

Training and Education for First Response Emergency Personnel: An Examination of Physical Fitness Requirements for the State of California and the Federal Government

LITA MEGAN GRACE Chabot Community College

ABSTRACT

This article is an examination of the first response emergency agencies within the State of California and the Federal Government. The objective was to determine how effective physical fitness and training is for first response emergency personnel. Within this work, a brief outline of the history of each emergency response agency is given. In addition, an in-depth description of physical fitness requirements and protocols for graduation are provided. Through the comparison of each agency on a detailed level, this research was able to discover whether or not the State of California was meeting or exceeding Federal physical fitness standards for the population of first response emergency personnel. Through in-depth comparison, it found that certain agencies lack a national governing doctrine that would aid agencies in their efforts to establish more comprehensive training programs. As a result of the lack of a national governing doctrine, agencies have failed in helping their first responders maintain physical prowess; thereby putting them at great risk.

INTRODUCTION

In 2003, it was found that at least 45% of United States' firefighters on-duty deaths occurred due to some form of cardiovascular heart disease (CHD) (Kales, Soteriades, Christoudias, & Christiani, 2003). After review of the data, it was discovered that the circadian pattern of CHD deaths occurred between noon and midnight and was closely associated to emergency duties (i.e. fire suppression, training, and alarm response), rather than nonemergency. While CHD victims in the study did have a higher prevalence of cardiovascular risk factors than their more active counterparts, the findings strongly supported that CHD fatalities in the first responder community are further precipitated by responding to emergency situations. Kales et al. (2003) suggested improved fitness promotion, medical screening and management to prevent the premature death of first response emergency personnel.

While initial research on the physical fitness and health education of first responders was focused on improving the quality of the instruction, health education, and physical training; it discovered more. The initial definition between training and education for first responders was not clearly defined. Therefore, a more operable definition had to be made concrete. Based on what was implied by preexisting academic work, it was inferred that education was a

knowledgeable foundation committed to long-term memory from which an individual could expand and retreat during times of uncertainty. Education was more broadly applicable in comparison to training; which was concluded to be more job-specific and usually acquired through work experience. For better or for worse, by defining training and education in a concrete manner, it allowed for easier focus of research.

Further in-depth reading uncovered the difficulty in having to divide a first responder's time between physical training and education. It was discovered that due to the restriction of time and demand of service, not all material may be covered equally within the academy. As a result, a first responder's attention is given to learning the tasks and situations that are most likely to be encountered on the job. This limits the time that can be spent educating a first responder in other areas (i.e. health and fitness). Consequently, the physical training component of a first responder's academy is meant to equalize the deficit. However, based on longitudinal studies and observations of first response emergency personnel, allowing the academy to equalize the deficit may—in the long-term—jeopardize first responders. According to Kay, Lund, Taylor and Herbold (2001) the population of first responders (as a group) do not feel comfortable enough with their knowledge of health and fitness to be able to properly train independently after graduation.

METHODOLOGY

With the knowledge that first responders have self-reported feeling uninformed regarding CHD, health, and fitness; further research attempts decided to undergo an in-depth look at all physical fitness requirements and training that a first responder is mandated to meet before graduating from their respective academy. Requirements were broken down at the state level and at the federal level before undergoing a head-to-head comparison. The attempt was to see if the State of California was meeting or exceeding Federal Government standards.

An online database and several government websites were used to acquire the appropriate physical fitness and training standards for the State of California and Federal first response emergency personnel. Due to the breadth of individuals who are incorporated within the population of first response emergency personnel, the research regarding their health and safety is interdisciplinary, ranging in topic from the professional field of criminology, to the science of police administration and law enforcement, firefighting, preventative medicine, and strength and conditioning. Upon completion of the literature review, a general search engine was utilized to determine what the most effective search terms were in locating physical fitness and training standards for first response emergency personnel.

Based on the terminology found within the literature, such terms as 'first responder' and 'first response emergency personnel' were used in conjunction

with ‘physical fitness,’ ‘physical training,’ and ‘physical fitness requirements.’ After repetitive trial and error attempts that resulted in little to no sufficient search return, the topic of first response emergency personnel was categorized into Federal and State of California first response emergency personnel. Additionally, upon receiving feedback, it was found that within each category—Federal and State of California—there needed to be three separate subcategories that incorporated the specific types of first response emergency personnel—law enforcement, firefighters, and emergency medical services (EMS). Upon isolation between Federal and the State of California and the subcategories created therein, search results lead to respective individual government agency websites that oversee each subcategory of first responder. Once an agency website was obtained, a search was conducted within the site—utilizing the terms ‘physical training,’ ‘physical battery test,’ ‘physical exercise test,’ ‘physical exercise battery test’ and ‘physical fitness standards.’

When the physical fitness standards and training policies for both the nation and the state had been obtained, they were compared directly head-to-head in table format. Comparison in table format allowed better capability to view where the policies for the nation and the state did and did not overlap. All standards and policies that are compared are required for a first responder to either enter into or graduate from their respective training academy before they begin their service career. All federal physical requirements were confirmed through multiple searches, as were the requirements for the State of California. Information from the following agencies and their respective agency websites were used: the United States Fire Marshall, the National Fire Protection Association (NFPA), Department of Homeland Security (DHS) Federal Law Enforcement Training Center (FLETC), California Department of Forestry and Fire Protection (CALFIRE), and California Peace Officer Standards and Training (POST). Any additional information that was not found directly through the agency websites or their respective supporting departments was graciously provided by contacts within the agencies.

Summarization of findings: A brief history of the major contributing agencies—Standards, Protocols, And Codes. After thoroughly researching the preacademy physical fitness standards for the State of California and Federal first response emergency personnel, a head-to-head comparison of all physical fitness requirements was conducted. A brief history of the agency and documentation used in this policy analysis is provided, followed by a conclusive discussion as to the implications of the areas in which the policies were found to be lacking. The Federal standards are presented first, followed by the State of California.

National Fire Protection Association (NFPA)—Code NFPA 1583. The National Fire Protection Association (NFPA) was established in 1896 to reduce the dangers of fire and other hazards that threaten daily civilian life (NFPA, 2011). The NFPA has the authority to advocate and enact safety codes, as well as conduct research and provide education and training to both Emergency Medical Services (EMS)

and firefighters. As the world's foremost leading advocate and authority of fire prevention and safety, the NFPA is responsible for publishing and disseminating more than 300 consensus codes and standards, one of which is known as NFPA 1583; a code that establishes the national standards on health-related fitness programs for firefighters (NFPA, 2011). The first version of the NFPA 1583 was published in 1996 (NFPA, 2000). This document was initially a part of the NFPA 1500 series, Standard on Fire Department Occupational Safety and Health Program. However NFPA 1583 was briefly retracted in June 1997, pending further review (NFPA, 2000). At the time of the initial retraction, statistics continued to longitudinally show that at least half of all occupational fire fighters were suffering from some form of CHD, while others had suffered heart attacks. Furthermore, it was found that at least half of the percentage hospitalized due to their conditions passed away (NFPA, 2000).

The NFPA code 1583 was developed as a standard "to provide the minimum requirements for a health-related fitness program for fire department members who are involved in rescue, fire suppression, emergency medical services, hazardous materials operations, special operations, and related activities" (NFPA, 2000, Section 1.2.1, p. 2). While the standard states that it "is not intended to establish physical performance criteria," it provides guidelines as to what constitutes a health-related fitness program (NFPA, 2000, Section 1.4.0, p. 3). NFPA 1583 also encourages outside collaboration with appropriate agencies to ensure the proper employment and utilization of the position of health and fitness coordinator. Furthermore, NFPA 1583 makes it clear that the health and fitness coordinator of any fire department may be employed so long as they are properly certified (NFPA, 2000). This inclusion to NFPA 1583 allows any fire department (at any level) the unique opportunity to collaborate with outside subject matter experts for greater benefit; thereby potentially providing cost-effective physical education and fitness to their firefighters through the use of community facilities and educators.

California Regional Fire Academy (CRFA). The California Fire and Rescue Training Authority (CFRTA) are charged with overseeing and operating the California Regional Fire Academy (CRFA). However, they are governed under the umbrella of the NFPA and must act in accordance to its protocols. CRFTA is known as a Joint Powers Authority (JPA), in which three partner agencies work together in cooperation to provide training to include: California Emergency Management Agency, Fire and Rescue Branch, Sacramento Fire Department; and Sacramento Metropolitan District (CRFA, 2010). It is the goal of the CFRTA to provide regional and statewide training from the beginning levels of a career in the fire service into the continuing education of Chief Officer (CRFA, 2010). The first class to graduate from CRFA was class 07-01 who graduated on March 2, 2008 with a class of only thirty-five cadets (CRFA, 2010). Since that time, the number of recruits that have reported to the academy has steadily increased and the CRFA is now accepting applications from the United States, Canada, and the United Kingdom (CRFA, 2010).

Before a candidate may participate in the physical component of the academy, an initial physical agility test must be performed in order to determine the candidates' physical condition and ability to safely perform all necessary academy activities [Table 1] (CFRTA, 2010a). Operating under NFPA 1583, a thorough physical examination by a personal physician is required before an individual can participate at the academy. Even after a candidate has consulted with a medical professional, further testing on behalf of the academy may still occur. Such additional testing includes: a body composition assessment, 1.5 Mile run, push-ups, sit-ups, bench press, 400-meter run, and modified sit and reach. While there are no age limits for applicants to the CRFA (and it is understood each individual will perform differently), the CRFA is clear to stress the dangers of the job of fire suppression, regardless of age.

Table 1

Physical Testing Components of the California Regional Fire Academy (CRFA)

Ladder Lift	Tower Climb*
Ladder Extension	Hose Hoist*
Ventilation	Tower Descend*
Search Maze—Hose Pull & Rescue Drag	
Hose Roll Carry	

*Each of these components is performed together as three separate subsections to one overall test. Source: CFRTA (2010b)

Federal Law Enforcement Training Center (FLETC). Prior to 1970, before the establishment of the Federal Law Enforcement Training Center (FLETC), the quality of training for federal agents greatly varied. Recognizing the need to standardize training amongst federal law enforcement personnel, Congress appropriated funds for the development of a master training facility (FLETC, n.d.-a). One of the earliest existing divisions within FLETC is the Physical Techniques Division (PTD), established in 1975 as an instructional component within FLETC (FLETC, n.d.-d). PTD is responsible for teaching all law enforcement personnel the proper techniques for arresting procedures, physical defense tactics (including fighting tactics), intermediate weapons (baton, oleoresin capicum, etc.), crowd control, basic medical services (i.e. Cardiopulmonary Resuscitation–CPR, Automated External Defibrillator–AED), and physical conditioning (FLETC, n.d.-d). The PTD has a program called the Physical Fitness Coordinator Training Program; established in December of 1985 at the request of the U.S. Department of Agriculture, Office of the Inspector General. It was recognized early on by the Office of the Inspector General that there was a need to provide physical fitness instructors for all federal agencies with a firm grasp on the requirements of their jobs and the ability to safely conduct and oversee physical fitness (FLETC, n.d.-b).

In January 1992, FLETC conducted a Curriculum Review Conference in order to establish the complete comprehensiveness of the Law Enforcement Fitness Coordinator Training Program (LEFCTP) (FLETC, n.d.-b). Instructors that participate within LEFCTP are either current or former federal, state, and local law enforcement personnel or civilian subject matter experts in the fields of physical fitness and wellness (FLETC, n.d.-b). The department staffs both permanent and part-time instructors who have been well trained. Through LEFCTP, the Federal Government secures that it is never without a constant stream of active or retired agents to act as instructors.

FLETC's standards for its agents and its fitness coordinators are very high. Before being allowed to participate in the PTD or attend FLETC, an individual must pass all Physical Exercise Performance Requirements (PEPR), in addition to those that may have already been a required prerequisite of their respective agency [Table 2]. The prerequisite for all students that wish to attend FLETC is a passing score of 40% or more on the Physical Efficiency Battery (PEB). For those who wish to participate in LEFCTP, a student must pass all five items of the PEB with a score of 40% or greater, meet all Physical Exercise Performance Requirements (PEPR) for the program, and possess a valid CPR certification (FLETC, n.d.-b). FLETC warns of its rigorous training program [LEFCTP]; that also includes written comprehensive examinations and the presentation of a twenty-minute block of instruction from the student to their colleagues regarding the subject matter of Functional Fitness for Law Enforcement Officers. Attendance is mandatory for the program and neither absence nor early personal dismissal is acceptable.

Table 2

Federal Law Enforcement Physical Exercise Performance Requirements (PEPR)

Obstacle Course	Body Composition
Solid Fence Climb	1.5 Mile Run/Walk
500-yard Run Body Drag	Illinois Agility Run
Flexibility Sit & Reach	Maximum Bench Press

Source: FLETC (n.d.-b,-c)

California Commission on Peace Officer Standards and Training (POST). In 1959 the California State Legislature established the Commission on Peace Officer Standards and Training (POST) (Capitelli, n.d.). The purpose of POST was to set minimum selection and training standards for California law enforcement. An Executive Director, appointed by the Commission, oversees all operations of POST (Capitelli, n.d.). Funding for training is provided by the Peace Officer's Training Fund (POTF). All money within the fund is supplied from penalty assessment on criminal and traffic fines, thereby making POST funded primarily by persons who violate the laws that the peace officers are trained to enforce.

There are more than 600 agencies that are eligible to receive the Commission’s services and benefits; such benefits include job-related assessment tools, research into improved officer selection standards, management counseling services, development of new training courses, and leadership programs (Capitelli, n.d.). POST requires a Work Sample Test Battery (WSTB), which is a series of job-related physical tasks that a law enforcement candidate must perform and pass with a minimum score before becoming a sworn law enforcement officer (POST, 1996). The job-related tasks that are included within the WSTB are developed and designed to mimic real situations that are reported by sworn officers as having been encountered on the job during their services (POST, 1996) [Table 3].

Table 3
POST Required Work Sample Test Battery (WSTB) Exercises

99-yard obstacle course	Solid Fence Climb
Body Drag	500-yard run
Chain Link Fence	

Source: Post (1996)

All tests within the WSTB are timed (POST, 1996). An officer has the opportunity to perform each test twice, utilizing the fastest time for their score (POST, 1996). Each time is converted into a T-score for each separate test of the WSTB and then weighted. All of the scores are then combined into a total to provide the officer’s overall score. The minimum passing score is 384 points (POST, 1996). All potential law enforcement officers must take and pass the POST WSTB after completion of the academy physical conditioning program but before graduation. POST does not mandate a physical abilities test prior to the hiring of an officer, only at the time of an officer’s graduation from the academy (POST, 1996).

DISCUSSION AND CONCLUSION

After closely examining the preacademy physical fitness standards for the Federal Government and the State of California, it can be determined that at the local level, the State of California is failing to provide for its law enforcement first responders. In addition, the greater topic of stress management and sufficient lifetime health has still been neglected. When comparing Federal standards for fire and law enforcement first response emergency personnel, the standards for both populations were very comprehensive. Fire first responders are governed by a document known as the NFPA that provides strict national guidelines to be followed by every state when developing a physical fitness program. In similar fashion, Federal law enforcement officers are required to pass a PEB, as well as any additional testing required by their respective agencies (USSS, 2010; FLETC, n.d.-b). The greatest difference between fire and law enforcement first responders is that the procedures and protocols utilized by FLETC have no national governing doctrine or authority over the states; whereas the NCFPA provides a

national guideline with minimum standards for all state and locally developed programs.

For firefighting first response emergency personnel, all of the requirements for the CRFA are preacademy requirements [Table 4] (CFRTA, 2010b). Before participating in the academy a cadet must first demonstrate that they can successfully and safely complete the tasks. The same holds true for FLETC; all potential federal law enforcement candidates must pass the PEPR before their participation [Table 4]. In addition, after training they must complete a final proficiency test on the United States Battery Proficiency (USBP) Confidence Course and pass additional quarterly testing throughout their career.

In comparison, the State of California only requires that their law enforcement personnel pass the WSTB once upon graduation (POST, 2011). For California first response emergency personnel there are no required physical fitness tests after graduation from their respective academies; therefore, there is nothing to hold them accountable and provide reason for them to maintain their physical prowess. While some departments at the state level may provide incentives to those first responders who continue to meet and exceed physical fitness standards (POST, 2011), the overall lack of regular future assessments is likely to cause unmotivation and unhealthy habits that develop later within a first responder’s service career.

Table 4
Summary of First Response Academy & Physical Fitness Requirements

California Regional Fire Academy (CRFA)	California Law Enforcement—WSTB (POST)	Federal Law Enforcement PEPR for FLETC
Tower Climb	Chain Link Fence	Flexibility Sit & Reach
Hose Hoist	Obstacle Course	Body Composition
Tower Descend	Solid Fence Climb	1.5 Mile Run/Walk
Ladder Lift	500-yard Run Body Drag	Illinois Agility Run
Rescue Drag		Maximum Bench Press
Ventilation		
Hose Roll Carry		
Ladder Extension		
Search Maze-Hose Pull		

Source: CFRTA (2010b), FLETC (n.d.-b,-c), POST (1996)

California and Federal requirements—Mandated physical testing and the implementation of outside subject matter experts. For Federal law enforcement first responders there is usually an age maximum—thirty-five years—at which an individual wanting to become an agent must have begun the process of being

trained and applying to the academy (USSS, 2010). Once an individual becomes an agent, as long as they continue to pass the PEB tests with the minimum scores allowable for their age group, they may continue to serve (FLETC, n.d.-c). The age requirement ensures that all Federal first responders enter into the career within their peak physical performance age, while regular physical testing ensures they maintain their peak.

In the State of California there are no age requirements for first response emergency personnel (CFRTA, 2010a). Consequently, there are also no additional testing requirements once a first responder is in service. This is one of the largest differences between Federal first response emergency personnel and those within the State of California. Due to the number of first responders who suffer from some form of CHD or other heart-related health risks, it is clear that more focus needs to be paid attention to the health and physical fitness education of first response emergency personnel. It is suggested that routine physical fitness examinations and physical fitness testing be mandated by the State of California in order to ensure that first response emergency personnel within the state maintain either at or near the level of physical fitness that was acquired upon their leave from the academy.

The greater relevancy of this research is the finding that after having relied on the academy to provide physical conditioning and structured physical fitness, many first responders may be unaware of how to properly train independently. Therefore, it is recommended that first responders at the state and local level look to the community in which they serve in order to receive the necessary aid. Additional professionals in the field have expressed this idea (Hilyer, Weaver, Gibbs, Hunter, & Spruiell, 1999; Lombardo, 2002; Moulson-Litchfield & Freedson, 1986; Winter, Seals, Martin & Russel, 2010), having proposed contracting out to professionals for the training and physical fitness maintenance of first response emergency personnel. Their supporting argument is that training with subject matter experts at the state and local level would ensure the maximum benefit for first responders; providing immediate and proper feedback regarding good form and continuing functionality. The utilization of local universities and institutions to provide subject matter experts and training facilities would be a cost effective way to ensure the health, safety, training, and education of first response emergency personnel. Involvement of the local subject matter experts would also ensure the support of the community behind the first responders, providing them a cooperative support network; decreasing the severity of emergencies to which they would respond.

The need for first response agencies to maintain updated information. As early as 1980, the health benefits of vigorous exercise and its capacity to fight CHD was discussed (see Morris, Pollard, Everitt & Chave, 1980). As new advances in medical science progressed and it was recognized that the stress of the job of a first responder could physically be detrimental to their health, many of the now governing bodies for the standards and protocol of first responders

answered back with implementations of physical fitness programs and preacademy physical battery tests. While the initial concern that prompted the implementation was the health and fitness of servicemen and women within the state, the physical challenges that were created by each respective first response agency was viewed by some to be sexist; favoring male cadets by far (Lonsway, 2003). With the development of the WSTB some agencies (such as POST) were able to standardize the test and make it more job-related, thereby attempting to eradicate any favoritism and solely focus on the tasks necessary to perform the job (POST, 1996). However, debate continues as to the complete eradication of favoritism within these tests.

While obtaining the core research for this analysis it was difficult to determine if the information that was publicly provided was the most recent and up to date. Due to the utilization of the Internet, most agencies are better able to provide the public with the general knowledge they will need to be successful in the academy. However, certain agencies are not as forthcoming as others for providing electronic sources. Additionally, those sources that are provided are out of date by at least sixteen years (see POST, 1996 citation). Considering that the general consensus for information to be considered out of date in academia is any literature or findings that are roughly ten years or older, this places added pressure on those agencies that have not kept up to date. In today's fast becoming electronic world, the capacity to cite the lack of funding or resources to update information is becoming unacceptable.

It is currently known that a majority of first responders will most likely experience some form of cardiac trouble over the duration of their service career (Kales et al., 2003). However there is not enough literature available on the methods that are being taken to improve current data collection methods. The improvement on such methods could provide insight into the specific areas where first responders struggle and need help to maintain their physicality. One such area into which future research might provide insight are the physical rigors of balancing a service career and the ability to stay physically fit enough for that service. Insight into such areas of a first responder's career might help supervisors, policy makers, and politicians when creating budgets and enacting new protocols.

Considering that firefighters have NFPA guidelines that nationally mandate minimum standards for all state developed physical fitness programs, it is highly suggested that similar guidelines be developed for their counterparts (i.e., law enforcement first response emergency personnel who are not in direct service to the Federal Government and operate at the state and local levels). Based on the information obtained through the POST module it is concluded that while time is spent presenting and learning about lifetime health and fitness, there is not enough time spent to ensure reinforcement and retention of the information. As a whole, while the first response emergency personnel within the State of California remain highly competitive, they remain under par to those at the federal level.

Furthermore, those at the local level still require greater improvement. It is the ultimate suggestion of this article that a future endeavor to update all training and educational supplements for the State of California be undertaken in order to ensure the continuing betterment of the State of California's first response emergency personnel. Additionally, it is suggested that some form of reoccurring physical fitness tests (such as those developed for FLETC) be designed and implemented for the State of California and enacted quarterly on a reoccurring basis.

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APPENDIX

List of Abbreviations

CHD	Cardiovascular Heart Disease
EMS	Emergency Medical Services
NFPA	National Fire Protection Association
DHS	Department of Homeland Security
FLETC	Federal Law Enforcement Training Center
CALFIRE	California Department of Forestry and Fire Protection
POST	California Peace Officer Standards and Training
NFPA	National Fire Protection Association
CRFA	California Regional Fire Academy
CFRTA	California Fire and Rescue Training Authority
PTD	Physical Techniques Division
LEFCTP	Law Enforcement Fitness Coordinator Training Program
PEPR	Physical Exercise Performance Requirements
PEB	Physical Efficiency Battery
WSTB	Work Sample Test Battery