

David Stefanus Landsberg Pieterse

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Professional Qualifications, Experience, and Training

From 1998 to 2015, I, worked as a Firearm and Toolmark examiner at the South African Police Service's Forensic Laboratory, Ballistics section. From 2010 until 2015, I was the Section Head for Development Facilitation (Ballistic Training, Mentoring, and Ballistic Awareness).

My independence as a Forensic Specialist, Firearm and Toolmark Expert, began in 2016 at The Forensic Hub. During this time, I investigated over 6600 firearm and toolmark-related incidents, including the Marikana Massacre in 2012. I have also routinely testified in South African and bordering country courts.

I have successfully completed a three (3) year in-service training course at the Ballistics section in the theoretical and practical application of the Forensic Ballistics Science.

THE IN-SERVICE TRAINING INCLUDES THE FOLLOWING TOPICS FOR FIREARM AND TOOLMARK INSPECTIONS (FORENSIC BALLISTIC SCIENCE):

- Identification of ammunition-fired bullets and fired Cartridge cases.
- The use of microscopic equipment.
- Microscopic individualization of firearms fired bullets and Cartridge cases.
- Microphotography.
- Identification of firearms.
- The examination of firearm mechanisms.
- The different manufacturing processes of firearms and firearm components.
- The examination of home-made devices.
- Techniques associated with the recovering and restoration processes of

obliterated alpha-numeric figures on metals.

- Re-loading of ammunition and the manufacturing processes of ammunition.
- Shot range determination.
- Crime scene investigation and examination techniques.
- Photographing and the documentation of the results during an investigation.
- Microscopic individualization of tools and tool marks.
- Physical matching.
- Documentation of examination results.

INTERNAL FORENSIC BALLISTICS:

- Functioning of firearm mechanisms during the firing process.
- Burning rates of propellant powder and gas pressure.
- The transfer of marks by the firearm to Cartridges fired Cartridge cases and fired bullets.

INTERMEDIATE FORENSIC BALLISTICS:

- The effect that hot gasses, propellant powder, and partially burnt propellant powder have on an intermediate target, before and after the exit of a bullet from the muzzle.
- The forming and effect of secondary missiles caused by intermediate targets.

EXTERNAL FORENSIC BALLISTICS:

- The trajectory of the bullet from the muzzle of the firearm to the final point of impact.

TERMINAL FORENSIC BALLISTICS:

- The wounding effect that the bullet has on tissue (Wound Ballistics).
- The effect that the bullet has on the target.
- The effect that the target has on the bullet.

I have received training in the capturing of fired cartridge cases and fired bullets on IBIS (Integrated Ballistics Identification System)

I successfully completed a test by the Indianapolis-Marion County Forensic Services Agency that is designed to determine the examiner's ability to correctly identify known bullets fired from ten (10) consecutively rifled barrels.

I visited the following firearm and ammunition manufacturers to ascertain myself which processes are used in the manufacturing of firearms and ammunition:

- Lyttelton Engineering Works (LIW)
- Truvello
- New Generation ammunition (NGA)
- Somchem
- Swartklip

I HAVE SUCCESSFULLY COMPLETED THE FOLLOWING QUALIFICATIONS:

- Bachelor of Laws (LLB) University of South Africa (UNISA), 2023.
- National Diploma Policing, Technikon SA, 1997.

I HAVE SUCCESSFULLY COMPLETED THE FOLLOWING COURSES:

- Certificate in Forensic Firearm and Toolmark Examinations for Specialists, South African Police Service, 2002.
- Bullet Trajectory Reconstruction, FBI (USA), 2002.
- Bullet Trajectory Reconstruction, FBI (USA), 2002.
- Techniques in Firearms Identification, FBI (USA), 2002.
- Gunpowder and gunshot Residues, FBI (USA), 2002.

- IBIS-Brasstrax, Forensic Technology, 2009.
- IBIS-Bullettrax, Forensic Technology, 2009.
- Statistical Method Validation, University of the Witwatersrand, 2012.
- Advance Shooting Incident Reconstruction, Bevel Gardner, and Associates, 2012.
- ISO 9001:2008 Facilitation DQS Training Academy, 2013.
- ISO 17025 Lab System Auditor, DQS Training Academy, 2013.
- General Health and Safety, Action Learning Academy, 2013.
- Education Training and Development Practices, SAPS ETDP-SETA, 2014.
- Public Sector Project Management, North-West University (Lee Mark Training), 2014.
- Conduct Outcomes Based-Assessment, HRD-Training, 2014.
- Blood Stain Pattern Analysis, Bevel Gardner, and Associates, 2015.
- Basic Light Microscopy (ZEISS 2016).
- Crime Scene Staging, Laura Pettler (USA), 2017.
- Firearm Competency Private-Use Unit Standards 119649,11650,119651 and 119652, Firearm Licensing, 2018.
- Firearm Competency Business-Use Unit Standards 123511,123514,123515 and 123519, Firearm Licensing, 2018.
- Pistol Armorer Course Level II, Canik Academy, 2023.

I HAVE PRESENTED THE FOLLOWING TRAINING COURSES:

- Co-presented with Michael Maloney (USA), Advance Shooting Incident Reconstruction, SAPS Ballistic Section, 2015.
- Co-presented with Iris Daily (USA), Bloodstain Pattern Analysis, SAPS Ballistic Section, 2015.
- Train the Trainer, Use of Marking and Measuring Kit for Crime Scene

Processing, SAPS Criminal Record Centre, 2016.

- Basic Crime Scene Photography, SA Military Police, 2017.
- First Crime Scene Responder, SA Military Police, 2017.
- Basic Recognition and Documentation of Bloodstain Patterns, SAPS 2017.
- Basic Crime Scene Photography (x2), SA Military Police, 2018.
- First Crime Scene Responder (x2), SA Military Police, 2018.
- Basic Crime Scene Management and Photography, Angolan Police, 2019.