



**Division of State Patrol
Policy and Procedure**

Number 16-2

Subject TECHNICAL RECONSTRUCTION	
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I. POLICY

It is the policy of the Division of State Patrol (DSP) to provide personnel trained in technical reconstruction and related services for vehicle crashes, crime scenes, death investigations, or other events when warranted by severity, liability, questionable circumstances, or upon requests from outside agencies.

II. BACKGROUND

Technical reconstruction services are often required for vehicle crashes that are criminal in nature. In addition to crash reconstructions, these services are also requested in investigations that involve crimes against persons and/or property. Reconstruction is a process of recreating an incident through factual information. In order to perform reconstructions of incident scenes, evidentiary items must be accurately documented and preserved for analytical purposes. The DSP has personnel who are specially trained to perform the duties of both evidence preservation and analytical reconstruction.

III. OBJECTIVE

The objective of this policy is to provide the DSP with guidelines for conducting technical reconstructions. This policy creates a structure to address uniformity, quality, and efficiency in support of established professional standards for scientific and evidentiary analysis of certain incidents. Processes involving management, equipment, personnel, and training are discussed.

IV. DEFINITIONS

- A. **Accredited Reconstruction Specialist** – personnel who obtain the qualification by ACTAR.

- B. **ACTAR** – the acronym for the Accreditation Commission for Traffic Accident Reconstruction.
- C. **Cause Analysis** – the effort to determine why the crash occurred and to establish the complete combination of contributing circumstances.
- D. **Crash Reconstruction** – the objective analysis of the physical evidence present in a collision event to establish how the collision occurred, factually and objectively.
- E. **Crash Reconstruction Specialist** – personnel trained through the reconstruction level. They have not obtained the ACTAR accreditation.
- F. **Crime Scene Reconstruction** – the use of scientific methods, physical evidence, deductive and inductive reasoning, and their interrelationships to gain explicit knowledge of the series of events that surround the commission of a crime.
- G. **Complete Reconstruction Analysis** – a comprehensive examination of all attainable evidence related to a crash event or other incident investigation for use as the basis to establish professional expert opinions relative to cause analysis.
- H. **Death Investigation** – the sudden or unexplained death of an individual which has a profound impact on families, friends and society; and places significant responsibility on the agencies tasked with determining the cause of death.
- I. **Forensic Mapping** – the utilization of a survey instrument, tape measures, levels, or other devices to document the location of evidence at events involving ~~motor~~ vehicle crashes and crime scenes. This data can be utilized to create a scaled representation of the event scene.
- J. **Incident Scene Reconstruction** – the collection and preservation of physical evidence at crash scenes, crime scenes, or disasters by DSP personnel for later reconstruction purposes; regardless of whether the reconstruction will be conducted by the DSP or another entity.
- K. **Limited Reconstruction Analysis** – examination of specific aspects of a collision event or other incident investigation where the scope of the analysis is more narrowly defined than a complete reconstruction analysis. Expert opinions and testimony could result from this type of evaluation.
- L. **Point Set Registration** – The process of aligning two or more-point sets into a consistent model.
- M. **Point Set Rendering** – The process of creating a 3D image from registered point set data.

- N. **Technical Crash Scene Investigator (TCSI)** – personnel with special training in crash investigation and forensic mapping.
- O. **Technical Reconstruction Unit (TRU)** – a Division of State Patrol specialized unit comprised of specially trained and qualified reconstruction personnel.

V. GENERAL PROVISIONS

A. Assignment of Personnel

1. TRU Supervisors

- a. The TRU will provide assistance and guidance to regional operations. The supervisors of the TRU will manage the statewide unit and provide technical support for DSP reconstruction efforts.
- b. The supervisors of the TRU is responsible for managing the workload of TRU members, assigning reconstructions as appropriate and determining the priority order in which reconstructions should be conducted.
- c. The supervisors of the TRU will monitor the statewide Traffic and Criminal Software (TraCs) database of reconstructions that will include: assignment date, requesting agency, nature of request, and DSP member assigned. This database will be used to monitor and prioritize TRU reconstructions and analyze the overall work performed by the unit.
- d. The supervisors of the TRU will be responsible for the statewide management of the equipment needed to perform reconstruction duties. Equipment will include, but not be limited to, total stations, computer hardware and software, photography equipment, tools, safety equipment, etc.
- e. The supervisors of the TRU will also be responsible for coordinating regional Technical Crash Scene Investigators and Crash Reconstruction Specialist as needed for technical crash investigation training and case assignment.

2. TRU Personnel

- a. Investigate incidents where a reconstruction is requested or needed.
- b. Provide oversight to region-level Crash Reconstruction Specialists and Technical Crash Scene Investigators by giving assistance and performing quality control review of technical reconstruction reports.
- c. Assist management staff in meeting training and resource needs at the

B. Case Classification System

Crash Reconstruction

1. A classification system designed to establish case priority for the purpose of personnel resource allocation will be as follows:
 - a. Class 1 – An incident resulting in death, great bodily harm or serious bodily injury to one or more persons where criminal charges are probable.
 - b. Class 2 – An incident resulting in death, great bodily harm or serious bodily injury to one or more persons where criminal charges are possible and where cause analysis cannot be reasonably discerned by a patrol officer.
 - c. Class 3 – Any other incident with high profile implications, or involving another law enforcement agency, or as designated by the respective command staff.

2. The classification of the reconstruction will serve as a guideline for allocating resources. Reconstruction personnel should be guided by the following:
 - a. Class 1 investigations will usually require a complete reconstruction analysis and be given the highest priority.
 - b. Class 2 investigations will usually be reported through a limited reconstruction analysis. Although a limited report may be completed, data collection will be given the same priority as a Class 1 investigation.
 - c. Class 3 investigations will be given a priority by management, based on resource availability and degree of importance.

Forensic Diagramming

1. A classification system designed to establish case priority for the purpose of personnel resource allocation will be as follows:
 - a. Class 1F – An incident resulting in an arrested subject, where a court assigned discovery date is set, where a district attorney has requested specific timelines for the completion of the investigation, where the involvement of the TRU is paramount in assisting the investigating agency in identifying a suspect, or as assigned by a TRU supervisor.
 - b. Class 2F – An incident resulting in the arrest of a subject where court proceedings have not assigned a discovery date, the district attorney has not required a specific timeline for completion, or the involvement of the TRU is limited to evidence documentation only and no suspect to the crime is yet to have been identified, or as assigned by a TRU supervisor.

2. The classification of the forensic diagram will serve as a guideline for allocating resources. Reconstruction personnel should be guided by the following:
 - a. Class 1F investigations will usually require a full point set rendered diagram along with a narrative supplemental report and will be given the highest priority.
 - b. Class 2F investigations will usually require a full point set registered diagram along with a narrative supplemental report and will be given a priority by management, based on resource availability and degree of importance.
- C. Reconstruction Technology
1. Equipment Maintenance & Procurement – It will be the responsibility of the Technical Reconstruction Unit to set up proper maintenance and operational protocols of equipment.
 2. Software – Software utilized for investigative and reconstruction purposes will be determined by the Technical Reconstruction Unit.
- D. Crash Reconstruction Documentation
1. Narrative Reports – Each investigator who participates in any part of the reconstruction process by collecting, preserving and/or recording of evidence at incident scenes shall complete a narrative report detailing their involvement. A supplemental report designated by the TRU will be utilized.
 2. Crash Reconstruction Reports – All complete crash reconstructions shall require the completion of a comprehensive written narrative report.
 3. Limited Reconstruction Reports – May be used in cases where there is a narrow or limited objective, or where the investigator is documenting the collection of evidence without a complete reconstruction analysis. Examples are: lamp examinations, evidence collection, crush analysis, forensic mapping, or review of reconstruction reports from agencies outside of the DSP.
 4. Mobile Architecture for Communication Handling (MACH) – Personnel will provide information regarding their duty status, the status of vehicle impoundments, criminal charges, driver and vehicle information, etc. through the MACH system.
 5. Traffic and Criminal Software (TraCs) – Personnel will enter information regarding the investigations in TraCs including task, reports, photographs, recordings, electronic data, etc.

E. Quality Control

A peer review process is required upon completion of an incident reconstruction. The region-level Crash Reconstruction Specialist will forward the completed reconstruction package to a member of the Technical Reconstruction Unit for review. Members of the TRU will have their cases peer-reviewed or approved by a supervisor of the Technical Reconstruction Unit or his/her designee.

F. Open Records

In pending criminal cases, district attorneys may request that reconstruction information be kept confidential. However, completed investigative reports have no blanket exemption from disclosure. Records custodians should confer with prosecutors when conducting disclosure balancing tests (*Linzmeier v. Forcey*, 2002 WI 84, 254 Wis. 2d. 306 (2002)). The custodian of records is urged to consult the Wisconsin Department of Transportation (WisDOT) legal counsel prior to denying requests for records.

1. All documents, photographs, and voice recordings will be maintained in electronic format. Files will be stored in a location designated by DSP IT.
2. Open records requests may be filled by DSP staff by downloading the appropriate files and copying them to electronic storage media such as a compact disc (CD), digital video disc (DVD), or a portable flash memory device.

G. Training

1. Reconstruction Training Advisory Committee – This committee, appointed by the supervisors of the TRU and consisting of reconstruction trained personnel, shall determine the availability and feasibility of reconstruction related training. In addition, the committee may make recommendations pertinent to training and certification requirements related to the DSP technical reconstruction program.
2. A minimum of 40 hours of specialized training related to the field of crash and crime scene reconstruction for all reconstruction specialists will be conducted annually, based on the needs and resources of the DSP.
3. The TRU will facilitate region-level training as needed.

H. Certifications

The DSP encourages its personnel to obtain certifications within the field of technical reconstruction. Some of the certifications may include, but not be limited to ACTAR, American Traffic Safety Services Association (ATSSA), Forensic Mapping or Total Station Technology, and the Crash Data Retrieval (CDR) System.

VI. PROCEDURE

A. Law Enforcement Dispatcher

1. Collect information, including but not limited to, requesting agency, incident type, scope, location, number of personnel requested and type of equipment requested.
2. Advise and obtain authorization from the duty supervisor to assign personnel to meet the request.
3. Contact appropriate personnel such as members of the Technical Reconstruction Unit, region-level Crash Reconstruction Specialists, or Technical Crash Scene Investigators, as directed. Geographical location of personnel and quickest response times should be considered when making the requests
4. If a reconstruction request is subsequently cancelled by the requesting agency, including DSP, the LED will document the name of the supervisor cancelling the request, as well as the contact information of that supervisor in the CFS.

B. Region-level Supervisor

1. Reconstruction requests for incidents in-progress
 - a. Assess, evaluate and determine the appropriate response for the request.
 - b. Attempt to notify a supervisor of the TRU prior to a reconstruction request being denied.
 - c. Have the nearest available qualified personnel and needed equipment dispatched to the scene.
 - d. A Crash Reconstruction Specialist from another region, and/or in an off-duty status, may be contacted with consideration given to their geographical location or response time to the scene.
 - e. Assist the Crash Reconstruction Specialist with scene management as appropriate and necessary.
 - 1) Ensure appropriate staffing levels.
 - 2) Work with on-scene reconstruction personnel assigning tasks such as taking witness statements, traffic direction, evidence collection, motor carrier inspection, etc.
 - 3) Coordinate road closures and detour routes when necessary for evidence collection or safety, in accordance with WisDOT Emergency Traffic Control and Scene Management Guidelines.

- 4) Contact other law enforcement agencies when required.
 - 5) Contact local prosecutor when appropriate.
 - 6) Authorize vehicle impoundment for evidentiary purposes.
 - 7) Assess critical incident impact on any involved DSP personnel and arrange for appropriate debriefing or Employee Assistance as needed.
 - 8) Authorize necessary schedule changes for personnel involved in the incident who are performing follow-up activities.
 - 9) Monitor regional personnel to assure timely submission of required follow-up and reports.
- f. Consult with a TRU supervisor on unusual or high profile cases, cases involving DSP personnel, officer involved shootings, or cases resulting in great bodily harm or death to a police officer.
- 1) In crash investigation cases involving a law enforcement officer, the duty supervisor should make every reasonable effort to ensure that a DSP officer, other than the crash reconstruction specialist, complete the DT4000.
 - 2) The DT4000 should be reviewed by the crash reconstruction specialist prior to completion in the TRACS database.
2. Cases not currently in progress shall be forwarded to a supervisor of the TRU for evaluation and processing.

C. Crash Reconstruction Personnel

- 1. Reconstruction requests for incidents in-progress
 - a. Scene assessment, determination of personnel and equipment needs, and scene preservation are required for a complete reconstruction or incident analysis.
 - b. Determine if an autopsy should be attended and by whom. Attend, or brief attending officer on details of the investigation and type of evidence to be sought during autopsy. Coordinate with coroner.
 - c. Request assistance and necessary schedule changes for follow-up activities as needed.
 - d. Complete the reconstruction analysis as appropriate.
 - e. Complete the required written reports.
 - f. Follow the quality control review process before releasing the final report.
 - g. Provide a timely summary of the incident, and updates when necessary, to a supervisor of the TRU utilizing a protocol determined by DSP management.

D. Motor Carrier Enforcement Personnel

Qualified Motor Carrier Safety Assistance Program (MCSAP) inspectors may be called to assist the reconstruction specialist during an investigation and are to be guided by DSP Policy and Procedure 8-13.

E. Region Commander or designee

1. Ensure compliance with policy directives.
2. Act as a regional liaison with local agencies regarding DSP reconstruction services.
3. Make referrals to the TRU when appropriate.
4. Provide appropriate investigation material to the media as appropriate.
5. Establish procedures for release of investigative materials to other agencies in accordance with open records procedures.
6. Manage region-level reconstruction personnel consistent with the needs of the region.

F. TRU Supervisors

1. Provide guidance to TRU members, region-level Reconstruction Specialists, Technical Crash Scene Investigators, and region supervisors as needed.
2. Coordinate TRU resources and assist with management of high profile or extraordinary investigations requiring multi-region, large scale, or unusual responses.

VII. REFERENCES

DSP Policy and Procedure 8-13, Motor Carrier Safety Assistance Program
 Traffic Accident Investigation Manual, At Scene Investigation and Technical Follow-up,
 J. Standard Baker, Northwestern University Traffic Institute, 1986
Linzmeier v. Forcey, 2002 WI 84, 254 Wis. 2d. 306 (2002)
 WisDOT Emergency Traffic Control and Scene Management Guidelines
 Early Acquisition and Preservation of Information in a Motor Vehicle Crash, SAEJ1674,
 Society of Automotive Engineers, 2009.