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**FORENSIC**

**COLLISION INVESTIGATION**

**AND RECONSTRUCTION**

**WITHIN THE POLICE SERVICE**

**2018**

# **National Police Chiefs' Council**

## **Roads Policing Business Area**

### **Forensic Collision Investigation and Reconstruction within the Police Service**

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## 1 Introduction

- 1.1 The Forensic Collision Investigation Protocol sets out to define and promote a common standard of investigation of road traffic collisions. This document will be separately available to the police service and the public on the NPCC website.
- 1.2 The investigation of the circumstances surrounding death and life changing injuries resulting from road traffic collisions that are so serious that life-long health and wellbeing is drastically affected, or serious crime where a vehicle has been used as a weapon is one of the most important activities within policing. It is essential that a thorough and impartial investigation be carried out, seeking out best evidence to provide information to those personally affected and to any subsequent court enquiry, whether criminal or civil. The role of the Forensic Collision Investigator is crucial to this process.
- 1.3 The police service has built up a level of expertise in the field of forensic collision investigation and reconstruction since its introduction in the 1970s. This expertise is now recognised by H.M. Coroners, as well as the criminal and civil courts.
- 1.4 Forensic Collision Investigators provide evidence as expert witnesses and in doing so; their first duty is to the court, to comply with the legislative requirements contained within the Criminal Procedure Rules (CrPR), the Criminal Practice Directions and the Civil Procedure Rules (CPR). They should also comply with accepted or approved national practice and training, including those from relevant professional or regulatory bodies.
- 1.5 In conjunction with the Roads Policing Lead Investigators, they must carry out an impartial and thorough investigation, drawing on all the available evidence to determine what happened, rather than simply directing effort towards securing a conviction.
- 1.6 Forensic Collision Investigators should not feel obliged to arrive at a single, definitive conclusion. Some collisions are open to a number of equally viable interpretations.
- 1.7 This Forensic Collision Investigation & Reconstruction Protocol will be subject to continual review, to ensure that it continues to reflect current good practice and remains valid in the light of emerging legislation, new technology, human rights case law and other relevant factors.
- 1.8 The review process will be managed by the NPCC portfolio holder<sup>1</sup> and will take into account representations from members of the police service, external stake holders and the public.
- 1.9 Reference to the role of Forensic Collision Investigator may apply equally to the role of Forensic Vehicle Examiner (and this document should be read in this context). It should be noted that, in some forces, Collision Investigators also perform the role of Vehicle Examiner, whilst in others; the two roles are performed by different officers, members of police staff or the Driver and Vehicle Standards Agency (DVSA).

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1. The NPCC Road Death and Serious Collision Investigation portfolio holder is:  
Assistant Chief Constable Martin Evans, West Mercia Police

## **2 The role of the Forensic Collision Investigator**

- 2.1 The skills and experience possessed by Forensic Collision Investigators are such that they must be involved in the investigation of every road death at an early stage, or any other incident where their skills may add value, and accordance with the College of Policing Authorised Professional Practice (APP).
- 2.2 When a Roads Policing Lead Investigator has been appointed to manage an investigation, they will have overall responsibility for that investigation. It is the role of the Forensic Collision Investigator to advise the Roads Policing Lead Investigator on matters within the scope of their expertise. It is not, however, for the Roads Policing Lead Investigator to restrict the FCI's reconstruction, influence their findings or the impartiality of their reconstruction.
- 2.3 Police forces must ensure that they are readily able to deploy a Forensic Collision Investigator with the appropriate level of skills to road traffic collisions and scenes of crime that fall within the remit of this protocol.
- 2.4 Where a police force is unable to deploy a Forensic Collision Investigator with the appropriate level of skill from within its own resources, it is essential that the services of an experienced Forensic Collision Investigator from another force be obtained.

## **3 The role of the Senior Forensic Collision Investigator**

- 3.1 Every police force that undertakes the investigation and reconstruction of road traffic collisions must appoint a Senior Forensic Collision Investigator (SFCI), who will be responsible for the quality assurance of reconstructions and the standard of forensic collision investigation within that force.
- 3.2 The Senior Forensic Collision Investigator must possess the appropriate qualifications and current experience in the field of forensic collision investigation to enable them to undertake this role. Supervisory experience is desirable, but not essential.
- 3.3 The Senior Collision Investigator's responsibilities, in conjunction with individual force strategy, should ensure:
- That the number of Forensic Collision Investigators available to the force is appropriate to the demand for their services.
  - That all Forensic Collision Investigators receive adequate training.
  - That Forensic Collision Investigators are provided with sufficient and suitable equipment and resources to enable them to fulfil their role.
  - That all trained Forensic Collision Investigators have a regular opportunity to practise their skills.
  - Effective procedures exist for the critical review of collision investigation evidence.
  - Senior Forensic Collision Investigators have an opportunity to attend regional and national meetings to share good practice.
  - That the Forensic Collision Investigation unit and individuals within such a unit comply with and attain the required accreditation and comply with accepted national practice and guidelines.

## **4 Welfare Considerations**

- 4.1 Chief Officers must recognise that the investigation of road death frequently exposes the investigators to traumatic incidents. Their health and welfare must be monitored on a regular basis and provision made to provide occupational support where appropriate, and this should be reflected within individual force policies.

## **5 Training**

- 5.1 It is essential that forces have, in place and adhere to, a structured schedule of training for their Forensic Collision Investigators that provides them with the necessary skills to perform the role on a technical and practical basis (see Appendix 'A' & 'C').
- 5.2 Chief Officers must ensure that, as an initial starting point, Forensic Collision Investigators undergo training and pass a nationally approved qualification.<sup>2</sup> Further, it is a requirement that this be achieved within two years from the time the officer or police staff member first undertakes their initial forensic collision investigation training<sup>3</sup>. Forensic Collision Investigators must hold the relevant vocational driving licences or training, to enable them to investigate and reconstruct incidents involving the main spectrum of vehicle types they will regularly encounter.
- 5.3 It is essential that Forensic Collision Investigators, once having attained the initial qualification continue a structured programme of study, including CPD, to qualify in the various areas listed within Appendix 'C'. Initially, with the aim of attaining the Cert HE in Forensic Road Collision Investigation, within a further 2 years before progressing, if possible to attain the degree qualification in Forensic Road Collision Investigation.
- 5.4 Forensic Collision Investigation will only be carried out by a person who has successfully obtained a recognised Forensic Collision Investigation qualification<sup>4</sup> and who has been formally assessed by the Senior Forensic Collision Investigator as being competent to work unsupervised, or until this requirement is met, are working under the supervision of a fully qualified Forensic Collision Investigator.
- 5.5 Chief Officers must provide opportunities for training and the continuing professional development (CPD) of their Forensic Collision Investigators. The principle of life long learning is essential for all persons engaged in forensic collision investigation. Forensic Collision Investigators are required to keep a balanced and documented CPD portfolio of not less than twenty five hours per annum and in any case seek to achieve as much as possible.
- 5.6 Examples of required training and professional development activities are contained in appendix B, although this is not an exhaustive list.
- 5.7 Chief Officers must provide the opportunity for Forensic Collision Investigators to carry out empirical testing into vehicle stability, handling, braking and general performance, particularly in relation to new technology such as vehicle borne data systems, in a safe and controlled environment. This may be general research or specific to individual ongoing investigations.
- 5.8 Chief Officers must support Forensic Collision Investigators in registering with the appropriate professional bodies for this discipline.

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<sup>2</sup> Relevant approved qualifications are listed in appendix A.

<sup>3</sup> Required as part of the UCPD De Montford University process, failure to achieve this will require a candidate to recommence training from the beginning. The UCPD part 1 course does not qualify an officer or member of staff to practice collision investigation unsupervised.

<sup>4</sup> City and Guilds in Accident / Collision Investigation / De Montford University Certificate in (Road) Collision Investigation, Cert HE or relevant degree.

## **6. Scientific Support**

- 6.1 It is recognised that the majority of Forensic Collision Investigators will develop substantial expertise in a range of specialist areas.
- 6.2 It is, however, imperative that every Forensic Collision Investigator recognises the limits of their own knowledge and expertise. Use must be made of appropriate forensic service providers, as well as other scientific or specialist technical support, whenever the requirements of the investigation exceed the limits of the Forensic Collision Investigator's own expertise.
- 6.3 Determining when it is appropriate to use such specialist support should involve consultation between the Road Policing Lead Investigator, Senior Forensic Collision Investigator and the Forensic Collision Investigator in the case; in accordance with individual force policy. Such decisions should be proportionate, justified and in the best interests of the reconstruction. In respect to issues directly impacting upon the robustness and impartiality of the reconstruction and the expert evidence to be tendered, the final decision should ultimately lie with the Senior Forensic Collision Investigator.

## **7. The use of computer technology in Forensic Collision Investigation**

- 7.1 Specialist Forensic Collision Investigation computer software programs are an important tool in many investigations. An investigator using specialist collision investigation software in the course of an investigation or reconstruction, must be trained in its use, hold the relevant qualification certifying that that are competent in its use and have knowledge of the processes involved, as well as a full understanding of the effect of variable inputs on the final result. In the event that certification is not undertaken, the parent force should document why certification was not gained or deemed necessary.
- 7.2 The Forensic Collision Investigator must consider the validity of the results obtained from specialist computer software in the light of their own experience and expertise. Wherever possible, results obtained from computer software should be corroborated by other evidence, or independently validated.

## **8. Critical review of expert evidence**

- 8.1 It is recommended that Forensic Collision Investigators use a suitable template for the production of their expert reports. Such templates should contain a 'Statement of Compliance' and 'Declaration of Understanding', using a form of words that demonstrates knowledge of, and compliance with, the legislative requirements of the Criminal Procedure Rules (CrPR), the Criminal Practice Directions and the Civil Procedure Rules (CPR).
- 8.2 Where a Collision Investigator is preparing a report in a case where there is limited evidence or the evidence is far from complex, the content of that report should be tailored to the circumstances of the case, as determined by the author.

- 8.3 It is a requirement that any conclusion or expert opinion expressed in a Forensic Collision Investigator's report is independent and capable of being supported by the available evidence in the case, the expertise, experience and qualifications<sup>5</sup> of the author, or published scientific research and in line with their role as an expert witness, under Criminal and Civil Procedures Rules. It must also comply with the following:
- Scientific laws and physical principles must have been correctly used within their proper context.
  - Any calculations used in reaching the conclusions are both valid and numerically correct.
  - All references to published research should be fully cited.
- 8.4 All forensic collision investigation evidence should be subject of a critical review(s) by a suitably qualified, experienced and nominated Senior Forensic Collision Investigator, or their nominated deputy. To maintain continuity in standards these roles should not fall to whomsoever is available at the time. The Investigator carrying out this critical review must be independent of the investigation and be able to certify that they have examined the expert reports, including associated documentary evidence, and can confirm that the content of the report is, in their view and to the best of their knowledge, correct. The opinions expressed, however, remain those of the author.
- 8.5 Where an investigation involves the application of physical laws, methods or mathematics that are beyond the experience of the Forensic Collision Investigator to explain and prove to the satisfaction of a court, the evidence must be reviewed by an appropriate expert.
- 8.6 This may be a more qualified and experienced member of the police service, a forensic service provider or an appropriate expert, who has the necessary knowledge and experience. In such cases, a balance must be drawn between those who possess academic qualifications and those with essential practical experience.
- 8.7 Whilst the independent scrutiny of individual investigations and quality assurance processes may be achieved by the use of appropriate experts to verify police findings, it should also be noted that the management of collision investigation within forces may be subject to independent review.

## **Appendix A**

### **Approved Forensic Collision Investigation qualifications**

- City and Guilds Forensic Collision / Accident Investigation Certificate
- University Continuing Personal Development (UCPD) Certificate in Collision Investigation, awarded by De Montfort University
- SQA in Forensic Collision Investigation
- Cert HE in Forensic Road Collision Investigation
- Appropriate degree qualification in collision investigation or a relevant allied subject.
- Appropriate vehicle examination qualifications, such as City and Guilds

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<sup>5</sup> This includes driving and ensuring that Forensic Collision Investigators have suitable vocational licences to enable them to comment on vehicles involved in collisions, in terms of the driving and handling characteristics of vehicles of different categories.

## Appendix B

### Continuing Professional Development

#### 1. Overview

- 1.1 The process of Continuing Professional Development (CPD) is essential and enables Forensic Collision Investigators to record their training and demonstrate their continuing development within their role. CPD ensures investigators keep up to date with current developments and new technology, thereby expanding their knowledge. It forms a personal record of learning and development for the benefit of the investigator and the organisation. It is a means by which standards of expertise and experience are not only maintained, but also enhanced.
- 1.2 Learning is a life long experience and continues beyond initial qualification. Increased knowledge can always improve performance and enhance role competence. CPD does not include attending and reporting incidents, except where subsequent research into new technology or methods is required.
- 1.3 CPD is a means for recording the learning gained. Recording relevant CPD is also not just a matter of attending courses. Achievement of CPD does not necessarily impose requirements to attend courses, nor does it set financial obligations.

#### 2. How to obtain CPD

- 2.1 CPD is a requirement for all Collision Investigators engaged in the investigation of collisions within the police service. A **minimum**, documented twenty five hours requirement is specified for each year. All records should include details of the learning activity, its relevance to the role and the development achieved.
- 2.2 It is the investigator's responsibility to record, justify and calculate the value of their CPD in hours. An example would be listening to a presentation concerning a subject in which an investigator already has a good knowledge. Such an activity may not benefit that investigator as much as one experiencing that subject matter for the first time.

#### 3. Development Activities

- 3.1 CPD can be obtained in a variety of ways. A balanced approach is required to the activities recorded, as it will provide greatest benefit.
- 3.2 Activity categories relevant to forensic collision investigation may include:
  - a. **Further Education Studies**

BTEC, National Certificates, City and Guilds, Diplomas, NVQs, other recognised diplomas, post qualification studies, BA, BSc, MA, MSc.
  - b. **Short Courses/workshops**

Attending short courses in individual relevant subjects, structured practical training and seminars organised by:

    - Police.
    - Relevant professional bodies.
    - Other short course providers.
    - Distance learning providers.
  - c. **Imparting knowledge**
    - Preparation of presentations for conferences and seminars.
    - Preparation of articles and reviews for publication.



- Preparation of lectures and training course input.
  - Mentoring of trainee Forensic Collision Investigators.
- d. **Conferences and exhibitions**
- Attending conferences and exhibitions organised by the police, relevant professional bodies and other organisations
- e. **Committee work**
- Related committees for the development and management of collision investigation issues.
  - Service on technical panels.
- f. **Meetings**
- Organised by police or other relevant professional bodies.
- g. **Research relevant to individual investigations**
- Technical and structured studies into a specific issue.
  - Structured research that enhances knowledge and experience.
  - Experience of new or emerging technology and investigative techniques.
- h. **Private study/Self directed learning**
- Learning of new skills.
  - Private study, including reading publications and journals relevant to collision investigation.

#### **4. How to record evidence of CPD**

4.1 Achieving, recording and maintaining records of CPD is a personal responsibility.

4.2 Formal records of CPD should be kept, which can be either electronic or paper, but they must be readily available for inspection if required.

4.3 For each documented CPD entry there is a requirement to specify:

- Date
- Activity or event title
- Organiser and venue
- Description of the activity or event
- Relevance to the person's role
- Personal development achieved.
- Hours claimed

Examples of completed records can be found on various relevant professional organisations' websites.

## Appendix C

### Training Courses

Forensic Collision Investigators **require** training in the following subjects, although this is not an exhaustive list:

#### To be attained within first 3 years

Advanced police driving  
Motorcycle Rider training  
Full Forensic Collision Investigation qualification (C&G, UCPD+ or equivalent)  
Surveying / Laser Scanners and software  
Vehicle damage measurement (crush) and analysis  
Photography  
Plan production  
Hybrid vehicles  
CCTV Analysis  
Tyre examination

+ De Montford University requirement – if not completed in specified time, then an investigator will be required to recommence training from the beginning.

#### To be attained within the first 5 years

Large goods vehicle licence holder or Passenger carrying vehicle licence holder  
Vehicle Examination - Cars and motorcycles  
Computer animation and simulation  
Pedestrian and Cycle Collisions  
Motorcycle Collisions  
Light bulb analysis  
Human factors  
Analogue and Digital Tachograph Analysis

#### Specialist courses (ideally not within the first 5 years):

Vehicle Examination - Commercial vehicles  
Tachograph calibration  
Vehicle handling courses  
Supplementary Restraint Systems (SRS)  
Manufacturer's vehicle borne data systems  
Incident Data Recorders and Data Loggers

Additional courses as identified, together with refresher training, as deemed appropriate by the Senior Forensic Collision Investigator.