OBJECTIVE PAGE

VMR
Lesson One
Victim Management

DOMAIN: COGNITIVE / PSYCHOMOTOR

LEVEL OF LEARNING: COMPREHENSION / APPLICATION

MATERIALS

IFSTA Principles of Vehicle Extrication, 2nd edition; NFPA 1006, 2008 edition, Standard For Technical Rescuer Professional Qualifications; Vehicle Rescue and Extrication by Ronald E. Moore; NFPA1670 Operations and Training for Technical Rescue Incidents; audio visual equipment. Various types of spinal immobilization devices used by the Authority Having Jurisdiction (AHJ) such as a short spine board, a long spine board, a KED, an XP1, cervical collars, wrist and ankle straps or equivalent devices, and various types of vehicles available to the AHJ for practicing the proper use of the equipment covered in this lesson plan. Vehicles in the vehicle extrication lesson plans include passenger vehicles, trucks, buses, industrial moving machinery, and farm machinery. Laptop computer, multimedia projector and whiteboard or flipchart, and marking pens.

NOTE: The mentioned vehicles and machinery are only suggestions. Practice on all of these types of vehicles and machinery is not mandatory to complete the objectives of the lesson plan. Selection should be based on availability and AHJ needs. Practical skills testing for the Technical Rescuer candidate is based on passenger vehicle extrication.

NFPA 1006, 2008 edition JPRs

10.1.7 Create access and egress openings for rescue
10.1.8 Disentangle victim(s)
10.1.9 As a member of a team, remove a packaged victim to a designated safe area

10.2.3 Determine access and egress points for heavy vehicles and large machinery
10.2.4 Create access and egress points for a rescue
10.2.5 Disentangle victim(s) from a Level II incident

Junior Member Statement:

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

TERMINAL OBJECTIVE

The Technical Rescuer candidate shall correctly demonstrate the various procedures for accessing, stabilizing, packaging and removing a victim to a safe area from a vehicle or machinery accident.

ENABLING OBJECTIVE

1. The Technical Rescuer candidate, when given the appropriate rescue equipment, working as a member of a team, and following local medical protocols, shall correctly demonstrate techniques for stabilizing, packaging, and removing a victim to a safe area from a vehicle or machinery accident.

2. The Technical Rescuer candidate, when given the appropriate rescue equipment and working as a member of a team, shall correctly demonstrate safe and efficient methods for gaining access and initiating the disentanglement phase of a vehicle rescue incident.

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MOTIVATION

The ultimate goal of any vehicle rescue incident is to gain safe access to the victim, assess the injuries, stabilize and prevent further injuries, package the victim and transport the victim to a medical facility. In order for these goals to be met, a coordinated effort by all rescuers must occur. Medical personnel and extrication personnel must communicate constantly. Suggestions for best techniques must be weighed against the actual effect it might have on the victim. Several plans may be adopted. Medical personnel inside with the victim must be the eyes and ears for the extrication team. Monitoring the victim's conditions and watching for positive or negative effect of disentanglement procedures will play an important part in the successful outcome of the operation. Once access has been made to the victim, proper stabilization of injuries and packaging techniques need to be correctly implemented to prevent further injuries or complications.

PRESENTATION

ENABLING OBJECTIVE #1

The Technical Rescuer candidate, when given the appropriate rescue equipment, working as a member of a team, and following local medical protocols, shall correctly demonstrate techniques for stabilizing, packaging, and removing a victim to a safe area from a vehicle or machinery accident.

1. Identify the mechanism of injury in relationship to a frontal impact collision.
    a) Inertia forces occupants forward as vehicle is recoiling rearward.
    b) Unrestrained drivers are violently thrown against the steering wheel.

c) Potential injuries include facial, thoracic, cranial and spinal trauma.
d) Unrestrained front seat passengers are thrown against the dash or propelled against or through the windshield.
e) Potential injuries include same as driver plus fractures of upper extremities.
f) Unrestrained rear seat passengers are propelled against the back of the front seat or over it.
g) Potential injuries include the same as other occupants.

2. Identify the mechanism of injury in relationship to a rear impact collision.
   a) Inertia will force the occupant rearward as vehicle is recoiling forward.
   b) Unrestrained occupants are violently thrown rearward and possibly upward.
   c) Potential injuries include whiplash, cranial and spinal trauma.
   d) A potential exists for the rear of the vehicle to be lifted up and flipped; increasing the potential for multiple external and internal injuries.

3. Identify the mechanism of injury in relationship to a side impact collision.
   a) Vehicles tend to wrap around the point of impact.
   b) Unrestrained occupants are violently thrown in all directions within the vehicle.
   c) Potential injuries include whiplash, cranial and spinal trauma.

4. Identify the mechanism of injury in relationship to a roll over collision.
   a) Severe structural damage occurs in sideways and end-over-end-rollovers.
   b) Unrestrained occupants are violently thrown in all directions within the vehicle and can be ejected from the vehicle.
   c) Potential injuries include whiplash, cranial, and spinal trauma and death.

Reference: IFSTA Principles of Vehicle Extrication, 2nd edition, pages 87 - 89.

5. Discuss patient care priorities at the scene of a vehicle or machinery incident.
   a) Provide scene safety for EMS personnel.
   b) Provide adequate access and egress routes for EMS personnel.
   c) Institute triage protocol for multiple victims.
   d) Begin treatment and transport of victim according to triage priorities.
   e) EMS personnel working with trapped or pinned victims should keep the IC informed of patient condition, existing entrapment problems, and any suggestions that might expedite the extrication of the victim.

6. Following local medical protocol and using equipment provided by AHJ, demonstrate stabilizing a victim found sitting behind the steering wheel and cervical injuries are suspected.
   a) Perform primary survey to include ABC evaluation, correct airway and severe bleeding problems.
   b) Implement secondary survey including neurological function, signs of blunt trauma injuries extremity fractures and or dislocations, signs and symptoms of internal injuries, obtain and document vital signs.
   c) Apply manual traction.
   d) Apply cervical traction device.
   e) Apply short spinal immobilization device.
   f) Transfer the victim to a long spinal immobilization device.
   g) Transport the victim to a safe zone.

7. Following local medical protocol and using equipment provided by AHJ, demonstrate stabilizing a victim found lying down in the rear passenger compartment with suspected cervical and lower back injuries.
   a) Perform primary survey to include ABC evaluation, correct airway, and severe bleeding problems.
   b) Implement secondary survey including neurological function, signs of blunt trauma injuries, extremity fractures/dislocations, signs and symptoms of internal injuries, obtain and document vital signs.
   c) Apply cervical stabilization device.

d) Apply spinal immobilization device in accordance with the protocol of the AHJ.

8. Following local medical protocol and using equipment provided by AHJ, demonstrate stabilizing a victim found with the lower extremities pinned under a vehicle.
   a) Perform a primary survey to include ABC evaluation, and correct airway and severe bleeding problems.
   b) Implement a secondary survey including checking neurological function, signs of blunt trauma, injuries extremity fractures, and or dislocations, signs and symptoms of internal injuries, obtain and document vital signs.
   c) Apply a cervical stabilization device.
   d) Apply a spinal immobilization device in accordance with the protocol of the AHJ.

APPLICATION

Using the scenarios found at the end of this Lesson, have the candidates, working as members of a team, demonstrate appropriate patient stabilization and packaging techniques in accordance with each scenario.

Suggest a 10 to 1 instructor to student ratio when in the field environment. Instructors should make sure the vehicle is safe to practice on. Neutralize all electrical energy, make sure gas tanks are empty or removed. Neutralize or remove alternative fuels and any other potential hazard you think is necessary for conducting a safe training operation. All candidates should wear appropriate PPE at all times.

PRESENTATION

ENABLING OBJECTIVE #2

The Technical Rescuer candidate, when given the appropriate rescue equipment and working as a member of a team, shall correctly demonstrate safe and efficient methods for gaining access and initiating the disentanglement phase of a vehicle rescue incident.

1. Identify and discuss the patient access phase of an extrication response.

a) While hazards are being mitigated, plans should be made to determine the location and means necessary to gain access to the victims.
b) Initially rescuers should seek out or create at least one pathway so that medical personnel can gain entry and begin medical care.
c) Natural openings or openings created by the crash may need cleaning up (glass shards removed, jagged metal removed or covered).
d) Gaining initial access should not take more than a minute or two.
e) Keep the task simple.
f) Remember the old adage “Try before you pry”.

2. Define and discuss the disentanglement phase of extrication.
   a) Disentanglement is the systematic removal of portions of the wreckage allowing access and removal of the victim.
   b) It provides sufficient room within the vehicle to release the victim from the condition that is causing the entrapment.
   c) The goal is to rapidly remove the wreckage without causing additional harm to the victim.
   d) Vehicle stabilization, hazard control and access should be done prior to this phase.
   e) The strategy for this phase is an on going process involving input from medical personnel, the rescue officer and the IC, development of a Plan A, Plan B, and possibly a Plan C are essential.
   f) Exterior disentanglement involves movement or removal of glass, roofs and roof pillars, and doors.
   g) Interior disentanglement involves movement or removal of items that have pinned or are is close proximity to the victim.
   h) Selection of techniques is based on extent of entrapment, nature of the victim’s injuries, and victim’s overall medical condition.

3. Stress that interior personnel must provide protection for the victim and themselves throughout the operation.
   a) PPE worn by interior personnel should provide fire retardant protection.

4. Define and discuss the extrication phase.

a) Extrication is the process by which the victim is physically removed from the wreckage.
b) The rescue officer must confirm that all obstructions and the victim are properly immobilized.
c) The pathway should be adequate in size to remove the packaged victim.
d) Interior medical personnel coordinate interior activities to insure that the victim is moved smoothly and safely.
e) The victim is safely moved to a long spine board, secured, and removed from the wreckage.
f) Patient handling is supervised by the medical personnel.

5. Define and discuss the transportation phase.
   a) Remove the victim from the crash scene.
   b) Selection of transportation mode is based patient condition, transport time to nearest appropriate medical facility and weather conditions.
   c) The emergency ends when medical personnel make contact with and stabilize the non-critical victims.
   d) For critical victims survival depends on continuous care during transportation and eventual intervention by the hospital trauma team.

6. Define and discuss the termination phase.
   a) This begins when the last victim has been transported.
   b) The IC determines if services from any agency is needed.
   c) If services are not needed, personnel begin returning equipment to the vehicles.
   d) Hose lines are gathered up.
   e) IC insures that the scene is safe for other agencies to enter and perform clean-up.
   f) Interior medical personnel coordinate
   g) Once in quarters all equipment and vehicles are serviced and prepared for readiness.
   h) All paperwork is completed.

7. Point out that if feasible, an incident debriefing should be conducted.

a) Due to the trauma and emotional drain of some calls a Critical Incident Stress Debriefing may be appropriate.

Reference: Vehicle Rescue and Extrication, pages 123 - 131.

8. Discuss the preparatory methods for gaining access into a vehicle.
   a) Size-up. Try before you pry.
   b) Identify potential entry and egress points.
   c) Perform set-up work.

9. Demonstrate the various techniques for displacing and removing a door using various hand and power tools.

Reference: Vehicle Rescue and Extrication, pages 306-322.

10. Demonstrate the various techniques for opening a roof using various hand and power tools.

Reference: Vehicle Rescue and Extrication, pages 323 - 327.

11. Demonstrate the various techniques for lifting a dash using various hand and power tools.

Reference: Vehicle Rescue and Extrication, pages 328 - 331.

12. Demonstrate the various methods for pulling a steering wheel using various hand and power tools.

Reference: Vehicle Rescue and Extrication pages 332 - 338.

13. Demonstrate the various techniques for pulling a seat using various hand and power tools.

Reference: Vehicle Rescue and Extrication, pages 340 - 341.

14. Demonstrate the various techniques for gaining access into the passenger compartment through the floorboard with the vehicle on its side using various hand and power tools.

15. Demonstrate the various techniques for gaining access into the passenger compartment through the trunk using various hand and power tools.

Reference: Vehicle Rescue and Extrication, pages 298 - 301, and 344 - 345.

16. Demonstrate various techniques for gaining access to a trapped victim under a roof of an upside down vehicle using various hand and power tools.

Reference: Vehicle Rescue and Extrication pages, 345 - 348.

APPLICATION

After candidates have practiced the various skills listed in this lesson plan, set up the following scenarios:

Scenario 1 Total Side wall removal –

Objective- Access a victim located in the floorboard of the rear passenger compartment by removing two doors and the B pillar on one side of the vehicle. The patient is complaining of pain in lower back and numbness of both legs. Package the patient for spinal injury in accordance to local medical protocol and transport to a safe zone.

Scenario 2 Total Roof Removal-

Objective- Access a victim located in the front passenger compartment by completely removing the roof. The patient is complaining of severe neck pain. Package the patient for spinal injury in accordance to local medical protocol and transport to a safe zone.

Scenario 3 Dash Roll-up-

Objective- Access a victim trapped by the dashboard in the driver compartment by performing a door opening procedure and a dash roll-up. The patient is complaining of severe chest and neck pain. Package the patient for spinal injury in accordance to local medical protocol and transport to a safe zone.

Scenario 4 Stabilizing a vehicle on its side-

Objective- Access a victim who's legs are trapped under a vehicle by performing a stabilize and lift operation. The patient is complaining of severe back pain and numbness of lower extremities. Package the patient for spinal injury in accordance to local medical protocol and transport to a safe zone.

Advise the candidates they must address the following points while performing the above scenarios.
Scene size-up
Establish command
Stabilize scene and vehicle
Scan for air bags
Provide fire control measures
Locate batteries and electrical shutdown
Assess and neutralize fluid hazards
Create an initial access point
Provide protection for victim and interior rescuer
Determine content of trunk

Rotate the teams through as many scenarios as possible.

Suggest a 10 to 1 instructor to student ratio when in the field environment. Instructors should make sure the vehicle is safe to practice on. Neutralize all electrical energy, make sure gas tanks are empty or removed. Neutralize or remove alternative fuels and any other potential hazard you think is necessary for conducting a safe training operation. All candidates should wear appropriate PPE at all times.

The above scenarios will be evaluated as part of the practical skill requirement.

NOTE: Due to potential risk of injury to candidates it is recommended that a Rescue Randy be used to simulate the victim. Instructors should follow the protocol established by the AHJ.

SUMMARY

This lesson plan is designed to allow candidates to practice patient stabilization at a controlled simulated vehicle accident scenario. Vehicle accident scenes like other major incidents are controlled chaos at best. Proper patient care

and stabilization is crucial to the survivability of the victims and the post accident quality of life they will have. By challenging the candidates with these types of scenarios skills proficiencies can be evaluated and corrected in a controlled environment thus increasing the victim's chance of recovering from injuries sustained from a vehicle or machinery accident.

This lesson plan is a culmination of the learning process regarding vehicle extrication. The hands-on training is designed to expose the candidates to various types of incidents the rescuer may encounter. Candidates apply knowledge and techniques learned in the classroom to simulated incidents. Performance is based on the application of acceptable vehicle extrication principals and tactical techniques.