



Australian Government

POLINV042 Critically analyse crash incident evidence

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Modification History

Release	Comments
1	This unit of competency was first released in POL Police Training Package Release 10.0.

Application

This unit describes the skills and knowledge required to apply specialised vehicle crash analysis techniques within a police investigation. This includes identifying, validating and collating evidence collected from crash incidents and determining applicable analysis methodologies.

This unit applies to those working as police employees involved in vehicle crash analysis.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are undertaken. Organisational policies and procedures must be consulted and adhered to, particularly those related to continuity of evidence, information management, Work Health and Safety (WHS) and quality management.

Those undertaking this unit would be required to work autonomously or as part of a team. They would demonstrate the ability to critically analyse and evaluate crash incident related evidence to develop and test hypotheses. They would demonstrate knowledge of analysis methodologies and perform analysis requiring adaptability across a broad range of contexts.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite unit(s)

No prerequisite units.

Competency field(s)

Investigation

Unit sector(s)

N/A

Elements and Performance Criteria

Elements		Performance criteria	
Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Evaluate evidence	1 .1	Identify and collate evidence to facilitate analysis.
		1 .2	Assess evidence to determine relevance to crash analysis.
		1 .3	Examine evidence to determine quality and evidentiary value.
		1 .4	Review investigation processes to ensure integrity of evidence.
2	Determine and apply analysis methodologies	2 .1	Evaluate crash incidents to identify and select analysis methodologies.
		2 .2	Assess evidence using multiple analysis methodologies.
		2 .3	Identify variables using derivatives of formulae and calculations.
3	Analyse crash incidents using analysis methodologies	3 .1	Calculate object, vehicle movement and speed using mathematics and physics.
		3 .2	Analyse momentum and kinetic energy to establish interactions of objects and vehicles.
		3 .3	Establish vehicle rollover thresholds, balance and loads to determine forces in crash incident.

		3 . 4	Undertake crush damage analysis to determine forces and impact speeds.
		3 . 5	Undertake digital data analysis to determine forces and impact speeds.
		3 . 6	Analyse object and vehicle movement using circular motion.
		3 . 7	Determine the direction of forces to reconstruct object and vehicle dynamics in crash incident.
4	Diagram a crash incident	4 . 1	Illustrate vehicle movement and interactions using computer software or other methodologies.
		4 . 2	Use computer software or other methodologies to develop a diagram of a crash incident.
		4 . 3	Validate measurements to confirm accuracy of diagram.
		4 . 4	Represent a crash incident graphically using vectors.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the POL Police Training Package Companion Volume Implementation Guide.

Unit Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
POLINV042 Critically analyse crash incident evidence	POLINV021 Critically analyse complex crash incident evidence	Changes include updates to: • Unit Code • Unit Title • Application • Elements • Performance Criteria • Performance Evidence • Knowledge Evidence • Assessment Conditions	Not equivalent

Assessment Requirements for POLINV042 Critically analyse crash incident evidence

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- applying kinematic equations
- applying multiple analysis methodologies
- assessing crash evidence
- calculating speed and dynamics of vehicle
- determining crash analysis methods
- evaluating evidentiary value
- identifying limitations of crash evidence
- undertaking crush damage analysis
- undertaking digital data analysis.
- producing a diagram of crash incident using mapping equipment and computer software or other methodologies.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- crash analysis equipment and resources
- judicial practices and policies on admissible evidence
- jurisdictional legislation, policies and procedures related to information gathering and handling
- kinematics including but not limited to:

- acceleration
 - relative acceleration
 - relative velocity
 - time, displacement and velocity
- mathematics and physics for crash analysis including but not limited to:
 - airborne motion
 - braking factors
 - circular motion
 - forces
 - kinetic energy
 - linear motion
 - types of momentum
 - vectors
- methodologies for analysing crash evidence
- methodologies for crash analysis
- legislation, organisational policies and procedures related to Work, Health and Safety (WHS)
- types of crash evidence including:
 - digital
 - forensic
 - human
 - road
 - vehicle
- types of damage
- digital data analysis
- mapping software or other methodologies.

Assessment Conditions

Assessment must occur in operational workplace situations or, where this is not available, in simulated situations that replicate workplace conditions.

Assessors of this unit must satisfy relevant vocational education and training legislation, frameworks and/or standards.

Link

Companion volumes, including implementation guides, are found on the national training register - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=98c3984e-2cf1-48a8-8ed1-85e4b92e7351>.