

LAW ENFORCEMENT MANAGEMENT INSTITUTE

REQUIRING THE CONTINUED PHYSICAL FITNESS  
OF POLICE OFFICERS

A LEARNING CONTRACT  
SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR  
MODULE II

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## INTRODUCTION

This student is thinking of an occupation in which the employees must routinely sprint short distances, and occasionally run considerably longer routes. The employee must scale obstacles, pursue a running opponent, engage in physical combat, both armed and unarmed, and subdue his often larger and stronger adversary. In addition the employees in this occupation must emerge the victor, their fans expect that, and their very lives depends upon it. What occupation is this student thinking of: football, wrestling, some future death-sport akin to "The Running Man?" No, described to you is the partial job description of an American police officer.

This student's intent, through this paper, is to provide an argument for requiring the continued physical fitness of police officers. The once young, athletic recruits we tested for above average fitness, an occupational requirement defended successfully in the courts, have in many agencies been allowed to back-slide into poor fitness and even poorer overall health status. I contend that what were once occupational requirements, remain bona fide occupational qualifications throughout a professional's career.

Professional police officers must and should maintain physical fitness as a benefit for themselves and their agencies.

## **BENEFITS**

### To The Officer

Physical well-being is a benefit for any person, in any occupation. Professions that require a higher than average amount of physical exertion actually create the need for increased physical fitness. The degree to which an employee in these professions is either fit or unfit physically can affect his or her overall performance.

In the case of police officers, the state of the employee's health not only contributes to his performance, but could very well save his life or the life of another. By job requirements alone a police officer must pit his strength, agility, and overall fitness against those who would violate the law and further, resist the attempts of the officer to bring these violators to justice. Every police officer should be cognizant of the fact that as he grows older every day, the average age of the criminal violator remains the same, fourteen (14) to twenty-four (24) years of age.<sup>1</sup> Should the aging officer remain in good physical condition for his age bracket, he will constantly find himself facing a younger and proportionately stronger and faster opponent. The officer who suffers from poor health has practically assured his inability to face the demands of his profession in the future.

More serious than the threat others present to the officer suffering from poor physical fitness is the threat poor physical fitness and overall health status pose for the officer himself. Cases of disease and disability far outstrip the instances of physical assaults that lead to death or disability.

Although officers may enter their profession in sound health, they certainly can not be expected to be significantly better-off than the population as a whole where seventy (70) to eighty (80) percent of all diseases can be attributed to poor nutrition, a sedentary lifestyle of little physical activity, and the effects of smoking.<sup>2</sup>

Contributing to the police officer's higher than average incident of disease are the very conditions in which he works. Most officers perform their tour of duty in a "portable office," the patrol-car, unable to escape the stress and accessibility to the public. This is where the officer eats his fast-food meal, promoting high cholesterol and stomach disorders. Cramped inside his vehicle, the officer's musculoskeletal system begins to atrophy from lack of use. His blood circulation also is impeded, thus enhancing his probability of hypertension. Add to all this the contained cigarette smoke of the smoking officer and you increase the damage to his cardiovascular system ten (10) times over the employee who smokes at his desk in an open

office.<sup>3</sup>

Submitted as evidence that the occupation itself contributes to an officer's poor health is the fact that police recruits enter the profession with above average health as compared to the general population. However after only five (5) years of service these officers begin to lose "the edge" they enjoyed earlier. Support for this hypothesis can be found in the results of a study of police officers physical fitness, conducted by the Aerobic Research Institute in Dallas, Texas. This study was commissioned by the International Association of Chiefs of Police (IACP).

This study examined the overall health and physical fitness of five hundred and twenty (520) male police officers between the ages of twenty-one (21) and fifty-five (55). The study included the measurements of resting and active heart rates, blood pressure, electrocardiograms, blood chemistry, percentage body fat, aerobic capacity; and various tests for strength, flexibility, and agility. Collection and evaluation of the data found that at age twenty-eight (28) the police officers had already lost their "edge." From the below average status once enjoyed in the area of risk for coronary heart disease and the above average physical fitness, the officer's condition was now just average with the normal population of the same age. Found of officers twenty-nine (29) and older, was a higher than average risk

for heart disease and a lower than average rating in physical fitness as compared to men in the same age group.<sup>4</sup>

Allow me one last "scare tactic" to surface the physical threats confronting the police officer. (see table 1)

**TABLE 1**  
**MORTALITY FROM SPECIFIC CAUSES AMONG POLICE OFFICERS,**  
**CITY OF BUFFALO, 1950-1979**

<u>Underlying Cause of Death</u>	<u>Observed Deaths</u>
All Causes of Death	661
Malignant Neoplasms	150
Infective and Parasitic Disease	2
Benign Neoplasms	2
Nutritional Diseases	14
Diseases of Nervous System	3
Diseases of Circulatory System	336
Arteriosclerotic Heart Disease	252
Vascular Lesions	39
Respiratory Diseases	24
Diseases of the Digestive System	25
Cirrhosis of Liver	12
Diseases of Urinary System	7
All External Causes	37
All Accidents	19
Suicides	11

Of all the observed police officer deaths, heart and circulatory ailments accounted for five hundred and eighty-eight (588). All other causes accounted for three hundred and forty-two (342) deaths of which only sixty-seven (67) were the results of accidents, suicides, and external causes.<sup>5</sup> Last time said . . . a police officer's own health

is a far greater threat than any opponent he will meet in the course of performing his duties.

Now for some good news . . . the officer who exercises as little as three (3) times a week, for twenty (20) minutes a session, can greatly improve his physical fitness and overall health. Utilizing a program of aerobic exercise the officer:

1. Improves and strengthens the cardiovascular system.
2. Improves muscular tone, strength, and endurance.
3. Improves muscular flexibility.
4. Helps maintain ideal body weight.
5. Improves posture and physical appearance.
6. Decreases the risk for chronic disease and illness.
7. Relieves tension and helps in coping with stress.
8. Increases levels of energy and job productivity.
9. Slows down the aging process.
10. Improves self-image and aids in fighting depression.
11. Motivates toward positive lifestyle changes (better nutrition, smoking cessation, alcohol and drug abuse control).
12. Decreases recovery time following physical exertion.
13. Speeds up recovery following injury and/or disease.
14. Regulates and improves overall body functions.
15. Eases the process of childbearing and childbirth.
16. Improves the quality of life.<sup>6</sup>



The officer that exercises will feel better both physically and psychologically. Fitness controls excessive stress and promotes emotional stability. The fit officer increases his or her mental alertness and problem-solving ability.<sup>7</sup> Commenting on the psychological benefits of pursuing physical fitness, Dr. Kenneth Cooper, of the Aerobic Center, Dallas, Texas stated,

When asked what motivates patients to continue to exercise, 90% respond . . . "the quality of life improves when I exercise regularly." The patient who is physically fit is less depressed, improves self-image, and have a more positive attitude towards life. Recent studies have shown it may not be psychological, it may be bio-chemical. The body during intense physical activity pours out beta-endochiroce morphine, that lessen pain and produce a feeling of "high."<sup>8</sup>

The psychological benefits, coupled with the physical rewards of maintained fitness, should encourage the participation of all police officers.

#### To The Agency

The agency that promotes a physical fitness program benefits from the improved health of their employees. Consider that nearly half of all early retirements and disability leaves are due to back trouble, permanent injuries suffered in the line of duty, and heart attacks.<sup>9</sup> Ranked by greatest occurrence, heart attacks are the leading cause followed by back injuries.<sup>10</sup> Ironically, the two largest factors responsible for retirement costs and workman's compensation litigation could be reduced by the encouragement

of physical fitness.

Perhaps the greatest benefit for the police agency that implements a required maintenance program for physical fitness is a monetary one. Three (3) areas of expenditures have been curtailed by employer promoted health programs.

First, are the reductions of absenteeism in the workplace. Dr. Robert Bertera, health manager for the Du Pont Company of Wilmington, Delaware, conducted a study on the role that a health maintenance program played in reducing absenteeism among participating employees. Over the course of two (2) years a 14.0 percent decline in disability days occurred compared with a 5.8 percent decline in a control group.<sup>11</sup> (see table 2)

**TABLE 2**  
**MEAN DISABILITY DAYS LOST BY EMPLOYEES**

<u>Year</u>	<u>Disability Days Lost</u>	
	<u>Program Sites</u>	<u>Non-Program Sites</u>
1985 (year 1)	5.1	5.3
1986 (year 2)	4.9	5.1

The employer that consistently has all it's employees at the workplace conducts business more efficiently and at lower costs.

Secondly, the investments a employer makes in a health maintenance program can reduce the expenditures paid in health care insurance costs. In a study conducted by the Blue Cross-Blue Shield company (an insurance provider) employers over a five (5) year period averaged a return of \$2.05 for every dollar invested in their health maintenance programs.<sup>12</sup> (see table 3)

**TABLE 3**  
**PROGRAM COSTS AND DISABILITY SAVINGS**  
**BY LEVEL AND YEAR**

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Program Analysis	All Program Sites (41)
Year 1 (1985)	
Costs	\$1,436,965
Savings	\$1,596,877
Return on Investment	\$1.11
Year 2 (1986)	
Costs	\$ 714,312
Savings	\$1,463,524
Return on Investment	\$2.05

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Third, are the successful defenses against disability suits filed by employees. Workers have taken their employers to court seeking benefits for ailments and disabilities they claim were a product of the work environment. An example of

an agency that was unable to defend such a claim was the Los Angeles Police Department. The courts awarded a officer 50 percent of his salary for life after determining that his job drove him to eat excessively, to the tune of 300 pounds, just as it drives others to drink.<sup>13</sup>

The police agency should be encouraged to look past the money saved by requiring maintained physical fitness, however, and on to a consideration of the increased effectiveness that healthy officers can contribute to. Physically fit employees, as mentioned earlier, are more productive, more aware mentally, and display greater problem solving ability. In a series of interviews conducted by the Dallas Times Herald on successful business people Boone Pickens, general partner of Mesa Limited Partnership and a respected Texas entrepreneur, replied to the request for a success tip,

I'm a firm believer in the benefits of physical fitness, and our experience with Mesa's employee fitness program has confirmed my belief. Physically fit employees are more alert, more productive, and more creative. They exhibit more team spirit and feel less stress than employees who don't exercise.<sup>14</sup>

Another benefit in effectiveness for the agency is the very ability to perform its primary mission, law enforcement and the apprehension of violators. A study conducted by the Texas Department of Corrections, Huntsville, Texas, revealed that state and federal prisoners far exceed the strength and endurance of police officers in the same age catagories.<sup>15</sup> Considering that criminals are the natural opponents of

police officers, agencies should encourage fitness, for if nothing else, to not be "out-gunned" by the competition.

Also worth mentioning to agencies considering required physical fitness programming is the ease with which successful programs can be developed. Repeated examples of successful programs are available to researchers, but none were brought to a more personal level than the program instituted by the San Rafael Police Department of California. In a three month program of aerobic activity, four officers lost a total of 170 pounds. These officers interviewed on tape appeared healthier and appreciative of the efforts the department had made to improve their health, and the efficiency of the agency.<sup>16</sup>

Even the employer that doesn't genuinely care for the employees happiness and well-being, can see the benefit that a physically fit employee has on the organization.

#### **BONA FIDE OCCUPATIONAL QUALIFICATION**

When initially considered for police officers, agencies subject recruits to intense physical tests of strength, speed and agility. The right to do so has been successfully

defended in the courts due to the agencies' ability to prove the bona fide occupational qualification. The Law Dictionary, defines bona fide occupational qualification (BFOQ), as a statutory provision that permits discriminatory practices in employment if a person's religion, sex, or national origin status is reasonably necessary to the normal operation of that particular business.<sup>17</sup> This has come to include health requirements necessary to police agencies. Case law set in cases such as Massachusetts v. Murgia, 1976, and Geary v. Retirement Board of Alleghany County, 1967, have established a precedent for physical fitness as a BFOQ.<sup>18</sup>

In the Murgia decision, the Court determined that the duties of police officers are physically taxing and that a relationship existed between advancing age and decreasing physical capabilities. The forced retirement of an officer at fifty (50) years of age was upheld. The Geary decision held that an earlier retirement for officers was justified, even though other city employees were required to work till a later age. The Pennsylvania court stated that the policemen's greater need for physical fitness and his greater exposure to physical hazards justified the difference in treatment.<sup>19</sup>

Notwithstanding the court rulings, sufficient evidence exists to prove the need for an officer's physical fitness.

A study of three (3) police agencies; the San Francisco Police Department, the Los Angeles Police Department, and the Los Angeles County Sheriffs Office revealed some interesting information. The study showed that an officer must climb a wall or fence of four (4) feet or more once every six to eight shifts; he must run at least two (2) blocks once every ten shifts; and he must wrestle with a suspect once every thirty (30) shifts. The researcher asked that the student understand that conditions vary among different agencies.<sup>20</sup>

Additionally, a study conducted by Michael Devine, of Sam Houston State University, in partial fulfillment for his Doctoral degree, found that 1,116 police officers from different agencies had common experiences in physical exertion in their duties. Analysis revealed that nineteen (19) of twenty-seven (27) physical tasks (74%) were performed by more than fifty percent (50%) of the officers in the last twelve (12) months. While performing these tasks eighty-eight percent (88%) of the officers responded that they expended approximately the same amount of physical exertion. In Mr. Devine's study he stated;

This study demonstrates the need for physical fitness standards in a police agency. Physical fitness standards help assure that patrol officers are qualified to meet the physical challenges of patrol duty. Perhaps physical fitness will play a key role in elevating the professional nature of policing by enhancing the officer's ability to perform.<sup>21</sup>

Studies of this nature should adequately defend police agencies in their pursuit of physical fitness as a bona fide

occupational qualification.

#### **SUGGESTED MINIMUM STANDARDS**

One definition of a physically fit police officer is one who possesses an efficient cardiovascular-respiratory system (good aerobic capacity), moderate to low levels of body fat, and adequate muscular strength, endurance, and flexibility.<sup>22</sup> With these traits an officer would be able to carry out daily tasks, both professionally and socially without fatigue and injury.

Based on this criteria, there are three (3) basic components to assess physical fitness: cardiorespiratory fitness, body composition, and musculoskeletal fitness. For a police agency to select fitness standards for their organization, I suggest that these three components be measured. During this student's research many examples of health guidelines were found. I offer the following charts (see tables 4 thru 6) that were compiled by Dr. Kenneth Cooper in his research for improving police physical fitness.<sup>23</sup>

Each chart gives a range of measure in six (6) areas of physical fitness: a 1.5 mile run, percentage of body fat, flexibility, pushups, situps, and an agility run. Note that in the profile chart for officers ages 40 thru 52 the agility run measure is not listed. This is due to the recommendation



by Dr. Cooper that officers at this age not participate in this event as a high degree of injuries occur within this age group, on this particular exercise.

**TABLE 4**  
**POLICE FITNESS CHART AGES 20-29 YEARS**

Fitness category	1.5 Mile Run	Body Fat	Flexibility	Push-ups	Sit-ups	Agility Run
Excellent	Below 10:15	Below 6.7	Above 25.9	Above 43	Above 51	Below 16.1
Good	10:16 12:00	6.8 17.3	25.8 19.7	42 28	50 40	16.2 17.7
Average	12:01 14:30	17.4 22.6	19.6 16.6	27 20	39 35	17.8 18.6
Below Avg.	14:31 16:30	22.7 33.2	16.5 10.5	19 5	34 24	18.7 20.2

**TABLE 5**  
**POLICE FITNESS CHART AGES 30-39 YEARS**

Fitness category	1.5 Mile Run	Body Fat	Flexibility	Push-ups	Sit-ups	Agility Run
Excellent	Below 11:00	Below 13.8	Above 26.4	Above 37	Above 45	Below 16.2
Good	11:01	13.9	26.3	36	44	16.3
	13:00	21.5	19.2	23	34	18.1
Average	13:01	21.6	19.1	22	33	18.2
	15:30	25.4	15.6	17	29	19.1
Below Avg.	15:31	25.5	15.5	16	28	19.2
	17:30	33.0	8.4	3	18	21.0

**TABLE 6**  
**POLICE FITNESS CHART AGES 40-52 YEARS**

Fitness category	1.5 Mile Run	Body Fat	Flexibility	Push-ups	Sit-ups	Agility Run
Excellent	Below 11:30	Below 16.8	Above 23.3	Above 28	Above 39	N.A.
Good	11:31	16.9	23.2	27	38	N.A.
	14:00	22.9	16.3	18	26	
Average	14:01	23.0	16.2	17	25	N.A.
	16:30	26.0	12.8	13	19	
Below Avg.	16:31	26.1	12.7	12	18	N.A.
	18:30	32.2	5.7	2	6	

These charts are subjective and administrators should consider standards and physical measures that are appropriate for their officers, and their geography, environment, and surroundings. For example, if the agency's jurisdiction includes bodies of water, the standards might include a swimming requirement.

In defining standards and measurements to use I suggest that the agency allow the police officers a great amount of input in the design and implementation of the program. With the natural resistance to change expected, allowing the officers to assist in the process will promote their acceptance later.

#### **IMPLEMENTING PHYSICAL FITNESS PROGRAMS**

Once the agency has realized the benefits of requiring continued physical fitness for their police officers, I believe the agency will seek additional information, and explore the feasibility of implementing a physical fitness program.

One of the first things to consider is the standards to which the officers will be held and measured against. Many examples of fitness standards are available from recognized experts in the field. For the purposes of this report, this

student offers the standards developed by Dr. Kenneth Cooper, the "father of aerobics," as both agree that aerobic exercise will reap the most effect toward improving one's fitness. (These standards and techniques toward their measurement, were offered in the previous chapter titled "Suggested Minimum Standards.")

Aerobic exercise, in whatever form the officer wishes to pursue, should be encouraged in the department's program. There are three (3) factors that contribute to an effective aerobic exercise program; the frequency of participation, the duration per session, and the intensity of the activity.

Studies have shown that to be effective the aerobic activity must take place three (3) or four (4) times a week. A three or four times a week frequency was found to reduce body fat more than a twice a week program, yet was just as effective as a five (5) or more days a week program.

To reduce both fat and body weight, a duration of at least thirty (30) minutes per session is necessary. This was found to burn the stores of fat in the body. With regard to intensity, research indicates that the total energy cost, or calories burned in jogging, cycling, and swimming produce the most favorable workload as they involve moving major muscle groups to burn calories and increase cardio-respiratory efficiency.<sup>24</sup> Information of this nature is necessary to

assist officers and should be related to the knowledge-base of the agency or to data developed by a consultant.

During this student's research he studied the programs used by different agencies, and found them to fall into one of three (3) categories for employee compliance;

1. Voluntary
2. Revolutionary
3. Evolutionary

#### Voluntary Approach

In the voluntary program the department provides, through purchase, lease or other arrangements, the equipment to pursue improved physical fitness. The department then encourages the officers to keep in shape through inter-departmental memos. While this was the most widely used approach, it was found to promote the least compliance.

#### Revolutionary Approach

In the revolutionary approach to required physical fitness, the department institutes a policy stating that officers will meet specific fitness standards within a certain time period. No assistance is offered by the agency in regards to equipment, and no structured program designed. Officers that fail to meet the requirements are subjected to

negative disciplinary action.

### Evolutionary Approach

In the evolutionary method, the department provides equipment, and an initial assessment of the officer's physical fitness. Standards are defined, and the officers are encouraged and assisted in meeting the requirements. This encouragement is in the form of additional benefits to the employee who voluntarily complies with the set standards. After a sufficient period of time to allow all the officers to comply, the department notifies the officers well in advance of a specific date when the program becomes one of mandatory compliance. This student believes this method would be the most effective and allows the most adaptation to the change for the officers.

### **A MODEL PROGRAM FOR THE GRAND PRAIRIE POLICE DEPARTMENT**

Having reviewed the material collected for this report and based upon the belief that requiring the continued physical fitness of police officers holds benefits for both the officer and agency, I recommend the following program for the Grand Prairie Police Department.

### Information Dissemination

Information and data as to why a physical fitness program is necessary and beneficial to the officers and the agency would be shared with those affected. Through in-service meetings the officers would receive information and have their input sought to implement a physical fitness program within the department. Based on the officers input and preferences, allowing that they don't conflict with the intent of the program, the following steps toward implementation would reflect the agency's concern for employee acceptance.

### Medical Screening

Each officer would be medically examined to detect possible health risks to physical exercise. As the Grand Prairie Police Department requires annual check-ups, this screening could take place January of 1991, and at no additional cost to the agency.

At the medical screening stage of the program the designating of a Fitness Director would take place. While training is available for police personnel in this area, I would recommend the hiring of a specialist, someone with a background in physical education or physical therapy. Working with the doctor and the officer, the director would

discuss the officer's current state of health and conduct a physical evaluation of the officer.

### Fitness Evaluation

Based on the Fitness Director's recommendations each officer found to be medically able would be assessed in measures to gauge their current physical fitness. For the purposes of this report I will use the techniques discussed earlier in the chapter, "Suggested Minimum Standards." Officers would participate in the following exercises, and based on performance in their age category be assessed; excellent, good, average, and below average.

1. 1.5 mile run
2. Percentage of body fat
3. Flexibility
4. Pushups
5. Situps
6. Agility run

### Counseling

Each officer would meet with the Fitness Director to discuss his or her current fitness. Findings from the medical examination conducted earlier would also be shared. Officers assessed in the categories of average and below average would be given "exercise prescriptions" to achieve a



higher rating at their next evaluation (after six (6) months for officers in these last two categories.)

#### Incentives / Sanctions

For the first year and a half of the program the compliance would be voluntary, with the understanding and written into the policy, that at the end of that period, June of 1992, officers would be held to the "good" standards for their age brackets.

Incentives would be offered from the voluntary stage and carried into the mandatory compliance stage. Officers could receive up to twenty-four (24) hours of compensatory time off for higher than average ratings in the fitness standards. For each evaluation exercise the officers would receive two (2) hours of time off for each "good" rating, and four (4) hours for each "excellent" rating. (i.e., an officer rating "good" in all six exercises would receive twelve (12) hours of compensatory time; an officer with "excellent" in all six exercises, twenty-four (24) hours.)

Sanctions would be as follows during the voluntary compliance stage. There will be no awarding of compensatory time off for officers with "average" ratings. A documented statement will appear on the next job performance evaluation, as to their poor physical fitness, for each officer rating

"below average." Once mandatory compliance is enacted (June, 1992) an officer rating "below average" in two or more exercises will have six (6) months to improve in this area or face negative disciplinary action, progressive in nature if necessary, to the point of termination.

#### Equity In Implementation

One of the variables that would affect the successful implementation of this program would be the degree to which the officers believed the policy was fair and equitable. Toward this goal, an understanding that fair does not necessarily imply equally strict sanctions to all officers is needed. I would recommend that older officers, age forty-five (45) or greater, be "grandfathered," if you will, from the negative sanctions, while still enjoying the incentive rewards for above average physical fitness. I also recommend that for younger officers who fail to make "average" ratings, but show improvement toward better health, that the agency be lenient with discipline, considering each case and officer on his own merits. Consider the amount of effort the officer puts toward improving his fitness and whatever gains he has made, regardless how minor.

## CONCLUSIONS

As important as good health is to anyone, and as related in this report, lifesaving to police officers who face greater than normal health and physical dangers, I believe all police agencies should implement physical fitness programs. The costs are low compared to expenses in insurance claims and absenteeism. Policing can take another step toward claiming professionalism, as it would require the continued occupational standards of the entrance police officer. Finally, and probably most important to the agency, is the fact that their efforts in improving the fitness of their police officers can be very effective.

This student, as a result of his research for this report, has decided to begin a program of aerobic exercise. This has never been an easy activity for this weight-lifter, but is now obviously necessary to this police officer's continued health and professional effectiveness. While not empirical in design, this will be the research that holds the most validity for this student. I'll get back to the Institute later, and let you know how it's going. Perhaps this will be the topic of a later and related learning contract for the Law Enforcement Management Institute.

## REFERENCE LIST

1. Samuel Walker, Sense and Nonsense About Crime, (Pacific Grove, CA.: Brooks/Cole Publishing, 1989), 59.
2. MTI Video, Lifesavers: Fitness and Nutrition, (Northbrook, ILL.: Simon and Shuster, 1988).
3. Bob Healy, "The Aerobic Cop," The Police Chief, (Chicago: November, 1981), 68.
4. Ibid.
5. John Violant, "Disease Risk and Mortality Among Police Officers: New Evidence and Contributing Factors," Journal of Police Science and Administration, Vol; 14, #1, (Gaithersberg, MD.: March, 1986), 18.
6. Linda King, lecture to Law Enforcement Management Institute, Module II, "Benefits of Physical Fitness and Wellness," (Denton, TX.: September 7, 1990).
7. IACP, Physical Fitness - Importance for Police Officers, Training Key #265, (Gaithersberg, MD.: IACP., 1978), 4.
8. MTI Video, Lifesavers.
9. Michael Charles, "Police Training: A Contemporary Approach," Journal of Police Science and Administration, Vol; 11, #3, (Gaithersberg, MD.: December, 1983), 253.
10. Kevin Krajick, "Out of Shape on the Beat," Police Magazine, (New York: May, 1979), 26.
11. Robert Bertera, "The Effects of Workplace Health Promotion on Absenteeism and Employment Costs in a Large Industrial Population," American Journal of Public Health, (Washington, DC.: September, 1990), 1103.
12. Ibid., 1104.
13. Krajick, "Out of Shape on the Beat," 26.
14. Robert Deitz, "Success Tips," interview series, Dallas Times Herald, (Dallas: October 15, 1990), C1.
15. Krajick, "Out of Shape on the Beat," 25.
16. MTI Video, Lifesavers.
17. Steven Gifis, Law Dictionary, (New York: Barron's Educational Series, 1984), 50.

18. Clifford Price et al., Physical Fitness Programs for Law Enforcement Officers: A Manual for Police Administrators, (Washington, DC.: U.S. Department of Justice, 1976), 208-209.
19. Ibid., 211.
20. Krajick, "Out of Shape on the Beat," 26.
21. Michael Devine, An Analysis of the Physical Demands Encompassed in Policing: A New York Study, dissertation for Doctoral, (Sam Houston State University, TX.: 1988), abstract.
22. Price et al., Physical Fitness Programs for Law Enforcement Officers, forward.
23. Ibid., 287-292.
24. Ibid., 30.