

# **Halifax Regional Fire and Emergency Services**

## **Appendix C**

### **Candidate Physical Ability Test (CPAT)**

## Event #1 - Stair Climb



### Purpose of Evaluation

This event is designed to simulate the critical tasks of climbing stairs while carrying a hose pack and climbing stairs in full protective clothing carrying firefighter equipment. This measures the candidate's aerobic capacity, lower body muscular endurance and ability to balance. The muscle groups affected by this test include the quadriceps, hamstrings, glutes, calves, lower back stabilizers and the aerobic energy system.

### Event

The candidate will be required to wear an additional 11.34 kilograms (25 pounds) of weight to simulate the weight of a high-rise pack (hose bundle). Prior to the initiation of the test, the candidate will have a 20-second warm-up on the StepMill at a predetermined stepping rate of 50 steps per minute [Level 3]. The candidate will then be required to walk on the StepMill, at a predetermined stepping rate of 59 steps per minute [Level 4] for 3 minutes. This concludes the event. The 11.34 kilogram (25 pound) weight will be removed. The candidate will walk 25.91 meters (85 feet) within an established walkway to the next event.

### Failures

If the candidate falls, grasps any of the test equipment, or steps off the StepMill within 30 seconds of starting the test, the candidate is allowed to immediately resume the test. The test will be started over and the candidate will not be credited with the time achieved during the first attempt. If the candidate falls, grasps any of the test equipment, or steps off the StepMill after the second attempt or after being on the StepMill for more than 30 seconds, their test time will be concluded and the candidate will fail the test.

The candidate is permitted to touch the wall for balance, however if the wall is touched for an extended period of time or if the wall is used for weight bearing, the candidate will be warned. Only two warnings will be given. The third warning will constitute a failure, the test time will be concluded and the candidate will fail the test.

## Event #2 - Hose Drag



### Purpose of Evaluation

This event is designed to simulate the critical tasks of extending a dry hose line from the fire apparatus to the fire occupancy and advancing an uncharged attack line around obstacles while remaining stationary. This measures the candidate's aerobic capacity, lower body muscular strength and endurance, upper back muscular strength and endurance, grip strength and endurance, and anaerobic energy systems. The muscle groups affected by this test include the quadriceps, hamstrings, glutes, calves, lower back stabilizers, biceps, deltoids, upper back, muscles of the forearm and hand (grip), and the aerobic and anaerobic energy systems.

### Event

The candidate will grasp an automatic nozzle attached to 60.96 meters (200 feet) of 40.45 millimeter (1 3/4 inch) hose. The candidate will place the hose line over their shoulder or across chest, not exceeding the 2.24 meter (8 feet) mark. The candidate is permitted to run during the hose drag. The candidate will drag the hose 22.86 meters (75 feet) to a pre-positioned drum, make a 90° turn, and continue an additional 7.62 meters (25 feet). The candidate will then stop within the established marked 1.52 meter x 2.13 meter (5 feet' x 7 feet) box, drop to at least one knee and pull 15.24 meters (50 feet) of hose, as indicated by a marked coupling, to the finish line. This concludes the event. The candidate will walk 25.91 meters (85 feet) within an established walkway to the next event.

## **Failures**

If the candidate fails to go around the drum or goes outside of the marked path (cones), their test time will be concluded and the candidate will fail the test.

During hose pull, the candidate must remain on at least one knee and that knee(s) must remain within the marked boundary lines. The candidate will receive one warning. Second time the candidate moves knee(s) outside of boundary or fails to maintain at least one knee in contact with the ground, their test time will be concluded and the candidate will fail the test.

## Event #3 - Equipment Carry



### Purpose of Evaluation

This event is designed to simulate the critical tasks of removing power tools from a fire apparatus, carrying them to the emergency scene and returning the equipment to the fire apparatus. It measures the candidate's upper body muscular strength and endurance, lower body muscular endurance, grip endurance, balance, and aerobic endurance. The muscle groups affected by this test include the biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quads, hamstrings and the aerobic and anaerobic energy systems.

### Event

The candidate will remove 2 saws from cabinet, one at a time, and place them on the ground. The candidate will momentarily release their grip, then pick both saws up, one in each hand, and carry them while walking 22.86 meters (75 feet) around a cone then back to the starting point. The candidate will then return the saws to the ground, release their grip, and then pick each saw up and replace the saws, one at a time, in the designated space in the cabinet. This concludes the event. The candidate will walk 25.91 meters (85 feet) within an established walkway to the next event.

### Failures

If the candidate drops or places either saw on the ground during the carry, their test time will be concluded and the candidate will fail the test. During the equipment carry, the candidate must walk. The candidate will receive one warning for running. Second warning will constitute failure, their test time will be concluded and the candidate will fail the test.

## Event # 4 - Ladder Raise and Extension



### Purpose of Evaluation

This event is designed to simulate the critical tasks of placing a ground ladder at a fire structure and extending the ladder to the roof or window. It measures the candidate's upper body muscular strength, lower body muscular strength, balance, grip strength, anaerobic endurance. The muscle groups affected by this test include the biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quadriceps, hamstrings and the aerobic and anaerobic energy systems.

### Event

The candidate will walk to the top rung of the 7.32 meter (24 feet) aluminum extension ladder, lift the unhinged end from the ground, and walk it up until it is stationary against the wall. This must be done in a hand over hand fashion being sure to use each rung (candidate must not use the rails). The candidate will then immediately proceed to the pre-positioned and secured 7.32 meter (24 feet) aluminum extension ladder, stand within the marked 91.44 centimeter x 91.44 centimeter (36 inch x 36 inch) box, and extend the fly section hand over hand until it hits the stop. The candidate will then lower the fly section hand over hand in a controlled fashion to the starting position. This concludes the event. The candidate will walk 25.91 meters (85 feet) within an established walkway to the next event.

## **Failures**

If the candidate misses any rung during the raise they will receive one warning. If the candidate allows the ladder to fall to the ground, or receives a second warning for missing a rung, their test time will be concluded and the candidate will fail the test.

If the candidate does not fully extend the ladder, or does not maintain control of the ladder in a hand over hand manner, or lets the rope halyard slip in an uncontrolled manner their test time will be concluded and the candidate will fail the test. During ladder extension, candidate must remain within marked boundary lines. The candidate will receive one warning. Second time the candidate moves outside of boundary will constitute failure, their test time will be concluded and the candidate will fail the test.

## Event #5 - Forcible Entry



### Purpose of Evaluation

This event is designed to simulate the critical tasks of using force to open a locked door or breach a wall. It measures the candidate's upper body muscular strength and endurance, lower body muscular strength and endurance, balance, grip strength and endurance, and anaerobic endurance. The muscle groups affected by this event include the quadriceps, glutes, triceps, upper back, trapezius, muscles of the forearm and hand (grip), and the aerobic and anaerobic energy systems.

### Event

The candidate will use a 4.54 kilogram (10 pound) sledgehammer and strike the measuring device in the target area until the buzzer and signal lamp are activated. The candidate then places the sledgehammer on the ground. This concludes the event. The candidate will walk 25.91 meters (85 feet) within an established walkway to the next event.

### Failures

If the candidate does not maintain control of the sledgehammer, where it is released from both hands, their test time will be concluded and the candidate will fail the test.

During the forcible entry event, the candidate must remain within marked boundary lines. The candidate will receive one warning. The second time the candidate moves outside the boundary will constitute failure. Their test time will be concluded and the candidate will fail the test.

## Event #6 - Search



### Purpose of Evaluation

This event is designed to simulate the critical task of searching for a fire victim with limited visibility in an unpredictable area. It measures the candidate's upper body muscular strength and endurance, agility, claustrophobia, aerobic and anaerobic energy capacity. The muscle groups affected by this test include the muscles of the chest, shoulder, triceps, quadriceps, abdominals, lower back, and the aerobic and anaerobic energy systems.

### Event

The candidate will crawl on their hands and knees through a tunnel maze that is approximately 91.44 centimeters (3 feet) high and 121.92 centimeters (4 feet) wide and 19.51 meters (64 feet) in length with two 90° turns. At a number of locations in the tunnel, the candidate will navigate around, over and under obstacles. In addition, at two locations, the candidate will crawl through a narrowed space where the dimensions of the tunnel are reduced. Upon exit from the maze, the event is concluded. The candidate will walk 25.91 meters (85 feet) within an established walkway to the next event.

### Failures

The candidate's movement will be monitored through the maze. If for any reason, the candidate chooses to end the event, the candidate will call out or rap sharply on the wall or ceiling and the candidate will be assisted out.

If the candidate requires assistance or exits before completing the event, their test time will be concluded and the candidate will fail the test.

## Event #7 - Rescue



### Purpose of Evaluation

This event is designed to simulate the critical task of removing a victim or injured partner from a fire scene. It measures the candidate's upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic capacity. The muscle groups affected by this test include the quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, trapezius, deltoids, latissimus dorsi, biceps, muscles of the forearm and hand (grip), and the aerobic and anaerobic energy systems.

### Event

The candidate will grasp a 74.84 kilogram (165 pound) mannequin by the handle(s) on the shoulder(s) of the harness (either one or both handles are permitted) and drag it 10.67 meters (35 feet) to a pre-positioned drum, make a 180° turn around the drum (mannequin is permitted to touch drum), and continue an additional 10.67 meters (35 feet) across the finish line. The candidate is allowed to stop and, if needed adjust their grip. This concludes the event. The candidate will walk 25.91 meters (85 feet) within an established walkway to the next event.

### Failures

The entire mannequin must be dragged past the marked finish line. If the candidate fails to go around the drum, their test time will be concluded and the candidate will fail the test. If the candidate touches or rests on the drum at any time, their test time will be concluded and the candidate will fail the test.

## Event #8 - Ceiling Breach and Pull



### Purpose of Evaluation

This event is designed to simulate the critical task of breaching and pulling down a ceiling to check for fire extension. It measures the candidate's upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. The muscle groups affected by this test include the quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, deltoids, trapezius, triceps, biceps, muscles of the forearm and hand (grip), and the aerobic and anaerobic energy systems.

### Event

The candidate will remove the provided pike pole from the bracket, stand within the boundary established by the equipment frame, and place the tip of the pole on the painted area of the hinged door in the ceiling. The candidate will fully push up the hinged door in the ceiling with the pike pole 3 times. The candidate then proceeds to hook the pike pole to the ceiling device and pull the pole down five times. Each repetition consists of three pushes and 5 pulls. The candidate will repeat the process four times. The event, and the total test time, ends when the applicant completes the final pull stroke repetition.

### Failures

If the candidate does not successfully complete a repetition, the examiner will call out miss and the candidate must push or pull the apparatus again to complete the repetition. If the candidate does not repeat the missed part of the repetition, the entire repetition will not count.

During this event, the candidate must remain within marked boundary lines. The candidate will receive one warning. Second time the candidate moves outside of boundary will constitute failure, their test time will be concluded and the candidate will fail the test.

The candidate is permitted to stop and, if needed, adjust their grip. Releasing grip or slipping from pike pole handle, without the pike pole falling to the ground, does not constitute a warning or a failure. The candidate will reestablish their grip and resume the event. The candidate will be permitted to drop the pike pole, to the ground once. If the candidate drops the pike pole they must pick it up themselves and resume the event. The second time the candidate drops the pike pole to the ground will constitute failure, their test time will be concluded and the candidate will fail the test.