

CHAPTER 5
INVESTIGATION FORMAT AND COMPOSITION
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CHAPTER 5

INVESTIGATION FORMAT AND COMPOSITION

1. PURPOSE. The purpose of this chapter is to outline the format to be used in the composition of Multidisciplinary Accident Investigation Team (MAIT) investigations. All written investigations shall conform with the requirements of this chapter. If the circumstances of a specific case dictate a logical deviation from the standardized format outlined in this chapter, approval shall be obtained from Enforcement and Planning Division (EPD), Collision Investigation Unit (CIU), Multidisciplinary Accident Investigation Team (MAIT).

2. INTRODUCTION.

a. MAIT Investigation. A MAIT investigation is any incident investigated by MAIT in which a written MAIT report is generated. For MAIT investigations, the terms “crash” and “incident” may be used interchangeably and the MAITs may use whichever term most appropriately describes the event under investigation. This may include any heading, form, or attached document.

b. The format included in this chapter is intended to ensure standardized documentation of MAIT investigations.

c. All MAIT-related forms, with the exception of the CHP 558, Multidisciplinary Accident Investigation Team (MAIT) Report, are available to MAITs on the CHP Intranet site under Forms. The CHP 558 is available from the EPD, CIU upon request.

d. In cases where a MAIT investigation is to be conducted, the affected MAIT and area of primary jurisdiction shall exchange written correspondence, such as an official e-mail, memorandum, letter, or similar, describing which elements of the investigation are to be completed by MAIT.

3. CASE NUMBERING SYSTEM.

a. The following numbering system shall be used in assigning MAIT case numbers:

(1) The case numbers shall be assigned sequentially for each calendar year.

(2) The case numbers shall consist of three separate parts, each separated by a hyphen.

(a) The first part shall consist of the letter abbreviation for the investigating MAIT, as designated below.

1 Certified MAITs (refer to Chapter 1, General, of this manual) shall use their designated abbreviations in the assignment of MAIT case numbers. Decertified MAITs shall contact the appropriate mentoring team leader for a case number.

<u>Code</u>	<u>MAIT</u>
HQ	Headquarters
ND	Northern Division
VA	Valley Division
GG	Golden Gate Division
CE	Central Division
SO	Southern Division
BD	Border Division
CO	Coastal Division
IN	Inland Division

(b) The second part of the number shall consist of a three-digit, sequential case number beginning with 001 for the first case of the new calendar year. Investigations shall be assigned these numbers in the order in which the investigation requests are received.

(c) The third part of the number shall consist of the last two digits of the calendar year the MAIT case was initiated.

b. Case Numbers. The following are examples of MAIT case number formatting:

(1) VA-001-26. Valley Division MAIT, first case for the 2026 calendar year.

(2) CE-005-26. Central Division MAIT, fifth case for the 2026 calendar year.

NOTE: When any reconstruction methodologies are used, MAIT associates are required to contact the appropriate MAIT to request a case number (case numbers shall be assigned as outlined in this chapter). Once completed, the MAIT investigation shall be forwarded to the MAIT for review and approval prior to being

released in accordance with Chapter 1 of this manual. All MAIT Investigations submitted for review shall be formatted according to departmental policy.

4. GENERAL INSTRUCTIONS.

- a. The narrative shall be completed on a CHP 558 (refer to Annex B).
- b. The typeface, type family, and font size for all MAIT investigations shall be consistent with Highway Patrol Manual (HPM) 5.1, Correspondence Manual. The standard size of the main body text should be 12-point, unless otherwise noted. The point size specification does not apply to figures, charts, tables, etc., inserted within the written investigation.
- c. All references shall be cited in a consistent manner throughout the investigation and formatted according to the Gregg Reference Manual.
- d. If diagrams will not fit on the CHP 558, the heading information contained on the CHP 558 shall be placed in the upper-right corner of the diagram.
- e. Page Numbering. The numbering of all pages of MAIT investigations shall adhere to the following format:
 - (1) The cover sheet and table of contents shall be numbered sequentially using lowercase roman numerals beginning with the cover sheet (i, ii, etc.).
 - (2) When MAIT is responsible for the completion of the CHP 555, Page 1, Traffic Crash Report, CHP 555, Page 2, Traffic Crash Coding, and CHP 555, Page 3, Injured/Witness/Passengers, the MAIT investigation shall be numbered sequentially beginning with the first page of the CHP 555.
 - (3) When MAIT is not responsible for the completion of the CHP 555 forms, the MAIT investigation shall be numbered sequentially beginning with the Introduction page.

5. INVESTIGATION COVER SHEET FORMAT.

- a. CHP 558, Multidisciplinary Accident Investigation Team (MAIT) Report. The cover sheet for all investigations shall be prepared on a CHP 558 and shall be formatted following the example in Annex A. The typeface and type family of the cover sheet shall be consistent with HPM 5.1, unless otherwise indicated.
 - (1) Form Header. The date of the incident, time, National Crime Information Center number, officer ID number, Area/agency case number, MAIT case

number, and page number shall appear at the top of the cover sheet. The left edge of the header shall measure a minimum of one-half inch to accommodate binding when required.

(a) An Area case number or other appropriate number may be entered in the Area/Agency Case Number box. This box shall not contain the MAIT case number.

(2) Case Information. One (12-point size) line space shall separate the bottom of the form header and the case information headings. The information case headings shall be centered, equally spaced across the page, and consist of the following:

(a) Team Division. The name of the Division MAIT responsible for the investigation shall be centered directly below the Team Division heading.

(b) Agency/Area. The agency name and Area name of the requestor for the case, as applicable, shall be centered directly below the Agency/Area heading.

(c) Case Number. The unique MAIT case number assigned to the incident shall be centered directly below the Case Number heading.

(3) Document Title. The title, "MAIT INVESTIGATION," shall be centered, in all uppercase letters, with a boldface 22-point font size. Three (12-point size) line spaces shall separate the bottom of the Case Information and the Document Title.

(4) Logo. No photographs of the incident scene may be placed on the cover sheet. The "CHP Badge" is the approved logo.

(a) The CHP Badge should be 2 1/2 inches from point to point, centered between the right and left edges of the paper, and a single (12-point size) line space should separate it from the bottom of the Document Title.

(5) Lead MAIT Investigator. Enter the rank or title, name, and ID number of the investigator assigned by the investigating MAIT, originating Area, or agency to investigate the incident directly below the Lead MAIT Investigator heading.

(a) The Lead MAIT Investigator heading, along with the investigator information below, shall be left-aligned, in alignment with the left-most edge of the Team Division case information header and a single (12-point size) line space should separate the heading from the bottom of the CHP Badge logo.

(6) MAIT Personnel. Enter the rank or title, name, ID number if applicable, and Division or Area of assignment of all the individuals assigned to, or participating in, the investigation.

(a) The MAIT Personnel heading, along with the personnel information below, shall be left-aligned, in alignment with the left-most edge of the Lead MAIT Investigator heading and a single (12-point size) line space should separate it from the bottom of the lead investigator information.

(b) The uniformed staff of the investigating MAIT should be listed first, followed by any team member information of the Motor Carrier Specialists and/or California Department of Transportation (Caltrans) Engineers. Uniformed staff should be listed by rank and status (Investigator, Associate, etc.) as appropriate. MAIT Motor Carrier Specialists and Caltrans Engineers may be listed with the Investigator designation when appropriate.

(7) Subpoenas for MAIT Personnel Should be Directed to. Enter the mailing address of the MAIT investigating the incident. Include an attention line to the team leader below the address.

(a) The Subpoenas for MAIT Personnel Should be Directed to heading and applicable information shall be left-aligned, in alignment with the leftmost edge of the MAIT Personnel heading, and a single (12-point size) line space below the bottom of the MAIT personnel information.

6. WRITTEN INVESTIGATION FORMAT INSTRUCTIONS.

a. Topic headings are to be used at the discretion of the Division MAIT leader and with the concurrence of the Area commander with jurisdiction, as necessary to produce a complete investigation. Each topic heading and subheading, when used, should follow the order established in Annex C.

(1) Headings. The topic and subtopic headings may be centered or left-aligned and styled using all uppercase letters, bold, underline, italics, or any combination thereof based on the author's discretion. The chosen topic and subtopic heading styles shall remain consistent and organized in a logical manner throughout the written investigation to aid flow and reader comprehension. The text following each heading shall begin on the next line and be left-aligned below its respective heading. If a section splits across subsequent pages, the heading does not need to be repeated on the next page. Any spacing between sections shall be a single line space of 12-point size, unless otherwise stated.

b. Topic Format. Each topic and subtopic heading, when included, are to be structured as follows:

(1) Table of Contents. A table of contents should be prepared when it would enhance access to information within the investigation.

(a) A table of contents shall be prepared when multiple individuals are responsible for the preparation of different topic areas within the same investigation.

(b) The table of contents shall identify all topic headings in their respective order of appearance.

(c) Topic headings should be broken down further into subtopic headings with their respective page numbers identified. Subtopic headings shall be indented from the topic heading.

(d) Each topic and/or subtopic listing should include the names or initials of the investigators responsible for its completion.

(2) CHP 555, Page 1, Traffic Crash Report.

(a) The guidelines established in HPM 110.5, Crash Investigation Manual, shall be adhered to in the preparation of page 1 of the CHP 555.

(3) CHP 555, Page 2, Traffic Crash Coding.

(a) The guidelines established in HPM 110.5 shall be adhered to in the preparation of page 2 of the CHP 555.

(4) CHP 555, Page 3, Injured/Witness/Passengers.

(a) The guidelines established in HPM 110.5 shall be adhered to in the preparation of page 3 of the CHP 555.

(b) Seating charts or diagrams may be used in conjunction with fatal/injured and passenger lists.

(5) Introduction. The introduction should include the following:

(a) Provide a brief description of the call-out notification, request for MAIT assistance, response, and arrival for the responding Area/agency, as well as for MAIT personnel.

(b) Include a brief description of the incident scene as observed by first responders.

(c) The introduction may include an investigative summary, formatted as either a table or narrative. When included, this summary should include, at a minimum, the dates and pertinent details of the investigation in chronological order.

(d) Issues. Issues shall identify the specific areas to be investigated, the limits of the investigation within those areas, and the ultimate objectives of the investigation. The issues or objectives may be presented in the form of questions.

(6) Scene Description and Analysis. The scene description and analysis shall include any relevant sections related to the location of the incident, including, but not limited to, the following:

(a) Measurement Equipment. In this section, report the location, description, reference points, and setup of any measuring devices used to document physical evidence or the scene environment, such as a total station survey system; three-dimensional imaging and scanning device; or small, unmanned aircraft system.

(b) Environment Description. Describe the scene, including, but not limited to, the type of roadway, number and width of lanes, direction and alignment of the roadway, sight distances, visual obstructions, grade, superelevation, radius of any horizontal and/or vertical curve, curbs, shoulders, islands, fences, median area, loose materials and other surface contamination, and fixed objects on or near the highway.

1 Traffic Controls. Describe the position, operation, and visibility of all traffic controls at the incident scene, including, but not limited to, official traffic control signs, traffic signal phases and time duration, warning signs, flares, cones, officers, flag person, and other temporary controls.

2 Weather Conditions and Lighting. Record ambient weather conditions existing at the time of the incident which are pertinent to the investigation, as well as the method of determination (weather service or direct measurement and observation). The following are examples of the types of entries for this category:

a Amount and type of precipitation.

b Temperature.

c Humidity.

d Wind direction and velocity.

e Visibility.

(c) Environment Diagram. An environment diagram should be prepared in each investigation where physical evidence is observed, measured, and reported. The environment diagram should be prepared as an overview of the environment, including all environmental features that are pertinent to the incident.

1 The diagram shall be an accurate, to-scale depiction of the incident site with the exact scale clearly specified.

(d) Coefficient of Friction. Document the coefficient of friction, determined by the use of accepted and published test procedures.

(e) Engineering Report. A written assessment of the roadway environment should be from the perspective of a traffic engineer or other qualified person. The report should include any pertinent information, such as roadway defects, design deficiencies, traffic volumes, and crash history for the immediate and adjacent areas of the incident scene.

(7) Physical Evidence Description and Analysis.

(a) In this section, detail the descriptions and the location measurements of all physical scene evidence, excluding vehicle crash damage. This includes, but is not limited to, tire friction marks, pavement scars (gouges, scrapes, scratches, chops), fluid spatters and trails, tire tracks, scattered debris, dislodged vehicle components, bullet strikes, position of body parts, and body fluids.

1 Following each description, a determination of the origin of physical evidence (e.g., tire friction marks, debris, gouges) documented at the scene should be given. If the origin of the physical evidence cannot be determined, it should be noted.

(b) Positions of Rest. Measurements determining the positions of rest for relevant vehicles and persons involved in the incident shall be reported in this section.

1 Identify positions of rest reconstructed without a direct measurement and include a description of how the position of rest was obtained.

(c) Physical Evidence Diagram. A physical evidence diagram shall be prepared in each investigation where physical evidence is observed, measured, and reported. More than one diagram may be prepared.

1 The diagram(s) shall be an accurate, to-scale depiction of the incident site, as well as the physical evidence contained therein, with the exact scale clearly specified.

(8) Parties. Identify each involved party and detail their pre-incident information relevant to the incident. This includes, but is not limited to, sobriety, mental and physical condition, fatigue, activities prior to the incident, pertinent driver's license information and status, and experience and/or training for the type of vehicle operated.

(a) Describe how each individual was identified as the driver of the subject vehicle.

(9) Occupants. Describe the occupants of each vehicle by name and seating position within the vehicle.

(a) Charts or seating diagrams may be used.

(b) This section may be deleted when seating charts or diagrams are used with the CHP 555, page 3.

(10) Injury Analysis. Identify all deceased and injured parties by name, party type (driver, passenger, pedestrian, etc.), vehicle or party number, and seating position. Include the coroner's case numbers when applicable.

(a) List fatal and injured parties in a logical sequence.

(b) Describe the nature and extent of the injuries suffered by all parties killed or injured in the incident. If victim or occupant position was determined by comparison of injuries to interior or exterior vehicle damage, the injuries used in that comparison should be described in detail.

(c) In fatality cases, the date, time, and location of death, as well as the name of the person pronouncing death, should be recorded in this section (if not included elsewhere in the investigation).

(d) Specify the cause of death for all deceased parties and occupants, when possible.

(11) Statements. Each statement shall be given a heading, indicating the name of the person that provided the statement. Include in this section the title

and name of the person that acquired the statement, as well as the date, time, location and manner in which the statement was taken and, if applicable, recorded (e.g. in person, by telephone, etc.).

(a) Statements should be reported in the following order:

1 Drivers and other primary parties by sequential party numbers as listed on the CHP 555, page 1.

2 Passengers, occupants, or other victims by sequential party number as listed on the CHP 555, page 3.

3 Witnesses, as listed on the CHP 555, page 3.

(b) Audio/video-recorded statements may be summarized, edited and transcribed, or transcribed verbatim. When edited or summarized, a preface statement shall indicate that the statement is an edited transcription or summary of an audio/video interview.

(12) Vehicle Identification. All vehicles involved shall be identified by year, make, model, color, license plate number, and the vehicle identification number. The date and location of their inspection shall also be recorded.

(a) Vehicle identification may include any other relevant vehicle data including, but not limited to, recalls, gross vehicle weight rating, curb weight, gross axle rating, and original manufacturer tire size.

(13) Mechanical Inspection. This section shall include a description of the mechanical condition and conclusion(s) from the inspection of the applicable systems and/or component(s) reviewed of each pertinent vehicle involved in the incident.

(a) Inspect and describe any relevant component(s)/system(s), such as:

1 Engine.

2 Transmission.

3 Drivetrain.

4 Differential/Transaxle.

5 Exhaust system.

6 Suspension.

- 7 Steering.
- 8 Brakes.
- 9 Parking brakes.
- 10 Tires and wheels.
- 11 Fuel system.
- 12 Electrical system.
- 13 Other accessories.

(b) Each component and/or system inspected should be given a subtopic heading and the inspection should be described in narrative form below that heading.

- 1 Structural damage to component(s)/system(s) should be described in detail in the section covering that component/system.
- 2 Charts, graphs, or diagrams may be used to clarify measurements, specifications, or system configuration.
- 3 When applicable, the examination of vehicle maintenance records shall be reported in the Mechanical Inspection section of that vehicle.

(c) If the mechanical inspection of any vehicle determines a mechanical issue was related to a causation factor, it shall be explained in the Conclusions section of the investigation.

(14) Vehicle/Property Damage Description and Analysis. Physical evidence in the form of damage, markings, or transfer to a vehicle shall be reported in this section. Describe the nature and extent of the damage sustained by each vehicle involved. The description should distinguish contact damage from induced damage.

(a) The description should include the pertinent damage to all external and internal areas of the vehicle, including the undercarriage as well as the passenger compartment of the vehicle. Longitudinal, lateral, and vertical measurements should be included in the description of areas of significant damage.

1 Damage to vehicle component(s)/system(s) may be described in general in this section. Specific damage descriptions of these areas will be included in the Mechanical Inspection section of the investigation, if completed.

2 Physical evidence associated with the vehicle, such as, but not limited to, transfer evidence, imprints, and impressions, should be described in detail along with their location using longitudinal, lateral, and vertical measurements.

(b) A vehicle damage profile should be used to enhance or clarify the damage description.

(c) Once determined, describe how the damage to each of the involved vehicles or property occurred.

1 The analysis should describe impact match points and contain a general description of the principal direction of force acting on the vehicles during the impact.

(d) Damage to property at the immediate or adjacent areas of the incident site shall be described in this section. Examples of the types of damaged property to be documented include, but are not limited to, signs, poles, trees and other types of vegetation, fences, and buildings.

(15) Occupant Restraints. Describe the condition of the restraints in each vehicle involved, including any identified damage sustained.

(a) In this section, include the deployment or non-deployment of any relevant supplemental restraint system.

(b) Document child safety seats in this section, and note all relevant information including, but not limited to, the manufacture date and any other relevant dates, installation details, recall information, and damage sustained to the seat or components of the connection system.

(16) Event Data Recorder. Describe in the narrative the foundation and process of acquiring any data from the event data recorders of the involved vehicles.

(a) This section should note what legal authority was used to acquire the data from the event data recorder.

(b) If an analysis of the data is conducted, the analysis should include, at a minimum, the following elements:

- 1 Whether the recorded data is completely stored.
- 2 Whether the ignition cycles are consistent with the recorded data, when applicable.
- 3 Whether the other physical evidence is consistent with the recorded data.
- 4 Whether the direction and magnitude of change in velocity is consistent with recorded data.

(17) Other Evidence Sections. Any additional evidence not identified or described in other sections may be included in a logical place within the investigation, following the Event Data Recorder section, under an appropriately titled heading. "Other Evidence Section" is not a heading name and shall not be used as such. This section is not designed to replace headings if the analysis fits in a pre-described heading or category.

(a) Any other section(s) included shall contain an analysis and/or assessment of the evidence, including a description of the process used to acquire the evidence.

(b) Examples of additional sections that may be used when they are relevant to the investigation include, but are not limited to:

- 1 Metallurgical Analysis.
- 2 Paint Sample Analysis.
- 3 Body Tissue or Fluid Analysis.
- 4 Lamps Assessment.
- 5 Fingerprint Identification and Comparisons.
- 6 Imprint and Impression Comparisons.
- 7 Thermal Damage Analysis.
- 8 Trace Evidence Analysis and Comparison.
- 9 Shooting Trajectory Analysis.
- 10 Firearm Identification.
- 11 Infotainment System.

(18) Physical Evidence Log. A physical evidence log shall be prepared anytime evidence is physically retained and collected by MAIT personnel relative to a MAIT investigation. This is true whether the evidence is retained by the investigating team, allied agency, or Area. This section should not include any digital media evidence. Any digital media evidence will be documented in the Digital Media Log section.

(a) The physical evidence log shall consist of the following elements.

- 1 Date, time, and location of collection.
- 2 Description of the evidential item collected.
- 3 Name of the investigator who collected the evidence.
- 4 Disposition of the evidence.

(19) Digital Media Log. This section shall account for all photographs, videos, or other digital media evidence obtained by MAIT personnel related to the incident investigated. The log shall also include digital media evidence taken by the Area or agency having jurisdiction for the investigation, if it is not accounted for in a report prepared by that Area or agency.

(a) Any images or videos taken by news media personnel, private photographers, or members of the public should also be included, when applicable.

(b) Imagery related to the incident shall be identified by the name of the person(s) who obtained it, when applicable, or method used to capture it, the date acquired, the general subject(s) captured, and the quantity acquired.

(c) The digital media log may use a narrative format, chart format, or a list of image numbers and descriptions. A combination of these formats may be used to report the digital evidence inventory.

(d) With respect to storage of digital media, MAITs shall follow the policy contained in HPM 70.1, Evidence Manual, and General Order 110.8, Processing and Storage of Digital Media.

NOTE: Any request for Caltrans aerial imagery shall be made through the Caltrans Engineer of the certified MAIT that has investigative responsibility for the case.

(20) Dynamics Diagram. When dynamics are used to ascertain any aspect of the causation factor(s), support other methodologies, or serve as a demonstrative example, the investigation shall include a dynamics diagram that meets the criteria below.

- (a) The diagram shall accurately depict the incident site and be drawn to scale, with the scale specified on the diagram.
- (b) The reconstructed motion of each of the involved vehicles and other involved parties shall be depicted on the dynamics diagram. The dynamics diagram should include the motion of the vehicles and other involved parties during the pre-crash, at-crash, and post-crash phases of motion from first identified evidence to final positions of rest.
- (c) A series of sequential diagrams may be used to clarify the motion of each of the vehicles involved and other involved parties.
- (d) The relative positions of each vehicle and involved party from the established area of impact to their respective position of rest should be specified.

(21) Occupant Kinematics. In this section, describe the movements and interactions of the occupants and pedestrians involved in the incident.

- (a) The description should include the movements of the bodies within or around the vehicle based on injuries sustained and physical evidence located.

(22) Velocity Reconstruction. Any MAIT reconstruction methodologies shall include only approved and established formulas, and derivations thereof, and will be consistent with current practices used and approved by Headquarters (HQ) MAIT.

- (a) Techniques used to determine velocities of entities involved in an incident that will appear in published investigations shall be based on established physics principles and follow sound mathematical practices. Any new techniques shall be submitted to EPD, CIU to be reviewed and approved by the MAIT Traffic Crash Reconstruction Specialist Certification (TCRSC) Board prior to their use in investigations conducted by departmental personnel.
- (b) All calculations relating to the dynamics of the incident and/or velocity reconstruction should be reported in this section.
- (c) Velocity reconstruction shall be structured in the following manner.

1 Introduction. The introduction may be used to report the method of calculation, identify known quantities or variables, identify key assumptions, establish parameters, or provide any other information used to clarify or qualify the calculations used.

2 Symbols. List all symbols used in the calculations.

3 Equations/Formulas. List all equations/formulas used in the calculations.

4 Calculations. Report all calculations in a logical sequence.

a The calculations should be in outline or block form with an appropriate heading or title given to each phase of the calculation.

5 Summary. A brief summary of the results of the calculations should be given in narrative or chart form. The calculations must be strongly defensible and shall be firmly established on the available physical evidence, current methodologies, and other factual information.

(23) Time-Position Analysis. When applicable, the time-position relationships of involved vehicles, pedestrians, etc., should be evaluated and reported.

(a) The same general format used for dynamics and velocity reconstruction should be used for time-position calculations. Symbols, formulas, and equations used may be included in the listings for the velocity reconstruction.

(b) The time-position analysis may be done for all phases of motion (pre-crash, at-crash, and post-crash) or at any single phase of motion where a time-position analysis is necessary for determining causation.

(c) The results of the time-position calculations may be reported in narrative or chart form, or both.

(d) A to-scale time-position diagram should be prepared, specifying the relative time and position of each involved vehicle, object, or person at significant times or locations during the incident sequence.

(e) Dynamics diagrams may be used as the time-position diagram for known pre-crash, at-crash, and post-crash sequences, based on physical evidence locations, and only if no further involved locations are depicted or calculated.

(24) Crash Sequence. When a description of the crash sequence is included in the investigation, it shall be based on the in-depth evaluation of all available information relevant to the crash.

(a) The description shall be divided into three distinct phases of motion: pre-crash, at-crash, and post-crash.

1 The pre-crash description shall describe all significant events leading up to the first area of impact, and may include any prior events necessary to establish the circumstances leading up to the crash. Examples of the elements contained in a pre-crash description include the driver's mental and physical condition, mechanical condition of the vehicles, significant environmental influences, the sobriety of drivers or other involved parties, pre-impact speed and direction, and attempted evasive actions.

2 The at-crash description shall describe the motion of any involved vehicle and/or party from the point of initial contact to the point where crash forces have been dissipated and separation occurs, or could occur.

3 The post-crash description shall describe the motion of the involved vehicles or parties from the end of the at-crash phase to their respective positions of rest.

a The post-crash description should also include any significant post-impact event which affects the damage sustained by vehicles, injuries suffered by involved parties, or otherwise affects the investigation of the crash.

1/ Examples of the post-impact events that should be reported include injuries suffered as a result of extrication, post-impact damage to vehicles resulting from rescue or recovery operations, post-impact fires, and marks made or obscured by post-impact scene cleanup operations.

(25) Areas of Impact. In this section, describe the areas of impact which occurred during the incident sequence.

(a) A description of how each area of impact was determined should be included.

(26) Conclusions. The issues or objectives raised as a consequence of the investigation request shall be answered in a sequential, clear, and logical

manner. They may be written in narrative or outline format, addressing all factors which were considered contributory to the incident.

(a) The primary cause and associated factors of the incident should be identified, and the elements used in their determination should be outlined and explained.

(b) Pertinent law violations should be identified and reported, with all elements for each violation clearly outlined and substantiated.

(27) Recommendations. If the Division MAIT cannot finish its inquiry prior to release of the investigation, indicate any follow-up action needed to complete the case file.

(a) Indicate any recommendations to the district or city attorney for filing criminal charges based upon the conclusions contained in the investigation.

(b) If there are no recommendations, state "None."

(c) Indicate any special routing necessary for appropriate action to be taken based on the conclusions established in the investigation, such as:

1 Routing to affected vehicle or component part manufacturers in cases relating to product defects.

2 Routing to appropriate federal, state, county, city, or private agencies involved in the regulation, control, design, manufacture, or operation of any vehicle, device, regulation, or other element considered contributory to the crash, where such routing is necessary or beneficial to traffic safety.

Example: It is recommended the Department's Commercial Vehicle Section review this investigation for causation factors which may be related to training provided to ambulance drivers as part of the Department's licensing requirement.

3 Specific recommendations for appropriate action to be taken based on the conclusions established by the investigation shall not be contained in the investigation. These specific recommendations shall be contained in a separate memorandum. (Refer to paragraph 9.)

7. INVESTIGATION REVIEW AND COMPLETION.

a. All MAIT investigations should be completed as soon as possible and, except under special circumstances, no later than 120 calendar days after the initial MAIT response. The completion date for an investigation requiring more than 120 calendar days must be coordinated with the appropriate Area commander. The investigation will be processed in the same manner as normal Area investigations, except as follows:

(1) The team leader will review the completed investigation prior to submission to the Area involved. This review will ensure all issues are addressed, and areas agreed upon to be the responsibility of MAIT are accurately and thoroughly covered (refer to paragraph 2.d.). The team leader shall ensure the content of the MAIT investigation is consistent with any report generated by the Area. If an investigation is especially complex or has unusual public interest, the team leader can request a minor or significant case review prior to submission to the Area involved (refer to Chapter 4, Case Review Panel, of this manual). Investigations containing new techniques or using previously unapproved formulas/equations or technical information shall be submitted to EPD, CIU for consideration and approval by the MAIT TCRSC Board prior to publication.

NOTE: As a general practice, MAITs are encouraged to exchange ideas and discuss the application of methodologies with adjacent teams and other MAIT members who have specialized skills in various reconstruction methodologies. All MAITs should use the experience and knowledge of all persons in the program to produce the most accurate investigation possible. Refer to Chapter 4 of this manual for confidentiality issues associated with informal discussions. It is important to understand the product of any one MAIT is perceived by the public as being representative of the program and Department as a whole.

b. The MAIT Division commander is responsible for the quality of all MAIT investigations produced within the team's area of responsibility.

8. CASE FILE DISTRIBUTION AND RETENTION.

a. The MAIT investigation will be attached to the original report when necessary and filed with the Area/agency having primary jurisdiction over the incident. The original MAIT investigation and all evidence taken by MAIT investigators are to be routed to the Area or agency having primary investigative jurisdiction.

(1) The original MAIT investigation shall be delivered to the Area commander or commander's designee by the team leader or alternate.

b. The Area or agency having investigative jurisdiction shall be responsible for the normal distribution of the final MAIT investigation.

c. All MAIT case support materials not incorporated into the investigation, such as field notes, media recordings, copies of investigation reports, or photographic prints shall be maintained by the Division MAIT having responsibility for investigations in that particular geographical area. Any case support materials related to an allied agency investigation, including a copy of any final report, shall be maintained by the Division MAIT.

9. MEMORANDUM CONTAINING RECOMMENDED ACTION.

a. All recommendations requiring special routing, as outlined in this chapter, shall be completed in a memorandum separate from the MAIT investigation.

b. The memorandum stating the recommendations, along with a copy of the investigation, shall be forwarded to EPD, CIU for HQ MAIT review prior to distribution.

c. The HQ MAIT shall objectively review, evaluate, and critique the recommendations from all points of view.

d. In the event the recommendations may affect departmental programs, operations, or procedures coordinated through another Office of Primary Interest (OPI), HQ MAIT will forward a copy of the recommendations to the affected OPI and request an analysis of the recommendations.

e. In those areas where questions or concerns are raised, HQ MAIT, in cooperation with investigating team members and the affected OPI providing the analysis, will attempt to resolve issues to the mutual satisfaction of all concerned.

f. The HQ MAIT shall submit the final memorandum, its evaluation of the recommendations, and the analysis by the OPI to the appropriate Assistant Commissioner for review.

g. After the recommendations have been approved by the appropriate Assistant Commissioner, the MAIT with investigative jurisdiction will attach the memorandum to the investigation for public distribution.

ANNEX A

EXAMPLE OF A CHP 558, MULTIDISCIPLINARY ACCIDENT INVESTIGATION TEAM (MAIT) REPORT COVER SHEET WITH AN OPTIONAL SECOND PAGE

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

MULTIDISCIPLINARY ACCIDENT INVESTIGATION TEAM (MAIT) REPORT

CHP 558 (Rev. 6-26) OPI 060 (MAIT use only)

DATE OF INCIDENT (MONTH-DAY-YEAR)	TIME (2400)	NCIC	OFFICER ID	AGENCY/AREA CASE NUMBER	MAIT CASE NUMBER	PAGE
01-01-2099	2500	9999	29999	9999-2099-00001	HQ-001-99	i

TEAM DIVISION
Headquarters

AGENCY/AREA
CHP Sacramento

CASE NUMBER
HQ-001-99

MAIT INVESTIGATION



LEAD MAIT INVESTIGATOR

Officer R. Superstar, ID 30000, Headquarters Division MAIT Investigator

MAIT PERSONNEL

Sergeant F. Leader, ID 29988, Central Division MAIT Team Leader
Sergeant M. Boss, ID 29989, Valley Division MAIT Team Leader
Officer A. One, ID 29990, Golden Gate Division MAIT Investigator
Officer B. Two, ID 29991, Southern Division MAIT Investigator
Officer C. Three, ID 29992, Coastal Division MAIT Investigator
Officer D. Four, ID 29993, Inland Division MAIT Investigator
Officer E. Five, ID 29994, Border Division MAIT Associate
Officer F. Six, ID 29995, Northern Division MAIT Assistant
Motor Carrier Specialist I M. Wrench, ID A99999, Central Division MAIT
Motor Carrier Specialist I V. Inspector, ID A99998, Valley Division MAIT Investigator
Caltrans Senior Transportation Engineer E. Calculator, P.E., S999999, Northern Division

SUBPOENAS FOR MAIT PERSONNEL SHOULD BE DIRECTED TO:

California Highway Patrol
Headquarters MAIT
601 North 7th Street
Sacramento, CA 95811
Attention: Sergeant P. Supervisor

ANNEX A

EXAMPLE OF A CHP 558, MULTIDISCIPLINARY ACCIDENT INVESTIGATION TEAM (MAIT) REPORT COVER SHEET WITH AN OPTIONAL SECOND PAGE (continued)

STATE OF CALIFORNIA DEPARTMENT OF CALIFORNIA HIGHWAY PATROL MULTIDISCIPLINARY ACCIDENT INVESTIGATION TEAM (MAIT) REPORT CHP 558 (Rev. 6-26) OPI 060 (MAIT use only)						
DATE OF INCIDENT (MONTH-DAY-YEAR)	TIME (2400)	NCIC	OFFICER ID	AGENCY/AREA CASE NUMBER	MAIT CASE NUMBER	PAGE
01-01-2099	2500	9999	29999	9999-2099-00001	HQ-001-99	ii
TEAM DIVISION Headquarters		AGENCY/AREA CHP Sacramento		CASE NUMBER HQ-001-99		

MAIT INVESTIGATION



The seal of the California Highway Patrol is a gold seven-pointed star. The outer ring contains the text "CALIFORNIA HIGHWAY PATROL" at the top and "1929" at the bottom. The inner circle features a shield with a figure holding a torch and a banner, with the words "SAFETY, SERVICE, & SECURITY" at the bottom.

ADDITIONAL MAIT PERSONNEL
Caltrans Senior Engineer E. Calculator, P.E., S999999, Golden Gate Division Investigator
Officer G. Seven, ID 29996, Southern Division MAIT Associate Investigator
Officer H. Eight, ID 29997, Coastal Division MAIT Assistant Investigator
Officer I. Nine, ID 29998, Inland Division MAIT Apprentice Investigator
Officer J. Ten, ID 29999, Border Division MAIT Apprentice

ANNEX B

EXAMPLE OF A CHP 558, MULTIDISCIPLINARY ACCIDENT INVESTIGATION TEAM (MAIT) REPORT NARRATIVE PAGE

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

MULTIDISCIPLINARY ACCIDENT INVESTIGATION TEAM (MAIT) REPORT

CHP 558 (Rev. 6-26) OPI 060 (MAIT use only)

DATE OF INCIDENT (MONTH-DAY-YEAR)	TIME (2400)	NCIC	OFFICER ID	AGENCY/AREA CASE NUMBER	MAIT CASE NUMBER	PAGE
01-01-2099	2500	9999	30000	9999-2099-00001	HQ-001-99	36

EVENT DATA RECORDER

2019 Lexus ES300h

TRG 2 (FIRST PRIOR EVENT)

The resultant velocity change and principal direction of force experienced by the ACM during the event was calculated using the reported sampling for both axes at 170 milliseconds:

Where:

mph - Miles per hour

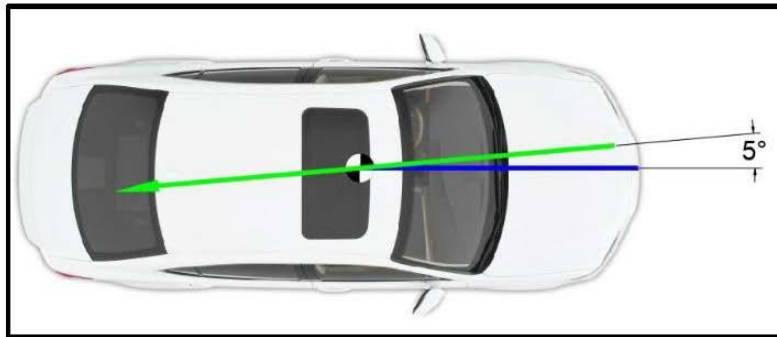
Δ - Change in

v - Velocity (*fps* or *mph*)

PDOF - Principal direction of force (*degrees*)

$$\Delta v_r = \sqrt{\Delta v_x^2 + \Delta v_y^2} = \sqrt{(-43.7)^2 + (3.9)^2} = 43.9 \approx 44 \text{ mph}$$

$$PDOF = \tan^{-1} \left(\frac{\Delta v_y}{\Delta v_x} \right) = \tan^{-1} \left(\frac{3.9}{-43.7} \right) \approx -5 \text{ degrees}$$



PDOF Illustration

The calculated resultant change experienced by the ACM during the event was 44 miles per hour. The calculated PDOF was -5 degrees (front-to-rear with a left-to-right component). This did not account for any force in the normal (vertical) direction.

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ANNEX C
INVESTIGATION TOPIC OUTLINE

1. Table of Contents.
2. CHP 555, Page 1, Traffic Crash Report.
3. CHP 555, Page 2, Traffic Crash Coding.
4. CHP 555, Page 3, Injured/Witness/Passengers.
5. Introduction.
 - a. Issues.
6. Scene Description and Analysis.
 - a. Measurement Equipment.
 - b. Environment Description.
 - (1) Traffic Controls.
 - (2) Weather Conditions and Lighting.
 - c. Environment Diagram.
 - d. Coefficient of Friction.
 - e. Engineering Report.
7. Physical Evidence Description and Analysis.
 - a. Positions of Rest.
 - b. Physical Evidence Diagram.
8. Parties.
9. Occupants.

ANNEX C

INVESTIGATION TOPIC OUTLINE (*continued*)

10. Injury Analysis.
11. Statements.
12. Vehicle Identification.
13. Mechanical Inspection.
14. Vehicle/Property Damage Description and Analysis.
15. Occupant Restraints.
16. Event Data Recorder.
17. Other Evidence Sections.
18. Physical Evidence Log.
19. Digital Media Log.
20. Dynamics Diagram.
21. Occupant Kinematics.
22. Velocity Reconstruction.
 - a. Introduction.
 - b. Symbols.
 - c. Equations/Formulas.
 - d. Calculations.
 - e. Summary.
23. Time-Position Analysis.

ANNEX C

INVESTIGATION TOPIC OUTLINE (*continued*)

24. Crash Sequence.

25. Areas of Impact.

26. Conclusions.

27. Recommendations.

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