



**Howard County**  
**Department of Fire and Rescue Services**  
HVO  
Practical Evolution Exercises  
Instructions and Background Information  
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# Practical Evolution Exercises – Instructions and Background Information

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## Practical Evolution Exercises – Instructions and Background Information

### Skills Assessment Scoring

There are three evolutions in the PO Skills Assessment. There are two evolutions in the EVO Skills Assessment. To “pass” the Skills Assessment, a candidate must achieve a score of 70 or higher on each non-Driving evolution (i.e., Drafting Operations, Attack Pumper Operations, Aerial Operations). There is no minimum required passing score for the driving evolution, but your driving evolution score will be combined with the appropriate non-Driving evolution score(s) to form your overall Skills Assessment score. Each evolution is scored on a 0 to 100 scale. Evolution scores are averaged.

### General Instructions

The purpose of the Skills Assessment is to evaluate your skill in performing common driving/operating duties of the HVO position on Department apparatus. The Skills Assessment is a simulation used as a job-related method for evaluating your ability to perform the evolutions as described below.

#### PO

- **Driving**
  - Drive an ambulance through a cone course. The course is comprised of two tasks – a serpentine and an alley dock. If you are testing for both PO and EVO, you will only take the driving evolution once, and that one score will be used to calculate both your PO and EVO Skills Assessment scores.
- **Drafting Operations**
  - Position and operate the apparatus to establish water supply by drafting from a portable tank, using supplied hard sleeve(s), and correctly flowing a master stream without significant errors to achieve a score of 70 or higher. The pumper will have a dry tank and a dry pump.
- **Attack Pumper Operations**
  - You will have the opportunity to familiarize yourself with the apparatus and to calculate pump pressures. Then, with a dry tank and dry pump, you will position and operate the apparatus at a hydrant to flow a 1 ¾” attack line and a 2 ½” attack line without significant errors to achieve a score of 70 or higher. You must pump the two attack lines at the proper pressures according to the Coefficient Method.

#### EVO

- **Driving**
  - Drive an ambulance through a cone course. The course is comprised of two events – a serpentine and an alley dock. If you are testing for both PO and EVO, you will only take the driving evolution once, and that one score will be used to calculate both your PO and EVO Skills Assessment scores.

- **Aerial Operations**
  - Position and operate the aerial apparatus from the pedestal to make “rescues” from locations on a building and position to support roof operations without significant errors to achieve a score of 70 or higher.

During each evolution, assessors will evaluate you using scoring guidelines established specifically for the evolution. You will receive a separate score for each evolution as well as an overall Skills Assessment score. Administrators from HumRRO will be on hand to manage the Skills Assessment process.

## Location of Skills Assessment

The location for the Skills Assessment Process is the James N. Robey Public Safety Training Center (PSTC). You must report to the lobby of the PSTC on time for registration. Candidates that arrive after their assigned appointment(s) time(s) or are not present at their assigned appointment(s) will be disqualified from the entire testing process and will not be given the option of a retest or new appointment date(s).

## Attire

Information related to uniforms and personal protective equipment will be released in a future special order.

## Assessment Dates

You will be provided with a specific assessment date and time. You should expect to be at the assessment for up to ½ day.

## Apparatus

Any Howard County or similar apparatus will be the primary apparatus used for the Skills Assessment.

## General Evolution Approach

View the Skills Assessment as simulations of activities that an HVO might undertake in the course of a shift. In general, it is best to conduct yourself like an HVO would if an HVO were actually performing the activity. In other words, do not try to “take the test” – do what you think is best based on the evolution you are taking. While you may “walk and talk,” don’t just say you would do something – actually do it. The assessors will only evaluate what you do, NOT what you say you would do. They can only assess the approach you use and the results of your actions. Each evolution has a time limit. Therefore, you must balance the need to be thorough with the amount of time you have available.

You will be provided with all the equipment (e.g., tools) that you will need to perform each evolution. You will not need to bring any special equipment or tools with you. Remember, unless

conditions become extreme, the evolutions will be conducted outside and, if necessary, in inclement weather.

## PO Evolutions

### Driving

You will have 10 minutes to perform two tasks using an ambulance – the serpentine and the alley dock. Assessors will observe your performance and take notes throughout the exercise. The evolution begins and ends in the same location. First, you will navigate the serpentine driving forward. Once you pass the final cone, you will cross laterally to the other side of the cones and perform the serpentine in reverse. Once your front bumper clears the final cone, you will proceed to the alley dock. You will drive forward into the area designated by the cones and then back into the alley. You will not have a backer, however the assessors will motion for you to stop, should they feel a collision may occur with an object other than a cone. You will set your parking brake while backed into the alley. Assessors will then measure the distance between the ambulance and the rear of the alley. When the assessors have indicated the measurement is complete, you will return to the same location where you started. When you set your parking brake, your time will stop.

Assessors will stop you when 10 minutes have elapsed if you have not yet returned to the finish position. As a reminder, you may use some exercise time to look over the apparatus and the course. If you hear a whistle or air horn, stop what you are doing because we have noticed a safety issue.

There are no “points” for the speed at which you complete this evolution. However, if you run out of time before you complete the important tasks associated with the evolution, your score will be negatively impacted. Your score can also be negatively impacted by performing some or multiple of any of the negative actions described below. There may be other actions that you could take that would affect your score as well.

| <b>Description of Negative Actions - Driving</b>  |
|---|
| Failed to wear seat belt while driving.   |
| Did not properly negotiate a turn, backed-up, adjusted position, in order to complete the turn. |
| Failed to set parking brake at alley dock or at completion of the course.                       |
| Failed to park within the designated area to the rear of the alley dock.                        |
| Drove off-course (e.g., into grass).  |
| Hit a cone (any part, including base) with any part of the vehicle.                             |
| Contacted any object, e.g., vehicle, building, post/pole.                                       |
| Timed out (exceeded 10 minutes before completing course).                                       |

### Drafting Operations

You will perform this evolution as you would if you were drafting to provide a water supply for a long duration working fire. Assessors will observe your performance and take notes throughout the exercise.

Your pumper will have a dry tank and a dry pump. The equipment needed for this evolution will be laid out for you.

You will be instructed to provide water to the master stream through two 50-foot sections of 3-inch hose. The assessors will tell you the required pump pressure to achieve at the discharge gauge. You will position the apparatus to make all necessary connections.

You can use the help of an “assistant” who will help lift and/or move the hard suction under your direction. The assistant will also act as a spotter should the engine need to be backed up, per your department's general orders.

You will be evaluated by assessors on your ability to create and sustain a draft from a portable tank and flow the master stream. The master stream must flow continuously for at least 90 seconds. If water stops flowing from the master stream, you must re-establish the draft and the 90-second timer will restart from zero. You must also connect and flow a recirculating line from your pump discharge into the portable tank.

You will have up to 15 minutes to complete these tasks. You will have up to 3 audible primer attempts to successfully establish a draft. Once the assessors instruct you to begin, you may familiarize yourself with the apparatus before you drive it to the drafting location.

If you hear a whistle or air horn, stop what you are doing because we have noticed a safety issue or noticed something that has the potential to damage equipment or the apparatus.

There are no “points” for the speed at which you complete this evolution. However, if you run out of time before you complete the important tasks associated with the evolution, you will fail. You can also fail this evolution by performing some or multiple of any of the negative actions described below. There may be other actions that you could take that would affect your score as well.

| <b>Description of Negative Actions - Drafting Operations</b>   |
|--|
| Failed to wear seat belt while driving.  |
| Failed to set the brake.   |
| Placed the pump into gear before being prepared to draft (e.g., before all connections have been made and it is ready to be put into operation). |
| Failed to set a wheel chock.   |
| Failed to properly attach the hard sleeve to an intake.  |
| Failed to properly establish a “draft” from water supply (no more than 3 audible attempts with primer pump).                                     |
| Failed to flow master stream from draft continuously for at least 90 seconds.  |
| Failed to flow master stream at the identified pressure.   |
| Failed to establish and flow a recirculation line.   |
| Failed to remove kink(s) in master stream discharge line.  |
| Failed to begin refilling the tank.  |
| Timed out before completion of all major tasks (15min).  |

## **Attack Pumper Operations**

There are two parts to this evolution. In the first part, you will have up to 10 minutes to familiarize yourself with the apparatus and to calculate the pump pressures for this evolution, if you choose to do so. The equipment needed to complete this evolution is provided. The calculations sheet will have the information (e.g., length, diameter, etc.) about the attack lines that you will need for Part 2, where you'll perform the attack operations.

Your calculations on the sheet are for your use only and will not be evaluated. However, what the assessors will evaluate is your skill in pumping the two attack lines at the proper pressures according to the Coefficient Method.

You can use as much of the 10 minutes as you want. You will be told that you will begin Part 2 of the evolution with a dry tank and a dry pump. You will not have the opportunity to fill your tank before the evolution begins.

In Part 2 of the Attack Pumper Operations evolution, you will perform as if you are on the scene of a working fire. You will have up to 12 minutes to complete this evolution. Assessors will observe your performance and take notes throughout the exercise. When the assessors instruct you to do so, you will drive the apparatus to the hydrant location and make all necessary connections to perform the fire attack, including connecting the attack lines to the appropriate discharge. The lines will be tied off and will be flowing to an imaginary working structure fire.

You will need to pump the two attack lines properly. They will already be laid out for you and will be the same as the ones on your calculations sheet. You must have the 1  $\frac{3}{4}$ " line in service within 7  $\frac{1}{2}$  minutes of setting the parking brake. Then you will charge the 2  $\frac{1}{2}$ " line. Both lines must end up flowing simultaneously for at least one minute, each with the proper pressures according to the Coefficient Method. Do not draw or mark on the gauges in any way.

If you hear a whistle or air horn, stop what you are doing because we have noticed a safety issue or noticed something that has the potential to damage equipment or the apparatus.

If you run out of time before you complete the important tasks associated with the evolution, you will fail. You can also fail this evolution by performing some or multiple of any of the negative actions described on the next page. There may be other actions that you could take that would affect your score as well.

| <b>Description of Negative Actions - Attack Pumper Operations</b>   |
|---|
| Failed to wear seat belt while driving.   |
| Failed to set the brake.  |
| Placed the pump into gear before being prepared to pump (e.g., before all connections have been made and it is ready to be put into operation). |
| Failed to set a wheel chock.  |
| Failed to flush the hydrant (water rose in the barrel and exited a connection).   |
| Failed to properly connect the supply hose to the hydrant.  |
| Failed to establish water supply (charge hydrant).  |
| Failed to properly charge the 1 ¾" attack line within 7 ½ minutes of setting the parking brake.   |
| Failed to set the pressure of the 1 ¾" attack line to the correct psi.  |
| Failed to remove kinks from all hoselines.  |
| Failed to properly charge the 2 ½" attack line second.  |
| Failed to set the pressure of the 2 ½" line to the correct psi  |
| Failed to pump attack lines simultaneously for at least 1 minute.   |
| An attack line lost effective stream (stream ended a few feet from nozzle).   |
| Failed to begin refilling the tank.   |
| Apparatus struck a significant object.  |
| Timed out before completion of all major tasks (12 minutes).  |

## **EVO Evolutions**

### ***Driving***

The driving evolutions for EVO and PO are the same (including the apparatus, instructions, course layout, scoring, etc.). Please refer to the PO section of this document for information related to the driving evolution. If you are testing for both PO and EVO, you will only take the driving evolution once, and that one score will be used to calculate both your PO and EVO Skills Assessment scores.

### ***Aerial Operations Evolution***

You will perform this evolution as you would if you were on the scene of a working fire. Assessors will observe your performance and take notes throughout the exercise. When instructed, you will drive the apparatus to a building to a position to allow you to operate the aerial from only the pedestal to perform aerial rescues and provide for aerial access to the roof. The area designated for roof access will be identified. There will be two victims located on the building. If you see an orange cone, it indicates fire. The order of your operations is your choice and may affect your score.



Assessors will measure the distance from the basket to the objective. When you are done spotting the basket, let the assessors know and they will take a measurement.

You will see boat bumpers protecting the building. The bumpers are considered part of the building.

You will have up to 30 minutes to complete this evolution.

You may familiarize yourself with the apparatus, but only once time has begun. The familiarization time is built into the total evolution time. You may NOT walk the course.

If you hear a whistle or air horn, stop what you are doing because we have noticed a safety issue or noticed something that has the potential to damage equipment or the apparatus.

There are no “points” for the speed at which you complete this evolution. However, if you run out of time before you complete the important tasks associated with the evolution, you will fail. You can also fail this evolution by performing some or multiple of any of the negative actions described below. There may be other actions that you could take that would affect your score as well.

| <b>Description of Negative Actions - Aerial Operations Evolution</b>                            |
|---|
| Failed to wear seat belt while driving.   |
| Failed to set the brake.  |
| Failed to engage the PTO/aerial master.   |
| Failed to properly set both wheel chocks on front wheel.  |
| Failed to set the pads.   |
| Failed to properly set the ground pads.   |
| Set stabilizers such that any part of a ground pad is on a weak structure.                      |
| Failed to “rescue” victims in the correct order.  |
| Failed to “rescue” a victim.  |
| Failed to position the tower basket (any point of the basket) to the windowsill.                |
| Failed to position the tower basket to the roof at the designated location for roof operations. |
| Failed to position the tower basket over roof properly.   |
| Repositioned to achieve an objective after a stabilizer contacted the ground.                   |
| Approached victim, with aerial, from below.   |
| Hit the building with any part of the tower or aerial apparatus/basket.                         |
| Timed out before completion of all tasks (30 minutes).  |

## How Will Your Overall Score Be Calculated?

Candidates must achieve a minimum score of 70 on each non-Driving evolution (i.e., Drafting Operations, Attack Pumper Operations, Aerial Operations) to be considered “Passing” the Phase 2 – Skills Assessment. There is no minimum required passing score for the driving evolution. Evolution scores are averaged, resulting in your overall Skills Assessment score. This score will then be combined with your Phase 1 – Written Knowledge Exam score to create your overall score based on the points assigned to each phase. See below for Skills Assessment scoring examples and overall score formulas.

| PO Skills Assessment Scoring Examples |               |                |                     |                         |                          |
|---------------------------------------|---------------|----------------|---------------------|-------------------------|--------------------------|
|                                       | Driving Score | Drafting Score | Attack Pumper Score | Skills Assessment Score | Skills Assessment Result |
| <b>Candidate A</b>                    | 60            | 90             | 90                  | 80                      | Pass                     |
| <b>Candidate B</b>                    | 80            | 60             | 100                 | 80                      | Fail                     |
| <b>Candidate C</b>                    | 90            | 100            | 65                  | 85                      | Fail                     |

| EVO Skills Assessment Scoring Examples |               |                         |                         |                          |
|--|---------------|-------------------------|-------------------------|--------------------------|
|  | Driving Score | Aerial Operations Score | Skills Assessment Score | Skills Assessment Result |
| <b>Candidate A</b>                     | 65            | 85                      | 75                      | Pass                     |
| <b>Candidate B</b>                     | 85            | 65                      | 75                      | Fail                     |
| <b>Candidate C</b>                     | 95            | 65                      | 80                      | Fail                     |

**PO = (Written Exam Score x .30) + ((Driving Score + Attack Pumper Operations Score + Drafting Operations Score)/3) x .70)**

**EVO = (Written Exam Score x .30) + ((Driving Score + Aerial Operations Score)/2) x .70)**

**Good Luck!**