  
solving**

Some distortion indicators generate a need to be wary. These could be considered as 'red flags' for careful analysis of pressure and deposition pressure distortions. Indicators of distortion include:

- Ridge disturbances – sudden differences in the appearance of the matrix or development media.
  - Lines through pattern area.
  - Misaligned ridges.
  - Extra thick ridges.
  - Hatch ridges.
  - Crossovers.
  - Angular joints.
  - Lack of harmony in distortions.
  - Substrate artefacts.
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## Topic 2: Bias

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### Learning objectives

The questions you need to answer for this topic include:

- What is the concept of bias?
  - What is cognitive bias and confirmation bias?
  - How can you self-manage to try and avoid bias?
- 

### Introduction

The concept of bias was referred to in the previous module, Identification 1.

Bias is not a fault; it results simply from the way the human mind works. For experts, bias is an unavoidable, inherent outcome of their very expertise and comes with the nature of our work. All information we receive potentially introduces bias. Bias must be recognized and accommodated for when undergoing the ACE-V process. Quite simply, bias distorts the way we perceive and evaluate information.

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### Cognitive bias

This is defined as:

“The tendency to make decisions or take action in an illogical way. For example, you might subconsciously make selective use of data, or you might feel pressured to make a decision by more influential or more senior colleagues.” Sourced from:

[https://www.mindtools.com/pages/article/newTED\\_79.htm](https://www.mindtools.com/pages/article/newTED_79.htm)

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### Confirmation bias

Confirmation bias happens when you look for information that supports your existing beliefs, and reject data that goes against what you believe. This can lead you to make biased decisions, because you don't factor in all of the relevant information. It is the tendency to look for information that conforms to your hypothesis. Sourced from:

<https://www.mindtools.com/pages/article/avoiding-psychological-bias.htm>

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**How do I  
manage bias?**

All information can introduce bias, so it's important to:

- Keep an open mind.
  - Be impartial in your examination process.
  - Never assume.
  - Examine everything as if it were a blank script.
  - Not compare the known print to the latent.
  - Not be emotively swayed by the nature of the offence.
  - Never assume it is an offender's print. Do not allow your mind to be led to believe it should be an offender's print.
  - Manage the verification/peer review process. Verifications should always go 'up' the experience/ability ladder.
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## Topic 3: Forgery and Fabrication

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### Learning objectives

The questions you need to answer for this topic include:

- What is the difference between forgery and fabrication?
  - What are the three methods of fabrication, and what clues might be observed in each case of the recovered fabricated latent?
  - What are two methods of forgery and what clues might be observed in each case of the recovered forged latent?
- 

### Introduction

To help understand the differences between forged and fabricated, the following definitions provide a good insight.

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### Fabricate

“Fabricate” in the sense of “manufacture” has no moral or ethical implications, although it can be used in the sense of making things up and, by implication, lying. A statement which is a fabrication (a lie) would not be called forged. A “fabricated” latent print is manufactured or misrepresented by a person, possibly involved in the investigation, in order to enhance the case against a suspect.

Sourced from: [ell.stackexchange.com/questions/78989/forgery-vs-counterfeiting-vs-fabrication](http://ell.stackexchange.com/questions/78989/forgery-vs-counterfeiting-vs-fabrication)

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### Forge

A signature, document, or painting could be forged. That is, we could reproduce it with the intention of having people mistake it as being authentic. Sourced from:

[ell.stackexchange.com/questions/78989/forgery-vs-counterfeiting-vs-fabrication](http://ell.stackexchange.com/questions/78989/forgery-vs-counterfeiting-vs-fabrication)

“A ‘forged’ latent print is the print of an innocent person that has been ‘planted’ at a crime scene by the perpetrator (or another person) in an attempt to hide the true offender’s identity.

“As part of your fingerprint knowledge, you will be expected to be vigilant and observe the appearance of prints in order to detect forged or fabricated evidence.”

Sourced from:

<https://www.ncjrs.gov/App/publications/abstract.aspx?ID=202212>

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## **Signs of fabrication**

According to Pat A Wertheim, Director of Training, Forensic Identification Training Seminars Ltd (see source below):

“Examiners need to be alert to the signs of fabrication in latent print evidence submitted by others, and they need to follow procedures in their own cases to document absolutely the authenticity of their latent prints in order to preclude the charge of fabrication against their legitimate evidence.”

Wertheim goes on to discuss methods of fabrication. The following text is summarised from the source (see below).

The usual methods of fabrication are:

1. To lift the print from a known, inked print and then label it as having come from the crime scene. Clues – ink is a different shade of black than fingerprint powder. Lifted inked prints are usually the fully rolled prints, a phenomenon virtually impossible in real latent print work. Lifts from inked prints usually include fibres and microscopic fibre marks.
2. Mislabelling the print as having come from a crime scene when it was actually lifted from a more benign location. Clues – the most reliable method of detection is a close inspection of background noise. Each type of surface leaves a trademark background noise, and frequently, fabricators fail to take this into account. A mislabelled latent may also reflect an orientation inconsistent with normal handling.
3. Through the use of a staged photograph of the print. Clues – these photographs are usually taken slightly out of focus in an attempt to hide details which would disclose the fabrication. Or, such a photograph may be over or under-exposed. Strange lines or shadows may be present. The photographs may also contain stray images not expected on the surface from which the latent purportedly came, or background noise may not be consistent with the surface claimed.

Sourced from: [www.iowaiai.org/latent-fingerprint-fabrication](http://www.iowaiai.org/latent-fingerprint-fabrication)

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**Considerations** Kristi Mayo’s article (see source below) discusses the factors that an examiner should look out for to alert them to fabrication:

“... a lifted print that does not match the surface from which it was supposedly taken; a lift that has different characteristics from the other lifts collected at the same scene; and inconsistency in lift tapes.

The article also discusses collection techniques examiners can use to avoid any suspicion of fabrication:

“... photograph the print in place before it is lifted; include the description of the latent print in crime scene processing notes; and using a marking, perhaps with a ballpoint pen, on the surface near the print to be included in a re-photograph of the print. Other techniques are to keep lifts together and to use serial-numbered lifts.”

Sourced from:

*<https://www.ncjrs.gov/App/publications/abstract.aspx?ID=202212>*

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**Office practices** We cannot categorically state the true origin of latent prints unless we were there ourselves and actually lifted the prints. It is for this reason that we do not report on the origin of the prints, rather we say ‘labelled as’ and why we copy the exact wording, misspellings and all.

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**Signs of forgeries** Forged fingerprints are rare. Clues – the ‘staged’ appearance of the prints. The locations of the prints might be in an unnatural or unlikely area. Locating any forged fingerprints relies on the scene examiner developing and lifting the planted prints.

1. Casting materials like stamps or latex moulds can be used. Clues – bubbles in the developed print (from air bubbles in the latex mould). The framing effect (halo) of the stamp or mould. Examine the pores and ridges carefully. Overall shape inconsistent with natural deposition.
2. Transfer of latent from one surface to another. Clues – careful observation of background noise, which will have transferred across with the latent print.

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**End of module** Congratulations, you have completed the Identification 2 module. Be prepared to answer questions on these topics.

You are now ready to begin the next training module.

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# Fingerprint Officer Training Programme



Module: Law 2



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# Topic 1: Understanding your place in the court system

## Expert witness purpose and role

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### How a case is selected for prosecution

A case will only be considered appropriate for prosecution if the various factors, unique to that particular case, indicate that there is both evidential sufficiency and public interest in prosecution.

The evidential sufficiency test is determined first. If that is satisfied then the officer must proceed to consider the public interest test. The weight of factors is not based on the number of factors; rather it is on how various factors relate to a specific unique offender and all the circumstances relating to that offender.

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### The core purpose of an Expert Witness

An expert witness is engaged by the courts to assist the courts. While you can be engaged by either prosecution or defence, your role is to maintain impartiality; you are neither 'for' the prosecution or the defence.

The general position in the Evidence Act 2006 is that a statement of opinion is not admissible in a proceeding to prove the truth of what is believed. The reason for this is that witnesses in a case give evidence as to the matters they have experienced, not their beliefs or opinions, and that factual evidence has to be evaluated and a decision made on the legal and factual issues in dispute. However, from the earliest times, the courts recognised there were technical areas outside common knowledge where a court might benefit from the assistance of expert opinion in understanding the matters which it had to evaluate. The courts admit expert evidence when the judge is satisfied that the matters which the expert evidence addressed were outside "*common knowledge*" and expert opinion is required.

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### Expert evidence

Expert evidence is defined under the Act in terms which reflect the position at common law:

*"The evidence of an expert based on the specialised knowledge or skill of that expert and includes evidence given in the form of an opinion."*

It is for the court to consider whether an expert is properly qualified to give expert evidence and whether the evidence which they will give is within the expert's area of expertise. A court will rule on this if there is a challenge to the evidence. Opinions by non-experts on technical matters are inadmissible.

The various codes of conduct adopted by the courts in the past decade emphasise that in giving this expert opinion, the paramount duty of an expert is to assist the court to understand the evidence in the case.

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### **The role of the Expert Witness**

An expert witness has a number of conflicting duties which need to be managed and resolved correctly:

- The most important is the duty to the court and is to be treated as a paramount and overriding duty. At its core is an obligation to assist the court in arriving at the truth. It should be borne in mind that, it is the court which makes the ultimate decision and the role of the expert is to educate the court to the same level of understanding as the expert on the particular issue in question, in this case, fingerprints.
- The expert is not an advocate for a particular party and should remain true to his or her profession and refrain from attempting 'to win' the case.
- An expert witness is to ensure that all of the relevant points of the case are brought to the attention of the court.
- An expert has a duty to comply with the directions or orders made by the court; these directions should be provided to the expert by the legal practitioner conducting the matter. Directions are usually straightforward and typically determine whether there will be a joint conference; the timeframes for serving reports; the dates for hearing; terms on which experts are to be briefed etc. Such directions will normally be made by the Judge, often by consent of the parties.
- The expert has a duty to maintain his or her reputation by providing competent advice to the court (reasoned conclusions are preferred to bold conclusions) and refusing to put forward arguments that lack substance or credibility in an attempt to unreasonably advance the client's case. It is inappropriate to allow the instructing lawyer or any outside party to 'filter' the expert's report. The lawyer may provide advice on legal or procedural matters and may even provide advice as to the scope of the report and its relevance to the proceedings.

- With Joint Conferencing it is inappropriate to allow the instructing lawyer or any outside party to interfere with the independent expert witness process once a Joint Conference has commenced.
  - Your duties to the court include confidentiality; diligence especially in presenting the case fully and fairly; punctuality; and to quote fairly and transparently. The duty is to be *truthful* as to fact, *honest* as to opinion and *complete* as to coverage of relevant matters. Expert evidence must be independent, objective and unbiased.
- 

**Presentation of Expert Evidence**

A Statement of Evidence is where the expert sets out his opinion and qualifies themselves as an expert to the court. This should ideally be a complete document without the need for further amendment. An acknowledgement that the expert has read the 'Code of Conduct' and agrees to be bound by it should be contained in the statement of evidence.

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## How Court processes work

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**Integrity**

The integrity of the expert should be above reproach. You owe a duty to the court as the court seeks to gain assistance from the expert. It is important to have confidence in the opinions that you express. A primary requirement is to ensure that the statement is thoroughly prepared and that you, the expert, are familiar with all facts upon which the conclusions are formed. Knowledge plus careful preparation is the key to providing good testimony in court.

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**The general framework of the trial process:**

- a) Witness gives evidence-in-chief (*direct examination*) then;
  - b) *Cross-examination* by other parties, then
  - c) *Re-examination* by the calling party.
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**Direct Examination**

At the hearing the expert is sworn in by taking an oath on the bible or making an affirmation. Both carry the same obligations, which is to tell the truth.

When called to the witness box, the expert should take his notes and documents. While we are generally 'called' by prosecution, we may occasionally be called by defence. Whichever party has called you will direct the evidence in chief, which is comprised of your statement. At this stage, leading questions are not allowed to be asked. That is, those questions which suggests to the witness how it is to be answered or puts words into the mouth of the witness to be merely repeated in his or her response.

Refreshing memory. If you need to refresh your memory while giving evidence permission must be sought. You may refer to documents that were made by you when your memory was 'fresh' (contemporaneous requirement). Address the judge as 'your honour/ma'am' or 'sir/madam' and ask his/hers permission to refer to your notes.

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**Cross Examination**

The main goal of cross examination is to investigate the truth of the witnesses' testimony in recognition of the adversarial nature of our trial processes. The object is to elicit information favourable to the cross examination team (generally defence but could be prosecution) and to cast doubt upon the accuracy of the evidence in chief.

Cross examination is flexible and effective. You need not view the prospect of being cross examined with alarm; however you should ensure you know your facts thoroughly. You should express yourself as accurately and completely as possible. Be frank and be prepared to concede immediately anything that should be conceded. A successful cross examination can severely weaken or destroy an expert's testimony, however a cross examination that reveals the accuracy of your expert opinion, the logic of your reasoning and the soundness of your conclusions, enhances the weight and reliability of your opinion and therefore your standing as an expert.

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**Re-examination** If after cross-examination, it appears necessary to clarify some of the answers you have given, leave can be sought and usually obtained for 're-examination' of the matter needing clarification (as opposed to further evidence). This is often a frustrating exercise for the expert witness because leading questions cannot be asked during re-examination with the consequence that the witness may not then have the opportunity to further elaborate on a point or issue.

Once you have finished giving your testimony, you will be directed to step down from the stand. However, you must not leave the court until you have been given explicit permission to do so.

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## What we can and can't say in court

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**Prepare**

- Be well prepared.
- If you are going to be referring to 'level 3 detail' in your analysis notes, ensure you point to or mark out some 'level 3 detail' in your crimcons. These are to assist the jury; the jury needs to see the level 3 detail you refer to, rather than you simply saying it is 'present'.

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**Listen carefully**

- Listen to all the questions, all the time, in particular any questions from the judge.
- Listen to a question fully and comprehend what is being asked before you begin to answer.
- Listen carefully to the question from Counsel, especially long-winded questions as they can be effectively no more than a statement. If in doubt, ask for clarification or ask for the question to be repeated or broken into parts. They may drop it altogether! Be slow and methodical in your approach, don't appear overconfident but be articulate in your response.
- Listen to the question and if it is not understood ask for it to be repeated or clarified

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**Answer thoughtfully**

- Questions in cross-examination will be put in a closed form - do not agree with propositions which are poorly informed or incorrect.
- Where a concession is appropriate, make it.
- Do not back down unnecessarily. If your position can properly be justified, then answer accordingly.
- Do not put on any kind of a “show” for judge or jury. Keep your evidence as simple as possible.
- if you have made an error, do not try to cover it up.
- Do not become an advocate for the case of the party which instructs you.
- Expert evidence must be objective, independent and unbiased

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**Verbalise**

- If you use or refer to any visual aids or diagrams, these must be verbally articulated so the stenographer can explain what you are referring to in the transcript. For example, the transcript might read ‘witness points to lift 12’.

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**Know your role**

- It is not for you to determine what is best for the court, so refrain from saying you are ‘assisting the court’ or advising the judge on previous case law.
- The court determines if you’re an Expert or not, for the purposes of that particular trial. If you are there giving evidence it can safely be assumed the court has accepted you as an expert in your field. So don’t be afraid to use the terms ‘In my experience’ “in my opinion”. You are deemed an ‘expert’ through your training and experience.

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**Manage your demeanor**

- You should remain calm and polite and if necessary be firm but not argumentative.
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**Know about our processes**

- Know the difference between verification and peer review! Peer review is a well defined scientific process and a process by which a scholarly work (such as a paper or a research proposal) is checked by a group of experts in the same field to make sure it meets the necessary standards before it is published or accepted. It constitutes a form of self-regulation by qualified members of a profession within the relevant field. Peer review methods are employed to maintain standards of quality, improve performance, and provide credibility. In Fingerprints, peer review is the review of our case files for court by two others, confirming we have used a recognized methodology to arrive at a conclusion and that another person can follow that methodology and arrive at the same conclusion. Verification is the final step in ACE-V and involves another examiner verifying the identification made and presented by an identifier, that is, do they support the ID.

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**Understand our professional memberships**

- We mention belonging to a ‘society’ or professional body in our statements; firstly because we are expert witnesses and membership of a professional body supports this and secondly, because it implies we abide by their code of ethics. If you have a professional membership in your statement, you must ensure you know about this organisation and the rules it expects you to abide by.

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**Initiate when appropriate**

- Ensure any exhibits you refer to have already been presented in court. If not, you may wish to prompt prosecution politely. For example: “Sir/Madam, if I could now produce exhibit xyz, this will assist me in demonstrating this point’.
- Do not hesitate to request that documents be shown to you that will assist you in giving evidence.

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**Code of conduct**

At all times the expert must abide by the High Court code of conduct for expert witnesses and remain professional and polite.

Refer:

<http://www.legislation.govt.nz/act/public/1908/0089/latest/DLM1817947.html>

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# Disclosure

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## **Rules of Disclosure**

The Criminal Disclosures Act 2008 came into force in 2009. Disclosure under the Act occurs in a number of stages. Initial disclosure by the prosecution must be made within 21 days of commencement of the proceedings. This includes a summary of the facts of the alleged offence, the penalties applying to the offence and a summary of the defendant's previous convictions. Following this, the defendant can request further disclosure, including the names of witnesses to be called, a list of exhibits, copies of all interviews and notes on evidence. Full disclosure occurs after the defendant has pleaded in a summary proceeding, elected trial by jury, or made an appearance in court. The prosecution must disclose all relevant information, together with a list of any information that the prosecution is refusing to disclose. The defendant can, once again, request that the prosecution make additional disclosure. Under the Act, the prosecution's obligation to disclose is ongoing. Disclosure by the defendant is limited to disclosure of an alibi, if one will be argued, and disclosure of any expert witnesses that will be called.

All disclosure occurs through the OC file, which in our instances will be a police member. He/she determines what evidence is required to be disclosed and will undertake to do so. You must always submit your disclosure pack to the OC file for them to deal with as appropriate. They should never be sent directly to either prosecution or defence counsel.

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# Rules of Evidence and the Evidence Act

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## **Introduction to Evidence**

Evidence is determined by both the common law and the Evidence Act, 2006. It covers a whole list of rules; the ones discussed here have some relevance to your role as a Fingerprint Officer in court or when preparing statements and cases for disclosure.

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## **The Purpose of the Act:**

Stated in S6 of the Act; the main objective of the Act is to "help secure the just determination of proceedings". This is achieved through six objectives;

1. providing for facts to be established by the application of logical rules
2. providing rules of evidence that recognise the importance of rights affirmed by the New Zealand Bill of Rights Act, 1990

3. promoting fairness to parties and witnesses
4. protecting rights of confidentiality and other important interests
5. avoiding unjustifiable expense and delay
6. enhancing access to the law of evidence

In order to be admissible, evidence must be relevant and will only be admitted if its probative value outweighs any unfairly prejudicial effect that it may have on the proceeding

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### **Relevance**

Section 7(1) states the general rule that, unless otherwise provided, relevant evidence is admissible in court proceedings. Evidence that is not relevant is inadmissible. Relevance is defined in section 7(3) if it has a “tendency to prove or disprove anything that is of consequence to the determination of the proceeding”. This consists of two factors; materiality and probativeness.

*Materiality* asks if it is sufficiently relevant to an issue before the court and *probative* is whether the evidence has the tendency to prove or disprove that issue.

Looking at the above statement again, we break it down as follows:

“tendency to prove or disprove (*probativeness*) anything that is of consequence to the determination (*materiality*) of the proceeding”. Both these must be satisfied for evidence to be relevant.

There is always a cost, in terms of money, time, multiplication of issues, or possible prejudice, of introducing any piece of evidence. The probative value of the evidence must be weighed against these costs.

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### **General Exclusion**

Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time or needless presentation of cumulative evidence. Exclusionary rules exist to govern this.

Section 8(1) sets out the rules of exclusion of evidence that is otherwise relevant. These are mandatory. As a general rule, evidence **MUST** be excluded if (a) its probative value is outweighed by its unfairly prejudicial effect or (b) it will needlessly prolong the proceeding.

1. *Unfair Prejudice* – e.g. danger a jury may give more weight to it than it deserves or be misled by evidence. An example of unfair prejudice is with previous convictions. The Fingerprint Officer must generally avoid mentioning or alluding to previous convictions or arrest sets of fingerprints. Care must be taken with giving evidence around prints held on AFIS.
  2. Photographs and Videos. – Generally admissible but may be excluded if the judge considers they may prejudice the jury.
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**Hearsay rule  
and its  
Exceptions**

A hearsay statement is defined as an out-of-court statement made by a person other than the witness, tendered for proof of its content. The focus however is on the purpose or use of the statement. The following exceptions apply to this rule;

1. ‘State of mind’ evidence – may apply to show the state of mind, knowledge, emotion of the hearer (the witness) or the speaker (the maker). For example a statement could be held to not be hearsay if its use was to explain why the witness did or believed something
  2. Exclusionary rules of Hearsay - General Admissibility of hearsay statements – A hearsay statement is admissible if it is reliable (“*the surrounding circumstances must provide reasonable assurance that the hearsay statement is reliable*”) and unavailable (“*a person who is unavailable as a witness*”).
    - a) There are some further statutory exceptions to hearsay statements;
      - i) Admissions
      - ii) Business records – this covers disclosing our documentary evidence in court, that is, our normal everyday business documents.
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**Opinion  
Evidence**

Under S23 the general rule is that opinions are not admissible as evidence. The reason for this is that a witness should testify only to what a witness has perceived. There are of course exceptions to this as follows:

1. Non-expert opinion S24 – Allows opinion evidence if it is necessary to enable a witness to communicate what the witness saw, heard or otherwise perceived. For example, non-expert opinion as to a person’s sobriety is admissible but must state the observed facts that lead to that conclusion and cannot express an opinion on matters such as their fitness to drive.

2. Expert opinion Evidence S25 – This is fingerprint testimony. The opinion must be of an ‘expert’ and it must offer ‘substantial help’ to the fact finder in understanding other evidence or ascertaining any fact in the proceedings.
    - a) Expert – someone with specialist knowledge and/or skills based on training, study or experience.
    - b) Substantially helpful – impose a higher threshold than the general admissibility balance of probative v prejudicial.
- 

**Risks of  
Expert  
Opinion  
Evidence.**

There is a higher standard of accuracy and objectivity required in assessing the admissibility of an expert opinion. This is because the testimony of an expert is likely to carry more weight. *“An expert witness should provide independent assistance to the court by way of objective unbiased opinion to matters within his expertise...An expert witness... should never assume the role of advocate”*. <sup>1</sup>

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<sup>1</sup> *Cresswell, J. The Ikarian Reefer* 1993, 2 LILR 68, 81-82

## Topic 2: Explaining your work and profession

### Fingerprint evidence

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#### Standards for Identification

Fingerprints have been used in courtrooms since the early 20th century, and judges have generally regarded them as scientifically sound.

Globally there are various standards (criteria) for identification in fingerprint examination. At present, there are two well-known standards:

1. The *empirical* approach (also called “minutiae threshold” or “numerical standard”)
  2. The *holistic* approaches (also called “non-numerical approach”).
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#### New Zealand Standards

New Zealand has adopted the holistic approach and has never required a numerical threshold to reach a conclusion of identity. There is a fallacy held by some in the court system that we once obeyed a 12 point rule, that is, followed an empirical approach. (This may have come from their knowledge of Edmond Locard’s work. Locard stated in 1918 that if 12 points were the same between two fingerprints, it would suffice as a positive identification.)

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#### The holistic approach

The *holistic* approach calls for an assessment by the examiner of each comparison based on its own merit (in terms of quality and quantity as revealed by the mark and the print). The expert concludes on an individualisation when he/she is satisfied that there is “sufficient” correspondence (or sufficient discordance in the case of an exclusion) between the compared images. This informed judgment is based on training, experience, and expert knowledge.

This was successfully argued in 1973 when the International Association for Identification, IAI, adopted a resolution rejecting an arbitrary number of corresponding points as the required basis for identification.

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#### Ne’urim Declaration

This standard was endorsed by the International fingerprint community in the 1995 Ne’urim Declaration which states, “No scientific basis exists for requiring that a pre-determined minimum number of friction ridge features must be present in two impressions in order to establish a positive identification” 11 countries were represented, including New Zealand.

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**Other standards in our work**

While we adopt the holistic approach for identification, as we follow the Ne'urim declaration, this only forms our identification standards. Other standards in our work are set by:

- Selection (a preference for tertiary study in a related field and/or experience)
- Training (a rigorous 5 year programme of study and exams at tertiary level concurrent with workplace 'on the job' learning and assessments, resulting in a Diploma)
- Image quality/ quantity of detail
- Proficiency testing (Collaborative Testing Services (CTS,) an overseas independent proficiency testing service)
- Case work quality assurance and the requirement of two verifiers before each identification is released
- Standard Operating Procedures (SOP's)

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**Points to Remember:**

- Bias – refer to your module and readings on bias, you may be asked about bias in court or whether or not you have been biased in your examination.
- We have a tendency to offer too much in response to a question. K.I.S.S. saying 'yes' is a perfectly acceptable answer, you do not need to elaborate and explain on every point.
- Understand your training programme. Who assesses you? Who governs it and controls it? Who reviews the training? Is it peer reviewed?

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## **Relevant Case Laws - New Zealand**

**Introduction**

Case law (or common law) refers to any set of rulings on law which is guided by previous rulings. Cases that are legally similar will generally be decided the same way, conforming with the decisions of a higher court. This is called the rule of 'precedent', and ensures consistency and certainty in how the law is applied.

There are several cases and decisions which have set precedents for fingerprint aspects in the New Zealand courts.

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**R v Mokaraka.** Peer review (verification process) regarded as hearsay evidence. However it was conceded that scientific evidence is often the result of team work. It is therefore conceivable that there is or should be, a ‘common law exception to the hearsay rule’ for this type of evidence.

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**R v Buisson and Ratana** 1990 – Court of Appeal considered the admissibility and nature of fingerprint evidence. The court ruled;

- a) ‘It is for trained fingerprint experts, who are able to see features not apparent to a lay person, to determine the existence of characteristics or points of similarity. That is not matter for the jury.’ The evidence for the jury to consider was the opinion tendered by each expert, and in assessing its reliability they had to decide what they made of his claim to have discovered various points of similarity and his conclusions based upon them. The jury were entitled to reply on what they had been told about those points of similarity if they were satisfied with the experts reliability; and
- b) (b). A fingerprint expert is not obliged to produce and show in court the original prints of the fingerprints, but may be required to do so if their evidence is to be contested. It is the expert’s testimony which is the evidence, not the prints, which could not be understood of themselves by the jury.
- c) It was determined that there was no requirement for 12 points to be a criterion for identification, but rather the ‘standard of proof is one of beyond reasonable doubt rather than scientific certainty’.  
“Something less than 12 points may be acceptable for safety, and in some special cases as few as 6 points”

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**Queen v Sidney Te Paiho** – in a ‘voire dire’ the defense tried to say the FP evidence was inadmissible as its prejudicial value outweighed the probative value. Here the court upholds the fact that there is no requirement for there to be 12 points (as per R v Buisson) and that the surrounding (that is, sequential fingers) and other prints identified to the offender on the same exhibit, add value/weight to the identification overall. In this case there were prints on a bed head from a rape scene.

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**R V Krausch  
(1913) –**

This was a ruling on the ‘value of fingerprint evidence’. This was a landmark case where the judge determined that fingerprints were established scientific facts. Fingerprints “may be regarded as established facts. The first of these facts is that finger-markings remain absolutely unaltered from birth to death... the second is that..the characteristics are random, in comparing prints of two individuals you may chance to find a close agreement as to a particular point, but the whole weight of scientific testimony shows that even this is rare”.

The same Judge, Chapman J, reaffirmed this several years later during **R v Gunn**, where he again expounded on the technique and value of fingerprint identification and the guilty verdict was seen as a ‘vindication of the fingerprint system’.

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**R V Carter  
(19/12/05,  
CA155/05)**

– there was a question as to ‘admissibility’ of the fingerprint evidence. Fingerprint Experts can base opinion of identity on the ‘quality and quantity of information in the images’. The court also reiterated a finding in R v Calder that stated that there needed to be a ‘minimum threshold of reliability’ to be admissible (the reference being to peer review). The essential comments here are that with regards to fingerprint evidence: “Ordinary principals of expert evidence apply – experts must give reasons for their conclusions”.

The courts stated that new methodologies had developed since R v Buisson, a four-step process involving, analysis, comparison, evaluation and verification. Evidence linking a fingerprint to a particular person is expert evidence, and the expert must identify the steps undertaken in the process of analysis and the major factors that influenced the expert to reach the opinion expressed. In this instance whilst the expert explained the methodology used, ACE-V, and the need for individual identification by an expert, he failed to explain the major factors (other than reliance on peer review) that led him to the view that the fingerprint could be identified as Mr. Carter’s. (There was an absence of ‘reasons’ to justify the opinions reached.)

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## Relevant Case Laws – International - Daubert

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### **Introduction to Daubert v Merrell Dow Pharmaceuticals.**

The opinion governs the admissibility of scientific evidence in Federal court in the US. It states that the Federal rules of evidence supersede the ‘general acceptance’ tests for admissibility which came out of Frye v United States.

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### **Daubert Opinion**

Daubert opinion states that:

- a) The judge must screen scientific evidence to ensure it is relevant and reliable
  - b) The focus is on principles and methodology, not on the conclusions they generate.
  - c) The court should include the following factors:
    - i) Testing and validation
    - ii) Peer review
    - iii) Rate of error
    - iv) General acceptance
- 

### **Testing Daubert**

Well over 40 Daubert hearings have since tested this and all fingerprint evidence has been accepted. The first of these Daubert hearings was in US v Byron Mitchell. In this case the defendant claimed that there was no scientific basis for the assertion of individuality in the matching of fingerprints. The judge upheld the admissibility of the fingerprint evidence and rejected the challenge by defense to exclude it. Most importantly, the court took judicial notice of two factors:

Human friction ridges are unique and permanent throughout the area of friction ridge skin including small ridge areas.

Human friction ridge skin arrangements are unique and permanent.

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**Fingerprints  
Science and  
Daubert**

The science of fingerprints meets the standards set forth in *Daubert*:

- **Testing.** The reliability of fingerprint analysis can and has been tested over an extended period of time. There has never been an instance in which two different individuals have been found to possess the same fingerprint.
  - **Error Rates.** There is much ongoing debate about this issue. There is no error rate for the *methodology* of fingerprint analysis, however there is *practitioner* error. There are erroneous identifications, but those are not the fault of the science of fingerprints. “The analogy most often given is, *No science is more precise than mathematics, however that does not prevent the practitioner of math from saying that two plus two equals five. That is not the fault of mathematics, but the fault of the mathematician.* The same thought applies to the science of fingerprints.” Gary W Jones; *Courtroom testimony for the fingerprint expert, 2<sup>nd</sup> Ed.*
  - **Peer Review.** Refers to published material on fingerprints which are open to peer review by others in the scientific community.
  - **Acceptability in the Relevant Scientific Community.** The reliability of fingerprint analysis has been accepted in the scientific community for over a hundred years.
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# Errors in Fingerprints overseas – McKie and Madrid Bombing

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## Background to McKie

The case of the murder of 57 year old Marion Ross in Scotland. The main suspect was David Asbury and a number of fingerprints were recovered throughout the investigation that were identified to him, including on a gift tag in the victim's home and on a tin that contained 2000 pounds which also had the victims prints on it. However there was another print recovered from the door frame in the victim's house which was identified to a police officer Shirley McKie. McKie was adamant she had never set foot in the house. McKie was subsequently fired, arrested and charged with perjury. A trial ensued and four fingerprint experts concurred that the print did indeed belong to McKie. The trial became an issue in that, if McKie was telling the truth then the fingerprint evidence in this case, in its entirety, would be flawed. Two fingerprint experts from the U.S. were asked to examine the prints and both concluded that the print did not belong to McKie. Additionally, the Scottish parliament invited overseas experts to examine the print and 171 experts stated the two prints did not match. The fingerprint evidence was ultimately rejected and as such Asbury's conviction was also overturned.

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## McKie Inquiry Findings

An inquiry into the case was begun in 2008. Included in its terms of reference was the task of finding out what went wrong and making recommendations to avoid these shortcomings in the future. The inquiry report was published in 2011 and the findings included:

- The marks Y7 and QI2 Ross were both misidentified by the Scottish Criminal Record Office fingerprint examiners due to human error and there is nothing sinister about the fact that these two errors occurred in the same case.
- The misidentifications of Y7 and QI2 Ross expose weaknesses in the methodology of fingerprint comparison and in particular where it involves complex marks.
- Fingerprint examiners are presently ill-equipped to reason their conclusions as they are accustomed to regarding their conclusions as a matter of certainty and seldom challenged.
- There is no reason to suggest that fingerprint comparison in general is an inherently unreliable form of evidence but practitioners and fact-finders alike are required to give due consideration to the limits of the discipline

There were 86 recommendations that came out of the inquiry. Other work from the fingerprint officers was checked for accuracy with no other mistakes found.

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**Background to  
Madrid  
Bombing**

Train bombing in Madrid, Spain. Interpol requested the analysis of latent prints from the scene. The case was assigned to a latent print supervisor and the Spanish police sent through electronic images. Eight images of low resolution were submitted, with no scale. An AFIS search occurred with a negative result. Latent prints asked for higher resolution images with a scale. Interpol submitted more emails with the prints and 5 suspect sets of tenprints. The latents were compared to the knowns but no ID could be made as the tenprints were of poor resolution. One of the latent images was searched in AFIS on 7 points; the misidentified candidate was #4 on the list. The comparison was done using the on-screen images against the supplied latent image. The job went to verification and the verifier requested an original ten print set and the images was subsequently verified using the high resolution digital copy and the original ten prints. The unit chief did not make a thorough examination prior to releasing the ID.

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**Madrid  
Bombing  
Findings –  
Human Failure**

Findings included:

- If the FBI had insisted on more information (e.g., an image with scale for proper enlarging and an overall shot for orientation and proper finger determination), this error may have been avoided. (Object photographs that were available to the committee established that the candidate's finger determination was not probable.) This comment was not meant to mitigate the error. The error was a "human" failure and not a methodology or technology failure. The prescribed methodology (Analysis, Comparison, and Evaluation–Verification or ACE-V) used for this examination was appropriate. It was the examiners' application of this methodology that failed.
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**Madrid  
Bombing  
Findings –  
Mindset**

- The apparent mind-set of the initial examiner after reviewing the results of the IAFIS search was that a match did exist; therefore, it would be reasonable to assume that the other characteristics must match as well. In the absence of a detailed analysis of the print, it can be a short distance from finding only seven characteristics sufficient for plotting, prior to the automated search, to the position of 12 or 13 matching characteristics once the mind-set of identification has become dominant. This would not be an intentional misinterpretation of the data, but it would be an incorrect interpretation nevertheless.
- Once the mind-set occurred with the initial examiner, the subsequent examinations were tainted. Latent print examiners routinely conduct verifications in which they know the previous examiners' results without influencing their conclusions. However, because of:
  - the inherent pressure of such a high-profile case
  - the power of an IAFIS match in conjunction with the similarities in the candidate's print, and
  - the knowledge of the previous examiners' conclusions (especially since the initial examiner was a highly respected supervisor with many years of experience)

... it was concluded that subsequent examinations were incomplete and inaccurate. To disagree was not an expected response.

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**NEW ZEALAND POLICE FINGERPRINT SECTION**  
**STANDARD OPERATING PROCEDURE**

**LATENT FINGERPRINT EXAMINATION AND IDENTIFICATION**

<b>S.O.P #:</b> 2	<b>Procedure category:</b> OPERATIONAL
<b>Effective date:</b> 01 - 01 - 2015	<b>Review date:</b> 2021
<b>Process owner</b>	PFO Hamilton
<b>Moderators</b>	Fingerprint Management Group (Lead - Manager: National Fingerprint Service Centre)

### 1.0 Purpose

To provide standards for examining latent fingerprints, and making and recording identifications of latent fingerprints.

### 2.0 Scope

This procedure applies to Fingerprint Assistants, Assistant Fingerprint Officers, and qualified Fingerprint Officers undertaking latent fingerprint examination and identification.

### 3.0 Rules governing New Zealand Police Fingerprint Section's Identification Standards

A pre-determined minimum number of friction ridge characteristics / details / features is NOT required to be present in two impressions in order to establish a positive identification.

Friction ridge identification is established through the agreement of friction ridge formations, in sequence, having sufficient uniqueness to individualize.

Nothing in this standard shall be seen to override the internal policies, procedures and quality controls of individual jurisdictions.

### 4.0 Key Terms

Term	Definition
ACE-V	The methodology used in examining and identifying fingerprints; where A = Analysis; C = Comparison; E = Evaluation; V = Verification.
Complex examination	May include, but not exclusively, identifications made predominantly on third-level detail, distortion, multiple impressions.
Feature	The structure and flow of friction ridges formed during biological development and to include characteristics, ridge edge shape and pores. A temporary or permanent influence, eg scars, crease, wart, etc, not being a component of the friction ridge development.
Characteristic	Galton points, bifurcation, ridge ending, dot.
Levels of detail	1 - pattern (classification), ridge flow/path; 2 - characteristics, ridge flow/path; 3 - supporting information, edgeoscopy,



## New Zealand Police Fingerprint Section Standard Operating Procedure # 2

	poreoscopy, creases, scars, incipient ridges, ridge flow/path.
Friction ridge impression	Fingerprint, palmprint, or footprint.
Fingerprint	In the context of this SOP, the term 'fingerprint' equates to 'friction ridge impression' as defined.
Latent fingerprint	Generic term referring to the 'unknown' prints to also include patent and contaminant prints.
Verification	Independent undertaking of the ACE process to determine if you reach the same conclusion as the identifier.
Exemplar	Recorded print from known source.

### 5.0 Roles / Responsibilities

Role	Responsibility
Fingerprint Assistant Assistant Fingerprint Officer	Analysis of latent fingerprints; comparison of latent fingerprints to known fingerprints; and evaluation of result. Identification of latent fingerprints.
Fingerprint Officer Senior Fingerprint Officer Principal Fingerprint Officer	Analysis of latent fingerprints; comparison of latent fingerprints to known fingerprints; and evaluation of result. Identification of latent fingerprints. Verification of fingerprint identifications.

### 6.0 Procedure

Procedure	Action	Responsibility
	<b>The examiner/identifier:</b>	
6.1	In comparing two friction ridge impressions, use the ACE-V methodology.	FPO / SFO / PFO/ Trainee
6.2 ANALYSIS	Examine the latent fingerprint to determine the presence or lack of features that may permit comparison; the quantity and quality thereof; and the presence or lack of factors that may render a comparison complex.	FPO / SFO / PFO/Trainee
6.3 COMPARISON	Make a comparative assessment of the configurative, sequential, and spatial relationships of identifying features between the two fingerprints.	FPO / SFO / PFO/Trainee
6.4	Initiate the Comparison process by referencing the features within the latent print and searching for them in the exemplar print.	FPO / SFO / PFO/Trainee
6.5 EVALUATION	Assess the level of agreement of identifying features between the two fingerprints to establish whether (a) there is agreement, and (b) if the level of agreement	FPO / SFO / PFO/Trainee

	constitutes a sufficient basis on which to base an opinion of identity.	
6.6	Ensure you have located a number of corresponding identifying features between the latent and exemplar prints which, in your opinion, could not have originated from more than one source. That is, the configuration of features is specific and unique to the individual producing the print.	FPO / SFO / PFO/Trainee
6.7	Reach a conclusion as a result of the ACE process, which may be one of the following: <ul style="list-style-type: none"> <li>- Identification - the latent fingerprint and the exemplar have originated from the same source.</li> <li>- Exclusion - the latent fingerprint and the exemplar have NOT originated from the same source.</li> <li>- Inconclusive - there is insufficient recorded detail in either fingerprint (latent or exemplar) to come to either of the above conclusions.</li> <li>- Unsuitable – the quality or the clarity of information contained within the print is so low as to render the print valueless.</li> </ul>	FPO / SFO / PFO/Trainee
6.8 VERIFICATION	Two qualified fingerprint officers undertake the ACE process independently to reach an evaluation/conclusion. The verifiers must follow the same process as above to determine whether they reach the same conclusion as the identifier. If they reach a different conclusion, refer to SOP # 4. SOP # 24 guides further on the verification process.	FPO / SFO / PFO
6.9	Once the verification process has been completed, that is, two other qualified experts have reached the same conclusion as the identifier, then an identification has been established and the notification of identification can be released. (Note: This notification must NOT be released before the verification process is completed.)	FPO / SFO / PFO
6.10 DOCUMENTING IDENTIFICATIONS	Having completed the ACE process and formulated a hypothesis of identity, produce an image of the latent fingerprint (and corresponding known exemplar),	FPO / SFO / PFO/Trainee

New Zealand Police Fingerprint Section Standard Operating Procedure # 2

	and mark on them corresponding features until you have reached the opinion of identification. These form your working notes.	
6.11	Use the latent fingerprint lift as the reference for marking the identifying detail, unless a photograph is the method you used to preserve the fingerprint.	FPO / SFO / PFO/Trainee
6.12	Work from the latent fingerprint to the known fingerprint. In rare occasions where the quality of the latent fingerprint exceeds that of the known fingerprint, this could occur interchangeably.	FPO / SFO / PFO/Trainee
6.13	Ensure you mark the correct type and location of identifying features. Where a feature appears to have been recorded differently between two fingerprints (eg ridge ending on one, bifurcation on another), use all available information, including other sets of known fingerprints, to form an opinion as to which is correct, and appropriately mark both features.	FPO / SFO / PFO/Trainee
6.14	Ensure identification characteristics are marked in the correct ridge sequence.	FPO / SFO / PFO/Trainee
6.15	Endorse the image of the latent fingerprint with the identified AFIS number, lift or image number, finger identified, date and identifier's initials.	FPO / SFO / PFO/Trainee
6.16	Complete an identification file consisting of: - marked images - SOC documentation - SOCO notes, or photographs - identified person's NIA Dossier Summary sheet - identification cover sheet - other relevant notes or documents	FPO / SFO / PFO/Trainee
6.17	Follow SOP # 24 for verification procedures.	FPO / SFO / PFO/Trainee
	<b>The verifiers:</b>	
6.18	Complete an independent comparison and evaluation process to determine if you reach the same conclusion, or not, as the identifier. Sign the documentation, and initial and date the image to show you	FPO / SFO / PFO

	have undertaken a verification process.	
6.19	Do not sign an identification unless you would be prepared to give the evidence of identity yourself, should you be required to do so.	FPO / SFO / PFO
6.20	If there is a disagreement about sufficiency or identity, you may apply the Independent Evaluation Review SOP#4.	FPO / SFO / PFO
6.21	If an identification has been made on Level 3 detail alone, the PFO should refer it to the FMG for consultation.	FPO / SFO / PFO
	<b>The identifier:</b>	
6.22	If the identification is of a Child or Young Person (18 or under), you must ascertain that the set of known fingerprints used to make the identification is lawfully held. If in doubt or it is unclear, these should be referred to your PFO, who will seek guidance.	FPO / SFO / PFO/Trainee/M:NFPSC

## 6.0 History of Change

SOP / Revision No.	Description of SOP / Revision	Date / Staff QID
		19/02/2015 - FMG
2	Clarified verification process and added additional step to 5.27. Added SOP # 2 as reference.	25/9/2018 – TVM910
3	Aligned with new SOP # 24	2/8/2019
4	Updated for SOP#4 name change	27/8/2020 - M:NFPSC

## 7.0 Attachments

nil

## 8.0 References

New Zealand Police Fingerprint Section Identification Standard: No scientific basis exists for requiring that a pre-determined minimum number of friction ridge characteristics / details / features must be present in two impressions in order to establish a positive identification.

SOP # 4 Independent Evaluation Review

SOP # 24 Verification

Annexure

# NEW ZEALAND POLICE FINGERPRINT SECTION

## STANDARD OPERATING PROCEDURE

### INDEPENDENT EVALUATION REVIEW: FINGERPRINT IDENTIFICATION

<b>S.O.P #:</b> 4	<b>Procedure category:</b> Quality Management
<b>Effective date:</b> 01 - 01 - 2015	<b>Review date:</b> 2021
<b>Process owner</b>	PFO Christchurch and PFO Hamilton.
<b>Moderators</b>	Fingerprint Management Group (Lead - Manager: National Fingerprint Service Centre)

#### 1.0 Purpose

To provide a standard procedure to be followed when the verification of a 'fingerprint identification' cannot be confirmed between the staff conducting verification (technical review).

#### 2.0 Scope

This procedure applies to all operational fingerprint staff who conduct the analysis, comparison, evaluation and verification of crime scene fingerprint evidence to known exemplars of ink and LiveScan impressions.

#### 3.0 Key Terms

Term	Definition
Identifier	The person who makes the identification.
Verification	The process of verifying the identification.
PFO - Principal Fingerprint Officer	Officer in Charge, Crime Print Section - The Principal or Acting Principal Fingerprint Officer.

#### 4.0 Roles / Responsibilities

Role	Responsibility
Senior / Fingerprint Officer Principal Fingerprint Officer Manager: National Fingerprint Service Centre	<p>Informing the PFO that a fingerprint identification conflict exists and submitting a referral to the Manager: National Fingerprint Service Centre.</p> <p>Forwarding identifications referred for independent review to the PFO of another Crime Print Section. Ensuring that the site to which jobs are referred is rotated.</p> <p>Manager: National Fingerprint Service Centre: Making any enquiry, and/or taking any advice or action necessary to satisfy himself/herself of the correct course of action to be taken if he/she is not a qualified Fingerprint Officer and is referred an identification as a result of the Resolution Policy protocols following a review, or receives a report or appeal from any member concerned about the outcome of any Resolution Policy process.</p> <p>Manager: National Fingerprint Service Centre: provides a final decision.</p>

## 5.0 Procedure

<p><b>Prerequisites</b></p> <p>These procedures are written on the basis that national procedures within the individual sites are adhered to. Refer to the Identification Process SOP.</p> <p><b>Review</b></p> <p>If at any point during the verification process there is disagreement as to the sufficiency or validity of the identification, then the file in its entirety is to be forwarded to the PFO.</p> <p>There are two defined and separate areas for review as given below.</p>
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Scenarios	
	Scenario 1: Both verifiers agree with the correctness of identification, that is, the identified person may have made the latent impression in question, but one verifier contends that there is insufficient detail in the latent fingerprint to allow any opinion of identity to be formed, and that he/she would not personally confirm the identification or give evidence of identity.
	Scenarios 2 and 3: One verifier disagrees with the correctness of the identification, contending that the identified person is not the source of the latent impression in question.

### Review scenarios and resolution procedure

Procedure	Action	Responsibility
5.1	<p><b>Scenario 1:</b> If either verifier disagrees that there is sufficient detail present to confirm an identification, that verifier should mark and include a copy of a crimcon endorsed 'insufficient detail'.</p> <p><b>Procedure</b> The verifier is to forward the identification to the PFO who will then take one of the following courses of action.</p> <ul style="list-style-type: none"> <li>• If the PFO, agrees with the sufficiency of detail, the PFO signs and endorses the paperwork accordingly including 'PFO' / 'acting PFO'. The PFO then refers the identification to the Manager: National Fingerprint Service Centre for delegation for additional verification.</li> <li>• If the PFO, agrees with the sufficiency of detail, AND one other has also agreed, the PFO signs and endorses the paperwork accordingly including 'PFO' / 'Acting PFO',</li> </ul>	FPO / SFO / PFO

	<p>and then releases the identification in accordance with policy.</p> <ul style="list-style-type: none"> <li>• If two verifiers disagree with the sufficiency of detail, they ensure the identification is disallowed.</li> </ul>	
5.2	<p><b>Scenario 2: Correctness of Identity</b> If either verifier does not reach the same evaluation as the identifier.</p> <p><b>Procedure</b> The verifier (or identifier) is to refer the identification immediately to the PFO, unless the verifier is the PFO, then Step 5.3 applies). The verifier is to make the notation 'no match' on an individually marked copy of a crimcon.</p> <ul style="list-style-type: none"> <li>• If the PFO agrees with the identification, they refer the identification to another site.</li> <li>• if the PFO disagrees with the identification, they ensure the identification is disallowed. The identifier retains a right of appeal and the PFO refers the matter to the Manager: National Fingerprint Service Centre</li> </ul>	FPO / SFO / PFO
5.3	<p><b>Scenario 3:</b> If the verifier is the PFO and disagrees with the identification.</p> <p><b>Procedure</b> The PFO is to refer the identification to the Manager: National Fingerprint Service Centre for actioning under this procedure.</p>	FPO / SFO / PFO
<p><b>Referral for independent review</b></p>		
5.4	<p>Identifications for referral to other sites are to be directed from the Officer in Charge (PFO) of the site where the difference of opinion has arisen.</p> <p>The PFO of the site where the query has arisen forwards the relevant job, complete with paperwork, to the Manager: National Fingerprint Service Centre, PNHQ.</p> <p>The PFO includes a report to the Manager: National Fingerprint Service Centre briefly listing the circumstances of the difference of opinion.</p>	FPO / SFO / PFO
5.5	<p>The Manager: National Fingerprint Service Centre forwards this file to another PFO for review.</p> <p>The Manager: National Fingerprint Service Centre rotates the site to which he/she sends</p>	Manager: National Forensic Services

	files of this nature.	
5.6	<p>The PFO or Acting PFO of the reviewing site is responsible for the identification review.</p> <p>Under no circumstances are identifications for review to be sent or received by persons other than the PFO or Acting PFO.</p> <p>Any person erroneously receiving such an identification for review must report the matter immediately to the PFO of his/her Section.</p>	FPO / SFO / PFO
<p><b>Duties of Principal Fingerprint Officer or Senior Fingerprint Officer Conducting the Independent Review</b></p> <p>Where the identification has been referred as a question of sufficiency of detail:</p>		
5.7	The appointed reviewer may not support the original evaluation of identification. In this case the identification is not verified and therefore not to be allowed.	SFO / PFO
5.8	The reviewer may confirm the identification and signs as second verifier.	SFO / PFO
5.9	The reviewer reports his/her findings to the Manager: National Fingerprint Service Centre for return to the originating Fingerprint Section.	SFO / PFO
5.10	<p>Following the review, and where the identification has been referred as a question of correct identity:</p> <ul style="list-style-type: none"> <li>• If the reviewer is in agreement with the referring PFO, the Manager: National Fingerprint Service Centre returns the file to the referring site for appropriate action.</li> <li>• If the reviewer is in disagreement with the referring PFO, the Manager: National Fingerprint Service Centre takes such action as he/she deems necessary in the circumstances including seeking appropriate guidance / advice.</li> <li>• The Manager: National Fingerprint Service Centre must be advised where court requests for jobs actioned under this Standard Operating Procedure are received.</li> </ul>	Manager: National Fingerprint Service Centre
<p><b>Appeal</b></p>		



5.11	Any identifier/verifier having concerns about the outcome of the review process has the right to appeal or report such concerns to the Manager: National Fingerprint Service Centre, who must enquire into such concerns and take such action as is appropriate to the circumstances.	FPO / SFO / PFO
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## 6.0 History of Change

SOP / Revision No.	Description of SOP / Revision	Date / Staff QID
		19/02/2015 - FMG
2	Updated to reflect SOP # 24	2/8/2019 – M:NFPSC
3	SOP name change. Flow Chart updated and hyperlink to Flow Chart restored.	21/7/20 – FMG

## 7.0 Attachments

[Independent Evaluation Review Flow Chart](#) <click>

## 8.0 References

Standard Operation Policy > Competency Standard > Identification Errors, Mistakes and Discrepancies

Code of Conduct

[Independent Evaluation Review Flow Chart](#) <click>

SOP # 24 Verification

SOP # 2 – Latent Fingerprint Examination

SOP # 23 Proficiency in the workplace – internal auditing

**NEW ZEALAND POLICE FINGERPRINT SECTION**  
**STANDARD OPERATING PROCEDURE**

**VERIFICATION**

<b>S.O.P #: 24</b>	<b>Procedure category:</b> OPERATIONAL
<b>Effective date:</b> 15 - 07 - 2019	<b>Review date:</b> 2021
<b>Process owner</b>	Manager: National Fingerprint Service Centre
<b>Moderators</b>	Fingerprint Management Group

**1.0 Purpose**

To provide the standard procedure for the process of verifying identifications of prints from scenes of crime, exhibits or as a result of any other work.

**2.0 Scope**

This procedure applies to all qualified Fingerprint Officers.

**3.0 Key Terms**

Term	Definition
Verification	Independent undertaking of the ACE process to determine if you reach the same conclusion as the identifier.
Qualified Fingerprint Officers	Fingerprint Officers / Senior Fingerprint Officers / Principal Fingerprint Officers
Prints	Includes all palms, fingers, phalanges and feet either taken under Section 32 of the Police Act or for elimination purposes or volunteered or taken from deceased.
Single impression identification	Cases where only one print has been identified to a person.
Blind Verification	A completely independent undertaking of the ACE process by a second competent examiner who does not have information about the first examiners conclusions. Complex identification, the process will be semi-blind.

**4.0 Roles / Responsibilities**

Role	Responsibility
Fingerprint Officer (FPO) Senior Fingerprint Officer (SFO) Principal Fingerprint Officer (PFO) , including the Manager: National Fingerprint Service Centre	Ensuring the process outlined in this SOP is adhered to.
PFO/SFO/FPO's	Maintaining proficiency in verification and completing the verification training pathway.
PFO	One of the verifiers and final 'gatekeeper' for all identifications wherever possible. PFO may delegate other staff into this role.

## 5.0 Procedure

Procedure	Action	Responsibility
5.1	A print contained on a lift or image taken from a crime scene or exhibit is evaluated as 'identified' to a set of prints held on the database, or otherwise taken under controlled conditions.	FPTSO AFO FPO SFO PFO
5.2	All 'identified' prints must be subjected to the verification procedures as directed under SOP #2 Latent Fingerprint Examination	FPO SFO PFO
5.3	The purpose of the verification process is to undertake an independent ACE process to determine if the same evaluation as the identifier can be reached.	FPO SFO PFO
5.4	There are two routes that an 'identified' print may follow through the verification process and those routes are defined as standard or complex identifications.	FPO SFO PFO
5.5	Standard identifications are those with high levels of quality and quantity comparison features in both the known and unknown prints.  Complex identification prints may include, but are not exclusively limited to: <ul style="list-style-type: none"> <li>• Poor quality print</li> <li>• Low quantity of features</li> <li>• Movement or distortion</li> <li>• Overlaid or multiple impressions</li> <li>• Poor contrast</li> </ul>	FPO SFO PFO

	<ul style="list-style-type: none"> <li>• Poor photographic focus</li> <li>• Single impression identifications</li> <li>• All scenes we have attended</li> </ul> <p>These may apply to the unknown or known prints.</p> <p>Identifications made on 3<sup>rd</sup> level detail alone are also to follow SOP # 2</p>	
5.6	<p>The determination of which verification process is applicable to an identification is made by the 'identifier'.</p> <p>This does not, as per standard practice, preclude a verifier from using unmarked copies of the prints to form their own evaluation for any case they are to verify.</p> <p>If a verifier in the simple pathway determines the identification should undertake the complex pathway, the verifier should seek guidance from the PFO.</p> <p>If a verifier in the complex pathway determines the identification should undertake the simple pathway, the verifier shall take no action and leave the identification in the complex pathway.</p> <p>If the file contains a mix of complex and simple pathway verifications, it must go through the complex verification pathway, however, only the complex images need to follow the complex process.</p>	FPO SFO PFO
5.7	<p>Standard identifications:</p> <p>The marked copies of the working notes, crimcons (or other) or ABIS screens, are forwarded to the first verifier for them to follow the process as defined in SOP # 2.</p>	FPTSO AFO FPO SFO PFO
5.8	<p>If the first verifier confirms the evaluation of the identifier then the file is to be forwarded to the second verifier to follow the same process.</p>	FPO SFO PFO
5.9	<p>If the outcome of the verification process confirms the original evaluation then an identification has been established.</p>	FPO SFO PFO
5.10	<p>The working notes, crimcons, ABIS print outs or other, are to be signed and dated by both verifiers to confirm</p>	FPO SFO PFO

	they are verifying the identification, then SOP # 2 applies.	
5.11	<p>Complex identifications:</p> <p>The original identification and all working notes related to that, and the main file is retained by the identifying officer.</p> <p>All other contents of the file that are relevant to the identification, are to be forwarded for verification, including unmarked copies of the known and unknown prints, and are to be provided to both verifiers simultaneously.</p>	FPO SFO PFO
5.12	Each verifier will independently mark-up crimcons (or other working notes), following the process as defined in SOP # 2, in order to demonstrate the evaluation that they reach. A semi-blind verification process is to be undertaken.	FPO SFO PFO
5.13	Each verifiers will reach a conclusion as defined in SOP # 2 and each pass their working notes, containing their evaluations, back to the identifier on completion.	FPO SFO PFO
5.14	The identifier will review both outcomes of the verification process and if both 'confirm' the original evaluation then an identification has been established.	FPO SFO PFO
5.15	The identifier will collate the file with the two independently semi-blind verifications included and check for data accuracy and ID memo accuracy. The identifier may record in FIMS the QID's of the two verifiers at that stage.	FPO SFO PFO
5.16	<u>All</u> independently marked crimcons, ABIS print outs or other working notes, are to be attached to the file and notification of the identification may be released, as per SOP # 2	FPO SFO PFO
5.17	If the outcome of the verification process from either of the verifiers under either the standard or complex processes does not confirm the original evaluation then the procedures detailed in SOP # 4, Conflict Resolution applies.	FPO SFO PFO

## 6.0 History of Change

SOP / Revision No.	Description of SOP / Revision	Date / Staff QID
		02/07/19 – MHK981
2		16/7/2019 - FMG
3	To incorporate feedback	26/7/19 - FMG
4	To add clarification	2/8/19 – M:NFPSC
5	To incorporate FPTSO role and reflect name change to SOP#4	19/8/20 - M:NFPSC

## 7.0 Attachments

## 8.0 References

SOP # 2 – Latent Fingerprint Examination and Identification.

SOP # 4 – Independent Evaluation Review

## Fingerprint Officer Training Programme



### Intermediate 1 Oral Questions: Identification 2

**NOTE:** The following sample questions serve as a guide for you only; they do not have to be asked exactly as they are written but serves as an idea as to the type of questions that could be asked from this module. If the trainee answers to the standard you consider appropriate for their level and demonstrated a good understanding of the module content that is all that is required. Remember even though these oral questions serve as a 'gateway' to a Knowledge test the process can also serve as learning exercise for them as they respond to questions that could be asked in moot or real court. Therefore it is important to provide feedback on how well they responded to / dealt with being asked questions on certain subjects. Consider how articulate, accurate and convincing they were in their responses.

List four factors that could result in a fingerprint lift showing distortion. See Module, Topic 1

Describe the concept of 'tolerance' with reference to observable differences between a latent print and a fingerprint sample. See Module, Topic 1

When considering substrate distortion, describe three types of substrate that may influence the appearance of the latent print. Describe the features that are likely to be observed in the latent print for each type of substrate. See Module, Topic 1

With reference to matrix distortion, what are some of the features that may be observed in wet prints? See Module, Topic 1

With reference to matrix distortion, what are some of the features that may be observed with fingerprints made in blood or paint? See Module, Topic 1

When considering development media, what are the characteristics or features associated with each of the four development media (powder, ninhydrin, iodine, and cyanoacrylate)? See Module, Topic 1

Explain the difference between deposition pressure and pressure distortion. See Module, Topic 1

List six observable 'red flag' indicators of distortion in a latent fingerprint. See Module, Topic 1

Describe the concept of bias. See Module, Topic 2

Describe cognitive bias and confirmation bias. See Module, Topic 2

Describe how you can self-manage to try and avoid bias. See Module, Topic 2

Describe the difference between forgery and fabrication. *See Module, Topic 3*

Describe the three methods of fabrication, and include a description of what clues might be observed in each case of the recovered fabricated latent. *See Module, Topic 3*

Describe two methods of forgery and include a description of what clues might be observed in each case of the recovered forged latent. *See Module, Topic 3*