NSW Police Force

EXPERT CERTIFICATE

Section 177, Evidence Act 1995 No. 25

In the matter of:	**Death of William Emanuel ALLEN – Forensic Case Number 131959**
Place Statement Made:	Fingerprint Operations, Police Headquarters, Parramatta
Date:	14th June, 2023

Name:	Karen Halbert
Work Address:	Fingerprint Operations – Police Headquarters, Parramatta
Work Telephone:	(02) [redacted]
Occupation:	Crime Scene Officer – Fingerprint Expert

STATES:

1. This statement made by me accurately sets out the evidence that I would be prepared, if necessary, to give in court as a witness. The statement is true to the best of my knowledge and belief and I make it knowing that, if it is tendered in evidence, I will be liable to prosecution if I have willfully stated in it anything that I know to be false or do not believe to be true.

2. I make the following declarations:

   - I have read the Expert Witness Code of Conduct in Schedule 7 of the NSW Uniform Civil Procedure Rules 2005 and I agree to be bound by the Code.
   - I have made all inquiries that I believe desirable and appropriate, and to the best of my knowledge, no matter of significance that I regard as relevant has been withheld from the court.

3. I hereby certify I am a Fingerprint Expert. I have specialised knowledge based on my training, experience and study of fingerprints since 2005. Refer to **Annexure 1** for a summary of my qualifications and experience.

4. For a glossary of terms used in this certificate see **Annexure 2.**

5. On 7th June 2023 a request was received by Fingerprint Operations, New South Wales Police Force from the Special Commission of Inquiry into LGBTIQ hate crimes. This document requested a review of Major Crime Brief MC 89/298, Forensic Case Number 131959, relating to the death of William Emanuel ALLEN, DOB 14/08/1940, on 28th December 1988 in Alexandria Park.

Witness: [redacted]

Rick Sinclair
Senior Sergeant
14th June 2023

Signature: [redacted]

Karen Halbert
Crime Scene Officer
14th June 2023

6. A set of deceased fingerprints bearing the name William ALLEN taken at City Morgue Glebe on 30th December 1988 with Morgue Reference Number E32916 was retrieved, as well as a record set of fingerprints bearing the name William ALLEN from the National Automated Fingerprint Identification System (NAFIS) during the preparation of the evidence in this matter.

7. On 13th June 2023 I retrieved the Major Crime Brief 89/298 which filed photographic negatives containing the following set of photographs of latent fingerprints from the files maintained by the Forensic Evidence and Technical Services Command, NSW Police Force:

   Forensic Case Number 131959 – examination of 21 Newtown St Alexandria and a silver Holden Astra, registration [redacted], by N. POPOV and J. GUNIENIUK on 29th December 1988.

   The images from the photographic negatives were developed and uploaded in digital format for searching and comparison purposes.

8. On 13th June 2023 I carefully compared all the fingerprints appearing in the images bearing **Forensic Case Number 131959** with the deceased fingerprints bearing the name William ALLEN. I utilised the ACE-V methodology to analyse, compare and evaluate the latent and record fingerprint impressions. This comparison was made by placing those images, one at a time, side by side with those fingerprint impressions, and referring backwards and forwards between them. I compared pattern type and ridge flow, friction ridge characteristics, their relative position to each other and the number of intervening ridges between those characteristics. The comparison process was carried out systematically and sequentially until all available friction ridge detail had been compared, and a conclusion determined.

9. I also reviewed historical case information relating to Forensic Case Number 131959 and found that in 1988 the notation on the running sheet within the folder indicated that William ALLEN, CNI [redacted], was fully eliminated to FC131959. However, there were no fingerprint determinations or results recorded as to which fingerprints were identified.

10. Further to this, I obtained the results from a case review conducted in 2016 relating to this matter. This information is detailed below.

11. In my opinion, which is based wholly or substantially on my specialised knowledge as a fingerprint expert using the ACE-V methodology, I have reached the following conclusions:

Witness: [redacted]

Rick Sinclair
Senior Sergeant
14th June 2023

Signature: [redacted]

Karen Halbert
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14th June 2023

Forensic Case Number 131959 Examination of 21 Newtown St Alexandria and a silver Holden Astra, registration JED 069, by N. POPOV and J. GUNIENIUK on 29th December 1988					
Graph	**Location**	**Conclusion**	**Person**	**Area**	**Notes**
W1	Side of green glass wine carafe	Identified	William ALLEN	Right Middle Right Ring	Found to have insufficient clear detail present to form a determination during the 2016 case review
W2	Side of green glass wine carafe	Identified	William ALLEN	Left Index	Found to be inconclusive with the left index finger of William ALLEN during the 2016 case review
W3	Side of another green glass wine carafe in bedroom 1	Identified	William ALLEN	Right Middle	Identified to the right middle finger of William ALLEN during the 2016 case review
W4	Side of glass coffee jar in kitchen	Inconclusive	William ALLEN	Left Thumb	Searched on NAFIS and not identified during the 2016 case review

a: Although Graphs W1, W2 and W4 were not identified to William ALLEN during the 2016 case review, recent improvements in fingerprint comparison software have permitted greater enhancement and magnification of fingerprint evidence to facilitate comparison in this instance.

12. The underlying scientific principles, the methodology used to reach the conclusion/s above and the various factors to be considered when interpreting fingerprint evidence are outlined in **Annexure 3**.

13. Fingerprint Operations, NSW Police Force is accredited by the National Association of Testing Authorities (NATA) as meeting the requirement specified by the Australian and International Standard (AS ISO/IEC 17025) for the competence of forensic laboratories (NATA Accreditation Number 15184). Accreditation requires adherence to an approved quality assurance system and participation in an external proficiency testing program.

14. I hereby give notice under the Criminal Procedure Act 1986, that the proposed exhibits, which have been indicated in this Certificate, may be inspected at Fingerprint Operations, Forensic Evidence and Technical

Witness: [redacted]

Rick Sinclair
Senior Sergeant
14th June 2023

Signature: [redacted]

Karen Halbert
Crime Scene Officer
14th June 2023

Services Command, NSW Police Headquarters, Level 4B, 1 Charles Street, Parramatta at a mutually agreeable time.

Witness: [redacted] Signature: [redacted]

Rick Sinclair
Senior Sergeant
14th June 2023

Karen Halbert
Crime Scene Officer
14th June 2023

ANNEXURE 1

EXPERT QUALIFICATIONS IN THE SCIENCE OF FINGERPRINTS

Crime Scene Officer Karen Halbert

I have been attached to New South Wales Police Force, Fingerprint Operations, Forensic Evidence and Technical Services Command since 2005. During this time I have acquired extensive training, knowledge and practical experience in the Science of Fingerprints. My relevant qualifications include:

- *Bachelor of Science (honours) in Applied Chemistry – Forensic Science,* from the University of Technology, Sydney in 2004;
- *Certificate of Expertise in the Science of Fingerprints* issued by the Australian Board of Fingerprint Examiners and accredited by the Australasian Forensic Field Sciences Accreditation Board (AFFSAB) in 2011;
- *Verification Expert Certificate* issued by the Forensic and Technical Support Command, Identification Services Branch, New South Wales Police in 2017;
- *Diploma of Public Safety - Forensic Investigations (Fingerprint Identification)*, from the Canberra Institute of Technology in 2009;
- *Certificate IV in Scene of Crime Officer Training,* from the Canberra Institute of Technology in 2005;
- *Certificate of Completion, Fingerprint Induction Course,* from the Forensic Services Group Training and Development Services, New South Wales Police in 2006;
- *Certificate of Completion, Ridgeology,* from the Forensic Services Group Training and Development Services, New South Wales Police in 2005;
- *Certificate of Completion, Digital Crime Scene Photography,* from the Forensic Services Group Training and Development Services, New South Wales Police in 2006;
- *Certificate of Attainment, Disaster Victim Identification Course,* from the Forensic Services Group, New South Wales Police in 2006;
- *Certificate of Completion, Applied Fingerprint Detection and Enhancement Techniques,* from the Forensic Services Group Fingerprint Operations, Identification Services Branch, New South Wales Police in 2012;
- *Certificate of Completion, Digital Fingerprint Photographic Techniques Workshop,* from the Forensic Services Group Fingerprint Operations, Identification Services Branch, New South Wales Police in 2014;
- *Certificate of Completion, Palm Print Analysis Workshop,* from the Forensic Services Group Training and Development Services, New South Wales Police in 2014;

Witness: [redacted]

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- *Certificate of Completion, Advanced Ridgeology Workshop,* from the Forensic Services Group Training and Development Services, New South Wales Police in 2017.

I have also gained extensive practical experience in the Science of Fingerprints while performing duties within Fingerprint Operations, where I have:

- Classified, searched, compared and identified thousands of latent finger and palm prints developed at crime scenes. I have also passed an annual latent print identification proficiency test in accordance with the standards set by the National Association of Testing Authorities of Australia (NATA);
- Classified, searched, compared and identified thousands of inked and livescan finger and palm print impressions on fingerprint ten print forms, utilising both computerised and manual classification systems;
- Examined and managed thousands of crime scenes, including those of a very serious and complex nature, and have developed numerous finger and palm prints that have been positively identified.
- Examined numerous deceased persons to obtain finger and palm prints for the purposes of identification.

I have also gained practical experience performing duties at the Fingerprint Laboratory (responsible for the specialised laboratory examinations of evidence for fingerprints using special chemical development and enhancement techniques) where I have examined numerous items of evidence and developed numerous finger and palm prints that have been positively identified.

At the completion of my training I successfully completed various written and oral examinations set by the Australasian Forensic Field Sciences Accreditation Board (AFFSAB). I was certified by this panel and issued a 'Certificate of Expertise in the Science of Fingerprints' recognising this achievement.

I have read and studied many books and manuals pertaining to the Science of Fingerprints, and I maintain an up to date knowledge of current issues and new developments within the fingerprint science by reading articles and journals concerned with the field of forensic fingerprint identification.

I have attended two NSW Police Force Fingerprint Expert Conferences held at HMAS Penguin in 2013 and 2015, one NSW Police Force Fingerprint Conference held at Holsworthy Army Barracks in 2017 and two NSW Police Force Fingerprint Conferences held at the Mantra Hotel, Parramatta in 2019 and 2022.

Witness: [redacted] Signature: [redacted]

Rick Sinclair
Senior Sergeant
14th June 2023

Karen Halbert
Crime Scene Officer
14th June 2023

ANNEXURE 2

GLOSSARY OF TERMS

Crime Scene Officer – An examination officer who collects forensic evidence at complex (major) crime scenes and may also be qualified to conduct fingerprint comparisons. The minimum qualification for a Crime Scene Officer is completion of the Forensic Investigator 1 Course (or equivalent) facilitated by NSW Police Force, Forensic Evidence and Technical Services Command.

Fingerprint – The intricate design of the friction ridge skin found on the underside of the fingers, palm, toes or feet. The word fingerprint is also a generic term used to describe all impressions of friction ridge skin.

Graph – A label used for recording purposes to indicate the location of fingerprint evidence developed at crime scenes or on evidence examined in a laboratory. F1 is the first fingerprint developed during the examination; F2 is the second fingerprint developed during the examination, etc.

Latent fingerprint – The impression left on a surface when contact is made with a fingerprint. Latent fingerprints are normally invisible and are mainly comprised of the residue on the skin, which may include natural perspiration and/or contaminants from other sources (e.g. moisturiser or food residue). Various development techniques are then applied (e.g. fingerprint powder or chemicals) to the fingerprint in order to make it visible.

NAFIS – The National Automated Fingerprint Identification System. This is a computerised database of fingerprint records that is used to search and store both record and latent fingerprints. Although NAFIS is a useful tool in searching latent fingerprints, it does not establish a fingerprint identification – this function is performed by a fingerprint expert.

NATA – National Association of Testing Authorities (NATA) is recognised by the Commonwealth government as the sole national accreditation body for establishing and maintaining competent laboratory practice

Record Fingerprint – A set of fingerprint impressions collected directly from a person for the purpose of identification. In most circumstances this is comprised of an impression from each of the ten fingers and an impression of each palm. These impressions are most commonly recorded on a 'Livescan' electronic fingerprint device, however can also be recorded using ink and paper.

Scene of Crime Officer – An examination officer who collects forensic evidence at non-complex (volume) crime scenes. The minimum qualification for a Scene of Crime Scene Officer is completion of the Forensic

Investigator 1 Course (or equivalent) facilitated by NSW Police Force, Forensic Evidence and Technical Services Command.

ANNEXURE 3

SCIENTIFIC PRINCIPLES

FUNDAMENTAL PRINCIPLES OF FINGERPRINT IDENTIFICATION

Fingerprint identification involves the assessment of impressions made by friction ridge skin on the underside of the fingers, palms and feet. All findings are premised on three fundamental principles that are supported by extensive bodies of research and empirical testing[1]:

- Friction ridge skin is so highly variable that it is not duplicated in another person or another region of the same person (uniqueness).
- Friction ridge skin is permanent and remains unchanged for the life of a person (permanence).
- Fingerprint pattern types vary within limits to allow for systematic classification.

FINGERPRINT IDENTIFICATION METHODOLOGY: ACE-V

Fingerprint examiners employ the *Analysis, Comparison, Evaluation and Verification (ACE-V)* methodology[2] when analysing fingerprint impressions. The phases of the ACE-V methodology are as follows.

Analysis is the assessment of a friction ridge impression to determine suitability for comparison. This incorporates the interpretation of pattern type, friction ridge path and friction ridge detail. Other factors considered include clarity, surface type, development method and distortion.

Comparison is the process of observing friction ridge detail in two impressions to determine whether or not there is agreement. This systematic, side-by side comparison process is based upon the appearance, sequence and spatial relationship of the friction ridge detail.

[1] *For studies supporting uniqueness and permanency of friction ridge skin, see: Organisation of Scientific Area Committees (OSAC) - Friction Ridge Subcommittee 2017, Guideline for the Articulation of the Decision-Making Process for the Individualization in Friction Ridge Examination (Latent/Tenprint). Available from: https://www.nist.gov/topics/forensic-science/friction-ridge-subcommittee.*

[2] Ashbaugh, DR 1999, *Quantitative-Qualitative Friction Ridge Analysis: An Introduction to Basic and Advanced Ridgeology*, CRC Press, New York Boca Raton, pp. 87-148.

Witness: [redacted]

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Evaluation is the process of reaching a conclusion based on the quality and quantity of information observed in the analysis and comparison phases. There are several possible conclusions that can be drawn:

- **Identified**: The two fingerprint impressions were made by the same person.
- **Not Identified**: This conclusion can take one of two forms:
    - Exclusion: The two fingerprint impressions were not made by the same person.
    - Insufficient: There is insufficient clear friction ridge detail in the impression/s to conduct a comparison.
- **Inconclusive**: Following the comparison, there is insufficient friction ridge information in the latent fingerprint and/or the record fingerprint to identify or exclude the person as being the source of the latent fingerprint.

Verification is the independent analysis, comparison and evaluation of the friction ridge detail carried out by another qualified fingerprint examiner. In the NSW Police Force - Forensic Evidence and Technical Services Command, the verification step is undertaken by a designated Verification Expert, who is a senior, practicing fingerprint expert appointed to that role based on their skills, knowledge, training and experience in fingerprint analysis. Where the conclusions of the two experts are in agreement, the NSW Police Force – Forensic Evidence and Technical Services Command will report the unanimous decision.

In the majority of cases, the ACE-V process produces a unanimous conclusion between the two fingerprint experts. In rare cases where there are differing opinions between two experts, the case is referred to a senior fingerprint expert for a final determination. Following this assessment, the NSW Police Force – Forensic Evidence and Technical Services Command will report the consensus decision.

The ACE-V methodology, as applied by qualified, practising fingerprint experts, has been the subject of method validation studies and has been shown to be accurate, repeatable and reproducible.[3]

STATEMENT OF LIMITATIONS OF RESULTS

The conclusions expressed in this report are subject to certain inherent limitations of fingerprint evidence and the ACE-V methodology.

[3]Langenburg, G 2012, *A Critical Analysis and Study of the ACE-V Process*. Ph.D. Thesis, University of Lausanne, Switzerland; Pacheco, I et al, 2014, 'Miami-Dade Research Study for the Reliability of the ACE-V Process: Accuracy & Precision in Latent Fingerprint Examinations', *NIJ Report (Award 2010-DN-BX-K268)*; Ulery, B et al, 2011, 'Accuracy and Reliability of Forensic Latent Print Decisions', *Proceedings of the National Academy of Sciences*, vol. 108, no. 19, pp. 7733-7738.

Witness: [redacted]

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Potential for Error

Qualified, practicing fingerprint examiners have demonstrable and specialised abilities to accurately detect discriminating features in friction ridge skin impressions. The accuracy of qualified, practicing fingerprint experts in comparing and identifying friction ridge skin impressions has been demonstrated to significantly exceed that of people who are untrained (i.e. novices).[4] However, the comparison of fingerprint impressions is a task conducted by humans, and subsequently there exists a potential of error.

To mitigate risk of error, NSW Police Force - Forensic Evidence and Technical Services Command incorporates strict peer review practices requiring independent verification of all fingerprint identifications by a minimum of one appointed Verification Expert. My conclusion(s) is not a statement of fact, but one of expert opinion.

Absence of Fingerprints

It is not always possible to detect fingerprints which are suitable for analysis, even if a person has handled an object or touched a surface. Some explanations for this include:

- Insufficient perspiration or residue on the hands to leave a detectable or identifiable latent fingerprint.
- The poor condition of the receiving surface (e.g. rough, dirty or otherwise unsuitable surface).
- Handling an object in a manner that smears or obliterates any fingerprint on that object.
- Various environmental factors affecting the fingerprint after it has been placed on the surface (e.g. heat, moisture, sunlight, etc.).
- Measures were taken to prevent fingerprints being left on an object (e.g. the person wore gloves).

Age of Fingerprints

There is presently no scientific means of determining the age of a latent fingerprint. In some circumstances, a latent fingerprint may remain detectable and/or identifiable for a considerable length of time, whilst in others it will degrade relatively quickly. Factors which influence this variability include:

[4]Tangen, J, Thompson, M & McCarthy, D, 2011, 'Identifying Fingerprint Expertise', *Psychological Science*, vol. 22, no. 8, pp. 995-997; Thompson, M, Tangen, J & McCarthy, D, 2014, 'Human Matching Performance of Genuine Crime Scene Latent Fingerprints', *Law and Human Behaviour*, vol. 38, no. 1, pp. 84-93.

Witness: [redacted] Signature: [redacted]

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- The composition of the latent fingerprint. If it has a high content of fats or oils, it will last a longer period of time.
- A latent impression which is comprised of a large amount of fingerprint residue will more likely survive for a longer period of time than one with a smaller amount of residue.
- The type and condition of the receiving surface may affect the detectable life of a latent impression (e.g. porosity, cleanliness and chemical composition).
- If a fingerprint is positioned on a surface which is handled regularly it will more likely be damaged and may only last a limited period of time.
- Fingerprints which are exposed to sun, wind or rain will generally last a shorter period of time than those protected from the elements.
- The shorter the period of time between the deposit of a latent fingerprint and the examination of the surface on which it is deposited, the greater the chance of detection.

Witness: [redacted]

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