
	<b>STANDARD OPERATING GUIDELINE</b>				
	OPERATIONS				
	VEHICLE EXTRICATION				
	Effective:30/Jul/97	Revised: 28/Dec/20	S.O.G. #: O-323	Page: 1 of 5	

**1.0 Purpose**

1.1 It shall be the intent of this Standard Operating Guideline that all trapped patients shall be extricated in as efficient, safe, and timely a manner as practical according to generally accepted standards. It shall be the goal of the Fire Department to assist in whatever way possible so that trapped occupants can receive medical care at an appropriate medical facility within their “Golden Hour” of survival.

**2.0 Responsibility**

2.1 It is the responsibility of all Department personnel to understand the procedures documented in this Standard Operating Guideline.

**3.0 General Information**

3.1 All Highland Park Fire Department members who may be engaged in or exposed to the hazards of a vehicle extrication will wear the following approved items in accordance with Standard Operating Guideline O-311:

- 3.1.1 Protective turnout coat.
- 3.1.2 Protective turnout pants with bunker boots.
- 3.1.3 Helmet with goggles or safety glasses.
- 3.1.4 Nomex hood.
- 3.1.5 Fire resistive gloves.

3.2 Full protective clothing will be worn by firefighting personnel before responding to all motor vehicle accidents.

3.3 Helmets will be worn when operating near moving vehicles such as E.M.S. incidents on the street, with chin straps secured.

3.4 Helmet and approved safety goggles will be worn when personnel are within 15 feet of operating hand and power tools.

3.5 The Incident Commander may use his discretion to regulate those situations where exemptions to the above procedure appear necessary, such as when the use of protective clothing may compromise patient care, or when necessary to operate in close quarters where full protective clothing cannot be worn.

3.6 In specific situations for which no guidelines have been provided, the proper protective clothing to protect against all foreseeable hazards will be worn.



**4.0 Response**

4.1 Fire Department response to motor vehicle accidents will conform to the guidelines set forth in Standard Operating Guideline R-402.

**5.0 Operations**

5.1 Department operations shall be in conformance with the thirteen steps of the vehicle rescue life cycle. Department operations shall consist primarily of four (4) basic groups of evolutions referred to as rescue phases.

5.2 Rescue Phase 1 - Activities shall consist of arrival, size-up, establishing Command, scene stabilization, vehicle stabilization, patient access, and emergency medical care. After initial access to the injured persons has been



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gained and medical care is underway, rescue phases 2, 3, and 4 shall follow. The exact sequence of the performance of the rescue phases shall be at the discretion of the Rescue Sector Officer and the Incident Commander.

- 5.2 Rescue Phase 1 - Activities shall consist of arrival, size-up, establishing Command, scene stabilization, vehicle stabilization, patient access, and emergency medical care. After initial access to the injured persons has been gained and medical care is underway, rescue phases 2, 3, and 4 shall follow. The exact sequence of the performance of the rescue phases shall be at the discretion of the Rescue Sector Officer and the Incident Commander.
- 5.3 Rescue Phase 2 - Activities shall consist of disentanglement including total roof removal if needed.
- 5.4 Rescue Phase 3 - Activities shall consist of doors and sidewall (side posts) removal if needed.
- 5.5 Rescue Phase 4 - Activities shall consist of dashboard and firewall displacement.
- 5.6 Phases 2 and 3 shall be sequenced by the Rescue Sector Officer based upon a judgment of the most appropriate care for the patient(s). These four basic strategy phases shall be followed by patient extrication, transportation, and incident termination.
- 5.7 Any evolutions deemed necessary may be assigned by the Rescue Sector Officer in cooperation with the Incident Commander and the emergency medical personnel attending to the injured parties.

**6.0 Vehicle Extrication - Four Door Vehicle**

- 6.1 Simultaneous access to front and rear areas of a four (4) door vehicles shall be achieved, as follows:
  - 6.1.1 Try before you pry.
  - 6.1.2 Lower or remove all window glass
    - 6.1.2.1 Cover patient with blanket if using punch to remove glass.
    - 6.1.2.2 Place punch hand in palm of opposite hand to prevent pushing punch hand through window.
  - 6.1.3 Use the Hurst spreader to open a purchase point for the spreader at the lock side of the door in the manner illustrated below.
    - 6.1.3.1 Open spreader arms fully.
    - 6.1.3.2 Straddle the door with the spreader in a vertical position directly over the door lock.
    - 6.1.3.3 Close the spreader until the pinching action causes the door skin to peel outward, opening a purchase point along the door seam.
    - 6.1.3.4 Place the spreader in the new wider purchase point and force the door outward.
    - 6.1.3.5 Open the door fully to gain access to the door hinges.
    - 6.1.3.6 Cut both hinges with the Hurst cutter.
      - 6.1.3.6.1 Cut the top hinge first.
    - 6.1.3.7 Cut the hinges of the rear door accessible now that the front door has been removed. Remove the door by pulling it off the rear door lock.
  - 6.1.4 Cut the center "B" post at the roof line and at the floor level.
    - 6.1.4.1 The seat belt retracting mechanism may contain spring steel and should not be cut, if possible.

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- 6.1.5 The driver's seat-back is cut away by cutting the outside base of the seat and lifting the seat up and out of the vehicle. The cut should be made perpendicular to the seat hinge to make the maneuver a one cut operation.

**7.0 Vehicle Extrication - Two Door Vehicle**

- 7.1 Access a two (2) door vehicle - either side as follows:
  - 7.1.1 Try before you pry.
  - 7.1.2 Lower or remove window glass.
    - 7.1.2.1 Cover patient with blanket if using punch to remove glass.
    - 7.1.2.2 Place punch hand in palm of opposite hand to prevent pushing punch hand through window.
  - 7.1.3 Use the Hurst spreader to open a purchase point for the spreader at the lock side of the door in the manner illustrated below.
    - 7.1.3.1 Open spreader arms fully.
    - 7.1.3.2 Straddle the door with the spreader in a vertical position directly over the door lock.
    - 7.1.3.3 Close the spreader until the pinching action causes the door skin to peel outward, opening a purchase point along the door seam.
    - 7.1.3.4 Place the spreader in the new wider purchase point and force the door outward.
    - 7.1.3.5 Open the door fully to gain access to the door hinges.
    - 7.1.3.6 Cut both hinges with the Hurst cutter.
      - 7.1.3.6.1 Cut the top hinge first.
      - 7.1.3.6.2 Cut the bottom hinge.
  - 7.1.4 Remove the door from the area. Access to the front occupant compartment has now been achieved.

**8.0 Vehicle Extrication - Roof Removal**

- 8.1 Lower or remove all window glass, sides and rear. Do not remove windshield.
  - 8.1.1 Cover patient with a blanket if using punch to remove glass.
  - 8.1.2 Place punch hand in palm of opposite hand to prevent pushing punch hand through window.
- 8.2 Prior to cutting any roof posts (A, B, C, etc.) remove all interior molding from the posts to be cut to visualize any air bag cylinders, cables, etc.
- 8.3 Cut the "A" posts at their base, where the dash and the "A" posts meet.
- 8.4 Cut the "B" posts at their lowest point.
- 8.5 The rear most posts on the vehicle should be crushed with the spreader at their highest point nearest the roof. This could be a "B, C, D, or E" post depending on the size of the vehicle.
- 8.6 Position a ram in the door of the vehicle with the base of the ram against the rocker panel and activate the ram to push upward against the vehicle roof. This position should be as close to the windshield as possible.
- 8.7 Position personnel so that the roof is supported as it detaches from the windshield. A minimum of four (4) personnel is required.
- 8.8 After the windshield detaches from the dashboard, return to the rear most posts and completely cut through these posts.

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- 8.9 Move the roof either to the front or the rear of the vehicle depending on patient location in the vehicle. The roof should be placed out of the way so as to not cause injury to the rescuers.
- 8.10 If the post edges pose any danger to the rescuers and patients, cover these with tarps.
- 8.11 When the cutter man is cutting the “A” post, the spreader man should be crushing any posts which are wider than 6”. This will allow the cutter to make one cut per post.

**9.0 Vehicle Extrication - Vehicle Turned On Its Side**

- 9.1 Place wedges beneath the front and rear quarter panels of the vehicle to prevent the vehicle from falling onto the roof.
- 9.2 Place wedges and cribbing under framing members of the vehicle on its underside so as to prevent the same from falling onto its wheels.
- 9.3 If the vehicle can be tied off, then tie off the vehicle at two points, front and rear and tie it off to a fixed or immovable object. The ropes should be snug so as to prevent the vehicle from falling in the opposite direction of the tie-off.
- 9.4 Upon completion of stabilization, gain entry to the vehicle by one of three means:
  - 9.4.1 Window punch at the rear window.
  - 9.4.2 Open door above victims, tie off door and enter vehicle from above.
  - 9.4.3 Entry through hatch-back may be made if applicable.
- 9.5 Use the air chisel tool with the Air Cart from S33. Proceed with the following extrication guidelines:
  - 9.5.1 Using the cutting blade, begin a cut approximately 6 inches down from the roof edge, midway from front to rear, and cut parallel to the ground continuously toward the front. Turn the cut at the windshield and continue downward to the edge of the ground side roof edge. Return to the start of the original cut and cut in the opposite direction toward the rear and turn the cut at the rear window downward to the edge of the ground side roof edge.
- 9.7 Cut any cross bracing of the vehicle roof and remove any sound proofing material. Access to the victim should be accomplished at this time.
- 9.8 Prior to entry, place salvage covers across the roof skin and entry point to avoid injury to the victim and rescuers.

**10.0 Vehicle Extrication - Displacement of Dashboard and Steering Wheel**

- 10.1 Remove driver's side or passenger side door per procedure for access to a two door vehicle.
- 10.2 Remove the roof of vehicle per roof removal procedures. This can be accomplished with roof intact. Cut the “A” post on the side of the dash roll up at the level of the dashboard. Remove windshield.
- 10.3 Make a 45 degree cut with the Hurst cutters at a point where the “A” post and the rocker panel meet. Note: Open Hurst cutter blades to full cutting width for this cut.
- 10.4 Ram placement:
  - 10.4.1 Two Door Vehicle - Place the base of 60" ram at the point where the “B” post and the rocker panel meet.
  - 10.4.2 Place the head of the ram just under the bottom of the dashboard against the “A” post.

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- 10.4.3 Displace the dashboard and the steering wheel by activating the ram. To prevent the dashboard from returning to its original position, place a wedge into the cut at the base of the “A” post.
- 10.4.4 Four Door Vehicle - The same procedure as above is utilized, the only difference being the ram size would be the 40” ram.

**11.0 Reference**

11.1 Highland Park Fire Department

Approved:  Fire Chief