

CPAT PHYSICAL AGILITY TEST AND WORKOUT STRATEGIES

We strongly recommend that you go to the Fire Service Candidate Physical Agility Test (CPAT) on YouTube.

STAIR CLIMB

Equipment: This event uses a StepMill stair climbing machine. The machine is positioned with one side up against a wall and an elevated proctor platform on the side opposite the wall. A single handrail on the wall side is available for you to grasp while mounting and dismounting the StepMill. Additional steps are placed at the base of the StepMill to assist you in mounting the StepMill.

Purpose of Evaluation: This event is designed to simulate the critical tasks of climbing stairs in full protective clothing while carrying a high-rise pack (hose bundle) and climbing stairs in full protective clothing carrying firefighter equipment. This event challenges your aerobic capacity, lower body muscular endurance and ability to balance. This event affects your aerobic energy system as well as the following muscle groups: quadriceps, hamstrings, glutes, calves, and lower back stabilizers.

Event: For this event, you must wear two 12.5 pound weights on your shoulders to simulate the weight of a high-rise pack. Prior to the initiation of the timed CPAT, there is a 20-second warm-up on the StepMill at a set stepping rate of 50 steps per minute. During this warm-up period, you are permitted to dismount, grasp the rail or hold the wall to establish balance and cadence. If you fall or dismount the StepMill during the 20-second warm-up period, you must remount the StepMill and restart the entire 20-second warm-up period. You are allowed to restart the warm-up period twice. The timing of the test begins at the end of this warm-up period when the proctor calls the word "START." There is no break in time between the warm-up period and the actual timing of the test. For the test, you must walk on the StepMill at a set stepping rate of 6- steps per minute for 3 minutes. This concludes the event. The two 12.5 pound weights are removed from your shoulders. Walk 85 feet within the established walkway to the next event.

Warnings and Failures: If you fall or dismount the StepMill three times during the warm-up period, you fail the test. If you fall, grasp any of the test equipment or dismount the StepMill after the timed CPAT begins, the test is concluded and you fail the test. During the test, you are permitted to touch the wall or handrail for balance only momentarily. However, if the wall or handrail is grasped or touched for an extended period of time, or if the wall or handrail is used for weight bearing, you are warned. Only two warnings are given. The third infraction constitutes a failure, the test time is concluded and you fail the test.

Physical Preparation: You can readily modify aerobic training to more closely resemble the 3-minute stair climb in the CPAT by performing actual stair-stepping exercise on any conveniently located first step of a staircase, preferably at least 8 inches in height. Step at a rate that permits completion of 24

complete stepping cycles within a one-minute period. A stepping cycle consists of stepping up with one foot, then the other and down with one foot, then the other in a rhythm “up-up, down-down.” You must alternate starting foot from right to left. Strive to complete two stepping cycles within a 5-second period. Begin training by stepping continuously (un-weighted) for 5 minutes. As your fitness improves, complete a second and then third 5-minute exercise bout interspersed with several minutes of recovery. Once you can complete three intervals of 5-minute of stepping, add weight to your torso in the form of a knapsack to which weights, sand, dirt or rocks has been added. Continue to perform three 5-minute intervals of stepping; progressively add weight to the knapsack as your fitness improves so that you can step with 50 pounds of additional weight. (This 50-pound knapsack and work gloves should be worn in training for all subsequent events of the CPAT.) In addition, carry 10-15 pounds (dumbbell, sand-filled plastic container) in each hand while stepping. The total weight carried (knapsack plus hand-held weights) should equal approximately 75 pounds. At this stage, reduce the duration of the exercise interval to 3 minutes. This task-specific training not only improves aerobic fitness for continuous stepping, but it also improves your leg power for stepping in the weighted condition, which represents a unique component of this CPAT item.

HOSE DRAG

Equipment: This event uses an uncharged fire hose with a hoseline nozzle. The hoseline is marked at 8 feet past the coupling at the nozzle to indicate the maximum amount of hose you are permitted to drape across your shoulder or chest. The hoseline is also marked at 50 feet past the coupling at the nozzle to indicate the amount of hoseline that you must pull into a marked boundary box before completing the test.

Purpose of Evaluation: This event is designed to simulate the critical tasks of dragging an uncharged hoseline from the fire apparatus to the fire occupancy and pulling an uncharged hoseline around obstacles while remaining stationary. This event challenges your aerobic capacity, lower body muscular strength and endurance, upper back muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects your aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, calves lower back stabilizers, biceps, deltoids, upper back, and muscles of the forearm and hand (grip).

Event: For this event, you must grasp a hoseline nozzle attached to 200 feet of 1-3/4” hose. Place the hoseline over your shoulder or across your chest, not exceeding the 8-foot mark. You are permitted to run during the hose drag. Drag the hose 75 feet to a pre-positioned drum, make a 90° turn around the drum, and continue an additional 25 feet. Stop within the marked 5’ x 7’ box, drop to at least one knee and pull the hoseline until the hoseline’s 50-foot mark crosses the finish line. During the hose pull., you must keep at least one knee in contact with the ground and knee(s) must remain within the marked boundary lines. This concludes the event. Walk 85 feet within the established walkway to the next event.

Warnings and Failures: During the hose drag, if you fail to go around the drum or go outside of the marked path (cones), the test time is concluded and you fail the test. During the hose pull, you are warned if at least one knee is not kept in contact with the ground. The second infraction constitutes a failure, the test time is concluded and you fail the test. During hose pull, you are warned if your knees

go outside the marked boundary line. The second infraction constitutes a failure, the test time is concluded and you fail the test.

Physical Preparation: Attach 50 feet of rope to a duffel bag to which weight has been added. Tires or cement blocks can also be used for resistance. Choose an initial resistance that enables you to perform 8 to 10 repetitions (2-minute recovery between repetitions) of the exercise sequence. This generally represents an effort that you would rate as feeling “somewhat hard.” Progressively increase the resistance to 60 to 80 pounds as fitness improves. Place the rope over your shoulder and drag the resistance a distance of 75 feet. (You should run during this phase of the event.) Immediately drop to one knee and steadily and briskly pull the rope hand-over-hand to bring the resistance into your body. A parking lot, school yard, driveway, or sidewalk can be used for training on this event.

EQUIPMENT CARRY

Equipment: This event uses two saws and a tool cabinet replicating a storage cabinet on a fire truck.

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. This event challenges your aerobic capacity, upper body muscular strength and endurance, lower body muscular endurance, grip endurance, and balance. This event affects your aerobic energy system as well as the following muscle groups: biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quadriceps, and hamstrings.

Event: For this event, you must remove the two saws from the tool cabinet, one at a time, and place them on the ground. Pick up both saws, one in each hand, and carry them while walking 75 feet around the drum, then back to the starting point. You are permitted to place the saw(s) on the ground and adjust your grip. Upon return to the tool cabinet, place the saws on the ground, pick up each saw one at a time, and replace the saw in the designated space in the cabinet. This concludes the event. Walk 85 feet within the established walkway to the next event.

Warnings and Failures: If you drop either saw on the ground during the carry, the test time is concluded and you fail the test. You receive one warning for running. The second infraction constitutes a failure, the test time is concluded and you fail the test.

Physical Preparation: Use two dumbbells or plastic containers filled with sand so that each weighs approximately 30 pounds. Place the weights on a shelf four feet above ground level. Remove the weights, one at a time, and place them on the ground. Then pick up the weights and carry them a distance of 40 feet out and 40 feet back and replace them on the shelf. If the initial weight feels too heavy, choose a lighter weight for your initial practice. Continue to practice this test item until it can be performed with 30 pounds with relative ease.

LADDER RAISE AND EXTENSION

Equipment: This event uses two 24-foot fire department ladders. For your safety, a retractable lanyard is attached to the ladder that you raise.

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. This event challenges your aerobic capacity, upper body muscular strength, lower body muscular strength, balance, grip strength, and anaerobic endurance. This event affects your aerobic and anaerobic energy systems as well as the following muscle groups: biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quadriceps, and hamstrings.

Event: For this event, you must walk to the top rung of the 24-foot 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, using each rung until the ladder is stationary against the wall. You must not use the ladder rails to raise the ladder. Immediately proceed to the pre-positioned and secured 24-foot aluminum extension ladder, stand with both feet within the marked box of 36" x 36", and extend the fly section hand over hand until it hits the stop. Then, lower the fly section hand over hand in a controlled fashion to the starting position. This concludes the event. Walk 85 feet within the established walkway to the next event.

Warnings and Failures: If you miss any rung during the raise, one warning is given. The second infraction constitutes a failure, the test time is concluded and you fail the test. If you allow the ladder to fall to the ground or the safety lanyard is activated because you released your grip on the ladder, the test time is concluded and you fail the test. If, during the ladder extension, your feet do not remain within marked boundary lines, one warning is given. The second infraction constitutes a failure, the test time is concluded and you fail the test. If you do not maintain control of the ladder in a hand over hand manner, or let the rope halyard slip in an uncontrolled manner, your test time is concluded and you fail the test.

Physical Preparation:

Ladder Raise: The ideal training for this task requires an actual 12-foot aluminum extension ladder. If this size ladder is unavailable, you can use a single ladder or smaller extension ladder to practice the skill required raising the ladder. Practice of the ladder raise sequence requires the assistance of two adults to "foot" the ladder at its base to prevent it from sliding forward and/or falling during the raise. In practicing this component (as described in the test directions), it is important to initially move slowly so as to develop the skill and confidence to safely complete the required movements. Be sure to use each rung when raising the ladder to develop the coordination and timing necessary on the CPAT.

Ladder Extension: Task-specific training of the muscles required in the ladder extension can be provided by attaching a rope to a weighted duffel bag or knapsack. Place the rope over a tree branch (or horizontal bar support above a row of playground swings) eight to ten feet above the ground. With hand-over-hand movements steadily raise the bag to the top of the branch or bar and then slowly lower it to the ground. Start with a weight that you would rate as feeling “somewhat hard,” and perform eight to ten repetitions of the movement. Rest two minutes and repeat the exercise-rest sequence two more times. As your strength improves, progressively add more resistance until you can exercise with 40 to 50 pounds of weight.

FORCIBLE ENTRY

Equipment: This event uses a mechanized device located 39 inches off the ground that measures cumulative force and a 10-pound sledgehammer.

Purpose of Evaluation: This event is designed to simulate the critical tasks of using force to open a locked door or to breach a wall. This event challenges your aerobic capacity, upper body muscular strength and endurance, lower body muscular strength and endurance, balance, grip strength and endurance, and anaerobic endurance. This event affects your aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, glutes, triceps, upper back, trapezius, and muscles of the forearm and hand (grip).

Event: For this event, you must use a 10-pound sledgehammer to strike the measuring device in the target area until the buzzer is activated. During this event, you must keep your feet outside the toe-box at all times. After the buzzer is activated, place the sledgehammer on the ground. This concludes the event. Walk 85 feet within the established walkway to the next event.

Warnings and Failures: If you do not maintain control of the sledgehammer and release it from both hands while swinging, it constitutes a failure, the test time is concluded and you fail the test. If you step inside the toe-box, one warning is given. The second infraction constitutes a failure, the test time is concluded and you fail the test.

Physical Preparation: Borrow or purchase a ten-pound sledgehammer. Wrap padding around a large tree or vertical pole at a level of 39” above the ground with a circular target in the center. Stand sideways and swing the sledgehammer in a level manner so the head strikes the center of the target area. Focus on using your legs and hips to initiate the swinging motion. The initial phase of this task-specific training should focus on learning the coordinated movement of your arms and legs to accurately hit the target. Repeat the swing 15 times and rest for two minutes. Repeat this exercise-rest sequence twice again. Strive to increase the velocity (power) of each swing without sacrificing accuracy as your comfort level and skill on this test item improve.

SEARCH

Equipment: This event uses an enclosed search maze that has obstacles and narrowed spaces.

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. This event challenges your aerobic capacity, upper body muscular strength and endurance, agility, balance, anaerobic endurance, and kinesthetic awareness. This event affects your aerobic and anaerobic energy systems as well as the following muscle groups: muscles of the chest, shoulder, triceps, quadriceps, abdominals, and lower back.

Event: For this event, you must crawl through a tunnel maze that is approximately 3' high, 4' wide, and 64' in length with two 90° turns. At a number of locations in the tunnel, you must navigate around, over and under obstacles. In addition, at two locations, you must crawl through a narrowed space where the dimensions of the tunnel are reduced. Your movement is monitored through the maze. If for any reason you choose to end the vent, call out or rap sharply on the wall or ceiling and you will be assisted out of the maze. Upon exit from the maze, the event is concluded. Walk 85 feet within the established walkway to the next event.

Warnings and Failures: A request for assistance that requires the opening of the escape hatch or opening of the entrance/exit covers constitutes a failure, the test time is concluded and you fail the test.

Physical Preparation: Practice crawling on hands and knees (wearing sweat pants and/or kneepads) at least 70 feet while making several right angle turns during the crawl. For the major portion of the crawl, keep low enough so as not to contact an object three feet above the ground. Periodically, drop your stomach and crawl ten feet along the ground. Once you are comfortable crawling as above, repeat the sequence with a knapsack on. Gradually increase the weight within the knapsack until it equals 50 pounds.

RESCUE (DUMMY DRAG)

Equipment: This even uses a weighted mannequin equipped with a harness with shoulder handles.

Purpose of Evaluation: This event is designed to simulate the critical task of removing a victim or injured partner from a fire scene. This event challenges your aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects your aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, trapezius, deltoids, latissimus dorsi, biceps, and muscles of the forearm and hand (grip).

Event: For this event, you must grasp a 165-pound mannequin by the handle(s) on the shoulder(s) of the harness (either one or both handles are permitted), drag it 35 feet to a pre-positioned drum, make a 180° turn around the drum, and continue an additional 35 feet to the finish line. You are not permitted to grasp or rest on the drum. It is permissible for the mannequin to touch the drum. You are permitted to drop and release the mannequin and adjust your grip. The entire mannequin must be dragged until it

crosses the marked finish line. This concludes the event. Walk 85 feet within the established walkway to the next event.

Warnings and Failures: If you grasp or rest on the drum at any time, one warning is given. The second infraction constitutes a failure, the test time is concluded and you fail the test.

Physical Preparation: Attach a short handle to a duffel bag to which rocks, sand, or other appropriate weight can be progressively added. Start with a weight that feels “somewhat heavy.” You can grasp the handle with (a) one hand and drag the “victim” in a cross-over, side-stepping manner, or (b) two hands while facing the “victim” and moving directly backwards while taking short, rapid stagger steps. Drag the weight 35 to 50 feet in one direction, turn around and drag it back to the starting point. Complete eight to ten repetitions of this task with a two-minute rest interval between each trial. Gradually increase the resistance until you can successfully complete 4 repetitions (with rest interval) with 165 pounds.

CEILING BREACH AND PULL

Equipment: This event uses a mechanized device that measures overhead push and pull forces and a pike pole. The pike pole is a commonly used piece of equipment that consists of a 6-foot long pole with a hook and point attached to one end.

Purpose of Evaluation: This event is designed to simulate the critical task of breaching and pulling down a ceiling to check for fire extension. This event challenges your aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects your aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, deltoids, trapezius, triceps, biceps, and muscles of the forearm and hand (grip).

Event: For this event, you must remove the 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. Fully push up the 60-pound hinged door in the ceiling with the pike pole three times. Then, hook the pike pole to the 80-pound ceiling device and pull the pole down five times. Each set consists of three pushes and five pulls. Repeat the set four times. You are permitted to stop and, if needed, adjust your grip. Releasing your grip or allowing the pike pole handle to slip, without the pike pole falling to the ground, does not result in a warning or constitute a failure. You are permitted to re-establish your grip and resume the event. If you do not successfully complete a repetition, the proctor calls out “MISS” and you must push or pull the apparatus again to complete the repetition. This event and the total test time ends when you complete the final pull stroke repetition as indicated by a proctor who calls out “TIME.”

Warnings and Failures: One warning is given if you drop the pike pole to the ground. If you drop the pike pole, you must pick it up without proctor assistance and resume the event. The second infraction constitutes a failure, the test time is concluded and you fail the test. If you feet do not remain within the marked boundary lines, one warning is given. The second infraction constitutes a failure, the test time is concluded and you fail the test.

Physical Preparation:

Ceiling Breach: Tie a rope to a dumbbell or weighted knapsack placed between your legs, shoulder width apart. Grasp the rope, arms slightly away from the body with one hand at upper-thigh level and the other hand at chest level. Lift upwards and out from the body in an action that simulates thrusting a pole through an overhead ceiling. Use a resistance that feels “somewhat hard,” yet enables you to complete three sets of eight repetitions with two minutes of rest between sets. Continually add weight as strength improves. Practice coordinating upward arm movements with an upward extension of the legs to provide a more powerful thrusting action.

Ceiling Pull: The training set-up for this simulation is the same as that used in training for the ladder extension. However, unlike the hand-over-hand movement that is required for the ladder extension, the ceiling pull requires exerting power in single, repeated downward thrusts. Grasp the rope attached to the weighted knapsack or duffel bag with hands spaced about one-foot apart and the bottom hand at chin level. In a powerful movement, simultaneously pull arms down and lower your body to raise weight several feet above the ground. Repeat eight to ten consecutive repetitions of the movement with a resistance that feels “somewhat hard.” Complete three sets with a two-minute recovery interval interspersed. Progressively add resistance as fitness improves.

FIREFIGHTER WORKOUTS

REMEMBER THAT 60-70% OF THE PHYSICAL AGILITY EVENTS REQUIRE EXCELLENT LEG STRENGTH AND GOOD WIND ENDURANCE!

Physical agility testing events in most departments are very strenuous in nature. You must begin your workouts immediately in order to put yourself in top condition to perform well. This training should be year-round. In preparing firefighter applicants for physical agility examinations for over 50 years, one of the most important aspects is overall good strength, with emphasis on good leg strength and most importantly your wind endurance (lung strength and capacity). Time and time again we see individuals who are 6'4", 250 pounds, can squat 350 pounds 10 times, run 2 miles and think that they are in good physical shape. However, if they have not built up their wind endurance (lung capacity) they may have the strength equivalent of someone who is 100 pounds. Nothing drains your strength more than a lack of wind. Most physical agility test events are of short duration but very demanding. Most of these events are completed in a 5-10 minute timeframe. During that time, it is an all-out effort. We believe that the emphasis of your preparation training should be on developing your wind. Wind sprints are an excellent way of increasing your endurance. Start off by sprinting 30 yards, 3 or 4 times. Then proceed to 40 yards, 50 yards. After a period of training and feeling that your lungs are developing, we suggest that you undertake the following physical agility training.

Mark off 20 yards, 30 yards, 40 yards, and 50 yards. Use a nearby recreation field in your area or even a parking lot. Start your sprints by sprinting 20 yards and then sprint back to the start. Then immediately sprint 30 yards and back to start. Then sprint 40 yards and back to start. Sprint 50 yards and back to start. As you continue training, you will see that your wind endurance is building. You may be able to complete 5-6 of these wind sprints in a single training session and not feel winded.

Applicants also need to concentrate on overall strength training – your chest, triceps, biceps, back, legs, sit-ups. We have included descriptions of some physical agility exercises and programs for your review.

Some additional training tips:

- Many times you are required to wear a vest that is from 30-75 pounds, simulating firefighter equipment and air tank. These are available for purchase at a reasonable price. If possible, get a weighted vest or get a backpack, fill it with sand or weights, and use it while training. For example, wear it while running stairs.
- Run stairs. If you have a school football field accessible to you, we strongly suggest that you run the stands' stairs. You may also be able to use an office or apartment building stairs. You may also want to run the stairs carrying 20-30 pound dumbbells in each hand or your weighted backpack. It is also good practice to skip every other stair – it will build leg strength and endurance, and on some exams you can skip stairs, which will decrease your overall time and better your score.
- If you train in a gym, you may have access to a Stairmaster machine (revolving stairs – not stepper type). We suggest that you build your endurance by not holding onto the rails and increasing the level of difficulty each time you work out. If you have a training backpack, wear it while on the machine.
- If you train by running distance, the best training for firefighter examinations is to aim for your fastest 2-mile time. If you want to alternate a 3-4 mile run in between, that is fine. Your emphasis while training, however, should not be on a steady pace but on a faster pace in order to build your endurance. Physical agility examinations are short in time, but require endurance.
- Remember - always warm up before exercising and cool down after exercising.
- Do not begin these workouts until you get yourself in good physical condition by jogging 15 to 25 minutes, 3 to 4 times a week for at least 3 to 4 weeks. This will strengthen your heart and lungs so it won't be too much of a demand on your body.

START YOUR TRAINING NOW!!!

Don McNea Fire School offers complete entry-level exam prep for the written, oral, psychological and physical agility portions of your exam!