



Australian Government

POLINV021 Critically analyse complex crash incident evidence

Release: 1

POLINV021 Critically analyse complex crash incident evidence

Modification History

Release 1. This is the first release of this unit of competency in the POL Police Training Package.

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 by police investigators and determining applicable analysis methodologies.

This unit applies to those working as police officers 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 and 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 as they apply to investigations into crash incidents. They would perform sophisticated analysis requiring strong adaptability across a broad range of unpredictable contexts.

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

Pre-requisite Unit

Not applicable.

Competency Field

Investigation.

Unit Sector

Not applicable.

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** Coordinate resources 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** Verify investigation processes to ensure integrity of evidence
- 1.5** Identify limitations of evidence to inform crash analysis approach

2 Determine and apply analysis methodologies

- 2.1** Evaluate complex crash incidents to identify and select analysis methodologies
- 2.2** Interpret 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 object and vehicle movement using kinematic equations
- 3.3** Analyse momentum and kinetic energy to establish interactions of objects and vehicles
- 3.4** Establish vehicle rollover thresholds, balance and loads to determine forces in crash incident
- 3.5** Undertake crush damage analysis to determine forces and impact speeds
- 3.6** Undertake vehicle data analysis to determine forces and impact speeds
- 3.7** Analyse object and vehicle movement using circular motion
- 3.8** Determine the direction of forces to reconstruct object and vehicle dynamics in crash incident

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

This is a new unit. No equivalent unit.

Links

Companion Volume Implementation Guides can be found on VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=98c3984e-2cf1-48a8-8ed1-85e4b92e7351>

Assessment Requirements for POLINV021 Critically analyse complex crash incident evidence

Modification History

Release 1. This is the first release of this unit of competency in the POL Police Training Package.

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 and prioritising avenues of inquiry
- calculating speed and dynamics of vehicle
- determining crash analysis methods
- evaluating evidentiary value
- identifying limitations of crash evidence
- undertaking crush damage analysis
- undertaking vehicle data analysis.

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 court policies on admissible evidence
- jurisdictional policies and procedures related to information gathering, recording and dissemination
- kinematics including:
 - acceleration
 - relative acceleration
 - relative velocity
 - time, displacement and velocity
- mathematics and physics for crash analysis including:
 - airborne motion
 - braking factors
 - circular motion
 - forces

- kinetic energy
- linear motion
- types of momentum
- vectors
- methodologies for analysing crash evidence
- methodologies for crash analysis
- organisational policies and procedures related to information safety and information and quality management
- organisational policies and procedures related to work, health and safety (WHS)
- types of crash evidence including:
 - digital/electronic
 - forensic
 - human
 - road
 - vehicle
- types of damage
- vehicle data analysis.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, such as in situations that can affect safety or occur only rarely, assessment can occur in simulated workplace operational situations that reflect workplace conditions.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals.

Links

Companion Volume Implementation Guides can be found on VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=98c3984e-2cf1-48a8-8ed1-85e4b92e7351>

