Common Passenger Vehicle Rescue Technician (2021)

Course Plan

Course Details

Description: This course provides the knowledge and skills to prepare an emergency responder to extricate victim(s) from a common passenger vehicle in a safe and effective manner in accordance with AHJ policies and procedures. Topics include sizing up an incident; creating an incident action plan; establishing safety zones; mitigating hazards; stabilizing and creating access and egress openings for rescue from a vehicle resting on its wheels, side, and roof or in a multi-hazard configuration or environment; disentangling and removing victims; and terminating an incident. This course incorporates awareness, operations, and technician training based on NFPA 1006 (2021).

Designed For: All emergency personnel who perform common passenger vehicle rescue.

Prerequisites: IS-100, IS-200, IS-700, IS-800 (FEMA – online)

Public Safety First Aid (*CA Health and Safety Code* 1979.182)

CPR (*CA Health and Safety Code* 1979.182)

Standard: Attend and participate in all course sections

Successful completion of all skills identified on the Training Record

Hours: 24 hours

(6.25 lecture / 17.75 application)

Max Class Size: 50

Instructor Level: SFT Registered Common Passenger Vehicle Rescue Technician Instructor

Instructor/Student Ratio: 1:50 (lecture)

1:8 (skills/teaching demonstrations)

Restrictions: All instructors counted toward student ratios, including application components, must be SFT Registered Common Passenger Vehicle Rescue Technician Instructors.

SFT Designation: FSTEP

Table of Contents

Course Details 1
Table of Contents 2
Required Resources 3
Instructor Resources 3
Online Instructor Resources 3
Student Resources 3
Facilities, Equipment, and Personnel 3
Time Table 5
Time Table Key 6
Unit 1: Introduction 7
Topic 1-1: Orientation and Administration 7
Unit 2: PPE, Tools, and Equipment 8
Topic 2-1: Selecting and Using PPE 8
Topic 2-2: Using Tools and Equipment 9
Unit 3: Incident Response 10
Topic 3-1: Sizing Up an Incident 10
Topic 3-2: Creating an Incident Action Plan 12
Topic 3-3: Recognizing the Need for Technical Rescue Resources 15
Topic 3-4: Supporting an Operations- or Technician-level Incident 16
Topic 3-5: Establishing Scene Safety Zones 17
Topic 3-6: Recognizing Incident Hazards and Initiating Isolation Procedures 19
Topic 3-7: Establishing Fire Protection 21
Topic 3-8: Managing Potentially Harmful Energy Sources 22
Topic 3-9: Mitigating Hazards Associated with Alternative Fuel Vehicles 23
Unit 4: Vehicle Stabilization 25
Topic 4-1: Stabilizing a Common Passenger Vehicle 25
Unit 5: Access and Egress 28
Topic 5-1: Determining Vehicle Access and Egress Points 28
Topic 5-2: Creating Access and Egress Openings for Rescue 30
Unit 6: Victim Rescue 32
Topic 6-1: Disentangling Victims 32
Topic 6-2: Removing a Packaged Victim to a Designated Safe Area 34
Unit 7: Termination 36
Topic 7-1: Terminating a Vehicle Incident 36
Skill Station Recommendations 38
How to Read a Course Plan 40

Required Resources

Instructor Resources

To teach this course, instructors need:

- One (or both) of the following texts:
  - *Vehicle Extrication Levels I and II: Principles and Practice* (and instructor tool kit) David A. Sweet, Jones & Bartlett Learning, revised 2nd edition (or newer)
  - *Principles of Vehicle Extrication* Fire Protection Publications, International Fire Service Training Association (IFSTA), 5th edition (or newer)
- NFPA 1006: Standard for Technical Rescue Personnel (2021) (physical or digital access to current edition)
- Full structural personal protective equipment (including hand, eye, and respiratory protection)

Online Instructor Resources

The following instructor resources are available online at https://osfm.fire.ca.gov/divisions/state-fire-training/fstep-curriculum/

- None

Student Resources

To participate in this course, students need:

- Course text selected by instructor
  - *Vehicle Extrication Levels I and II: Principles and Practice* (and instructor tool kit) David A. Sweet, Jones & Bartlett Learning, revised 2nd edition (or newer)
  - *Principles of Vehicle Extrication* Fire Protection Publications, International Fire Service Training Association (IFSTA), 5th edition (or newer)
- Full structural personal protective equipment (including hand, eye, and respiratory protection)

Facilities, Equipment, and Personnel

Facilities

The following facilities are required to deliver this course:

- Standard learning environment or facility, which may include:
  - Writing board or paper easel chart
  - Markers, erasers
  - Amplification devices
  - Projector and screen
  - Laptop or tablet with presentation or other viewing software
  - Internet access with appropriate broadband capabilities

- A Common Passenger Vehicle Rescue Technician Training Site with the NFPA 1006 required facilities, structures, work areas, materials, props, tools, and equipment of adequate size, type, and quantity to fully and safely support the cognitive and psychomotor training required to deliver the curriculum

Equipment

Student safety is of paramount importance when conducting the type of high-risk training associated with this Common Passenger Vehicle Rescue Technician (2021) course.

- The equipment listed below is the minimum for the delivery of this course.
- The student is responsible for providing all PPE and ensuring that all PPE meets AHJ and site requirements.

The following equipment is required to deliver this course:

Category	Equipment
Incident action plan (IAP)	One for each skills day (tactical worksheets and ICS 201)
Hand tools	Bolt cutters, crowbar/pry bar, flat head axe, Halligan tool, hack saw and spare blades, pick-head axe, pike pole (or equivalent), flashlight, sledgehammer, spring-loaded center punch, cable cutters, seatbelt cutter (or equivalent), webbing, utility rope, duct tape, basic mechanic's tool kit
Power tools	Circular saw, reciprocating saw
Fire extinguishers	One per skills station
Extrication tools	Cutters, spreaders, rams
Stabilization	Cable/chains/rope/sling (determined by AHJ), manufactured strut systems, cribbing, wedges, step chocks, wheel chocks
Vehicles	See skills sheets for minimum requirements per station
Victim Immobilization and Protection	Determined by AHJ
Victims	Live, manufactured, or improvised rescue mannequins (determined by number of vehicles used)
Lifting equipment	Air bag sets, struts, hydraulic and mechanical jacks
Other supplies as needed	Salvage covers, straight or folding ladder, hearing protection (one/student minimum), brooms, shovels, absorbent
For all equipment, ensure that you have the power source, operating supplies (blades, fuel, etc.), and cleaning supplies.	

Personnel

The following personnel are required to deliver this course:

- Any instructor counted toward student ratios must be an SFT Registered Common Passenger Vehicle Rescue Technician (2021) Instructor.

Time Table

Segment	Lecture	Application	Unit Total
Unit 1: Introduction			
Topic 1-1: Orientation and Administration	0.5	0.0	
Unit 1 Totals	**0.5**	**0.0**	**0.5**
Unit 2: PPE, Tools, and Equipment			
Topic 2-1: Selecting and Using PPE	0.25	0.25	
Topic 2-2: Using Tools and Equipment	0.25	0.5	
Unit 2 Totals	**0.5**	**0.75**	**1.25**
Unit 3: Incident Response			
Topic 3-1: Sizing Up an Incident	0.25	0.25	
Topic 3-2: Creating an Incident Action Plan	0.25	0.25	
Topic 3-3: Recognizing the Need for Technical Rescue Resources	0.25	0.25	
Topic 3-4: Supporting an Operations- or Technician-level Incident	0.25	0.25	
Topic 3-5: Establishing Scene Safety Zones	0.25	0.5	
Topic 3-6: Recognizing Incident Hazards and Initiating Isolation Procedures	0.25	0.5	
Topic 3-7: Establishing Fire Protection	0.25	0.5	
Topic 3-8: Managing Potentially Harmful Energy Sources	0.25	0.5	
Topic 3-9: Mitigating Hazards Associated with Alternative Fuel Vehicles	0.25	0.0	
Unit 3 Totals	**2.25**	**3.0**	**5.25**
Unit 4: Stabilizing a Common Passenger Vehicle			
Topic 4-1: Stabilizing a Vehicle	1.5	5.75	
Unit 4 Totals	**1.5**	**5.75**	**7.25**
Unit 5: Creating Access and Egress			
Topic 5-1: Determining Vehicle Access and Egress Points	0.25	0.5	
Topic 5-2: Creating Access and Egress Openings for Rescue	1.0	5.75	
Unit 5 Totals	**1.25**	**6.25**	**7.5**
Unit 6: Victim Rescue			
Topic 6-1: Disentangling Victims	0.25	1.0	
Topic 6-2: Removing a Packaged Victim to a Designated Safe Area	0.25	0.25	
Unit 6 Totals	**0.5**	**1.25**	**1.75**
Unit 7: Termination			
Topic 7-1: Terminating a Vehicle Incident	0.25	0.25	
Unit 7 Totals	**0.25**	**0.25**	**0.5**
Formative Assessments			

Segment	Lecture	Application	Unit Total
Determined by AHJ or educational institution	**0.0**	**0.0**	**0.0**
Summative Assessment			
Determined by AHJ or educational institution	**0.0**	**0.0**	**0.0**
Course Totals	**6.75**	**17.25**	**24.0**

Time Table Key

1. The Time Table documents the amount of time required to deliver the content included in the course plan.

2. Time is documented using the quarter system: 15 min. = .25 / 30 min. = .50 / 45 min. = .75 / 60 min. = 1.0.

3. The Course Totals do not reflect time for lunch (1 hour) or breaks (10 minutes per each 50 minutes of instruction or assessment). It is the instructor's responsibility to add this time based on the course delivery schedule.

4. Application (activities, skills exercises, and formative testing) time will vary depending on the number of students enrolled. The Application time documented is based on the maximum class size identified in the Course Details section.

5. Summative Assessments are determined and scheduled by the authority having jurisdiction. These are not the written or psychomotor State Fire Training certification exams. These are in-class assessments to evaluate student progress and calculate course grades.

Unit 1: Introduction

Topic 1-1: Orientation and Administration

Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, skills exercises, resources, evaluation methods, and participation requirements in the course syllabus.

Enabling Learning Objectives

1. Identify facility requirements
    - Restroom locations
    - Food locations
    - Smoking locations
    - Emergency procedures
2. Identify classroom requirements
    - Start and end times
    - Breaks
    - Electronic device policies
    - Special needs and accommodations
    - Other requirements as applicable
3. Review course syllabus
    - Course objectives
    - Calendar of events
    - Course requirements
    - Student evaluation process
    - Assignments
    - Activities
    - Required student resources
    - Class participation requirements

Discussion Questions

1. Determined by instructor

Application

1. Have students complete all required registration forms.

Unit 2: PPE, Tools, and Equipment

Topic 2-1: Selecting and Using PPE

Terminal Learning Objective

At the end of this topic a student, given a common passenger vehicle incident and AHJ policies and procedures, will be able to select and use personal protective equipment (PPE), so that PPE is appropriate to incident response needs and donned and worn correctly.

Enabling Learning Objectives

1. Identify the protections provided by PPE during common passenger vehicle incidents
2. Identify the limitations of PPE
3. Identify when and how to don and doff PPE
    - Safety considerations
    - Manufacturer guidelines
    - AHJ policies and procedures
4. Don and doff PPE

Discussion Question

1. What types of PPE does your AHJ require for common passenger vehicle rescue?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: None

Topic 2-2: Using Tools and Equipment

Terminal Learning Objective

At the end of this topic a student, given various hand and power tools and equipment, will be able to select, and safely transport, operate, and use them in accordance with manufacturer specifications and AHJ policies and procedures.

Enabling Learning Objectives

1. Identify basic common passenger vehicle rescue tools and equipment
2. Identify safety considerations for storing and transporting tools and equipment
3. Identify guidelines for cleaning, inspecting, and maintaining tools and equipment
   - Manufacturer guidelines
   - AHJ guidelines
   - Documentation and reporting requirements
4. Describe methods for cleaning tools and equipment
   - Equipment/tools to use
   - Solvents or solutions to use
5. Identify when and how to remove hand and power tools from service
   - Manufacturer guidelines
   - AHJ guidelines
   - Documentation and reporting requirements
6. Transport, operate, and maintain tools and equipment

Discussion Question

1. What tools does your agency use for vehicle rescue?
2. What are maintenance procedures for these tools?
3. Which tools are carried on different apparatus types in your AHJ?

Application

1. Students will practice this skill at multiple skill stations and must demonstrate using each of the following devices—cutters, spreaders, rams, strut systems, and air bag systems—on at least one vehicle placement or configuration.

Instructor Notes

1. ELO 1 – Use the course equipment list as the minimum requirements and then include any other tools and equipment common to your AHJ.

CTS Guide Reference: None

Unit 3: Incident Response

Topic 3-1: Sizing Up an Incident

Terminal Learning Objective

At the end of this topic a student, given an incident, background information and applicable reference materials, will be able to size up an incident so that the operational mode is defined, resource availability and response time are determined, types of rescues are determined, the number of victims are identified, the last reported location of all victims are established, witnesses and reporting parties are identified and interviewed, resource needs are assessed, search parameters are identified, and information required to develop an incident action plan is obtained.

Enabling Learning Objectives

1. Identify types of reference materials and their uses
   - Emergency response guides
   - AHJ standard operating procedures and guidelines
2. Describe risk/benefit assessment
   - Rescue vs. recovery
3. Identify resource availability, capabilities, and limitations
4. Describe elements of an action plan and related information
   - Formal (ICS roles) vs. informal
   - Determined by incident complexity
5. Describe how size up relates to the incident management system
6. Describe information gathering techniques and how that information is used in the size-up process
   - Pre-incident
   - En route
   - On scene
   - Evolving
7. Read specific rescue reference materials
8. Interview and gather information
9. Relay information
10. Manage witnesses
11. Use information sources

Discussion Question

1. When does scene size up begin?
2. What specialty resources to support passenger vehicle rescue are available in your AHJ?
3. What are some ways to gather information for scene size up?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation.

Instructor Notes

1. For any content identified as “determined by AHJ”, adjust content to reflect the policies, procedures, guidelines, and best practices of the AHJ delivering or hosting the course.

This applies to all topics in this course plan.

CTS Guide Reference: CTS 1-2

Topic 3-2: Creating an Incident Action Plan

Terminal Learning Objective

At the end of this topic a student, given agency guidelines, planning forms, and an operations- or technician-level common passenger vehicle incident or simulation, will be able to create an incident action plan for a common passenger vehicle incident so that a standard approach is used during training and operational scenarios, emergency situation hazards are identified, isolation methods and scene security measures are considered, fire suppression and safety measures are identified, common passenger vehicle stabilization needs are evaluated, and resource needs are identified and documented for future use.

Enabling Learning Objectives

1. Describe operational protocols
    - Determined by incident and AHJ
2. Identify activity-level rolls and responsibilities
    - Awareness
    - Operations
    - Technician
3. Identify specific planning forms
    - Determined by incident and AHJ
4. Identify types of common passenger vehicles within AHJ boundaries
    - Common passenger vehicles
    - Light commercial vehicles
5. Identify common passenger vehicle positioning at an incident
    - Wheel resting
    - Roof resting
    - Side resting
    - Multi-hazard configuration or environment (under, on, or in another thing)
        - Configuration = two or more independently unstable objects
            - Vehicle on vehicle
            - Object on vehicle
            - Vehicle on object
        - Environment
            - Cliffs or rocks
            - Water
            - Structures
6. Identify common passenger vehicle hazards
    - Wheel resting
        - Fluid leaks
        - Broken glass
        - Shredded/splintered metal and plastic
        - Exposed vehicle components
        - Vehicle contents
        - Safety devices
        - Airborne debris

    - Bodily fluids
    - Fire
    - Traffic
- Roof or side resting
    - Greater instability (high center of gravity with narrow base)
    - Potential for roll over (side)
    - Potential for collapse (roof)
    - Exposed components on bottom of vehicle
- Multi-hazard configuration or environment
    - Multiple unstable objects
    - Weight
    - Access issues
    - Potential for roll over
    - Potential for collapse

7. Describe incident support operations and resources
    - Determined by incident and AHJ
8. Identify common passenger vehicle anatomy as it relates to an incident action plan
9. Describe fire suppression and safety measures
10. Apply operational protocols
11. Select specific planning forms based on the types of common passenger vehicles
12. Identify and evaluate various types of common passenger vehicles within the AHJ
13. Request support and resources
14. Identify common passenger vehicle anatomy
15. Determine the required fire suppression and safety measures

Discussion Questions

1. What types of passenger vehicles are common in your AHJ?
2. How does a vehicle's construction impact your incident action plan?
3. What hazards are unique to a vehicle resting on its roof?
4. What additional resources and equipment might be required for an incident involving a vehicle resting on its roof?
5. What hazards are unique to a vehicle resting on its side?
6. What additional resources and equipment might be required for an incident involving a vehicle resting on its side?
7. What hazards are unique to a multi-hazard configuration?
8. What additional resources and equipment might be required for an incident involving a multi-hazard configuration?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation for one vehicle placement or configuration.

Instructor Notes

1. ELO 6 – The hazards listed for "wheel resting" are common to all configurations. The hazards listed under other configuration are in addition to those listed for "wheel resting".
2. ELO 6 is covered in more detail in Topics 3-5 and 3-6. Use this as an introduction.

3. ELO 9 is covered in more detail in Topic 3-7. Use this an introduction.

CTS Guide Reference: CTS 2-1, CTS 3-1, CTS 3-4, CTS 3-7

Topic 3-3: Recognizing the Need for Technical Rescue Resources

Terminal Learning Objective

At the end of this topic a student, given AHJ guidelines, will be able to recognize the need for technical rescue resources at an operations- or technician-level incident so that the need for additional resources is identified, the response system is initiated, the scene is secured and rendered safe until additional resources arrive, and awareness-level personnel are incorporated into the operational plan.

Enabling Learning Objectives

1. Describe operational protocols
   - Determined by incident and AHJ
2. Identify specific planning forms
3. Identify types of incidents common to the AHJ
4. Identify hazards
5. Describe incident support operations and resources
   - Determined by incident and AHJ
6. Describe safety measures
7. Apply operational protocols
8. Select specific planning forms based on the types of incidents
9. Identify and evaluate various types of hazards within the AHJ
10. Request support and resources
11. Determine the required safety measures

Discussion Questions

1. What factors determine when an incident requires additional or specialty resources?
2. What process does your AHJ use to request resources?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation.

Instructor Notes

1. ELO 4 is covered in more detail in Topics 3-5 and 3-6. Use this as an introduction.
2. This topic has a lot of overlap with Topic 3-2 and can be taught concurrently.

CTS Guide Reference: CTS 1-4

Topic 3-4: Supporting an Operations- or Technician-level Incident

Terminal Learning Objective

At the end of this topic a student, given an incident, an assignment, an incident action plan, and resources from the tool kit, will be able to support an operations- or technician-level incident so that the assignment is carried out, progress is reported to command, environmental concerns are managed, personnel rehabilitation is facilitated, and the incident action plan is supported.

Enabling Learning Objectives

1. Identify support roles and responsibilities
    - Traffic control
    - Fire suppression
    - Establishing safety zones
    - Notifications
    - Resource requests
    - Logistical support
    - Emergency medical services
2. Describe AHJ operational protocols
3. Describe the incident management system
4. Describe how to select and use resources
5. Identify scene support requirements
6. Apply operational protocols
7. Function within an incident management system
8. Follow and implement an incident action plan
9. Report the task progress status to a supervisor or incident command

Discussion Questions

1. What are some of the roles and responsibilities of an awareness level responder during an incident?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 1-5

Topic 3-5: Establishing Scene Safety Zones

Terminal Learning Objective

At the end of this topic a student, given a common passenger vehicle incident, scene security barriers, incident location, incident information, and personal protective equipment (PPE), will be able to establish scene safety zones so that the scene and responders are visible to approaching common passenger vehicles, safety zones are designated, zone perimeters are consistent with incident requirements, perimeter markings can be recognized and understood by others, zone boundaries are communicated to incident command, and traffic flow is controlled.

Enabling Learning Objectives

1. Describe (hazard) zone or area control flow and concepts
    - Hot
    - Warm
    - Cold
2. Identify types of control devices and tools
    - Road flares
    - Traffic cones
    - Directional lighting on apparatus
    - Personnel (crew, law enforcement, Department of Transportation, etc.)
    - Apparatus placement/blocking
    - Signs (stop/slow)
3. Identify types of existing and potential hazards
    - Situational
        - Traffic
        - Weather (rain, snow, fog, glare, etc.)
        - Terrain (rocks, trees, water, elevation, etc.)
        - Road construction
        - Hazardous materials
        - Location (train tracks, hairpin turns, wires, etc.)
    - Vehicle
        - Propulsion (fuel, hybrid, alternate)
        - Restraint systems
        - Electrical
        - Other (cargo contents, struts, exotic metals, etc.)
4. Describe methods of hazard mitigation
    - Avoid
    - Eliminate
    - Isolate
    - Mitigate
5. Describe organizational standard operating procedure
    - Determined by incident and AHJ
6. Describe staffing requirements

- Determined by incident and AHJ

7. Apply crowd control concepts
8. Position zone control devices
9. Identify and mitigate existing or potential hazards
10. Maintain personal safety techniques

Discussion Questions

1. What determines whether an area is a hot, warm, or cold hazard zone?
2. What agencies in your AHJ can help with scene control?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation.

Instructor Resources

1. None

CTS Guide Reference: CTS 1-1

Topic 3-6: Recognizing Incident Hazards and Initiating Isolation Procedures

Terminal Learning Objective

At the end of this topic a student, given scene control barriers, personal protective equipment (PPE), requisite equipment, and available specialized resources, will be able to recognize incident hazards and initiate isolation procedures so that all hazards are identified; resource application fits the operational requirements; hazard isolation is considered; risks to rescuers, bystanders, and victims are minimized; and rescue time constraints are taken into account.

Enabling Learning Objectives

1. Identify types and nature of incident hazards
2. Identify common types of rescuer and victim hazards and risks
    - Moving vehicles
    - Vehicle stability
    - Cargo
    - Hazardous materials
    - Electrocution
    - Fire
    - Biohazards
    - Psychological impact
    - Injury
    - Death
3. Describe methods for controlling access to the scene
    - Flagging
    - Caution tape
    - Personnel (crew, law enforcement, DOT)
4. Describe isolation equipment types and their use
    - Absorbents
    - Tools
    - Equipment
    - Visual identifiers
5. Describe isolation methods and implementation
    - De-energize vehicle
    - Lock-out/tag-out
    - 5/10/30 rule
6. Identify operational requirement concerns
    - Responder safety
    - Patient safety
    - Public safety
7. Identify and types of technical references
    - NFPA 1006 (current edition)
    - Text identified by instructor
8. Identify incident hazards

9. Assess potential hazards to rescuers and bystanders
10. Place scene control barriers
11. Operate control and mitigation equipment

Discussion Questions

1. What vehicle features create hazards for rescuers?
2. What risks might rescuers encounter when isolating or mitigating hazards?
3. What is the 5/10/30 rule? Why is it important?
4. What is a simple way to reduce electrical hazards in a vehicle?

Application

1. Students will practice this skill at multiple skill stations and must describe it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 1-3

Topic 3-7: Establishing Fire Protection

Terminal Learning Objective

At the end of this topic a student, given an extrication incident and fire control support, will be able to establish fire protection so that fire and explosion potential is managed, and fire hazards and rescue objectives are communicated to the fire support team.

Enabling Learning Objectives

1. Identify types of fire and explosion hazards
    - Fuels
    - Fuel additives (ethanol, methanol)
    - Specialty metals
    - Batteries
    - Pressurized cylinders
    - Restraint devices
    - Ignition sources
2. Describe types of extinguishing devices
    - Water or foam (1½" diameter charged hoseline minimum)
    - Extinguishers
3. Describe agency policies and procedures
    - Determined by AHJ
        - Fire suppression
        - Rapid intervention personnel
4. Identify types of flammable and combustible substances and types of ignition sources
5. Describe extinguishment or control options
6. Identify fire and explosion hazards
7. Operate within the incident management system
8. Use extinguishing devices
9. Apply fire control strategies
10. Manage ignition potential

Discussion Questions

1. What components of a vehicle are a potential fire or explosion hazard?
2. What is your agency's policy on protection lines during a vehicle rescue?

Application

1. Students will practice this skill at multiple skill stations and must describe it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-2

Topic 3-8: Managing Potentially Harmful Energy Sources

Terminal Learning Objective

At the end of this topic a student, given a common passenger vehicle, common passenger vehicle tool kit, and PPE, will be able to manage potentially harmful energy sources, including propulsion power, restraint systems, and construction materials, so that all hazards are identified and isolated, systems are managed, beneficial system use is evaluated, and hazards to rescue personnel and victims are minimized.

Enabling Learning Objectives

1. Identify types of energy sources
    - Kinetic vs. potential
    - Electrical
    - Fuel
    - Chemical
    - Pneumatic systems
        - Fuel pumps
        - Air bags (passive restraint devices)
        - Alternative fuel systems
        - Air suspension systems
    - Gravity
    - Mechanical
    - Topographical
2. Describe specialized system features
3. Describe system isolation methods
    - Operate beneficial systems in support of tactical operations before isolating
4. Describe tools for disabling hazards
    - Determined by AHJ
    - Determined by incident
5. Describe policies and procedures of the AHJ
6. Identify hazard
7. Operate beneficial systems in support of tactical objectives
8. Operate tools and devices for securing and disabling hazards

Discussion Questions

1. What are some common energy source locations in or on a vehicle?
2. What systems should you address before isolating power?
3. What tools or equipment does your agency use to manage energy sources?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-4

Topic 3-9: Mitigating Hazards Associated with Alternative Fuel Vehicles

Terminal Learning Objective

At the end of this topic a student, given an alternative fuel common passenger vehicle, common passenger vehicle tool kit, and PPE, will be able to identify and mitigate hazards associated with alternative fuel vehicles so that all hazards are identified and isolated, systems are managed, beneficial system use is evaluated, and hazards to rescue personnel and victims are minimized.

Enabling Learning Objectives

1. Identify an "alternative" fuel vehicle
   - A motorized vehicle propelled by anything other than gas or diesel alone
2. Identify alternative fuel sources
   - Electrical
   - Hybrid
   - Hydrogen
   - Biodiesel
   - Natural gas
     - Compressed (CNG)
     - Liquified (LNG)
   - Liquefied petroleum gas (LPG)
3. Identify types of alternative fuel common passenger vehicles in the AHJ
   - Personal vehicles (Tesla, Prius, etc.)
   - Light commercial (delivery vehicles)
   - Heavy commercial (busses, trash trucks, etc.)
4. Identify hazards associated with alternative fuel vehicles
   - Electrical/hybrid
     - Electrocution
     - Exotic metal fires
     - Burns
     - Respiratory damage
     - Death
   - Gasses
     - Fire
     - Explosions
     - Compressed cylinders
     - Burns
     - Respiratory damage
     - Death
5. Describe how to isolate hazards
   - Determined by AHJ
   - Determined by manufacturer emergency response guides
6. Describe policies and procedures of the AHJ
7. Identify hazard
8. Operate beneficial systems in support of tactical objectives

9. Operate tools and devices for securing and disabling hazards

Discussion Questions

1. How do you identify an alternative fuel vehicle?
2. What type of alternative fuel vehicles operate in your AHJ?
3. What hazards are associated with alternative fuel vehicles?

Application

1. Students will practice this skill at multiple skill stations. It is embedded in other skills for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-5

Unit 4: Vehicle Stabilization

Topic 4-1: Stabilizing a Common Passenger Vehicle

Terminal Learning Objective

At the end of this topic a student, given a common passenger vehicle, an operations- or technician-level incident or scenario, a common passenger vehicle tool kit, and PPE, will be able to stabilize a common passenger vehicle so that the vehicle is prevented from moving during the rescue operations; entry, exit, and tool placement points are not compromised; anticipated rescue activities will not compromise vehicle stability; selected stabilization points are structurally sound; stabilization equipment can be monitored; and the risk to rescuers is minimized.

Enabling Learning Objectives

1. Identify factors that impact stabilization
    - Vehicle resting on wheels, roof, or side
        - Vehicle size or type
        - Vehicle position
        - Ground surface (dirt, gravel, sand, mud)
        - Access needs
        - Contaminants
    - Additional considerations for multi-hazard configuration or environment
        - Multiple vehicles or objects
        - Topography (water, cliffs, rocks, embankments)
2. Describe mechanism of common passenger vehicle movement
    - Horizontal Movement
        - Vehicle moves forward or rearward on its longitudinal axis or moves horizontally along its lateral axis
    - Vertical Movement
        - Vehicle moves up and down in relation to the ground while moving along its vertical axis
    - Roll Movement
        - Vehicle rocks side to side while rotating about on its longitudinal axis and remaining horizontal in orientation
    - Pitch Movement
        - Vehicle moves up and down about its lateral axis, causing the vehicle ‘s front and rear portions to move left or right in relation to their original position
    - Yaw Movement
        - Vehicle twists or turns about its vertical axis, causing the vehicle’s front and rear portions to move left or right in relation to their original position
    - Additional considerations for multiple objects with potential to move in multiple directions
3. Describe types and rated capacities of stabilization devices
    - Chocks (wheel and step)
    - Vehicle systems (ignition, brakes, etc.)

- Cribbing
- Struts
- Cables, chains, ropes, slings
    - Marrying or joining together a vehicle with another vehicle or object
- Air bags

4. Identify types of stabilization points
    - Single point vs. multi-point (based on access needs)
    - Vehicle placement (may already provide stabilization)
    - May need to stabilize multiple objects (may not all be vehicles)
5. Identify types of stabilization surfaces
    - Use what is available based on vehicle(s) resting position
    - Solid structural vehicle surfaces
        - Frame, jack points, trunk, hood, pillars, roof, undercarriage, platform, quarter panels
    - Non-vehicle surfaces
        - Rocks, structures, utility poles, etc.
6. Describe how to stabilize a common passenger vehicle
    - Resting on its wheels on the road surface or similar flat stable environment
    - Resting on its roof
    - Resting on its side
    - Resting in a configuration or environment where multiple concurrent hazards must be managed to access or remove the occupants
7. Describe AHJ policies and procedures
8. Select, operate, and monitor stabilization devices

Discussion Questions

1. How does vehicle location or position impact stabilization needs?
2. What tools and equipment does your agency use to stabilize a common passenger vehicle?
3. How is stabilizing a pick-up truck different from stabilizing a small passenger vehicle?
4. How is stabilizing a vehicle resting on its roof different from a vehicle resting on wheels?
5. When is it possible to use the roof as a stabilization surface? Why?
6. How does a vehicle's center of gravity change when it's resting on its side?
7. How is stabilizing a vehicle resting on its side different from a vehicle resting on its wheels?
8. How is stabilizing a vehicle in a multi-hazard configuration different from a solo vehicle?
9. How does your agency marry or join together vehicles or objects?

Application

1. Students will practice this skill at multiple skill stations and must perform stabilization once for each of the following devices—chocks (or equivalent), cribbing (or equivalent), struts (or equivalent), and air bags—on at least one vehicle placement or configuration.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-3, CTS 3-2, CTS 3-5, CTS 3-8

Unit 5: Access and Egress

Topic 5-1: Determining Vehicle Access and Egress Points

Terminal Learning Objective

At the end of this topic a student, given the structural and damage characteristics and potential victim location(s), will be able to determine the common passenger vehicle access and egress points so that the victim location(s) is identified; access and egress points for victims, rescuers, and equipment are designated; flows of personnel, victim, and equipment are identified; existing entry points are used; time constraints are factored; selected entry and egress points do not compromise vehicle stability; chosen points can be protected; equipment and victim stabilization are initiated; and AHJ safety and emergency procedures are enforced.

Enabling Learning Objectives

1. Describe common passenger vehicle anatomy and construction/features
    - 7 sides (top, bottom, four sides, inside)
    - Frame construction
        - Unibody
        - Solid frame
    - Suspension
    - Doors
    - Roof
    - Pillars/posts
    - Glass
    - Restraint systems
2. Identify access, egress, and purchase points
    - Primary - existing (doors, windows, sunroof, etc.)
    - Secondary - created (cutting)
3. Identify routes and associated hazards
    - Routes
        - Primary
        - Secondary
    - Hazards
        - Broken glass
        - Sharp objects
        - Leaking contaminates
        - Victim protection
4. Describe AHJ standard operating procedure
5. Describe emergency evacuation and safety signals
    - Determined by AHJ
6. Identify access and egress points and probable victim locations
7. Assess and evaluate impact of vehicle stability on the victim

Discussion Questions

1. What are some non-cutting access and egress points?
2. What emergency and evacuation signals do you use in your agency?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation on at least one vehicle placement or configuration.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-6

Topic 5-2: Creating Access and Egress Openings for Rescue

Terminal Learning Objective

At the end of this topic a student, given an operations- or technician-level incident or scenario, a common passenger vehicle tool kit, specialized tools and equipment, PPE, and an assignment, will be able to create access and egress openings for rescue from a common passenger vehicle so that the movement of rescuers and equipment complements victim care and removal, an emergency escape route is provided, the technique chosen is expedient, victim and rescuer protection is afforded, and vehicle stability is maintained.

Enabling Learning Objectives

1. Describe common passenger vehicle construction and features
    - Rollover protection
    - Roof integrity and design
    - Floor pan
    - Undercarriage and suspension
2. Describe access and egress equipment
    - Electrical
    - Mechanical
    - Hydraulic
    - Pneumatic
    - Alternative
3. Identify points and routes of ingress and egress
    - Determined by incident and AHJ priorities
4. Describe techniques and hazards
    - "Try before you pry" (work from least invasive to most invasive)
    - Door access
        - Hinge side
        - Latch side
        - Full removal
        - Third door conversion
    - Dash displacement
        - Lift
        - Roll
    - Glass removal
        - Side windows
        - Rear window
        - Windshield
        - Sun/moon roof
    - Sidewall removal (B post blow out)
    - Roof access
        - Flap
        - Removal
    - Rear access

    - Tunneling
  - Seat displacement
  - Pedal displacement
5. Describe how to create access and egress opening for rescue from a common passenger vehicle
   - Resting on its wheels on the road surface or similar flat stable environment
   - Resting on its roof
   - Resting on its side
   - Resting in a configuration or environment where multiple concurrent hazards must be managed to access or remove the occupants
6. Describe agency policies and procedures
7. Select and operate tools and equipment
8. Apply tactics and strategy based on assignment
9. Perform hazard control based on techniques selected
10. Demonstrate safety procedures and emergency evacuation signals

Discussion Questions

1. How would you prioritize selecting access and egress points?
   - For a vehicle resting on its wheels?
   - For a vehicle resting on its roof?
   - For a vehicle resting on its side?
2. In which circumstanced would tunneling be the best option?
3. In what situations would you use a third door conversion?
4. What technique is most often used to create access and egress points for a vehicle resting on its roof?
5. What hazards are associated with creating access and egress points for a vehicle resting on its roof?
6. What technique is most often used to create access and egress points for a vehicle resting on its side?
7. What hazards are associated with creating access and egress points for a vehicle resting on its side?
8. What hazards are associated with creating access and egress points for a vehicle resting in a multi-hazard configuration or environment?

Application

1. Students will practice this skill at multiple skill stations and must perform once for each of the following techniques—removing glass, removing a door, removing a roof, displacing a dash (lift), and displacing a dash (roll)—on at least one vehicle placement or configuration.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-7, CTS 3-3, CTS 3-6

Unit 6: Victim Rescue

Topic 6-1: Disentangling Victims

Terminal Learning Objective

At the end of this topic a student, given an operations- or technician-level extrication incident, a vehicle tool kit, PPE, and specialized equipment, will be able to disentangle victim(s) so that undue victim injury is prevented; victim protection is provided; and stabilization is maintained.

Enabling Learning Objectives

1. Describe tool selection and application
   - Cutting tools
   - Spreading tools
   - Lifting tools
2. Describe stabilization systems
   - Determined by county (LEMSA) EMS policies and procedures
3. Describe protection methods
   - Eye protection
   - Respiratory protection
   - Exposure protection
   - Debris protection
4. Describe disentanglement points and techniques
   - Structural components (pedals, dash, steering wheel, etc.)
   - Safety systems (seat belts, air bag, etc.)
   - Foreign objects (trees, signposts, etc.)
   - Cargo (boxes, tools, ammunition, etc.)
5. Describe dynamics of disentanglement
   - Basic laws of physics
   - Change in victim condition
6. Operate disentanglement tools
7. Initiate protective measures
8. Identify and eliminate points of entrapment
9. Maintain incident stability and scene safety

Discussion Questions

1. What victim stabilization systems does your county use?
2. What type of victim protection equipment does your agency use?
3. What are common entanglement points that may trap victims?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation for one vehicle placement or configuration.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-8 and CTS 3-9

Topic 6-2: Removing a Packaged Victim to a Designated Safe Area

Terminal Learning Objective

At the end of this topic a student, given a victim transfer device, a designated egress route, and PPE, will be able to remove a packaged victim to a designated safe area as a member of a team so that the team effort is coordinated, the designated egress route is used, the victim is removed without compromising victim packaging, undue injury is prevented, and stabilization is maintained.

Enabling Learning Objectives

1. Describe patient handling techniques
    - Determined by county (LEMSA) EMS policies and procedures
    - Consider:
        - Mechanism of injury
        - Triage
        - Patient safety during extrication
        - Spinal precautions
        - Advanced EMS needs
        - Documentation
    - Goal is patient outcome (minimize harm to victim), not vehicle outcome
2. Describe types of immobilization, packaging, and transfer devices
    - Qualified medical personnel to address before victim removal
    - Determined by county (LEMSA) EMS policies and procedures
3. Describe types of immobilization techniques
    - Qualified medical personnel to address before victim removal
    - Determined by county (LEMSA) EMS policies and procedures
4. Identify signs and symptoms of compartment syndrome and crush injuries
    - Qualified medical personnel to address before victim removal
    - In accordance with (LEMSA) EMS policies and procedures
5. Describe uses of immobilization devices
6. Identify victim decontamination needs prior to transport
7. Use immobilization, packaging, and transfer devices for specific situations
8. Use immobilization techniques
9. Apply medical protocols and safety features to immobilize, package, and transfer
10. Use all techniques for lifting the patient

Discussion Questions

1. What tools and equipment does your agency use to immobilize patients?
2. What rescuer actions could contribute to victim injuries?
3. Who is responsible for determining how a patient is handled, packaged, and transported?
4. Who is responsible for patient decontamination?

Application

1. Students will practice this skill at multiple skill stations and must perform it once for evaluation for one vehicle placement or configuration.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-9

Unit 7: Termination

Topic 7-1: Terminating a Vehicle Incident

Terminal Learning Objective

At the end of this topic a student, given PPE specific to the incident, isolation barriers, and an extrication tool kit, will be able to terminate a vehicle incident so that rescuers and bystanders are protected during termination operations; the party responsible for the operation, maintenance, or removal of the affected vehicle is notified of any modification or damage created during the extrication process; scene control is transferred to a responsible party; potential or existing hazards are communicated to that responsible party; and command is terminated.

Enabling Learning Objectives

1. Describe PPE characteristics
   - PPE requirements change in IDLH vs non-IDLH
   - Decontamination requirements
2. Identify hazards and risks
   - Reevaluate mitigated and ongoing hazards
   - Complacency
   - Normalized deviance
   - Fatigue
3. Describe isolation techniques
4. Identify statutory requirements identifying responsible parties
   - Determined by AHJ
5. Describe accountability system use
   - PAR – personnel accountability report
6. Describe reporting methods
   - Determined by AHJ
7. Describe post incident analysis techniques
   - Determined by AHJ
   - Critical incident stress debriefing
8. Select and use hazard-specific PPE
9. Perform decontamination
10. Use barrier protection techniques
11. Collect data and implement record keeping/reporting protocols
12. Conduct post incident analysis activities

Discussion Questions

1. What hazards and risks can be present during incident termination?
2. Who are some responsible parties for the operation, maintenance, or removal of the affected vehicle?
3. What critical incident stress management resources are available to you?

Application

1. Students will practice this skill at multiple skill stations and must describe it once for evaluation.

Instructor Notes

1. None

CTS Guide Reference: CTS 2-10

Skill Station Recommendations

Safety / Engine

- PPE selection / donning
- Scene size up
    - Incident Action Plan (IAP)
    - Resources
- Scene safety
    - Zones
    - Traffic
    - Hazards / hazardous materials
- Apparatus
    - Spotting / warning devices (cones, flares, etc.)
- Extinguishment
    - Minimum 1½" hose line
    - Dry chemical
    - Other water source

Stabilization

- Vehicle position
    - Wheel resting
    - Side resting
    - Roof resting
    - Other
- Vehicle disabling
    - In park, keys/fob removed, brake set, in gear, etc.
- Wheel chocks
- Cribbing
- Jacks
- Anchoring
    - Chains, level, slings, bindings
- Lifting

EMS/Victim Rescue

- Mechanism of injury
- Triage
- Victim/patient safety during extrication
- Spinal precautions
- Victim/patient packaging
- Extricate/transfer
- Advanced EMS skills
- Documentation

Extrication/Disentanglement

- Assess / egress
- Glass management
- Door removal
    - Hinge side
    - Latch side
    - Sidewall
    - Third-door conversion (optional)
    - Sliding door (optional)
- Roof
    - Roof removal
    - Roof flap
- Dash displacement
    - Lift
    - Roll
- Alternative extrication techniques
    - Truck tunneling (optional)
    - Floor pan drop (optional)
    - Seat displacement (optional)
    - Pedal displacement (optional)

Incident Termination

- Post incident analysis
- Decontamination
- Notifications
- Documentation
- Tool and equipment rehabilitation

Tool Lab

- Hydraulic/E-draulic
    - Power unit/batteries
    - Spreaders
    - Cutters
    - Rams
    - Combi tool
    - Accessories
- Hand/Power tools
    - Striking, prying, pulling, cutting
        - Engine / Truck company / AHJ compliment
    - Other AHJ tools
    - Pneumatics
        - Air bags
        - Air chisel (optional)

How to Read a Course Plan

A course plan identifies the details, logistics, resources, and training and education content for an individual course. Whenever possible, course content is directly tied to a national or state standard. SFT uses the course plan as the training and education standard for an individual course. Individuals at fire agencies, academies, and community colleges use course plans to obtain their institution's consent to offer course and provide credit for their completion. Instructors use course plans to develop syllabi and lesson plans for course delivery.

Course Details
The Course Details segment identifies the logistical information required for planning, scheduling, and delivering a course.

Required Resources
The Required Resources segment identifies the resources, equipment, facilities, and personnel required to deliver the course.

Unit
Each Unit represents a collection of aligned topics. Unit 1 is the same for all SFT courses. An instructor is not required to repeat Unit 1 when teaching multiple courses within a single instructional period or academy.

Topics
Each Topic documents a single Terminal Learning Objective and the instructional activities that support it.

Terminal Learning Objective
A Terminal Learning Objective (TLO) states the instructor's expectations of student performance at the end of a specific lesson or unit. Each TLO includes a task (what the student must be able to do), a condition (the setting and supplies needed), and a standard (how well or to whose specifications the task must be performed). TLOs target the performance required when students are evaluated, not what they will do as part of the course.

Enabling Learning Objectives
The Enabling Learning Objectives (ELO) specify a detailed sequence of student activities that make up the instructional content of a lesson plan. ELOs cover the cognitive, affective, and psychomotor skills students must master to complete the TLO.

Discussion Questions
The Discussion Questions are designed to guide students into a topic or to enhance their understanding of a topic. Instructors may add to or adjust the questions to suit their students.

Application
The Application segment documents experiences that enable students to apply lecture content through cognitive and psychomotor activities, skills exercises, and formative testing. Application experiences included in the course plan are required. Instructors may add additional application experiences to suit their student population if time permits.

Instructor Notes
The Instructor Notes segment documents suggestions and resources to enhance an instructor's ability to teach a specific topic.

CTS Guide Reference
The CTS Guide Reference segment documents the standard(s) from the corresponding Certification Training Standard Guide upon which each topic within the course is based. This segment is eliminated if the course is not based on a standard.

Skill Sheet
The Skill Sheet segment documents the skill sheet that tests the content contained within the topic. This segment is eliminated if the course does not have skill sheets.