The Connecticut Fire Academy
Recruit Firefighter Program
**Practical Skill Training**

**Skill Sheet 26.3.1**
**Vehicle Extrication**

SKILL / TASK: **Basic Vehicle Extrication Techniques**

LOCATION: **Southing Extrication Training Site**

INSTRUCTOR(S) **1**

DELIVERY TIME: **Approximately 1 ½ hours**

EQUIPMENT:

**Basic Vehicle Extrication Techniques**
ALL ITEMS are PER SKILL STATION
2 - Four Door Vehicles
1 - HRT and equipment
- Cutter
- Spreader
- Ram(s)
- HRT Power Unit

1 - Irons
1 - Recruit Extrication Tool Bag
1 - Saw-Zall
- Extension Cord & Blades
  - (One set-up per two stations)

4 - Traffic Safety Cones
2 - Step Chocks
8 - 4 x 4 x 24 cribbing
4 - 2 x 4 x 24 cribbing
2 - Wedges

**Two Door Vehicle Extrication Techniques**
1 - Two Door Vehicle
1 - HRT and equipment
- Cutter
- Spreader
- Ram(s)
- HRT Power Unit

1 - Irons
1 - Recruit Extrication Tool Bag
1 - Saw-Zall
- Extension Cord & Blades
  - (One set-up per two stations)

4 - Traffic Safety Cones
2 - Step Chocks
8 - 4 x 4 x 24 cribbing
4 - 2 x 4 x 24 cribbing
2 - Wedges

**Instructors are Responsible for Ensuring ALL Equipment has been Cleaned and Inspected at the Conclusion of the Training Session.**

**Report all Damaged or Equipment Maintenance issues to a Program Coordinator.**

## Practical Skills Training Day

| | |
|---|---|
| **08:30 – 09:00** | Instructor Briefing |
| **09:00 – 10:15** | Training Ground Set up |
| **10:15 – 10:30** | Recruit Briefing |
| **10:30 – 12:00** | Extrication Skills Training Vehicle 1 |
| **12:00 – 12:45** | Lunch |
| **13:00 – 14:30** | Extrication Skills Training Vehicle 2 |
| **14:45 – 15:15** | Extrication Skills Training 2-Door Vehicle / 3rd Door Cut Demo |
| **15:15 – 16:00** | Equipment Maintenance / Training Ground Clean-up |

## Set Up

Set up HRT equipment, Hand Tools, and Power Equipment with extension cord near Skill Station Vehicle.

Procure an Electrical Power Source.

Stage the Rescue Truck for use of Mounted HRT Power Unit.

Procure necessary Stabilization Equipment and/or Cribbing.

## Safety

Minimum required Personal Protective Equipment will be Safety Glasses, Fire Fighting Bunker Pants with Boots and Fire Department issued Extrication or Work Gloves during the Training Session.

All recruits will be required to wear Structural Fire Fighting Protective Clothing, when performing Extrication Techniques and Clean-up of the Vehicle components.

## Recruit Firefighter Objectives

After conducting this session, recruits will be able to perform the following skills:

- Disable the electrical system of a hybrid vehicle. (NFPA 6.4, 6.4.1B, p 813)
- Perform scene size-up at a motor vehicle crash. (NFPA 6.4, 6.4.1B, pp 815–816)
- Mitigate the hazards at a motor vehicle crash. (NFPA 6.4, 6.4.1B, pp 817–818)
- Stabilize a vehicle following a motor vehicle crash. (NFPA 6.4, 6.4.1B, pp 819–820)
- Break tempered glass. (NFPA 6.4, 6.4.1B, pp 824–825)
- Gain access to a vehicle following a motor vehicle crash. (NFPA 6.4, 6.4.1B, pp 824, 826)
- Open a vehicle door. (NFPA 6.4, 6.4.1B, pp 827–828)
- Gain access and provide medical care to a victim in a vehicle. (NFPA 6.4, 6.4.1B, pp 827, 829)
- Displace the dashboard of a vehicle. (NFPA 6.4, 6.4.1B, pp 831–832)
- Remove the roof of a vehicle. (NFPA 6.4, 6.4.1B, pp 831, 833–834)

## CFPC Certification Skill Evaluation Sheet / NFPA 1001 (2013 Edition)

### 6.4.1A Vehicle Extrication

- * Wears full protective equipment correctly (SS 5.1.2A)
- Secures scene
- Communicates potential hazards at incident
- Confirms vehicle is stabilized
- * Protects victim
- Communicates with victim
- * Follows all safety procedures

CFPC NFPA 1001 (2013)

### 6.4.1B Crib and Shore Vehicle

- * Wears full protective equipment correctly (SS 5.1.2A)
- Selects appropriate materials for cribbing
- Places cribbing pieces into position safely
- * Checks stabilization
- * Proper lifting techniques when cribbing vehicle (back to vehicle)
- * Proper hand placement when cribbing vehicle
- * Builds proper Box crib
- * Set Step Chock properly

CFPC NFPA 1001 (2013)

### 6.4.2A Rescue Team Assistance

- * Wears full protective equipment correctly (SS 5.1.2A)
- * Identifies and states application for various types of rescue tools upon request
- Retrieves various types of rescue tools upon request
- Establishes public barriers
- Indicates potential hazards
- Assists rescue teams as a member of a team upon request
- * Follows safety procedures

CFPC NFPA 1001 (2013)

**Basic Vehicle Extrication Techniques**

Each motor vehicle accident is unique. Variables such as the type and number of vehicles involved, their positions, number and condition of patients and external hazards all play a role in determining the appropriate actions and their sequence.

The goals this training session are to provide a good basis to the principles of extrication rescue.

KEEP IT SIMPLE. Some of the Recruits are learning what word "Extrication" means, have never used Extrication Tools or Equipment, don't know what the Anatomy of a Vehicle is or the Extrication Terminology we use. Explain what we do and why we are doing it.

The session will be conducted with two vehicles at each skill station; one used in the AM the other in the PM.

The AM session should focus on the proper use of the equipment and Basic Extrication Skills.

The end of the training session will be to demonstrate a third door conversion on a two door passenger vehicle.

**Before Cutting & Prying - Divide the squad into two teams and perform a Team Size Up:**

Each team will conduct a 360° (One Team Clockwise the other Counter Clockwise) From a Distance away from Vehicle

1. Scope and magnitude of the incident
2. Type of Collision; Head-on, Roll Over, T-Bone, ECT.
3. Number and size of vehicles affected
4. Number of known and potential victims
5. Determine access to the scene
6. Survey Scene for Hazards such as disrupted or exposed utilities, standing or flowing water, mechanical problems, hazardous materials
7. Protect Scene from Exposure to traffic and Protect Incident from Public (set cones)

Each team will conduct a 360° (One Team Clockwise the other Counter Clockwise) around perimeter of Extrication Vehicle

- Degree of entrapment of Victim
- Determine best access for Patient Care
  - Explain Victim Protection Options
- Scan for SRS (Identify and Communicate to teammate and other team)
  - Explain how SRS could be Isolated or Identified (P.I.C.)
- Determine Extrication Plan (Determined by Extrication Team)
  - Explain What Disentanglement Option would be used
- Door Removal, Roof Removal, Dash Lift, ECT.
  - Explain Method to be used for Removal Glass Obstructions

Once the two a 360° are completed each team will stabilize the vehicle

- Stabilization Team: Box Cribbing
  - Explain the Stabilization team will responsible for Stabilizing both sides of vehicle during the Certification Practical Skills Examination
    - Set Step Chocks on Extrication Side of vehicle
    - Set Box Cribbing on Opposite Side
    - One member will be responsible for Gaining Access and Patient Care once Initial Stabilization is complete
    - One member will responsible for Re-Evaluating and resetting Cribbing during Extrication
- Extrication Team: Step Chocks
  - Explain the Extrication team will responsible for setting up the HRT and performing the Extrication on the vehicle once the Size-up is complete during the Certification Practical Skills Examination.

**Training Sequence**

Each skill station will be demonstrated using two 4-door vehicles. Demonstrate as many of the techniques as possible.

- Demonstrate Basic Extrication Techniques in the AM Session
- Demonstrate Advanced Extrication Techniques in the PM Session
- Explain and/or demonstrate the content of the above lesson plan
- Demonstrate Scene Assessment and basic stabilization techniques prior to cutting or prying.

**Extrication Sequences – Basic AM**

Using a Vehicle that is not damaged perform Basic Extrication Techniques

- Demonstrate Glass removal
  - Flat Axe (Front)
  - Haligan (Side)
- Demonstrate Purchase Points
  - Using Haligan
- Demonstrate Door Removal Techniques
  - Removing front Fender
  - Beginning at the hinges
- Demonstrate Roof Removal Techniques
  - PIC
  - Using HRT
  - A-post to C/D-post
- Demonstrate Dash Displacement Techniques
  - Dash Lift

**Extrication Sequences – Advance PM**

Using a Vehicle that is moderately damaged perform more Advanced Extrication Techniques

- Demonstrate Glass removal
  - Glass Master
  - Center Punch
- Demonstrate Purchase Points
  - Using Haligan
- Demonstrate Door Removal Techniques
  - Removing front Fender
  - Beginning at the pin/Nader bolt
  - Beginning at the hinges
- Demonstrate Roof Removal Techniques
  - PIC
  - Using HRT
  - Using Saw-Zall
  - A-post to C/D-post
- Demonstrate Dash Displacement Techniques
  - Dash Lift
  - Dash Roll
  - Center Console Spread/Ram

## Extrication Equipment Maintenance

HRT Equipment

- The hydraulic spreader and the hydraulic ram should never be stored under pressure. Close the spreader arms and the rams to within 1/4-inch of completely closed.
- Close the spreader arms and the rams to within 1/4-inch of completely closed.
- The hydraulic cutter should be stored with the cutter blades overlapped one inch to two inches for protection from unnecessary damage.
- (If Applicable) When storing tool, compensate for possible pressure buildup from thermal expansion of hydraulic fluid by connecting the two short hoses on the tool, completing the circuit. Move trigger in both directions to equalize the pressure on both sides of the piston.

Routine Maintenance of Hydraulic Hoses

- After each use, hoses should be wiped clean with a light cleaning solvent.
- Inspect hose for damage to the rubber jacket.
  - Damage that exposes the wire braided core subjects the wire to corrosion and may weaken the hose.
  - Heavily damaged hoses should be taken out of service and report to a Program Coordinator.

Routine Maintenance for Couplings

- Couplings should be kept clean of dirt and contaminants.
- Couplings may be most easily cleaned by immersing in or scrubbing with a standard cleaning solvent (Break Cleaner).
- Couplings should then be lubricated with a non-water based lubricant such as WD-40.
- The rubber dust caps, which are provided with the tools, should also be cleaned periodically.
  - Be aware while the couplings are clean, the dust caps will accumulate dirt during use.
  - Do not cover a clean coupling with a dirty dust cap.

Routine Maintenance for HRT Power Units

- Inspect and tighten all hydraulic fittings.
- Check the hydraulic fluid level through the sight gauge on the front of the power unit.
- It is not necessary for the fluid to completely fill the sight-gauge window.
  - Overfilling the reservoir will result in excessive leakage.
- Hydraulic fluid is stored on the Rescue Truck and may be obtained from the Fire Station.

Recruit Extrication Equipment Bag and Saw-Zall

- Inspect and Inventory Complete Inspection Sheet

Cribbing Material Crate

- Inspect All Stabilization Cribbing Used
  - Separate and Report Damaged Cribbing
- Organize the Cribbing Crate as Described on Logistic Sheet