

Physical Abilities Testing: No Easy Answers

The fire service has spent much time and money in an eager search for the perfect entry-level firefighter physical abilities test. This ideal test would be inexpensive to administer and easily defensible: a fire department wouldn't get sued over it, or, if they did, they could successfully defend it in court. It would be valid for use by any fire department in the country.

The old NFPA 1001 test is the closest thing the fire service has ever had to a universal test; fifteen years ago, perhaps 30-40% of the country's fire departments were using it. But most departments that once used 1001 no longer do so. The move away from it and similar tests has been based on concerns that the tests' reliance on push-ups, pull-ups and other proxy events to indicate job fitness could not be successfully defended in court. The most common type of test now in use is the "work-performance" or "job-sample" test based on firefighting tasks. Many people — fire chiefs, firefighters, job applicants, and even courts — like this type of test because it looks like the things firefighters do on the job.

The Combat Test, a job-sample test based on the Firefighter Combat Challenge, is one beneficiary of this trend. Fire chiefs find combat-style tests attractive because they "look like firefighting," and lean towards the Combat Test in particular because it was developed by exercise scientists and because its national exposure as a sports competition lends a comforting sense of legitimacy for it as an entry-level test. In addition, a 1994 out-of court settlement to several years of litigation over the St. Paul Fire Department's entry-level test has been used to boost the Combat Test's image.

The Combat Challenge has been run for several years as a high-visibility firefighter athletic competition. As a contest, it has won sponsorship from the DuPont Corporation and has been featured at the International Association of Fire Chiefs' Conference, in conjunction with the Congressional Fire Services Institute's annual dinner, and even on ESPN. The Combat Challenge consists of a stair climb with standpipe pack, hose-roll hoist, simulated forcible entry, charged hose advance, and simulated victim rescue, performed in full protective gear, with the goal of getting the fastest time. Like waterball competitions, muster events and "toughest firefighter alive" contests, the Combat Challenge can be a fun way for firefighters to compete against each other and show off firefighter skills to the public. Unlike these other forms of competition, the Combat Challenge is also being marketed commercially as an entry-level test.

Many fire departments have rushed to embrace the Combat Test or one of its many variations, clones and imitators. But is this test really the hoped-for easy answer to the difficult problem of physical abilities testing? To answer this, let's review what an entry-level test should – and should not – be.

Guidelines for entry-level testing

An entry-level physical abilities test *should* be an accurate means of separating applicants who, with training, will be able to become successful firefighters, from those who will not. In other words, it's a way to take a group of untrained candidates and predict what their post-training level of job performance will be. The test should be based only on job-related factors and, all other things being equal, should not be unnecessarily affected by irrelevant factors such as the candidate's race, gender, age or size.

A test that doesn't predict job performance can't select the best people for your department. It will also unfairly deny job opportunities to qualified people. Usually, there is no way for a department to become aware of such shortcomings in its test. One fire department, however, did so accidentally. It developed a program that allowed a group of women and minorities (who had passed the physical test, but not scored high enough to be hired) to be included in a training academy with new recruits hired off the top of the list. What they found was that there was no consistent difference in performance or ability between the two groups. The test had completely failed to predict who would be "best" after training.

Firefighters currently on the job should be able to pass the entry-level test. The generally accepted method of determining a passing time or cut-off point on a physical abilities test is to administer it to a random selection of firefighters who are currently functioning in suppression at a satisfactory level. The firefighters are instructed to perform the sequence of tasks at a pace they would normally use on the fireground. Their performance times are then used to set the passing time.

A work-performance test should be composed of a representative sample of job tasks, in order to provide an accurate prediction of all-round performance. The *Uniform Guidelines on Employee Selection Criteria* – the federal law on employment testing – require the employer to "show that the behavior(s) demonstrated in the selection procedure are a representative sample of the behavior(s) of the job in question..." A test that overemphasizes some abilities required by the job and neglects others is not likely to be found valid.

An entry-level test should not attempt to measure an untrained candidate's ability to perform the skills of firefighting. "Entry-level" is, after all, the bottom of the ladder. It's where a fire department brings raw recruits into the hiring and training process. A department that wished to hire only trained firefighters on a lateral-entry basis might legitimately use a test of firefighting performance and skills, but on an entry-level test, tasks that require prior skills, or at which one improves with practice, should be minimized. The *Uniform Guidelines* warn against testing on the basis of "skills that can be learned in a brief orientation period." And simple logic dictates that if you test people on trainable skills, you will end up selecting the people who have training, not those who necessarily have the basic abilities you want.

With these as the criteria for entry-level tests, how do combat-style tests measure up?

Combat-style tests as firefighter selection devices

The Combat Test, like many job-sample tests, includes elements that are skill-dependent. In particular, performance on events such as hose drags and simulated forcible entry tends to be affected by skill levels: people get better at these events with practice or prior experience.

Top-level competitors in the Combat Challenge improve their times on the Challenge's events because they practice the events over and over, learning the optimum techniques. All of that practice makes them better at the Combat Challenge – often dramatically improving their times – but it doesn't make them better firefighters. Dr. William McArdle, an exercise physiologist with many years of experience in firefighter entry-level testing, said in his testimony in the St. Paul case, "We have no evidence that firefighters who improve their score on the (test) will function at a higher level on the job."

Anyone who practices a test also learns the tricks of the equipment used. Learning how to use the "chopping simulator" machine on the Combat Challenge, for example, confers a distinct advantage. The

motion used to move the simulated beam on the machine is different from the motion used in real forcible entry or ventilation, where for both safety and practical reasons one would never swing an axe down between one's legs. On the machine, there is no advantage to taking a full swing, so the competitor or candidate can not benefit from momentum the way the firefighter can in actual fireground tasks. And, according to many who have used it, the handle of the sledge hammer bounces and vibrates following impact with the beam. Competitors figure out "just the right way" to hit the beam to make it move most effectively: again, learning the tricks of the machine, not of real forcible entry.

Scoring options

The competitive nature of the Combat Challenge often inspires fire departments to rank candidates based on how fast they complete the combat-style test, rather than scoring the test pass-fail. It is crucial to analyze the underlying assumption: that the person with the faster time will be the better firefighter.

We can all agree that generalized attributes such as "strength," "fitness," "flexibility" and "endurance" are good things for firefighters to have. What is less obvious is that extreme levels of these attributes are not necessarily relevant to being a good firefighter. To take an example from another area: if you needed a car that would perform efficiently at 65 mph, and a Chevy Corsica or Honda Prelude suited your needs, a Ferrari wouldn't necessarily be even better. If you needed a family car to haul kids, pets and groceries, a moving van wouldn't be better than a station wagon just because it could haul even more. Similarly, someone who can bench-press 500 pounds or run a four-minute mile will not necessarily be twice as good a firefighter as someone who can only bench-press 250 pounds or run a mile in eight minutes.

If the department using a test can not show that faster times correlate with better job performance, it can not legally justify this type of scoring. WFS knows of no studies that indicate a correlation between high speeds on the Combat Challenge and high levels of job performance. Combat-style tests thus appear to be more a measure of candidates' abilities on the day of the test than a predictor of eventual performance on the job.

Rank-ordering scores on a test of this type is an attempt to draw very precise lines in a very imprecise area. Given all of the potential for inaccuracy in work-performance tests, it is hard to credit a difference of 15 or 30 seconds in one's total score as indicative of anything – let alone to have it be the determining factor in who joins a fire department as a firefighter and who doesn't.

Other problems with work-performance tests

Work-performance tests do *look* like firefighting – but they're not really *done* like firefighting. They offer only an approximate representation of some firefighting tasks without the overlays of the real fireground, where obstacles such as darkness, ice and snow, debris, constricted spaces, noise, smoke, poor communications and general confusion all constrain performance. Does the speed with which an untrained candidate can pull hose in a straight line through an open area, by him- or herself, closely predict the ability to advance hose as part of a crew, under real fireground conditions, at an acceptable speed? To quote Dr. McArdle again:

There may be a distinct difference between the levels of physiologic fitness and performance required to effectively perform a job such as firefighter compared to the requirements to excel on a timed, all-out physical test comprised of specific tasks gleaned from the occupation... The testing conditions under which the (test) is performed are so different from the dangerous, dark and

smoky conditions of actual firefighting that extreme speed on the (test) may indicate speed beyond the amount which can be used during actual firefighting.

A critical weakness to any test of this type is that candidates know exactly what tasks they have to do, and when they will be able to quit. On the Combat Challenge, five minutes is considered an excellent time; on the job, the firefighter may have to be able to keep going for twenty minutes, an hour, or even longer. The test environment allows (and often forces) candidates to perform at a pace they would never attempt on the fireground. No consideration is given to the candidate's condition at the end of the test; if they collapse and can't function further without a long rest, this does not affect their score. If your department has a very large supply of personnel, it may not matter what condition your firefighters are in after the first few minutes at a fire, or how long it takes them to recover. If, however, you need those people to be able to keep going for longer than that, or will need them again after a brief rest, it matters very much.

The process of determining the cut-off point for a passing score on work-performance tests is also subject to error. Some fire departments norm their test under race-like conditions that artificially enhance speed as a factor, instead of mandating a normal fireground pace. Even where speed is not specifically encouraged, incumbent performance tends to be speeded up, for several reasons. Out of interpersonal or inter-company rivalry, firefighters may perform quickly in order to beat each other's times. In other cases, firefighters may fear that those who perform more slowly will suffer repercussions from management, and they thus push themselves to go through the test quickly. Finally, if the test is being normed in an atmosphere that has been heavily polarized, such as by a lawsuit and the reaction to it, incumbents may deliberately perform the test as quickly as possible in order to distort the passing time and make the test more difficult.

Other criticisms of the Combat Test focus on its emphasis on speed and power, particularly when performed at high speeds. The philosophy behind the test is that measuring the ability to perform "critical suppression functions" and initial fireground tasks will automatically reflect the candidate's ability to perform easier tasks; yet the *Uniform Guidelines* require tests to contain a *representative* sample of job tasks, not just those perceived to be the most difficult. Another problem with such tests is that many fire departments do not demonstrate a range of techniques to candidates or permit variations in technique to be used on the test, even though firefighters in the field can benefit by using the most biomechanically efficient techniques for their shape and size. For example, many departments do not permit candidates to use a reverse grip on a ladder halyard, which is often easier for those with smaller hands or whose gloves do not fit well.

Alternatives

The Combat Test is a well-marketed product, but other types of tests, and other concepts in test design, are in use throughout the country. Some of these may be better suited to the needs and philosophy of your fire department.

Events that are simulated (in order to reduce skill dependence) can still reflect the realities of fireground practice and individual technique. One example is a debris-removal evolution using two buckets and a shovel. Candidates are required to simulate the removal of debris from a building by moving a certain weight of gravel from Point A to Point B. They may use one or both buckets; they may choose to put only a small amount of gravel in the buckets and make more trips, or to fill the buckets farther and make fewer trips.

The Tucson Fire Department for many years had an entry-level test called the First Encounter Acceptance Test that was written up in fire service journals and was borrowed or copied by a number of other departments. It included fireground events such as a hose advance, ladder carry, simulated ventilation and dummy drag, very similar to many tests now in use. The applicant's total time determined her or his score. Tucson later changed to a test that embodied a new philosophy. The new test was still composed of simulated fireground tasks, but candidates had to continue around the circuit until they had worked continuously for 15 minutes. Candidates were required to complete at least 1-1/2 circuits in that time, but could not stop before the time limit.

Fire departments seeking to improve their physical-abilities screening of job candidates would do well to review what it is they would like an entry-level test to do, and to consider a wide range of options rather than simply settling for the "latest thing."

Terese M. Floren
Executive Director

Note:

Following prolonged litigation, the City of Saint Paul in early 1994 reached a settlement agreement that allowed them to adopt a version of the Combat Test. The Combat Test itself has not been ruled on or validated in court. In an earlier case in New York City, hose-handling evolutions were specifically found to be inappropriate to an entry-level test. In her direct testimony in the St. Paul case, Dr. Joyce Hogan referred to the court's findings in New York:

Judge Sifton wrote in detail about the complexity of the charged hose advance task and its dependence on experience, skill and teamwork (*Berkman v. City of New York*, 580 F. Supp. 226, 236, E.D N.Y., 1983)... He concluded that tasks of hose handling have "been rejected whenever considered as a meaningful task of the individual physical capacities of persons seeking to qualify to be firefighters."

Physical Testing for Incumbent Firefighters

Everyone agrees that firefighting is a physically demanding job and that firefighters should be healthy, strong and fit for the job. But when it comes to the issue of physical testing for firefighters, that's about all people can agree on.

The debate about how to test entry-level firefighters for physical ability has been going on since long before I became a firefighter, and seems destined to continue until well into my retirement. For an entire generation, fire departments have been trying to decide how to select firefighter recruits who will be healthy, effective workers for their entire careers. What qualities are most important? How do you test for those qualities? The discussion has at times spawned lawsuits and wreaked havoc with morale on fire departments. Some fire departments have taken the position that what was good 20 years ago must still be good today, and have refused to re-evaluate their testing procedures. Others seem to have joined the "Test-of-the-Month Club," changing their physical tests for each new hiring. The only consistent result from all of this is that nobody is really happy with the outcome.

Now we add to the discussion the issue of ongoing physical testing for firefighters. It is logical to assume that if new firefighters must meet some type of physical standard to qualify for the job, incumbent firefighters should also maintain some standard in order to continue being effective. So while everyone is still completely confused about how to handle new-hire testing, the sticky issue of ongoing physical testing is thrown into the discussion.

Historically, physical abilities testing is a relatively new thing for many fire departments. On my department, we have only had a formal physical test for new hires for about 18 years; everyone hired before that time took no test at all. Nationwide, many fire departments became interested in the development of entry-level tests at around that time. It may or may not be coincidental that this was the same time period when women first showed a serious interest nationally in entering the career fire service – shortly after it became illegal for fire departments simply to refuse to accept job applications from women.

Entry-level tests have become part of the folklore of some fire departments, usually because their test is so difficult that few candidates can pass it. Those who do pass then adopt a "best of the best" attitude, and take great pride in their achievement. Unfortunately, because these tests can be so revered in departmental tradition, it can be very difficult to analyze or change them for any reason.

Between the extremes of having no test and having one that allows the passage of only the most elite physical specimen, most departments have been wallowing in confusion for the last 15 years or so. What should firefighters be like physically? How do you measure it? Is fitness something you do on a given day, or something you are for your whole life? How do you insure that a young, healthy firefighter remains fit and healthy throughout an entire career?

These last questions bring up the issue of ongoing physical testing for firefighters. In the past, firefighters needed to perform at an extremely high level on one day – the day of entry-level testing – and then they could basically do whatever they wanted for the next 20 or 30 years, as long as they could more or less do the job. Some firefighters would become obese or would lose what aerobic capacity they had through lack of exercise. They might smoke or eat a poor diet for several decades, and then be surprised to suffer a

heart attack at a relatively young age. Many firefighters would suffer back or other injuries that might have been avoided if the individuals had been in better shape. In addition to the suffering of the individuals involved, these trends were costing fire departments money – in the payment of death and disability benefits, in sick leave and in increased health insurance premiums. These are some of the reasons fire departments are now very motivated to look at ongoing physical fitness programs for firefighters that span the employee's entire career.

At first glance, it seems as though this shouldn't be too controversial. Most people want to live healthy lives into old age, and if the fire department wants this too, so much the better. But it isn't so simple. For one thing, there is a big difference between physical fitness and physical testing, although many departments choose to ignore the distinction. And this is where the problems begin.

The goal of ongoing physical fitness programs should be to insure the healthiest, most effective workforce possible. But how can this best be done, especially considering that time and money are scarce on most fire departments these days? What types of standards, if any, need to be set? If tests are given, what should they test for? What happens when someone who is doing the job just can't pass the test? Is there a better way to reach people than just testing them? What other kinds of support are effective and feasible?

All of these questions were in my mind when I began the task of surveying WFS members about physical fitness and testing programs on their fire departments. Although I wanted to focus the discussion on programs for incumbent firefighters (as distinct from entry-level testing), many respondents also described how their ongoing programs related to the entry-level testing done by their departments.

In all, I received 23 written or telephoned responses to my request for information. These represented 22 different fire departments in ten states and one foreign country. Twenty women and three men responded. Of the 22 different departments represented, twelve used the Combat Test or a close facsimile, four used task-based tests designed in house, four used fitness-oriented tests and two used no tests at all.

The Combat Task Test, designed by Paul Davis and Charles Dotson, is a timed test that requires the participant to complete a series of tasks that resemble fireground activities. This test has spawned many clones. Tests like these are increasingly popular with fire departments, although the fact that the majority of the survey respondents used these tests might be the result of my request for information about them by name.

In-house task tests are those designed by individual fire departments or, in one case, a regional group of departments. They are task-oriented, although the tasks may include non-emergency work such as stacking hose on a rack. Fitness-oriented tests are those that assess fitness through activities that are not specifically job related, such as push-ups, pull-ups, sit-ups, grip strength and so forth. The Cooper test is a type of fitness test.

In general, the attitude I encountered regarding physical testing was ambivalent at best. People generally agreed that some type of physical fitness program for firefighters is a good idea, but how such a program should operate was a different matter. In general, those using a program other than the Combat Test were most positive. "Yes, definitely [it is beneficial]. Physical fitness is necessary to perform fire department duties safely and efficiently." Commented another,

Standardized annual testing is beneficial to the department; it has thus far identified several high risk employees who were totally unaware of their disability. I believe that any of these employees could have possibly been a fatality at a fire scene if they had not been identified and dealt with properly.

Another said,

I think these tests are *one way* of impressing upon people that they need to stay fit. It's too easy to run medical assists and alarm bells and do nothing and still think you'll be in shape when the "real" fire call comes in.

Others were less positive. "I feel our exam is much too easy," said one person whose department uses an in-house test. "The physical exam is a gift to most people who participate [because] it is optional and if you decide to participate, you are rewarded with a day's salary or annual leave." Another said, "Although I am in favor of standardized annual testing, I feel [our] test does not do the job. Most of the guys do nothing all year, run a couple times before the test and kill themselves during the test..." Another commented that although her department's test was "fine by me," she didn't think about it much because she expected the test to change soon, as it had frequently in the past.

In dealing generally with the issue of physical fitness for firefighters, two major concerns emerged from my survey responses. The first is that when testing is used, it is often done inconsistently, the tests are not comprehensive, and the testing process itself becomes a negative experience that turns people away from wanting to participate in fitness programs. The second concern was that fire departments are focusing all of their resources on physical testing and not attending to other important aspects of firefighter fitness and wellness.

Inconsistency was a major problem. One woman wrote, "The physical ability testing for promotions has been a fiasco. The tests have changed, even during the same promotional list whereby candidates took different tests for the same promotion." "Ten minutes was the cut-off for the test I took, though they wouldn't put it in writing in case they needed to squeeze someone in," wrote another. "They have modified the test several times," said a woman from another department. "First we used a rope to pull the dummy. Then we couldn't. Then they increased the weight of the dummy to 194 pounds. They won't allow the use of different techniques to complete the tasks."

Most people commented that physical testing has become a competitive event, and that the outcome of this competitive atmosphere is mostly negative, especially for women. Stress resulting from the testing process was frequently mentioned. "The test has sparked a certain amount of competition," wrote one woman. "Lists with finish times always seem to leak out and are discussed widely throughout the department. This causes me a bit of personal anxiety." General knowledge of individual scores was the rule of the department surveyed – only one did testing privately and kept scores confidential. In most cases, testing is done in a group. "I detest going through this annual test," said one woman.

I also hate being the center of attention. When the guys go through the test, they just go through it. When it's my turn, the chief comes out and watches me; guys from that station will come out and watch me. Even guys from my own station stop what they're doing to see how I'm doing.

Another respondent told about a woman on her department who had several years of experience and had earned the respect of her co-workers. When she did poorly on the annual physical test (due to a recent illness), her overall credibility on the job was greatly diminished, although her job performance had not changed.

The biggest concern about physical testing is that departments are structuring physical fitness programs around testing alone, and paying little attention to other aspects of a comprehensive fitness program. “I do believe it is fair to administer such tests,” said one woman, “but only if a supervised fitness program is provided by the department. Such a program needs to include aerobic and strength training with an emphasis on strengthening the back, as well as education on health and safety topics.” Another woman said, “If they really want to help us, bring in a physiologist, a dietitian, etc. Just testing us is not motivating.” Several women echoed these thoughts. “I am a believer in good nutrition and diet as a part of the whole wellness and fitness circle. It appears that we need to educate our firefighters in healthful eating habits and cooking light.” One woman commented that members of her department are denied access to the fitness program until they have already failed the annual test.

As I read and listened to the many responses I received from my inquiry about physical testing, I couldn't help but feel that fire departments are getting the whole issue of physical fitness backwards. The emphasis on incumbent testing may be due to the tradition of entry-level testing, or it may just be the cheapest and easiest way that fire departments can see to “do something” about physical fitness. But testing alone clearly does not do the job.

When a firefighter candidate shows up to take an entry-level test, it is necessary to evaluate that person's fitness on a single day. Once a person is a member of the fire department, there is the opportunity to develop that person in many ways throughout his or her career. In the area of physical fitness, it seems that programs can be developed that help people see the long-term benefits of exercise, good nutrition and healthy living, without framing the whole matter in a competitive or punitive way. The goal should be achieving a healthier workforce. Testing may be useful to measure the results, but testing alone falls far short of meeting this goal.

Linda Willing
Associate Editor

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Recommendations from the survey

I heard a wide variety of opinions about fitness programs for firefighters as I worked on this project. As diverse as the respondents were, some consensus could still be reached on the subject, as follows.

1. **Physical fitness programs for firefighters are a good idea.** The survey respondents recognize the physical demands of the job and are serious about meeting them. They are concerned about their personal health and fitness and that of their departments as a whole.
2. **Physical fitness programs should consist of more than just testing.** People were universally concerned that testing alone does not make for a good fitness program. Respondents wanted to see assistance with personal exercise programs, individual health screenings and advice, aid with smoking cessation and other lifestyle changes, education on injury prevention: a complete wellness focus.
3. **Testing, when used, should be constructive, not punitive.** Many wrote of the poor effect on morale when jobs are threatened by test results. Many injuries result when people push too hard to meet a standard but do nothing else to develop real fitness.
4. **Timed results should be de-emphasized, if used at all.** Safety is at risk when time is the bottom line. Many people commented that the Combat Test in particular goes against what firefighters are taught as safe practice on the fireground. Several questioned what difference is made by a few seconds in time, if all tasks are successfully completed. Some suggested using a different standard than time, such as the ability to complete all tasks using only one air bottle.
5. **Testing and fitness screenings should contain an aerobic focus.** Heart attack is the leading cause of firefighter death on the fireground. Most respondents were concerned that the Combat Test and many fire department fitness programs overlook the aerobic function of the firefighter's job.
6. **Test results and the results of fitness screenings should be confidential.** Many spoke of being demoralized by a competitive atmosphere, and felt it hurt women in particular. Many said the competition leads to injuries. The consensus was that firefighters would be more open to fitness programs if they felt their individual problems and performance would be kept confidential. This is especially true with firefighters who might need help.
7. **More work needs to be done on fitness issues in the fire service.** Many felt the Combat Test's popularity is due to it being "the only game in town," and that fire departments would be open to alternatives if more existed.

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Up in Arms Over the Combat Test

While attending one of WFS' international conferences, I overheard a conversation between two women firefighters. "I have to do it as soon as I get back," one said. "Thinking about it is kind of ruining the experience here." The other sympathized, "I did it just before I came out here. I was so stressed out, I was sick."

The "it" they were discussing was the Combat Test, a speed-to-completion, task-oriented fitness test that at the time was gaining in popularity throughout the fire service. I had heard about it before, but I had never taken the test myself nor even seen it done by others. I felt I could be a fairly objective researcher about this controversial test.

I asked WFS members to contact me about their experiences with the Combat Test. I also asked for people to respond whose departments use some other kind of test. The purpose of the survey was to find out how people feel about different types of ongoing physical testing. It was not meant to assess how widely a specific test is used, or to determine the validity of a test by any scientific means. I wanted to hear people's thoughts and feelings about physical testing, and the Combat Test specifically. To protect respondents from retaliation, I offered to keep their names confidential; thus, no names of individuals or fire departments are included here.

Summarizing how people feel about the Combat Test is easy: the ones I heard from don't like it. This was true for the men as well as the women, and for people who excel at the test as well as people who struggle with it. But the feelings and opinions run much deeper.

The men I have talked to about the Combat Test tend to be dismissive in their dislike of it. Two men formally responded to the survey, and I spoke to many others informally as I was completing this project. "You mean the junior Olympics?" one scoffed. "It's stupid." "It doesn't really test for the kind of fitness we need in this job," lamented one assistant chief, who has been lobbying unsuccessfully for a different type of test for a long time. "But I guess we're stuck with it." "It's just another game to play, another hoop to jump through," said another firefighter.

Some male firefighters felt differently. One man on my department was excited about trying the test – he loves competition and wanted to test himself against the best times. He was less enthusiastic when faced with the idea that the test could be used to determine whether firefighters should be allowed to continue on the line.

Women were less ambivalent in their dislike of the test. One commented, "After successfully serving on my fire department for ten years, I am both angered and exhausted by the male-oriented achievements to which I must succeed." Another woman said, "How do I personally feel about this test? I don't feel it proves anything except a way to eliminate and legally discriminate against current and potential employees."

The survey respondents had a number of specific grievances against the test. The one voiced most strongly and frequently was that the competitive nature of the test is damaging to morale and also encourages injury.

The department has fostered an intense competition which encourages injuries. On the last test, four people out of 60 were sent to the hospital (back injuries, heart problems) and several others had strains and sprains. The morale for the fitness program has dropped dramatically since the new test was instituted.

Reports of injuries were echoed in a number of responses. "The last time, there were five back injuries from the test," one woman said. "We've spent a lot of worker's comp money on this." Another woman

spoke of sustaining a serious back injury during the test, caused in her opinion by the test's rejection of alternate technique. She was off the job for several months as a result of this injury. And another woman cautioned, "I think it's just a matter of time before someone has a stroke or heart attack because they didn't do any conditioning prior to the test."

Several women said the test was demoralizing to them because the nature of the events allows bigger people to do better regardless of fitness level. This bigger-does-better correlation was upheld in research done by Chief Dawn Smith of the Pike Township (Indiana) Fire Department.¹ "They don't have to be in shape," said one woman. "They're just big guys." Another woman agreed. "No matter how hard I work out, I'll never be at the top because I'm smaller... (I get) beaten by guys on my crew who never work out, who are just taller." "If you're big enough, tall enough, it can be fudged," asserted another firefighter. "Our test is set up so that out-of-shape men can make it through easier than an in-shape woman," said another.

The women who responded to my survey were very concerned that the Combat Test does not accurately reflect what firefighters really do on the job, and thus does not truly assess fitness for the job. "The events [may be] job related," said one woman,

But when was the last time you had to do *all* of the events represented by yourself at a fire? Why would you suddenly need to tell someone to hurry and do everything yourself, when for years you've been telling them to calm down, get help, and do it safely?

Another said,

I cannot see any relevance to actual fireground operations. When I observed a group of firefighters doing the Davis-Dotson test, I thought they looked like lab rats high on speed. They weren't *thinking*, just repeating a pattern of movements without real objectives or goals. You're never going to face those diverse activities in a 5-minute time frame on a working fire.

There was some discussion of the Combat Test's "validity." "The department went to the Combat Challenge because it looks more job-related and has court validation for getting rid of employees," stated one woman. What kind of legal validation this test has for ongoing fitness assessments is unclear at best. I know of no court case testing this specific issue. Many departments seem reassured by Dr. Davis' credentials and the fact that the test has gained widespread acceptance. Dr. Davis had personally consulted with several of the fire departments represented in the survey, but this consultation does not constitute validation of the test in any formal sense. Several women commented on this point specifically. "I consider Davis-Dotson to be a test which was not 'normed' with a large enough representation of women." Another told of her department's attempts to validate the test by bringing in advisors from a local university.

"[The chief] failed to tell them (the university advisors) that some of the functions are non-emergency tasks or that the equipment used is outdated and far heavier than what we use on the line. He did not explain to the test validators our Passport system: no firefighters should be working alone and performing these tasks alone."

Survey responses showed significant inconsistencies in the way the Combat Test is administered from department to department. Although the test is marketed as a discrete package, many departments have made changes on their own. Most notably, departments have changed the time allotted for the test from the recommended seven minutes up to ten minutes and beyond.² Equipment was also not standardized, although the testing company, ARA Human Factors, does market equipment especially for the test. One example of an inconsistency was the weight of the dummy – respondents reported that the dummy used in their test weighed from 150 to 194 pounds. Some departments had people do the test in full turnout gear; others used weighted vests.

Several women expressed concern that the test is “not based on anything but time.” No department made a consistent effort to assess the condition of the participant after testing, nor did any measure recovery in any meaningful way. Several women wrote of men who had to be treated with oxygen or IV’s following the test, yet those men’s scores were considered acceptable as long as they had come in under the designated time. A participant who was in good condition after the test but had run over the time, even if only by a few seconds, would fail. One woman’s experience illustrated this point clearly.

Another firefighter and myself took the test together. I took 10 minutes, 15 seconds to complete the test (not completely reliable, because after eight minutes I didn’t care what time I had, since [I knew I’d failed and] was going off line, and I stopped and rested when I wouldn’t normally have done so.) I also had about 700 psi of air left. After a 5-10 minute rest, I went back to practice several segments of the test again. The other man collapsed about twelve inches from the finish line with about 30 seconds to spare. Everyone on the side was yelling at him to get up. When someone finally said, “You still have ten seconds!” he got up, pulled the dummy across, and collapsed again. He was given an IV, sent to the hospital, and kept off the job by worker’s comp for three days. I was the one taken off line. He returned to work. His performance complied with the Davis-Dotson standard. Who would you want in a high-rise fire with you?

A number of women felt the Combat Test was used in a punitive way on their departments. Some also felt the test is discriminatory. “It appears to be an attempt to eliminate personnel who are ‘too old’ or ‘too small,’” said one woman. Another commented, “If a person fails to meet the cut-off, members of the fitness team say they will be fired... Many members of my shift were threatened by their co-workers on the fitness team that if they did not pass the test, they had no right to be firefighters.” Added another woman, “I believe this test does hurt our department. The punitive nature of this test has created strong negative feelings among the line. This is especially true with the people over forty.” Another woman said, “I resent what I see as subtle ways to keep women out.”

Survey respondents almost universally felt that the test causes stress. “I do not see any benefit to this department having this annual test,” said one woman. “It creates undue stress on all personnel due to concerns of losing their job.” Another respondent said,

[The test] makes me feel like I am being told that I really can’t do the job, although I have for the past nine years. Many are very concerned that they will not be able to pass this test as they grow older. Others worry about injuring themselves in a testing situation, making it impossible to continue working as a firefighter.

A third woman wrote,

It has proven to be a profoundly stressful event for myself and others. The first time I took the test, I completed it in 5 minutes, 30 seconds. Over the next year, I developed increased anxiety about the test, and in 1991, I completed the test in excess of ten minutes. This profoundly affected my self-esteem... In 1992 when taking the test, I suffered incredible nausea and anxiety, yet still completed the course in 6 minutes, 8 seconds. Three weeks ago, I completed the test in 5 minutes, 53 seconds with only an angry sense of relief... I maintain a very constant level of physical conditioning, and how I perform on this test has little to do with my condition.

A few women conceded that the test has had some positive effects on their fire departments. One wrote, “Even though most of the guys will never admit it, this annual testing has benefitted our department by showing each individual that they could actually do something they never thought they could.” She went on to say, however,

Whatever the department’s goal for this program is, very few things have changed. The few of us who worked out before are still working out. There are a couple who are borderline and have seriously started working out trying to improve. But for the most part, everyone works out on paper only.

Another added these thoughts: “The stress of knowing the test is coming up, along with my fear of failure, makes me increase my workout program. However, I don’t need this annual test as an incentive to work out; I would be doing this anyway.”

The women who responded to this survey clearly take the Combat Test seriously and try to do their best on it. Some routinely post what are considered “national contender” times. Others have hired personal trainers specifically to help them improve on the test. But overall, the women were discouraged with the Combat Test and its effect on their fire departments. “I think the damage that has already been done is to the morale for the fitness program,” said one. “I think we missed a great opportunity to institute a wellness program that could have achieved the goal of a more fit, lower risk department with proven methods,” said another. A third agreed:

I see our downfall as not having better resources and programs to address individual needs, such as weight loss, nutrition, hypertension, substance abuse, smoking cessation, etc. Instead of practicing prevention or promoting wellness, we persist in remediating illness and injury.

What is the future of the Combat Test in the fire service? Its use continues, despite what appear to be obvious drawbacks. This may be due to the fact that, to a large degree, (as of 1994) it is the only game in town. The clearest message I received from the extensive interviews I conducted in connection with this project is that the fire service needs more alternatives in the quest for a fitness program that really works for everyone.

Linda Willing
Associate Editor

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Women in the Fire Service, Inc.

Position Statement on the Candidate Physical Ability Test (CPAT) of the Fire Service Joint Labor Management Wellness/Fitness Initiative

May 30, 2002

Women in the Fire Service, Inc., has consistently advocated for entry-level tests that select qualified firefighter candidates without unfairly advantaging candidates who have prior experience and training in the skills and tasks sampled by the test events. Nonetheless, it is clear that the current level of interest by fire departments and testing agencies in the IAFF/IAFC Candidate Physical Ability Test (and similar tests) is very high, and is likely to remain so for the immediate future. For that reason, the organization has issued this position statement.

While we applaud the efforts of the IAFF and IAFC to develop a nationally standardized physical assessment for firefighter candidates, Women in the Fire Service, Inc., neither endorses nor opposes the use of the CPAT. We believe the CPAT, or any physical abilities test used as part of a hiring process for firefighters, can be implemented most effectively and with the least disparate impact if it incorporates into that process meaningful and comprehensive recruitment, pre-training, and mentoring programs aimed at assisting the widest possible range of candidates in preparing for the test and for the job of firefighter.

Without the pre-training component, the use of any skill-dependent test will always advantage those who have in some way been pre-trained for the test, whether through prior firefighting experience, repeated unsuccessful attempts at the CPAT or comparable tests, specific personal training for the test, or experience with non-firefighting jobs or tasks involving similar skills. Without meaningful recruitment and mentoring components, fire departments will continue to attract candidates who match the profile of current firefighters, and candidates who do not match the profile will continue to contend alone with the barriers inherent in that minority status.

It is important to consider the recruitment, mentoring, and orientation requirements outlined in the CPAT manual as minimum guidelines. Many fire departments have developed and implemented more extensive programs, with great success. The most crucial element is a hands-on training program that offers repeated, supervised opportunities for potential applicants to work with the actual test equipment until they reach a level of proficiency.

WFS encourages agencies administering the CPAT to demonstrate and permit a variety of techniques for safely and effectively accomplishing the skills and tasks on the test, thus taking into account individual differences in stature and body biomechanics.

We also encourage all fire departments and other testing agencies using the CPAT to complete and return the IAFF/IAFC CPAT survey, in order to help document test information and compile meaningful statistics about the impact of this testing process.

Finally, it should be noted that the U.S. Department of Justice has not endorsed the CPAT (or any other physical abilities test for the fire service as a whole). Information about firefighter recruitment and pre-testing programs is available in the U.S. Fire Administration manual entitled *Many Faces, One Purpose: A Manager's Handbook on Women in Firefighting*. Information to assist women firefighter candidates, as well as incumbents, can be found in the manual entitled *Many Women Strong: A Handbook for Women in Firefighting*. Both were previously available from the U.S. Fire Administration (301/447-1189; www.usfa.fema.gov), although their availability was scheduled to be curtailed as of early

2005. Women in the Fire Service (608/233-4768) hopes to make PDF files of both documents available on its website soon (www.wfsi.org).

CPAT: Some Unanswered Questions

If you're a structural firefighter or officer and you're not familiar with the Candidate Physical Ability Test (CPAT), it's time to learn more. This joint project of the International Association of Fire Fighters (IAFF) and the the International Association of Fire Chiefs (IAFC) is moving like a snowball downhill, picking up speed and enthusiasts as it travels. It is "Coming Soon" to a fire department near you.

The original intent of the IAFF and IAFC with their joint initiative on firefighter physical abilities was to develop an incumbent standard first: that is, a standard for people already on the job. This would then be used as the basis for an entry-level test, and would establish the job-relatedness of that test.

In the process, however, the focus shifted. Concerns were raised that current fire service hiring practices were resulting in firefighters being on the job who would not be able to pass an incumbent test. The incumbent standard was set aside, and priority was given to developing an entry-level standard. And that's where the CPAT came from.

In this article, I will briefly discuss some of the issues that have come up since fire departments started using the CPAT. These include:

- Questionable ability of the IAFF and IAFC to enforce the requirements of the CPAT
- Failure of fire departments and other testing agencies to conduct transportability studies
- Failure of test administrators to comply with the document's requirements regarding environmental factors
- Use of the test for purposes other than entry-level screening
- Inadequacy of the recruitment section in the existing document
- Inadequacy of the orientation requirements and guidelines in the document, and absence of suggestions or outlines for training programs
- Possible adverse impact of the test on female candidates: women passing in much lower rates than men

I will also present some suggestions for improving the document – the CPAT manual and its appendices – for the future.

Requirements of the CPAT, and gaps in those requirements

The IAFF and IAFC have emphasized that the CPAT is a copyrighted document and that the program is to be adopted *as a whole*: employers can not choose to adopt some portions of the program while ignoring others. Rich Duffy, Director of Occupational Health and Safety for the IAFF, has repeatedly said that the IAFF is ready to sue any employer that misuses the CPAT. But in doing my informal survey of CPAT's implementation to date, it seems to me that neither the IAFF or the IAFC is really keeping track

of how the CPAT is being implemented. The question then becomes, how serious are these organizations about enforcing the requirements of the document, and how capable are they of doing so? What is the mechanism for bringing violations of the CPAT to the IAFF/IAFC's attention? And what will the Justice Department's role be if the IAFF and IAFC fail to monitor the test's use?

At present, there is no formal mechanism in place for the IAFF or IAFC to keep track of who is using the CPAT or what happens when problems arise in administering it. People who have questions or concerns about its use in their area are told to go through their locals. But what happens when the local is opposed to the concern that the individual is raising? Or what happens if there is no IAFF local involved, such as when a community college is administering the test, or the test is adopted by a volunteer fire department?

Failure to conduct transportability studies

A disturbing trend already is what appears to be the indiscriminate and illegal use of the CPAT by agencies that did not participate in its development and have not conducted a transportability study to show the job-relatedness of the CPAT for their jurisdiction. The requirement for a transportability study is stated at several places in the CPAT document: other than the ten departments involved in developing the test, *any fire department that plans to use the CPAT must conduct such a study in order for the test results to be valid in their jurisdiction.* An appendix provides guidelines for conducting the study.

This requirement, however, is clearly being overlooked in many cases. Of fifteen fire departments responding to a survey by Captain Grace Yamane of San Diego Fire and Life Safety Services, presented in her workshop at the 2001 Fire Rescue West conference, fourteen said they were using the CPAT or considering doing so. Only five of the fourteen reported that they had conducted a transportability study. And in talking by telephone with representatives from several fire departments about their use of the CPAT, the reaction I sometimes got was, "What's a transportability study?"

Some test administrators must not be reading the document closely, perhaps having been overly impressed by the publicity surrounding the CPAT. The IAFC, for example, issued a press release when the test came out that emphasizes that the test "has been nationally validated." Nowhere does it mention transportability studies, and only in the fine print toward the bottom does it reference this requirement obliquely, when it indicates that one of the components of the manual is entitled "Steps for Jurisdictions Outside of the Initiative to Adopt Test."

In addition, several states – including Alabama, Mississippi, and New York – have adopted the CPAT statewide. This leads one to wonder exactly who is going to enforce the proper administration of the test and the application of EEOC requirements for transportability in those states.

The CPAT is not going to be a valid test for every single fire department or firefighter hiring authority in the U.S., because not all jurisdictions have the same working conditions. The ten fire departments that cooperated on the validity study are all major urban agencies. New York City, for example, has about six thousand high-rise buildings (over 75 feet) in Manhattan alone. Should a small, rural fire company in Iowa be using the same hiring standard as New York? If the working conditions and job requirements in the two places are substantially different, the answer will be no.

On a related issue, some proponents of the CPAT have apparently been saying that the U.S. Department of Justice (DOJ) has approved the test for use as a general entry-level standard. But at the WFS conference in Georgia last month, Claire Gregory, an attorney in the the Employment Litigation Section of DOJ's Civil Rights Division, made it clear that although DOJ was been consulted while the CPAT was being developed, DOJ has not approved the test as a hiring standard. The Justice Department is monitoring the test to see whether it has an adverse impact on protected groups.

Test administrators failing to comply with requirements, and other variables that may affect validity

In response to WFS' requests for members to provide us with information about how the CPAT is being administered across the country, I received several reports of problems. The most common has to do with the surface of the testing site. CPAT mandates that the testing site surface have friction values similar to that of an unpolished concrete floor, which is what was used in the validation study. Many fire departments seem to be administering the test in asphalt parking lots, with all the problems asphalt and uneven surfaces create for consistency of administration.

Another common observation was that when the test is conducted outdoors, weather interferes. The CPAT document contains specific environmental parameters, but in some cases, these are bent or ignored: for example, the stepmill is placed in the shade on some days of testing, and in the sun on others. When I asked Rich Duffy about these problems, he claimed the IAFF had "corrected" every complaint about test administration that had been brought to their attention. This would indicate that not every problem is being brought to the IAFF's attention.

Related to this issue is a question that has arisen regarding the validation process. The pass mark for the exam was set on a course at sea level. When the test is being given to firefighter candidates at significantly higher elevations, is that standard still valid? Are the physical fitness demands on firefighters the same at 5000 feet as they are at sea level? Or is it possible jurisdictions in mountain areas may have to conduct not only transportability studies but validation processes as well?

Another reported problem has been the inadequacy of facilities at the testing site. While the CPAT document goes into great detail about many aspects of test set-up and administration, it says nothing at all about ensuring privacy in restroom and changing areas. This factor has discouraged women from going through testing processes in the past, and will continue to do so until it is adequately addressed.

Use of the test for other purposes than hiring

In another part of Captain Yamane's survey, eight of the fifteen departments said they were using, or considering using, the CPAT for purposes other than as an entry-level standard. (Remember, entry-level screening is the only use authorized by the IAFF and IAFC.) Fire departments are currently using it as a standard for graduation from the fire academy, as an annual incumbent standard, and as a standard to assess fitness for return to duty. In my own department, for instance – and as one of the ten developing departments, New York *ought* to know the document's requirements – CPAT is currently being given to probationary firefighters before they graduate from the academy, even though it has not yet been used as an entry-level standard. And the first use of the CPAT in New York State was by the Syracuse Fire Department, which was "authorized" by the state to administer it as an academy graduation requirement. No mention was made of whether Syracuse had conducted a transportability study before doing so.

Inadequate recruitment section

Another gap in the document is its poor recruitment section. After urging fire departments not to "lower standards," and criticizing consent decrees for abolishing some job-related physical hiring tests, Chapter Two of the CPAT manual goes on to provide five pages (double-spaced) of very broad suggestions for increasing diversity in the fire service workforce. Most of these suggestions are already being carried out in many fire departments, with not particularly impressive results.

The IAFF and IAFC have said they intend to develop a recruitment manual, and one would hope they would reach out to the so-called "minority" organizations for our ideas in this area. But IAFF spokespersons have also strongly defended the recruitment section in the current CPAT manual, saying they saw no need to meet with or reach out to organizations like WFS or the IABPFF for suggestions on recruitment for the next edition of the CPAT. Yet the recruitment materials in the current document don't

even reference the fire service organizations likely to have the best resources on recruitment of women and people of color, namely WFS, the IABPFF, and the Hispanic firefighters' organizations.

Candidate preparation

The lack of suggestions or programs for candidate preparation is, I think, one of the most serious omissions in the CPAT manual as it stands. The chapter on candidate preparation guides is less than two pages long. It says:

All candidates *should* receive the preparation guide *at least eight weeks* prior to their CPAT date...
Fire Departments *should make reasonable efforts* to provide pre-CPAT preparation opportunities.
[italics added]

No further explanation is offered as to what might constitute "reasonable efforts," except to suggest the use of community colleges along with the department's own resources.

The chapter references a Candidate Preparation Guide in Appendix 3-1. There we find descriptions and pictures of various exercises designed to increase flexibility, strength, and aerobic and anaerobic fitness. The appendix also includes six pages of text describing "Supplemental Task-Specific Exercise Training" intended to simulate the eight CPAT events. These pages include no pictures or drawings to help explain exactly what simulations are being suggested. Also, the Guide does not suggest working up to doing these simulations in the gear – gloves and weighted vest, in particular – that candidates will be required to wear during the actual test, which is a serious omission.

Another problem is that the Guide does not advocate allowing candidates to practice the actual test course. Yet repeated practice of the test course has been found to be the single greatest help to women preparing for firefighter physical abilities tests. The Guide also fails to give any sense of the intensity with which candidates will be expected to perform on the CPAT course. Despite its shortcomings, few fire departments are supplementing this material in any way. Guidelines provided to most candidates simply consist of xeroxed pages from the CPAT manual.

The fourth chapter of the manual discusses test administration and orientation. The orientation is also to take place at least eight weeks before the test is given. Again, the suggestions for the candidates' pre-test orientation say nothing about giving people a chance to use or practice on the test equipment, or to run through the test from start to finish on a practice basis. What is intended, according to the accompanying appendix, appears to be a live test demonstration by trained instructors. Candidates are to be allowed to view the test events, and can "talk with instructors and physically examine each test component in a controlled setting." This version of an "orientation" is a far cry from the intensive, long-term training that has been shown to provide women candidates with their greatest success rate.

Some fire departments are even arguing against preparation programs: their position is that since the CPAT does not mandate such programs, departments cannot offer them. This is incorrect. CPAT outlines the *minimum* fire departments must offer in terms of preparation; it does *not* restrict fire departments from providing more preparation in order to reduce the adverse impact of the test on women or other groups.

What can you do?

We ask that WFS members make WFS aware of your concerns about the CPAT, as well as your IAFF local and any other groups you choose to involve. We would also suggest the following:

- Help monitor how the CPAT is administered in your area by notifying WFS about its use: good and bad aspects of its administration, outcomes for women, and other specifics. Encourage your IAFF local to report any administration problems directly to the International.
- If you are organizing a training program or are involved in administering the CPAT in your

department, or even if you just have information about how your department is using the CPAT, please write up a description and send it to WFS.

- Urge your locality – in the strongest possible terms – to provide a meaningful pre-training program that will allow candidates repeated practice of the actual events of the CPAT. If your agency refuses to sponsor the training, seek out other groups who might be willing to do so. Check with WFS for information on the types of programs that have been the most successful.
- Get a media plan ready. I cannot emphasize this too strongly. How you (and your department, and your union, and the other women firefighters) handle the media can affect your recruitment efforts, and the attitudes of both the public and your co-workers towards all women firefighters.
- Urge your union and your fire department’s management to support initiatives to improve the CPAT process.
- Support the participation of WFS and the other “minority” organizations in developing a recruiting manual, and in the new IAFF/IAFC proposals for a peer fitness trainer certification program.
- Funnel any suggestions you have for improvements in the CPAT handbook and the recruitment, training, and testing process to WFS.

Brenda Berkman
New York City, NY

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Practicing the Course: The Essential Ingredient⁽¹⁾

Introduction

The first women were hired on the New York City Fire Department in 1982. Ever since then, FDNY women have helped train other women for the physical abilities portion of the department's firefighter entrance examination. Judging from how well – or how badly – these various training programs have worked, the FDNY women have concluded that women candidates succeed when they participate *on a regular basis* in a program that provides *repeated opportunities* both to practice the individual events in a physical abilities test – using the actual props from the exam – and to perform the entire course in timed trial runs. This conclusion is born by research on the results of training programs for women in other parts of the US. This type of training enhances women candidates' physical performance by building their strength, endurance, technique and confidence.

In 2003, the authors of this article and other members of the FDNY's United Women Firefighters (UWF) organized and staffed an eight-week task-based (2) training program at the fire department's training academy on Randall's Island. This training came right after an eight-week physical conditioning program that had been offered to women candidates by the New York Sports Club. (3) While the FDNY physical abilities exam differs somewhat from the CPAT, the two exams are similar enough (CPAT was patterned after the FDNY exam) to make training suggestions for the two exams virtually interchangeable.

The FDNY allowed *all* of its "fraternal" organizations the option of organizing a preparation course for firefighter candidates. The organizations were allowed to establish their own rules about who was eligible to participate in their training program. (4) The overwhelming majority of women candidates who attended training chose the course offered by the UWF. Most of the women who attended the UWF course had also taken part in the NYSC program. (5)

FDNY made its practice course (which was set up with the same props used in the exam) at the training academy available to the interested organizations on weekends and week nights for 3- or 4-hour sessions. Certain rules were imposed regarding use of the facilities, (6) probably the most important of which was that each of the eight training stations had to be staffed or it could not be opened for use. That meant at least eight volunteer (unpaid) instructors had to be provided by an organization in order for the course to be fully operational. The FDNY recommended that no more than 80 candidates use the training course at any one time. The UWF typically had 8-10 instructors and 50 students at each of its Wednesday and Sunday weekly sessions.

All candidates participating in the training had to sign a liability release. The UWF also had its participants fill out two other forms: a "PAR-Q" questionnaire that attempted to identify people with medical conditions who might be at risk from the training program, and a physical fitness questionnaire to help identify the various fitness levels we would be encountering.

Major issues that the UWF encountered in organizing the program included:

- Finances: Since the FDNY was not paying any of the instructors or providing any financial assistance to the staff or candidates, all expenses (transportation, telephone and copying expenses) had to be covered by the instructors and candidates themselves.

- Staff:

- Insuring that we had enough instructors to cover each session

- Diversity in the instructor pool: UWF instructors included men and women (mostly women) of different ages and ethnicities. Many of our most dedicated instructors were retired women firefighters. We also made sure that instructors included EMT's (the need for EMT's arose on a couple of occasions during the training). Many of our instructors had also volunteered as instructors for the earlier NYSC training program.

– Staff training: Some of the UWF instructors had participated in previous training programs as instructors and/or students; others were inexperienced as instructors. Everyone had to be aware of training objectives, the schedule for the session, and safety concerns.

- Additional equipment: The UWF encouraged candidates to purchase personal weight vests. Women firefighters donated stopwatches and smaller-sized gloves for the candidates to use.

- A plan! (7) Most importantly, the organizers of the UWF training (primarily Anna Schermerhorn-Collins) had to have a plan for each individual session and an overall plan for the eight weeks of the program.

The UWF Training Program

The UWF training was specifically designed (8) to follow up on the NYSC women's conditioning program. Many women candidates' level of physical conditioning was already known when they attended their first practice session on the course. The first week's sessions were done for familiarization, as a hands-on introduction to the course without keeping track of time or counting the number of repetitions completed. After that, all sessions were organized as task-specific training, and *each event was practiced as it was to be performed in the actual firefighter exam.*

Most of the participants in the UWF program were women. On Wednesdays, the UWF shared the training facility with FireFLAG, the FDNY "fraternal" organization for gay/lesbian/bisexual firefighters. A small group of male candidates from that group shared the course with the women. The course was staffed by UWF members and volunteers.

Each training session began with a sign-in, confirmation that the liability waiver had been signed, assignment of the candidate to a training group (9) and an explanation of the session's training schedule. "Training Tip" sheets were also developed and given to the candidates. Each tip sheet contained a description of an event, the muscle groups needed for that event, exercises to develop those muscle groups, a general performance tip for the event (10) and a performance tip specific to an individual event. (11) Each session ended with approximately 30 minutes for clean-up and feedback.

Beginning with Week 2, events/stations were combined for practice. (The "ceiling breach" event was left as a stand-alone station because it was so time-consuming to complete.) In multi-station events, candidates ran sequentially through all the events without rest, and could continue to practice until it was time for their group to rotate stations. A six-flight stairwell and upper body exercises were inserted into the training sequence in order to augment conditioning. Candidates also obtained additional conditioning by replacing the equipment after events, spotting each other (for example, on the ladder raise) and putting equipment away at the end of the sessions.

At each station, anywhere from one to four instructors would time and monitor the candidates, giving performance suggestions as well as ensuring safety. Some instructors with specific expertise or experience repeatedly volunteered for certain events. Extra instructors could rotate among stations in order to give individual instruction to candidates.

Week 3's sessions consisted of time trials: candidates ran through all the events in a way that copied the actual test as closely as possible. Each event was timed by an instructor, and the candidate's time (or failure to complete the event in the allotted time) was recorded by a proctor (fellow candidate) who accompanied her sister candidate throughout the time trial. Candidates had to make appointments for specific times for a time trial, but were asked to attend both days to help as spotters and proctors. This first time trial was scheduled early in the program so candidates could identify areas where they needed

improvement, to focus their subsequent training. *Two or more time trials are highly recommended* to provide the candidates with performance information and training focus.

In Weeks 4 and 5 (three sessions), candidates continued to practice all eight individual events; some events were linked together in combined stations. Each week, the training was modified to combine more events in sequence. The goal was to combine events over time to introduce candidates gradually to the physical demands of test conditions, and to develop the candidates' stamina and strength while minimizing injuries. In Weeks 5 and 6 (three sessions), two of the less physically demanding events (12) were dropped from the schedule in order to focus on more difficult stations. The hose feed, hose advance, forcible entry and rescue events were combined to give candidates a feel for the physical demands of performing many events in sequence.

Week 7 consisted of another time trial over two sessions. The training concluded in Week 8 with more practice of individual events.

Additional suggestions:

- Try to minimize "down time." Cardiovascular work, pushups, and similar exercises could be added to keep the candidates warmed up, focused and working.
- Have a plan but keep it flexible. Weather (the FDNY course was outdoors) and equipment failures can throw a monkey wrench into the best-laid plans. The equipment *will* break, especially such important equipment as the forcible-entry simulator and the ceiling pulldown – both heavily used and abused, and critical for hands-on training. (These stations are particularly difficult to simulate accurately using other equipment, or to practice at home). Try to have spare parts and a mechanic or a reserve machine on hand.
- When combining the tasks, keep practicing combined tasks in the same order as the test, to help develop mental and muscle memory.
- Do not underestimate the mental stamina and concentration required by these kinds of tests. Encourage the candidates to develop and use visualization as part of their training regimen, and on test day.
- Incorporate all proper equipment and all the elements of the test (e.g., start/stop buttons if used) Use of gloves is mandatory.
- Give candidates copies of their time trial results.

Outcomes, and lessons learned

In August and September 2003, women candidates took the physical abilities portion of the FDNY firefighter exam. Unlike the CPAT, under the FDNY scoring system all eight events are scored separately. A candidate must complete each event under its cut-off time in order to receive a perfect score of 100. Missing the cut-off time for one event results in a score of 87.5. Missing the time for two events is scored at 75; missing three event cut-offs means the candidate fails the exam. With the exception of the current FDNY eligibles list (about to expire), candidates have had to score a perfect 100 on the physical abilities part to have a reasonable chance of being hired. (13)

The results (14) for the 2003 FDNY women candidates were as follows:

Score	≥4 UWF Training Sessions	≤3 UWF Training Sessions
100	19 (27%)	0
87.5	30 (43%)	5 (11%)
75	6 (9%)	5 (11%)
Failed	15 (21%)	37 (79%)

Total passing: 55 (79%)

10 (21%)

As is clear from the chart above, only women who had participated in the UWF training for four or more sessions achieved a perfect score of 100. In addition, a very large number of UWF-trained women missed the perfect 100 by only one event. Of the ten women who achieved passing scores despite having attended fewer than four UWF training sessions, three were participating in task-based training offered by other organizations, four were firefighters in other jurisdictions and two had frequently attended the NYSC training. (15) Clearly, even very fit women cannot just walk in off the street and pass this kind of task-based test, let alone score high enough to have a reasonable chance of being hired.

The UWF believes that two circumstances outside of our control hurt some women candidates' scores on the FDNY physical abilities exam:

1. Because the women were scheduled to take the exam the first week it was given, they were disadvantaged by the City's failure to adequately prepare the exam proctors and to work out kinks in administering the exam. As a result, the women as a group became the guinea pigs for the administration of the exam, and were victims of proctor inexperience and discriminatory attitudes, (16) equipment failure, exam administration failures and other problems, to a much greater degree than the men who took the exam later. The UWF had repeatedly asked the City *not* to schedule the women in the beginning of the test's administration period.

2. Based on experience – including time trial results in this training – the UWF instructors believed the ceiling pull event would be the biggest barrier for women. In fact, more women candidates failed the forcible-entry simulation than we would have predicted. This took the organizers of the UWF training program and the FDNY fitness staff (who had calibrated the forcible entry machine we used in our practice sessions) by surprise. The fitness unit staff believed they were calibrating the practice machine at a *higher* tension than would be used on the actual exam, to make the training more rigorous. When women candidates began emerging from the exam complaining that the forcible-entry simulation on the exam was much harder than they had practiced, the UWF asked that the FDNY fitness staff be allowed to verify the calibration of the testing machine. This request was denied by the City's test administrator. The UWF trainers and FDNY fitness staff members believe the forcible-entry testing machine may not have been properly calibrated. Use and wear affect the calibration of these machines; it is important to re-calibrate them after each candidate in order to guarantee that everyone is tested at the same level and under the same conditions.

While the City's training facility had the advantage of being free of charge, using it imposed some limits on the design and implementation of the UWF training program. We have discussed the possibility of creating our own separate training facility.

On a more positive note, several very constructive and encouraging outcomes emerged from this training program. Women candidates in the UWF training program – the next generation – bonded with current women firefighters (retired, senior and junior active members), providing a pool of mentors for the new women. Some of these candidates and women firefighters continue to keep in contact. A group of women candidates meets with Anna for weekly runs. Some candidates attend UWF social events. Women waiting to be hired and newly-hired women call more senior women for advice about the job.

The instructors and candidates alike found the success of this program demonstrated its importance to the future of women in the FDNY. Many participants left with positive feelings about doing future programs. As the women candidates come on the job, they will remember how the UWF and the dedication of some

of its members helped them succeed. The hope is that they in turn will be encouraged to "give back" help to the next generation of women candidates.

Firefighter Anna Schermerhorn-Collins, FDNY, Ladder 9
Captain Brenda Berkman, FDNY, Engine 239

Footnotes:

1. The packet of handouts from the Leadership Conference workshop – describing the schedule for the FDNY training session in detail as well as candidate training tips – is available from WFS.
2. By "task-based," the authors are referring to training that involved practicing the events from the physical abilities portion of the FDNY Firefighter entrance exam on the same equipment and under as similar conditions as possible as required by the actual exam.
3. It is important to note that, because of the 8-week **pre-training** program for women offered at the New York Sports Club (NYSC), most of the women training in the task-based course at the FDNY Training Academy entered the UWF training at a much higher level of fitness and preparation (including mental preparation) than a "normal" woman candidate walking in off the street. The NYSC participants had also formed a strong team spirit and had high morale. In lieu of a pre-training program, we would recommend that, at a minimum, candidates be *strongly* encouraged to prepare on their own (with specific exercise suggestions) and pass a "pre-test," e.g. be able to complete 5 minutes on the stepmill in a weighted vest, before beginning training on actual test equipment. Pre-training helps minimize injuries and maximize the training benefits of test practice. A future article in this series will provide more information about the NYSC program.
4. All of the FDNY women candidate-training programs have been women-only. Since its formation, the UWF has believed that women-only training provides the best training experience for women – that skill development is improved, distractions are reduced and women's confidence is enhanced. Over the past 22 years, almost every woman who has been hired by the FDNY participated in a women-only training program.
5. Many of the volunteer women firefighter instructors for the NYSC pre-training program also volunteered again for the task-based training.
6. See the Miami 2004 Leadership Conference handout packet, available through WFS.
7. A detailed description of the schedule and each training session is available from WFS.
8. In designing this program, the UWF relied not only on past experience with FDNY training but also on suggestions gathered from other training programs such as Donna Feller's efforts in Phoenix.
9. Candidates were divided up into groups based on ability, at the request of the instructors.
10. For example, "When performing 'power' events, concentrate on pulling your belly button back toward your spine to strengthen your trunk muscles."
11. For example, the stepmill performance tip included "Keep your body upright to conserve energy for endurance and quicker recovery during the rest of the test. Put your hands on the bottom of the weight vest to help with balance and to reduce the risk of grabbing the handrail. When you need to take a deep breath, lift up on the vest to relieve the compression on your chest. When your legs begin to burn, turn your feet slightly in or out to use different muscle groups. Use distraction techniques to occupy your mind – read the machine labels a few times."
12. The two events were the ladder raise and search – candidates could still practice those events during breaks in the ceiling breach event.

13. Another consideration that arises for people who receive lower scores is that they have a greater tendency to turn the job down even if they are reached on the list – so much time passes that they have lost interest in the job or "disappeared" by the time they are reached.

14. Based upon our "research" – interviews with women candidates and informal surveys – the actual results have not yet been issued by the City to the UWF.

15. In comparison, the 4-month program run at John Jay College (48 training sessions of 2-1/2 hours each) with only 2 practice sessions (which were run as time trials) on the actual equipment resulted in 25 percent of the 36 women who attended 25 or more sessions obtaining a perfect score of 100 on the physical abilities portion of the FDNY 2000 Firefighter Exam. More than 55 percent of the 36 regular attendees passed the physical abilities portion and because FDNY used the entire list, anyone who passed the test was eligible to be hired.

16. One woman proctor made remarks to women candidates to the effect that she did not believe they were physically large or strong enough to succeed on the exam – *just as these women candidates were about to take the exam!*

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