Massachusetts State Police Documents

The Massachusetts State Police wrote and formatted the documents contained in this compilation.

In November of 2004, the Massachusetts Public Employee Retirement Administration Commission (PERAC) assembled the documents into one booklet for the convenience of physicians conducting PERAC Restoration to Service Examinations.

In July of 2012, PERAC updated this document in accordance with recommendations from the Massachusetts State Police

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MASSCHUSETTS STATE POLICE

HEALTH AND FITNESS GUIDELINE MARCH 2011

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INTRODUCTION

Physical fitness preparedness will be paramount to your success in completing a training regimen at the Massachusetts State Police Academy. Statistics have shown that the majority of people that fail to successfully complete the training program fail as a result of not being properly prepared to meet the physical demands of training.

In order to increase your chances of successfully completing the training program at the Massachusetts State Police Academy, it is essential to participate in a proper fitness routine before entering the State Police Academy.

It is recommended that you develop and participate in a personal fitness program that meets your individual needs. However, it is important that you adhere to sound guidelines and safe procedures when planning and participating in any fitness program. In preparation of attending the State Police Academy, and to optimize your safety during an exercise training program, some initial screening for important medical and health factors is necessary. The Physical Activity Readiness Questionnaire (PAR-Q) is recommended as a minimal standard for screening prior to beginning an exercise program. The PAR-Q is designed to identify the small number of adults for whom physical activity might be inappropriate and should have medical clearance prior to participating in an exercise program (See Appendix E). If after reading the following information you are still not sure how to properly train for increased physical activity, seek out the advice of a trained and certified fitness specialist.

This guide will provide you with current and accepted health and fitness information on various topics of physical fitness. These range from aerobic and strength conditioning to equipment and nutrition planning. Use the information to assist you in developing a physical fitness program in order to better prepare yourself for the training challenges and demands you will encounter at the Massachusetts State Police Academy.

PHYSICAL FITNESS

According to the President's Council on Physical Fitness and Sports, physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue and with ample energy to engage in leisure time pursuits and to meet the above average physical stresses encountered in emergency situations.

Physical fitness may also be defined as an organic condition of the body which enables an individual to use his/her body in activities requiring strength, muscular endurance, cardio respiratory fitness, flexibility, coordination, agility, power, balance, speed and accuracy – without undue experience of fatigue or exhaustion.

STRETCHING & FLEXIBILITY (Appendix D)

Flexibility is defined as: the range or extent of motion possible within a given joint. Applying the term flexibility to muscles means that if your muscles are very elastic and pliable, stretching easily, then maximum joint flexibility will be available to you.

There are three basic types of stretching:

1. **Ballistic stretching** should be avoided. This involves stretching to your limit and performing repetitive, bouncing movements, usually quickly. This type of stretching may do more harm than good, increasing the risk of tiny muscle tears, soreness, and injury.

2. **Static stretching** is gradual stretching through a muscle's full range of motion until you feel resistance or the beginning of discomfort. You hold the maximum position for 10 to 30 seconds, relax, and then repeat this several times.

3. **Proprioceptive neuromuscular facilitation stretching** is more complicated. One type is called contract-relax stretching. Here you first contract a muscle against a resistance; usually provided by another person, and then relax into a static extension of the muscle.

Prior to and after each exercise session, all recruits will participate in a full body-stretching regimen. Stretching before and after physical exercise will help reduce the risk of injuries, enhance athletic performance and increase strength and aerobic power. Before stretching begins, each recruit will perform a short aerobic exercise (e.g. 60 side straddle hops). This will allow freshly oxygenated blood to engorge the muscle, thus increasing individual performance. Proper stretching will

increase flexibility. Increased flexibility will aid in the reduction of athletic injuries.

Some basic rules to follow for proper stretching are:

- Always warm-up by doing light aerobic movements for 5-8 minutes before engaging in a stretching routine
- Stretch before and after your actual workout
- Hold each stretch for 30-40 seconds
- Stretch for 10 to 15 minutes
- Stretch to the point of mild resistance
- Relax as you hold a stretch
- Do not hold your breath
- Do not lock out joints
- Stretching should be smooth and controlled – no bouncing
- Stop the stretch at the first sign of pain.

Participating in a proper stretching routine before and after your workout provides the following fitness advantages:

- Reduces injuries due to the tearing of muscle tissue
- Increases range of motion
- Increases muscular strength
- Promotes muscle relaxation
- Promotes faster recovery from soreness due to strenuous activity
- Promotes better circulation
- Makes strenuous activities like running, cycling, and swimming easier

AEROBIC EXERCISE (Appendix A)

Aerobic exercise, also known as Cardiorespiratory and Cardiovascular exercise, is exercise that requires the use of large amounts of oxygen and use of large muscle groups in a continuous and rhythmic manner for a sustained period of time. Aerobic exercise provides a person with numerous benefits, including but not limited to:

- Decreased blood pressure
- Decreased body fat and tryglyceride levels
- Decreased risk of developing cardiovascular disease
- Increased bone density

Before engaging in any cardiovascular exercise, you should understand the four basic components to a cardiovascular program

- Mode
- Frequency
- Duration
- Intensity

FINDING YOUR TARGET HEART RATE

1) Find Resting Heart Rate (RHR) first thing in the morning.
2) 220 – age = MHR.
3) MHR – RHR = HR Reserve.
4) HRR x %training zone = IL.
5) IL + RHR = THR or Training Zone.

RHR=Resting Heart Rate
MHR=Maximum Heart Rate
HRR=Heart Rate Reserve
IL=Intensity Level
THR=Target Heart Rate
% Training zone refers the level you wish to workout.

50 % to 60 % is usually used for beginners and 65% to 80% used for athletes.

Mode is the kind or type of activity you decide to participate in. Primary aerobic activities include brisk walking, running, swimming, and cross country skiing. Secondary aerobic activities could include stair climbing, racquetball and circuit course type weight training.

Frequency refers to how often you participate in a type of exercise. Under ideal conditions, aerobic exercise two days a week will maintain a person's current fitness level. However, in order to improve your aerobic conditioning level, 3-5 days of aerobic exercise is usually needed.

Duration refers to the amount of time you continuously perform an exercise. It is important to remember that in order for an exercise to be aerobic, it must involve continuous motion of the large muscles of the body. How long you exercise will depend on your individual physical conditioning goal. Normally 15 to 60 minutes of continuous activity is acceptable. Recent research has also shown the exercise duration could be quantified over a period of one day. Simply stated, aerobic fitness levels can improve with as little as 10 minutes of exercise duration, as long as the exercise is of an

aerobic mode and performed several times: Such as 3 to 4 times a day over a 5 day period.

Intensity refers to the difficulty of the exercise. With regards to aerobic conditioning, this does not mean harder, more intense levels are better. Moderate intensity levels are almost always more appropriate and enjoyable than high intensity workouts. Individuals that are just starting a fitness routine, suffer from or are recovering from an injury or illness, or are significantly overweight, should first consult with trained medical and fitness personnel before participating in even a low intensity aerobic exercise program.

To receive the maximum benefits from aerobic exercise, the intensity level should be maintained within your aerobic training zone. In general, individuals just starting an aerobic program, people that are at poor or very poor levels of fitness or people that are significantly overweight should calculate their training zone between 50-60% of their maximum heart rate (MHR). Individuals that are of average fitness levels should calculate an intensity level of between 65-80% MHR. Calculating your training zone can be done using three methods. One of the best and most precise methods of monitoring your training zone is by monitoring your actual heart rate. This can be done manually by taking your pulse or by use of an electronic heart rate monitor. Other more simplified, but less accurate methods are: The Borg Scale or rating of perceived exertion scale and the so-called "talk test": where you should be able to comfortably talk or take on a conversation while performing aerobic exercise.

6	
7	**Very, Very Light**
8	
9	**Very Light**
10	
11	**Fairly Light**
12	
13	**Somewhat Hard**
14	
15	**Hard**
16	
17	**Very Hard**
18	
19	**Very, Very Hard**
20	

Borg Scale of perceived exertion. Exercise between 11 & 15 are considered aerobic.

It is always important to gradually increase your duration, intensity and frequency over a period of time. In addition, the more aerobic training you participate in, the more important it is to cross train or change the mode of the exercise.

A warm-up stretching routine and cool-down stretching routine before and after aerobic exercise is also important to increase the benefits of aerobic exercise and decrease the chances of exercise related injuries.

RESISTANCE TRAINING (See Appendix B)

There are two types of muscular fitness needed for daily living and for physical performance:

- Muscular strength: This is the muscle's ability to generate maximum force in one contraction. (e.g. bench, 1 rep).
- Muscular endurance: This is the muscle's capacity to make repeated sub-maximal contractions without much fatigue. (e.g. pushups, reps).

The principles of muscular strength and endurance resistance training are:

- Overload - To increase strength or endurance, a higher workload than provided by daily activity must be imposed on the muscle.
- Progression - Successively higher workloads must be placed on the muscle to continue improvement.
- Specificity - Training effects are specific to the muscle, contraction joint angle, equipment, and demand placed on the muscle.
- Balance - All muscles should be equally worked.
- Regularity - The muscle must work against resistance 2 to 3 times a week consistently.
- Recovery - The same muscle should not be worked to exhaustion on 2 consecutive days to allow for its recovery.

When planning a weight-training program follow these steps:

- Develop a full body routine
- Perform the routine 2-3 times per week

- Start the program using lighter weight and gradually increase the resistance as strength improves
- Work large muscle groups before smaller muscle groups
- Alternate push with pull exercises
- Do multi-joint movements, such as bench press, before single joint movements, such as curls
- Work complimentary body segments during the same workout, such as chest and triceps, or back and biceps
- Seek trained professional advice

OVER-TRAINING

Over-training involves placing an excessive amount of stress on the body to a point where the body can no longer adapt and adjust, ultimately leading to a breakdown of the body. One of the most common causes of overtraining is doing too much too soon. It is important to remember that an increase in physical fitness comes from dedication over a long period of time. Training more than is necessary or desirable, engaging in exercise to an excessive degree, or engaging in an intensity level over your ability is neither wise, nor beneficial.

Some signs of overtraining are:

- Loss of appetite
- Sudden dramatic loss in weight
- Cold or flu like symptoms
- Difficulty sleeping
- Changes in mood, depression or irritability
- Constant sore, aching or injured joints and muscles

It is best to design a training program that allows the body to recover. A few tips to follow that will help you prevent overtraining problems are:

- Never have two hard days in a row. A hard day would be one that places the body in the upper levels of your training zone (75-85% MHR or 1RM)
- Don't increase your intensity level by more then 10% a week
- Allow your body the time to adapt to your training routine
- Rest and maintain a regular sleep schedule

DETERMINE YOUR BODY COMPOSITION

One of the greatest misconceptions in regards to a diet and exercise program is that weight loss indicates a successful program. Since weight loss is not always an indication of loss of body fat, body composition should be used in its place. Body composition has proven to be a more accurate and reliable method of determining overall fitness levels, in addition to determining an individual's risk to many types of health-related diseases. The three most common ways to determine body composition are:

Body Fat Percent
Body Mass Index or BMI
Waist to Hip Ratio

Body Fat Percent:

Probably one of the most well known methods of determining body composition is body fat percent. Body fat percent is determined by various methods. The most common of methods is by using a device called a "body fat caliper." By measuring folds of skin with subcutaneous fat at various locations of the body, an average percentage of body fat can be calculated. Other methods such as Hydrostatic Weighing, Ultrasound and Bioelectric Impedance are also available. However, these methods are often times cumbersome and expensive and usually achieve similar results as the fat caliper method.

With all body fat calculation methods, it is important to remember that a margin of error exists, and even the most accurate results are estimated calculations and dependent on numerous factors. As a result, body fat percent should be used more for the purpose of result comparison over a period of time to determine the effectiveness of your fitness program, rather than a single measurement to determine average body fat percent.

Maximum Desirable Body Fat Levels (± 2%)			
Male		Female	
Age	% Body Fat	Age	% Body Fat
≤ 24	15%	≤ 20	17%
25-27	17%	20-22	18%
28-29	18%	23-25	19%
30-32	19%	26-29	20%
33-39	20%	> 30	22%
> 40	22%		

(Durnin et al 1985, Katch & McArdle 1973, Durnin & Rahaman 1967, Royal College of Physicians 1983.

Body Mass Index (BMI)

Since BMI is a measurement of an individual's "mass," rather than body fat or weight alone, it is considered a more reliable predicator to the development of chronic diseases, such as high blood pressure, heart disease and diabetes. BMI is calculated by obtaining a ratio between your weight and height. A BMI ≥30 dramatically increases an individual's risk of developing one of the above health disorders.

To calculate your BMI use the following equation:

$$BMI = \frac{\text{Weight}_{lbs} \div 2.2}{[(\text{Height}_{inches}) \times (.0254)]^2}$$

BMI Norms*	
Emaciated	Less than 15.0
Severely underweight	15.0 to 16.9
Underweight	17.0 to 18.9
Normal weight	19.0 to 24.9
Overweight	25.0 to 29.9
Obese	30 to 39.9
Severely obese	40.0 or more

* Information taken from: Whitney E,S Rolfes, Understanding Nutrition; 6th ed. NY: West Publishing Co.,1993 p255

Waist to Hip Ratio:

Location of where body fat accumulates is also an important predictor of various types of disease. Regardless if you are overweight or not, increased fat distribution viscerally or primarily around the waist is an independent risk factor for diseases such as diabetes and stroke.

A ratio consisting of measurements from the narrowest point of the waist and the widest point of the hips determines your risk.

Male at risk above .8*
Female at risk above .9*

* Pentz, Jane, Nutrition for professionals, 5th ed. MA: LMA Publishing, 1999 p99

TRAINING LOGS (Appendix C)

Training logs are used to ensure improvement in cardiorespiratory (aerobic), muscular strength and/or muscular endurance conditioning. This is accomplished by helping to:

- Remember and record the details of each workout session
- Monitor the frequency of workout sessions
- Receive adequate rest and recovery between workouts
- Keep track of progress

After an aerobic workout, always record the frequency, intensity (exercise heart rate), and duration of each workout session. During weight training, always record the amount of weight, sets, and reps for each workout session.

Included in this guide book is an example of a training log record sheet for cardiorespiratory, strength and/or muscular endurance training.

NUTRITION

Hydration and fluid replacement:

Water is your most important nutrient. Although it contains no calories, water is essential for life. Water makes up 60% of your total body weight and 70% of your muscles. It serves as a transport mechanism for nutrients, gases, and waste products. It is also involved in the heat regulating functions of the body. Without water, your body cannot work at top levels and you may harm yourself. If you are not properly hydrated during a workout, you may encounter cramping and dehydration. Proper hydration is essential for top performance.

Thirst is an unreliable indicator to hydrate. If you feel thirsty, your body has already approached a level of dehydration. The feeling of thirst should be considered a warning indicating increased body heat and approaching heat illness. At the point of feeling thirsty, you should stop any physical activity and immediately replace body fluids, preferably with cool clear water.

CARDIAC DRIFT & HYDRATION

Despite the accuracy of electronic heart rate monitors, a phenomenon known as cardiac drift can throw a wrench into the works. Cardiac drift is the tendency of the heart to avoid a constant rate of functioning. As a result of cardiac drift the heart rate may rise slowly throughout your workout even if your pace remains constant. This increase can amount to as much as 20 beats per minute. Apparently, staying well hydrated can minimize the effects of cardiac drift.

Dr. Janet D'Arcy

The following guidelines help maintain proper hydration throughout your working day.

- Weigh in without clothes before and after exercise. For each pound of body weight lost during your workout, drink two cups of fluid.
- Drink 2.5 cups of water two hours before your workout.
- Drink at least one cup of water every 15-20 minutes during your workout.
- Do not restrict fluids before, during or after your exercise regimen.
- Avoid beverages containing caffeine and alcohol, because they increase urine production and add to dehydration.

Nutrition - food choices - menu planning:

The American diet contains too much fat (particularly saturated fat), too much refined sugar and too many calories. History shows that general recommendations in proper nutrition can curb nutrition related diseases, including heart disease, stroke and obesity. More fruits, vegetables, and whole grains should be consumed, accompanying a decrease in refined sugars and flours, egg yolks and other foods high in fat and cholesterol. In addition, eating meats, fish and poultry that contain less fat and cholesterol is encouraged.

The six essential nutrients are: carbohydrates, proteins, fats, vitamins, minerals and water. The proper "athletic training" diet should include:

60% **Carbohydrates** @ 4 calories per gram
15% **Protein** @ 4 calories per gram
25% **Fat** @ 9 calories per gram

(Based on 2,000 calories per day.)

Please note that caloric needs are based on age, sex and an individual's Basal Metabolic Rate.

Three key components to proper nutrition are variety, moderation, and nutrient dense food choices. Individuals should practice menu planning and avoid fast food meals of convenience. If you invest time in planning ahead for your day by packing a lunch or having fruits and vegetables on hand, you avoid the urge to grab the first thing that you see when you are hungry. Eating several small meals throughout the day instead of two or three large meals allows you to maintain constant energy levels and avoid the bogged down feeling so commonly experienced after ingesting large high fat and sugar dense meals.

Breakfast is the most important meal of the day and provides the jump-start your body needs to begin the day. Choices should include foods high in complex carbohydrates and fiber and low in fats and refined sugar. Increase fluid intake to hydrate the body and avoid everyday consumption of coffee or other caffeine containing beverages that tend to cause dehydration.

Supplement healthy snack choices for the traditional high fat and sugar containing ones. Better snack choices may include the following:

Traditional	Healthy Alternative
Donut	Small bagels
Chips	Crackers
Pizza slice	Cheese (low fat)
Candy bar	Fig or Granola bars (low fat)
Soda	Water, Fruit or Sports drinks
Cookies	Graham crackers or Fresh fruit
Other healthy alternatives:	
yogurt (low fat)	breakfast bars
fresh vegetables	whole grain cereal
pretzels	

SUPPLEMENTS

The consumption of performance-enhancing supplements, protein powders, amino acids, plant extracts, herbal supplements and other non-food substances is perhaps the trendiest area of sports nutrition. Athletes and laypersons believe that these supplements will give them a competitive edge when, in fact, they may be harmful to both health and performance.

The types of supplements used by athletes are continuously changing. There is a wide range of substances used. Substances are often marketed without any supportive scientific data to indicate the potential benefits or possible harmful side effects. Food and performance supplements are NOT regulated by the Federal Food and Drug Administration as many people believe. In fact, there is no independent or federally sanctioned agency that regulates the purity and safety of food supplements. Therefore, the Massachusetts State Police Academy does not recommend, endorse or encourage the use of any performance enhancing supplements.

Drug use:

The use of anabolic steroids and other performance-enhancing drugs such as testosterone, growth hormone, insulin and erythropoietin are not only very dangerous, but illegal. Any positive performance results from taking these drugs are usually short lived and are more than often accompanied by serious side effects and can even have fatal results.

Do not take any drug, in any form, which is not recommended or prescribed by a licensed medical practitioner. Be aware of people that offer you any substance that they claim will enhance your sports performance. Seek the advice of a physician or other licensed medical practitioner if you have questions.

OVERUSE INJURIES

Overuse/Inflammatory conditions may develop slowly and become chronic or may come and go before settling in. Signs and symptoms of overuse injury may include one or several of the following:

Aching	Tingling
Pain	Cracking
Diminished Coordination	Tenderness
Decreased Joint Movement	Swelling
Decreased Strength	Numbness

It is important to be aware of your body and what it is telling you. Continuing a training program while injured will not speed or increase your fitness results and could possibly lead to a long term disability.

Physical training is intrinsically linked with injury prevention. We recognize that a lack of physical fitness is one of the primary causes of injury. Muscular imbalance, improper timing because of poor neuromuscular coordination, a lack of ligamentous, tendonous and muscle strength, lack of flexibility and inadequate muscle bulk are among the major causes of injury directly attributable to insufficient or improper physical conditioning.

PREVENTING OVERUSE INJURIES:

The Six "S" Approach to analyzing the cause of overuse injuries from running:

Shoes: Footwear is a runner's most important piece of equipment. Footwear is designed to protect the bottom of the foot and provide flexibility and/or stability to the foot. Shock absorption and energy return are both key functions of footwear.

Go to a reputable shoe store with competent staff. Go to different stores and try on several pairs. Take your old shoes with you. They will tell an experienced sales person a lot about the way you wear your shoes. Take a pair of socks that you think you might wear with your shoes to get the proper fit. Remember that sneakers do not "break-in". For length, there should be a space the width of your thumbnail between the end of the toe box and the tip of your longest toe on your longest foot. Make sure you can freely wiggle your toes. The heel should feel snug, but comfortable. Get your feet measured every time you buy new shoes. Aging and injury can change your size.

Running shoes should be replaced every 300-400 miles if you run on hard surfaces and every 500 miles if you run on soft surfaces. Investing in the proper footwear can cost upwards of $75.00 – $90.00. Be cautious of purchasing bargain footwear. This footwear is often inferior in design and may not be appropriate for athletic training use.

Surface: Choose blacktop roads, without defects, whenever possible. If you run on a track be sure to change direction approximately every four laps. Run on even soft surfaces whenever possible to enhance shock absorption and to avoid injury.

Speed: Too many people try doing too much, too soon. Avoid increasing running mileage more than 10% a week. Use progression with speed and distance of training.

Structure: Your predisposed body composition. Address limitations and accommodate for leg length discrepancy, flat feet, bunions, etc.

Strength: Muscle balance over muscle imbalance. Stronger muscles provide more power for running up inclines. Equally important, they offer better shock absorption, hence injury protection when running downhill.

Stretch: Increased flexibility. If stretching is done properly, it prepares the muscle for imposed demands and reduces injury.

Reducing pain and injury:

Immediate care of overuse injuries is kept simple by using the **R.I.C.E.** principle. **R.I.C.E.** is an acronym for **R**est, **I**ce, **C**ompression and **E**levation.

These techniques reduce further trauma to the injured area, decrease blood flow and keeps swelling of effected area to a minimum.

**NSAIDs (non-steroidal anti-inflammatory drugs) such as Advil, Motrin or Acetaminophen may also aid in reducing signs and symptoms.*

** It is recommended that you obtain the advice of a physician before taking any type of medication.*

Please remember: this information is not intended as a substitute for medical treatment. Consult a physician or health care professional if the injury does not resolve.

CLOSING

Understanding the personal benefits and barriers of exercise and developing the skills and resources for regular physical activity are important in maintaining a planned approach to exercise. What motivates one person to become and remain physically active will differ from another. **The Health & Fitness staff at the Massachusetts State Police Academy wants you to succeed.** It is hoped that by providing you with the previous information you will have the basics to initiate or modify your current physical fitness training program. The physical challenges you will encounter at the State Police Academy are great. The more you prepare yourself for this challenge, the greater chance you will have to successfully complete the recruit training program at the Massachusetts State Police Academy.

On behalf of the Health and Fitness staff, we wish you the best of health and fitness.

DISCLAIMER

This preparation guide is intended to provide current and accurate physical fitness information that can be utilized in preparation for a recruit physical fitness program. It is offered as an information aid only and is not intended to render individual, professional, or medical advice. Any discomfort, injuries or questions regarding the capability of a person to perform any of the tests, programs, or activities set forth in this guide should be referred to the individual's medical practitioner.

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APPENDIX A

Cardiovascular Prescription

Recommended Cardiovascular Training Program Using Heart Rate.

Factor	Low Fitness level Very Poor & Poor	Average Fitness Level Fair & Good	High Fitness Level Excellent & Superior
Frequency (Days/Week)	3	3 or 4	5
Duration (Minutes at THR)	10-30	15-45	30-60
Intensity (% HR Reserve)	50-60	60-70	70-85
Mode* (Type of Exercise)	Walk, Swim, Cycle	Walk, Jog, Run, Swim, Cycle	Jog, Run, Swim, Cycle

* Other activities such as cross country skiing, roller-blading, rowing and stair climbing may also be used.

Over a sixteen (16) week period, gradual increases in duration and intensity should be made. Increases should take place only after completion of a full week or two of continuous training. No more than a 10% increase is recommended at a time. Remember that aerobic benefits are measured by monitoring heart rates and not necessarily duration and intensity alone. Even though you may increase duration, frequency and intensity, your "target heart rate" should always stay in your designated training zone during your training.

APPENDIX B

Weight Training Exercises

MUSCLE GROUPS	NO WEIGHTS	FREE WEIGHTS	RESISTANCE MACHINES
BACK (UPPER) Lattissimus Dorsi	Pull-up	Dumbbell row	Lat pull-down
LEGS (TOP FRONT)	Squats	Squat	Leg extension
CHEST Pectoralis	Push-ups	Bench press	Seated chest press
LEGS (TOP BACK) Hamstrings	Lunge	Lunges	Leg curl
SHOULDERS Deltoids	Dip	Seated press	Shoulder press
WAIST-STOMACH Abdominal	Crunches	Crunches w/weights	Ab machine
ARMS (UPPER FRONT) Biceps	Chin-up	Bicep curl	Curl machine
CALVES Gastrocnemius	Heel raise	Heel raise w/weights	Calf raise machine
ARMS (UPPER BACK) Triceps	Dips	Tricep extension	Tricep press-down

Sample resistance training program

EXERCISE	REPS / SETS	DAYS	MUSCLE GROUP
1. Leg Extension	8-12 / 2-3	MWF	Lower Leg (thigh)
2. Leg Curl	8-12 / 2-3	MWF	Lower Leg (hamstring)
3. Calf / Toe Raise	8-12 / 2-3	MWF	Lower Leg (calf)
4. Pullover / Bent Rows	8-12 / 2-3	MWF	Back
5. Bench Press	8-12 / 2-3	MWF	Chest
6. Dumbbell Overhead Press	8-12 / 2-3	MWF	Upper Back / Shoulders
7. Shoulder Shrugs	8-12 / 2-3	MWF	Shoulders
8. Triceps Extension	8-12 / 2-3	MWF	Upper Arm (back)
9. Biceps Curl	8-12 / 2-3	MWF	Upper Arm (front)
10. Wrist Curls	8-12 / 2-3	MWF	Lower Arm (forearms)
11. Ab Crunch (50% max)	3 sets	MWF	Abdominal / Stomach
1. Push Ups (50% max)	3 sets	T / Th	Back / Chest / Arm
2. Pull Ups (50% max	3 sets	T / Th	Back / Arms
3. Abdominal Crunch (50% max)	3 sets	T / Th	Abdominal / Stomach

***NOTE:** 50% max refers to the maximum amount of repetitions you can perform in one minute.

Remember goal-setting guidelines for both dynamic and absolute strength is about eight (8) weeks in order to see a significant one-category change. A category change is a 10% increase in either maximum repetitions or your maximum amount of weight you can lift in one repetition. Over a 16 week period a two-category increase is expected.

APPENDIX C
CARDIOVASCULAR TRAINING LOG

Wk.	Date: Exercise Info	Mon. / /	Tues. / /	Wed. / /	Thur. / /	Fri. / /	Sat. / /	Sun. / /
____	Activity							
	Duration							
	Level/Dist.							
	Exer. HR							
	Weight							
____	Activity							
	Duration							
	Level/Dist.							
	Exer. HR							
	Weight							
____	Activity							
	Duration							
	Level/Dist.							
	Exer. HR							
	Weight							
____	Activity							
	Duration							
	Level/Dist.							
	Exer. HR							
	Weight							
____	Activity							
	Duration							
	Level/Dist.							
	Exer. HR							
	Weight							

*** Refer to Appendix A for recommended modes of exercise.**

Name (print): ______________________________

Signature: ________________________________

Date: ____________________

APPENDIX C continued
STRENGTH TRAINING LOG

Wk.	Exercise	Date	Mon. / /	Tues. / /	Wed. / /	Thur. / /	Fri. / /	Sat. / /	Sun. / /
___		Weight							
		Sets							
		Reps							
___		Weight							
		Sets							
		Reps							
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		Sets							
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		Reps							
___		Weight							
		Sets							
		Reps							

*** Refer to Appendix B for recommended modes of exercise.**

Name (print): ______________________________

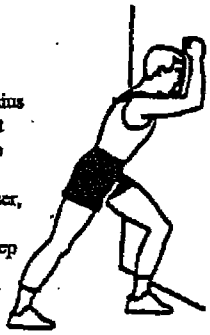
Signature: ______________________________

Date: ____________________

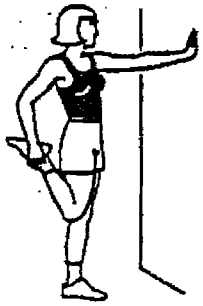
APPENDIX D

The Basic stretching session

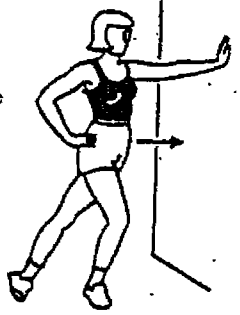
1. NECK STRETCH. Tilt head to right, keeping shoulders down. Place right hand on left side of head. Gently pull head toward right shoulder for 10 to 30 seconds. Switch sides and repeat.



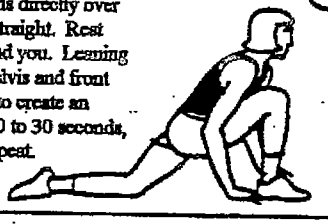
2. CALF STRETCH (for gastrocnemius and soleus muscles). Stand 2 to 3 feet from a wall, with feet perpendicular to wall and lean against it for 10 to 30 seconds. Keep feet parallel to each other, make sure rear heel stays on floor. Switch legs and repeat. Variation: keep rear knee slightly bent during stretch.



3. THIGH STRETCH (for quadriceps). Placing left hand against wall for balance, grab right ankle with right hand and pull heel gently toward buttocks for 10 to 30 seconds. Do not arch back. Switch sides and repeat.



4. OUTER THIGH STRETCH (for iliotibial band). Placing left hand against wall for balance, place left foot behind and beyond right foot. Bend left ankle and lean into wall. Hold for 10 to 30 seconds, then switch and repeat.

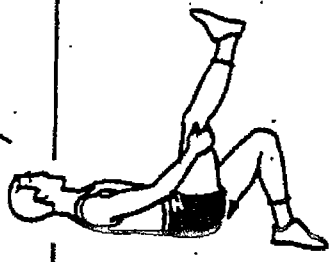


5. HIP STRETCH (for hip flexor). From a kneeling position, bring right foot forward until knee is directly over ankle; keep right foot straight. Rest left knee on floor behind you. Leaning into front knee, lower pelvis and front of left hip toward floor to create an easy stretch. Hold for 10 to 30 seconds, then switch legs and repeat.

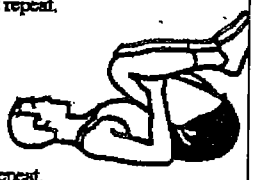
6. BUTTERFLY STRETCH (for adductor muscles in groin). Sit on floor, bringing heels together near groin and holding feet together. Have a partner gently push your legs down; hold for 5 seconds. Try to bring your knees upward as partner provides resistance. Relax, then have partner gently push down again for a greater stretch. Repeat. You can do the first part without a partner, simply by lowering your knees as far as possible.

7. SPINAL TWIST 9for back and sides). Sit with right leg straight out, and left knee bent, with left foot placed on the outside of right knee. Bend right elbow and place it on outside of upper left thigh, just above knee, to keep that leg stationary. Place left hand behind you, slowly turn head to look over left shoulder, and twist upper body toward left arm. Hold for 10 to 30 seconds. Switch sides and repeat.

8. CROSSOVER STRETCH (for lower back). Lying on back, bend left knee at 90° and stretch arms out to sides. Place right hand on left thigh and pull that bent knee over right leg. Keeping head on floor, turn to look toward outstretched left arm. Pull bent left nee toward floor, keep shoulders flat on floor. Hold for 10 to 30 seconds, then switch sides and repeat.



9. THIGH STRETCH (for hamstrings). Lie on back with both knees bent. Grasp behind the right thigh with both hands and pull toward chest. Slowly straighten leg, keeping foot relaxed. Hold for 10 to 30 seconds, then lower leg, switch legs, and repeat.



10. LUMBAR STRETCH (for lower back). Lying on back, clasp one hand under each knee. Gently pull both knees toward chest, keeping lower back on floor. Hold for 10 to 30 seconds, relax, then repeat.

APPENDIX E

MASSACHUSETTS STATE POLICE ACADEMY
APPENDIX F

SAMPLE PHYSICAL TRAINING SCHEDULE

Physical Training Protocol
Week Four

Time	Monday	Tuesday	Wednesday	Thursday	Friday
0700-0715	Warm Up & Stretch	Warm Up & Stretch	Warm Up & Stretch	Warm Up & Stretch	Warm Up & Stretch
0715-0815-	**Class Run - 3 Miles** **Upper body Calisthenics**	**Class Run - 3 Miles** Lower Body **Calisthenics**	**Defensive Tactics Circuit**	**Calisthenics Circuit** **Class Run**	**Class Run and Sprints** **Calisthenics**
0815-0830	Cool Down & Stretch	Cool Down & Stretch	Cool Down & Stretch	Cool Down & Stretch	Cool Down & Stretch

- Weather will be a determining factor on outside activity. Safety will be paramount in all physical fitness training.
- Staff members will ensure recruits are properly hydrating at all times.
- Any recruit sustaining an injury will report immediately to the Medical staff.
- Week Four P.T. plan will consist primarily of continuation of the Cardiovascular Endurance building phase (2-4 mile runs in class formation).
- The runs will be led by a member of the Health and Fitness staff.

MSP RECRUIT PHYSICAL FITNESS SCREENING DESCRIPTION

1.5 MILE RUN

Candidates must complete the 1.5 mile run in accordance with the Cooper Institute 40% physical fitness assessment age and gender standards.

Candidates who fail to successfully meet the required 1.5 mile run times, shall be granted one additional opportunity to pass the 1.5 mile run. Candidates shall be provided with another date and time to appear for a second and final attempt to successfully pass the 1.5 mile run.

TWO OBSTACLE COURSES

Candidates will be required to successfully pass two different obstacle courses.

Candidates must complete Obstacle Course #1, the Pursuit/Restrain obstacle course in a time of 1:54:06 or less.

Candidates must complete Obstacle Course #2, the Rescue Simulation obstacle course in a time of 1:58:00 or less.

Candidates who fail to successfully pass the required obstacle courses, shall be provided with another date and time to appear for a second and final attempt to successfully pass the two required obstacle courses.

DEPARTMENT OF STATE POLICE

PHYSICAL FITNESS SCREENING DESCRIPTION

1.5 MILE RUN

- Timed 1.5 mile run on a flat outdoor asphalt surface. This event assesses general fitness and is adjusted for age and gender. (see passing score table below)

1.5 Mile Run Times

Male		Female	
Age Range	Run Time (minutes:seconds)	Age Range	Run Time (minutes:seconds)
20-29	12:25	20-29	14:49
30-39	12:51	30-39	15:25
40-49	14:46	40-49	16:12
50-59	14:54	50-59	17:14

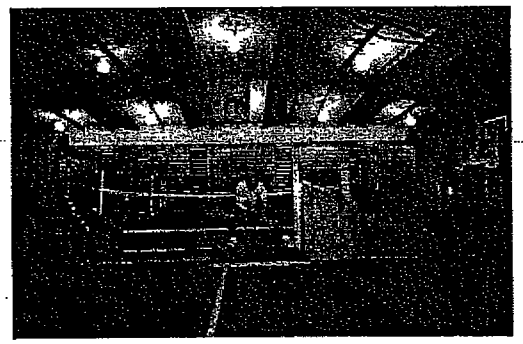
TWO JOB RELATED SIMULATIONS

- *PURSUIT/RESTRAINT SIMULATION*: The pursuit/restraint simulation is designed to represent chasing and subduing a suspect and contains a series of tasks that lead up to and include a simulated restraint of a suspect. Tasks performed in the simulation include essential physical tasks performed by incumbent troopers. Examples of these tasks are exiting a vehicle, running on flat areas and stairs, evading obstacles (e.g., branches), bending/stooping, negotiating barriers (e.g., guardrail), and restraining (e.g., handcuff, hold) resistive individuals. This simulation is conducted indoors at a conventionally sized gymnasium (see diagram below)

- *RESCUE SIMULATION*: The rescue simulation is designed to represent exiting a vehicle, moving quickly to an accident scene, and rescuing/removing a passive/unconscious person. Tasks performed in the simulation include essential physical tasks performed by incumbent troopers. Examples of these tasks are exiting a vehicle, running on flat areas and stairs, negotiating median barrier, and dragging victim to safety. This simulation is conducted indoors at a conventionally sized gymnasium. (see diagram below)

Obstacle Course #1 - Pursuit/Restrain

This job sample is designed to represent chasing and subduing a suspect and contains a series of tasks that lead up to and include a simulated restraint of a suspect.



You will be completing the following tasks:

- Going up and down stairs
- Going through a 4 ft. tunnel
- Going over a 3 ft. jersey barrier
- Pushing a 150 lb. weighted sled
- Completing the arrest simulator

Obstacle Course #2 - Rescue

This job sample is designed to represent exiting a vehicle, moving quickly to the accident scene, and rescuing/removing a passive/unconscious person.

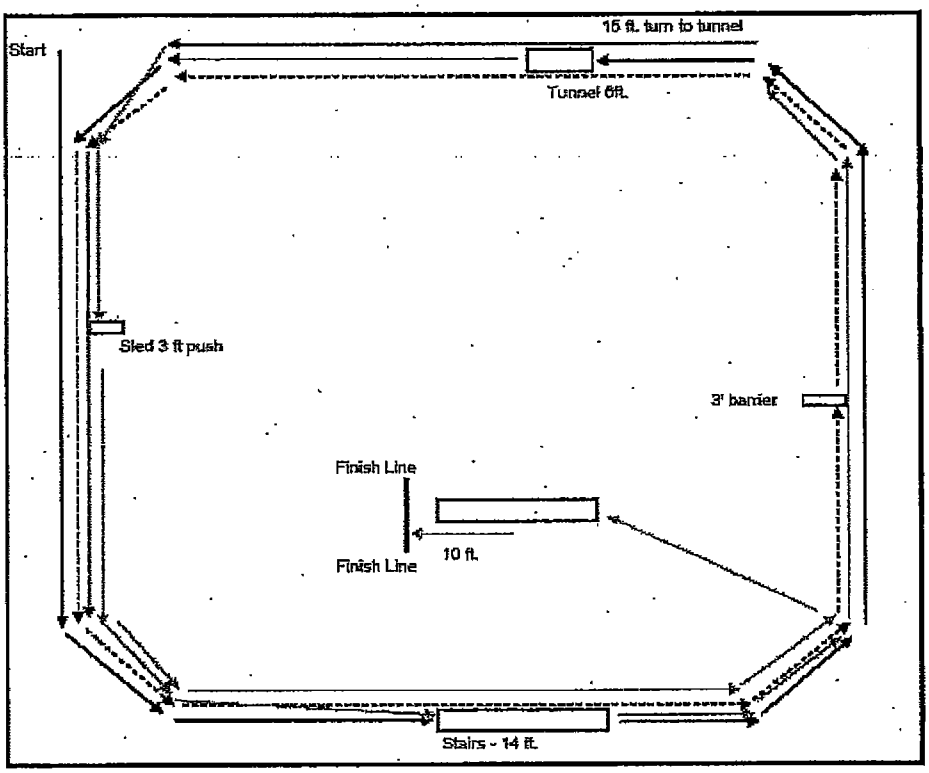
You will be completing the following tasks:

- Going over a 3½ ft. wall
- Going up and down stairs
- Going through a 4 ft. tunnel
- Dragging a 165 lb. dummy 25 feet

Qualifying Standards

Obstacle Course #1 Pursuit/Restrain	**1:54:60**
Obstacle Course #2 Rescue	**1:58:00**

MSP Course 1 - Pursuit/Restrain each square = 5' x 5' VERSION 3



Approximate total distance of the four laps is 1000 feet.

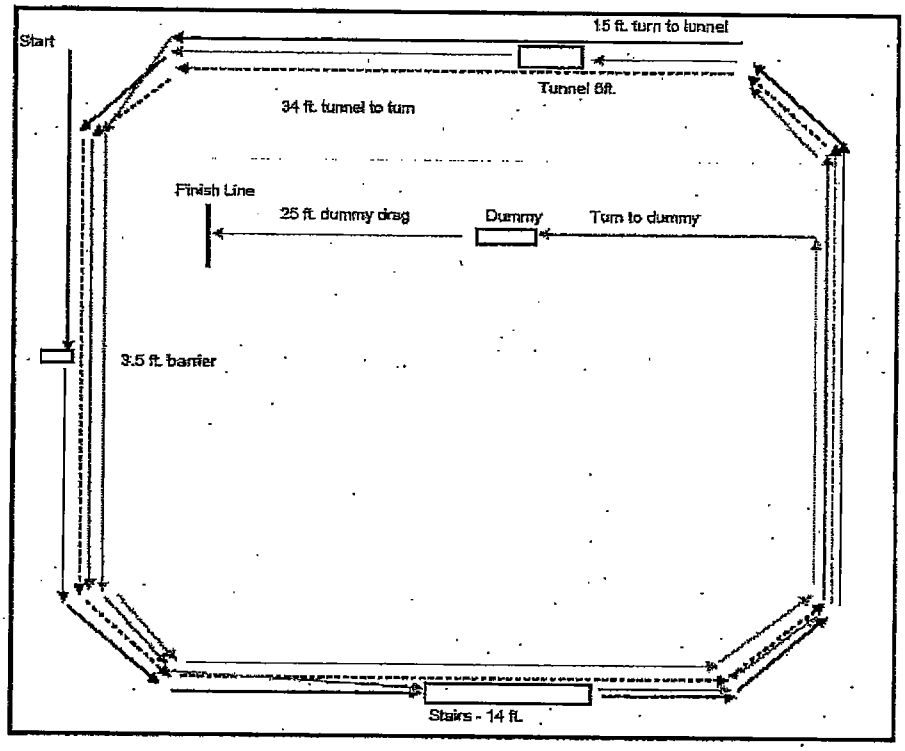
Lap 1- Up and down the stairs, touching each step and go through the tunnel.

Lap 2- Over the 3' barrier.

Lap 3- Up and down the stairs, touching each step.

Lap 4- Push the weighted sled 3' and complete the arrest simulator.

MSP Course 2 - Rescue Simulation each square = 5' x 5' VERSION 3



Approximate total distance of the four laps is 1050 feet.

Lap 1- Over the 3.5' wall, and up and down the stairs, touching each step.

Lap 2- No obstacles.

Lap 3- Up and down the stairs, touching each step.

Lap 4- Go through the tunnel and drag the dummy 25'.

MASSACHUSETTS STATE POLICE ACADEMY
PHYSICAL FITNESS ASSESSMENT FORM
_____RTT - Candidate

Name: (Last, First, MI)	Sex:	Age:	D.O.B.	Candidate #

DO NOT WRITE BELOW THIS LINE			
Date	Bib #	Candidate #	
Test	**Timer #1**	**Timer #2**	
1.5 Mile Run	: :	: :	**Pass Fail**
Pursuit / Restraint Simulation Obstacle Course #1 1:54:60	: :	: :	**Pass Fail**
Rescue Simulation Obstacle Course #2 1:58:00	: :	: :	**Pass Fail**
Height:	**Weight:**		

Male - Age 1.5 Mile Run	Passing Run Time		Female - Age 1.5 Mile Run	Passing Run Time
20-29	12:25		20-29	14:49
30-39	12:51		30-39	15:25
40-49	14:46		40-49	16:12
50-59	14:54		50-59	17:14

Comments:

Form completed by: (Name & ID#)

Medical Fitness Standards for Retention (Re-Enlistment) in the Massachusetts State Police

MEDICAL FITNESS STANDARDS FOR RETENTION (RE-ENLISTMENT) IN THE MASSACHUSETTS DEPARTMENT OF STATE POLICE

3-1 SCOPE

This chapter sets forth the medical conditions and physical defects which are cause for failure of a retention medical examination in the Department of State Police.

3-2 APPLICABILITY

These standards apply to all members of the Department of State Police for retention/re-enlistment . Exceptions to these standards, on an individual basis, are subject to approval of the Colonel of the Department of State Police upon recommendation of the State Police Surgeon, or may be sent to the Medical Appeal Board for evaluation.

3-3 POLICIES

a. Officers with conditions listed in this section will be considered as failing to meet the medical standards for retention in the Department of State Police. These are general guidelines and possession of one or more of the listed conditions does not mean automatic retirement or separation. Determination of fitness or unfitness will be dependent upon the individual's ability to perform the essential functions of a Massachusetts State Police Officer. The duties must be performed in such a manner as to reasonable fulfill the purpose of his/her employment. Individuals who possess one or more of the listed who are able to perform the essential functions of their position with or without reasonable accomodation will not be automatically retired or separated.

b. Not all medical conditions and physical defects which may render an officer unfit to perform full duty are listed. Further an officer may be unfit for full duty resulting from the overall effect of two or more impairments although one of them alone is not cause for unfitness.

c. Lack of motivation for the performance of full duty should not influence the medical examiner in evaluating disabilities under these standards except as it may be symptomatic of some disease process. Poorly motivated officers who are medically fit for duty will be recommended for administrative disposition.

3-4 ABDOMINAL AND GASTROINTESTINAL DEFECTS AND DISEASES.

a. Achalasia (cardiospasm). Dysphagia not controlled by dilation, with continuous discomfort or inability to maintain weight.

b. Amebic abscess residuals. Persistent abnormal liver function tests and failure to maintain weight and vigor after appropriate treatment.

c. Biliary dyskinesia. Frequent abdominal pain not relieved by simple medication, or with periodic jaundice.

d. Cirrhosis of the liver. Recurrent jaundice, ascites, or demonstrable esophageal varices or history of bleeding there from.

e. Hepatitis, chronic. When after a reasonable time (1 or 2 years) following the acute stage, symptoms persist, and there is objective evidence of impairment of liver function.

f. Ulcerative colitis. Except when responding to treatment.

3-5 GASTROINTESTINAL AND ABDOMINAL SURGERY

a. Gastrectomy.

1. Total, per se.

2. Subtotal, with or without vagotomy; or gastrojejunostomy with or without vagotomy, when, in spite of good medical management, the individual-

a. Develops "dumping syndrome" which persists for 6 months postoperatively, or

b. Develops frequent episodes of epigastric distress with characteristic circulatory symptoms or

c. Continues to demonstrate appreciable weight loss 6 months postoperatively.

b. Gastrostomy. Per se, when permanent.

c. Ileostomy. Per se, when permanent.

d. Pancreatectomy. Per se. Pancreaticoduodenostomy, pancreaticogastrostomy, pancreaticojejunostomy. Followed by more than mild symptoms of digestive disturbance , or requiring insulin.

e. Proctopexy, proctoplasty, proctorrhaphy, or proctotomy. If fecal incontinence remains after an appropriate treatment period.

3-6 BLOOD AND BLOOD FORMING TISSUE DISEASES

When response to therapy is unsatisfactory, or

a. Anemia.
b. Hemolytic crisis, chronic and symptomatic.
c. Leukopenia, chronic.
d. Polycythemia.
e. Purpura and other bleeding diseases.
f. Thromboembolic disease.
g. Splenomegaly, chronic.
h. HTLV-III (HIV) confirmed antibody positivity, with the presence of progressive clinical illness or immunological deficiency.

3-7 EARS

a. Malfunction of the acoustic nerve. Evaluate functional impairment of hearing under paragraph 3-10.

b. Meniere's syndrome. Recurring attacks of sufficient frequency and severity as to interfere with the satisfactory performance of duty.

3-8 HEARING

Trained and experienced personnel will not be categorically disqualified if they are capable of effective performance of duty with a hearing aid. Ordinarily a hearing defect will not be considered sufficient reason for initiating disability separation or retirement processing.

3-9 ENDOCRINE AND METABOLIC DISORDERS

a. Acromegaly with severe function impairment.

b. Adrenal hyperfunction which does not respond to therapy satisfactorily or where replacement therapy presents serious problems in management.

c. Diabetes insipidus unless mild and the patient shows good response to treatment.

d. Diabetes Mellitus when insulin dependent and proves to be "brittle" as evidenced by repeated incidents of symptomatic hypo or hyperglycemia.

e. Goiter when increased activity causes breathing obstruction, unless correctable.

f. Gout in advanced cases with frequent acute exacerbations and severe bone,

joint, or kidney damage.

g. Hyperinsulinism when caused by a malignant tumor or when the condition is not readily controlled.

h. Hyperparathyroidism when residuals or complications of surgical correction such as renal disease or bony deformities preclude the reasonable performance of duty.

i. Hyperthyroidism with severe symptoms or hyperthyroidism with or without evidence of goiter, which do not respond to treatment.

j. Hypofunction, adrenal cortex requiring medication for control.

k. Hypoparathyroidism with objective evidence and severe symptoms not controlled by maintenance therapy.

l. Hypothyroidism with objective evidence and severe symptoms not controlled by medication.

m. Osteomalacia with residuals after therapy of such nature or degree as to preclude the satisfactory performance of duty.

3-10 UPPER EXTREMITIES (SEE PARA 3-14)

a. Amputations. Amputation of part or parts of a upper extremity equal to or greater than-

1. A thumb proximal to the interphalangeal joints.

2. Two fingers of one hand, other than the little finger, at the proximal interphalangeal joints.

3. One finger, other than the little finger, at the meta-carpophalangeal joint and the thumb of the same hand at the interphalangeal joint.

b. Joint ranges of motion. Motion which does not equal or exceed the measurements listed below.

1. Shoulder

(a) Forward elevation to 90 degrees.
(b) Abduction to 90 degrees.

2. Elbow.

(a) Flexion to 100 degrees
(b) Extension to 60 degrees.

3. Wrist. A total range extension plus flexion of 15 degrees.

4. Hand. For this purpose, combined joint motion is the arithmetic sum of the motion at each of the three finger joints.

a. An active flexor value of combined joint motions of 135 degrees in each of two or more fingers of the same hand.

b. An active extensor value of combined joint motions of 75 degrees in each of the same two or more fingers.

c. Limitation of motion of the thumb that precludes opposition to at least two finger tips.

3-11 LOWER EXTREMITIES (SEE PARA 3-14)

a. Amputations.

1. Loss of toes which precludes the ability to run or walk without a perceptible limp, and to engage in fairy strenuous jobs.

2. Any loss greater than that specified above to include foot, leg, or thigh.

b. Feet

1. Hallux valgus when severe, with exostosis or rigidity and pronounced symptoms; or severe with arthritic changes.

2. Pes planus: symptomatic, more than moderate, when associated with vascular changes.

c. Internal derangement of the knee.

1. Residual instability following remedial measures, if more than moderate in degree.

2. If complicated by arthritis, see paragraph 3-14a.

d. Joint ranges of motion. Motion which does not equal or exceed the measurements listed below.

1. Hip.

a. Flexion to 90 degrees.

b. Extension to 0 degree.

2. Knee.

a. Flexion to 90 degrees.

b. Extension to 15 degrees.

3. Ankle

a. Dorsiflexion to 10 degrees

b. Plantar flexion to 10 degrees

3-12 MISCELLANEOUS CONDITIONS OF THE EXTREMITIES

a. Arthritis.

1. Arthritis due to infection. Arthritis due to infection associated with persistent pain and marked loss of function, with objective x-ray evidence and documented history of recurrent incapacity for prolonged periods.

2. Arthritis due to trauma. When surgical treatment fails or is contraindicated and there is functional impairment of the involved joints so as to preclude the satisfactory performance of duty.

3. Osteoarthritis. severe symptoms associated with impairment of function, supported by x-ray evidence and documented history of recurrent incapacity for prolonged periods.

4. Rheumatoid arthritis or rheumatoid myositis.
Substantiated history of frequent incapacitating episodes

and currently supported by objective and subjective findings.

b. Chondromalacia or osteochondritis dissecans. Severe, manifested by frequent joint effusion, more than moderate interference with function, or with severe residuals from surgery.

c. Fractures.

1. Malunion of fractures. When, after appropriate treatment, there is more than moderate malunion with marked deformity and then moderate loss of function.

2. Nonunion of fractures. When, after an appropriate healing period, the nonunion precludes satisfactory performance of duty.

3. Bone fusion defect. When manifested by more than moderate pain and loss of function.

4. Callus, excessive, following fracture. When functional impairment precludes satisfactory performance of duty and the callus does not respond to adequate treatment.

d. Joints.

1. Arthroplasty. Severe pain, limitation of motion, and of function.

2. Bony or fibrous ankylosis. Severe pain involving major joints or spinal segments in an unfavorable position, and with marked loss of function.

3. Contracture of Joint. Marked loss of function and the condition is not remediable by surgery.

4. Loose bodies within a joint. Marked functional impairment and complicated by arthritis to such a degree as to preclude favorable results of treatment or not remediable by surgery.

5. Prosthetic replacement. Prosthetic replacement of major joints.

e. Muscles

1. Flaccid paralysis of one or more muscles. Loss of function which precludes satisfactory performance of duty following surgical correction or if not remediable by surgery.

2. Spastic paralysis of one or more muscles. Loss of function which precludes the satisfactory performance of duty.

f. Myotonia congenital.

g. Osteitis deformans (Paget's disease). Involvement of single or multiple bones with resultant deformities or symptoms severely interfering with function.

h. Osteoarthropathy, hypertrophic, secondary. Moderately severe to severe pain present, with joint effusion occurring intermittently in one or multiple joints, and with at least moderate loss of function.

i. Osteomyelitis, chronic. Recurrent episodes not responsive to treatment and involving the bone to a degree which interferes with stability and function.

j. Tendon transplant. Fair or poor restoration of function with weakness which seriously interferes with the function of the affected part.

3-13 EYES

a. Active eye disease. Active eye disease, or any progressive organic disease, regardless of the state of activity, which is resistant to treatment and affects the distant visual acuity or visual fields so that-

1. Distant visual acuity does not meet the standard stated in paragraph 3-16e, or

2. The diameter of the field of vision in the better eye is less than 20 degrees.

b. Aphakia, bilateral.

c. Atrophy of the optic nerve. Due to disease.

d. Glaucoma. If resistant to treatment or affecting visual fields as in a (2) above, or if side effects of required medication are functionally incapacitating.

e. Degenerations. When vision does not meet the standards of paragraph 3-16e, or when vision is correctable only by the use of contact lenses or other special corrective devices (telescopic lenses, etc.).

f. Diseases and infections of the eye. When chronic, more than mildly symptomatic, progressive, and resistant to treatment after a reasonable period.

g. Ocular manifestations of endocrine or metabolic disorders. Not unfitting, peruse. However, residuals or complications, or the underlying disease may be unfitting.

h. Residuals or complications of injury. When progressive or when reduced visual acuity does not meet the criteria stated in paragraph 3-16e.

i. Retina, detachment of.

1. Unilateral.

a. When visual acuity does not meet the standard stated in paragraph 3-16e.

b. When the visual field in the better eye is constricted to less than 20 degrees.

c. When uncorrectable diplopia exists.

d. When detachment results from organic progressive disease or new growth, regardless of the condition of the better eye.

2. Bilateral, regardless of etiology or results of corrective surgery.

3-14 VISION

a. Aniseikonia. Subjective eye discomfort, neurologic symptoms,sensations of motion sickness and other gastro intestinal disturbances, functional disturbances and difficulties in form sense, and not corrected by iseikoniea lenses.

b. Binocular diplopia. Not correctable by surgery, and which is severe, constant, and in a zone less than 20 degrees from the primary position.

c. Hemianopsia. Of any type, if bilateral, permanent, and based on an organic defect. Those due to a functional neurosis and those due to transitory conditions, such aperiodic migraine, are not considered to render an officer unfit.

d. Night blindness. Of such a degree that requires assistance in any travel at night.

e. Visual acuity.

1. Vision which cannot be corrected with spectacle lenses to at least: 20/60 in one eye and 20/60 in the other eye, or 20/50 in one eye and 20/80 in the other eye, or 20/40 in one eye and 20/100 in the other eye, or 20/30 in one eye and 20/200 in the other eye, or 20/20 in one eye and 20/800 in the other eye, or

2. An eye has been enucleated.

f. Visual field. Bilateral concentric constriction to less than 20 degrees.

3-15 GENITOURINARY SYSTEM

a. Cystitis. When complications or residuals of treatment themselves preclude satisfactory performance of duty.

b. Dysmenorrhea. Symptomatic,irregular cycle, not amenable to treatment, and of such severity as to necessitate recurrent absences of more than 1 day.

c. Endometriosis. symptomatic and incapacitating to a degree which necessitates recurrent absences.

d. Hypospadias. Accompanied by evidence of chronic infection of the genitourinary tract or instances where the urine is voided in such a manner as to soil clothes or surroundings and the condition is not amenable to treatment.

e. Incontinence of urine. Due to disease or defect not amenable to treatment and of such severity as to necessitate recurrent absence from duty.

f. Kidney.

1. Calculus in kidney. When bilateral,resulting in frequent or recurring infections, or when there is evidence of obstructive uropathy not responding to medical or surgical treatment.

2. Congenital anomaly. When bilateral, resulting in frequent or recurring infection, or when there is evidence of obstructive uropathy not responding to medical or surgical treatment.

3. When symptomatic and renal function is impaired or is the focus of frequent infection.

4. Glomerulonephritis. When chronic.

5. Hydronephrosis. When more than mild, bilateral, and causing continuous or frequent symptoms.

6. Hypoplasia of the kidney. When symptomatic and associated with elevated blood pressure or frequent infections and not controlled by surgery.

7. Nephritis. When chronic.

8. Nephrosis.

9. Perirenal abscess. With residuals of a degree which precludes the satisfactory performance of duty.

10. Pyelonephritis or pyelitis. When chronic, which has not responded to medical or surgical treatment, with evidence of hypertension, eye-ground changes, or cardiac abnormalities.

11. Pyonephrosis. When not responding to treatment.

g. Menopausal syndrome, physiologic or artificial with more than mild mental and constitutional symptoms.

3-16 GENITOURINARY AND GYNECOLOGICAL SURGERY

a. Cystectomy.

b. Cystoplasty. If reconstruction is unsatisfactory.

c. Hysterectomy. When residual symptoms or complications preclude the satisfactory performance of duty.

d. Nephrectomy. When after treatment, there is infection or opathology in the remaining kidney.

e. Nephrotomy. If drainage persists.

f. Oophorectomy. When following treatment and convalescent period there remain more than mild mental or constitutional symptoms.

g. Ureteroplasty.

1. When unilateral procedure is unsuccessful and nephrectomy is necessary, consider it on the basis of the standard for a nephrectomy.

2. When bilateral, evaluate residual obstruction or hydronephrosis and consider fitness on the basis of the residuals involved.

i. Kidney transplant. Recipient or a kidney transplant.

3-17 HEAD

Loss of substance of the skull with or without prosthetic replacement when accompanied by moderate residual signs and symptoms such as described in paragraph 3-30.

3-18 NECK

Torticollis (wry neck). Severe fixed deformity with cervical scoliosis, flattening of the head and face, and loss of cervical mobility.

3-19 HEART

a. Coronary heart disease associated with-

1. Myocardial infarction, angina pectoris or congestive heart failure due to fixed obstructive coronary artery disease or coronary artery spasm.

2. Myocardial infarction with normal coronary artery anatomy.

3. Angina pectoris in association with objective evidence of myocardial ischemia in the presence of normal coronary artery anatomy.

4. Fixed obstructive coronary artery disease, asymptomatic, but with objective evidence of myocardial ischemia.

b. Supraventricular tachyarrhythmias, when life threatening or symptomatic enough to interfere with performance of duty and when not adequately controlled. This includes atrial fibrillation, atrial flutter, paroxysmal supraventricular tachycardia, and others.

c. Endocarditis with any residual abnormality or if associated with valvular, congenital, or hypertrophic myocardial disease.

d. Heart block (second degree or third degree AV block) and symptomatic bradyarrhythmias, even in the absence of organic heart disease or syncope. Wenckeback second degree heart block occurring in healthy asymptomatic individuals without evidence of organic heart disease is not a cause of unfitness.

None of these conditions is cause for medical referral when associated with recognizable temporary precipitating conditions: for example, perioperative period, hypoxia, electrolyte disturbance, drug toxicity, acute illness.

e. Myocardial disease, New York Heart Association or Canadian Cardiovascular society Functional Class II or worse. (See table 3-1.)

f. Ventricular flutter and fibrillation, ventricular tachycardia when potentially life threatening (for example, when associated with forms of heart disease which are recognized to predispose to increased risk of death and when there is no definitive therapy available to reduce this risk) and when symptomatic enough to interfere with the performance of duty. None of these ventricular arrhythmias is a cause for medical referral when associated with recognizable temporary precipitating conditions: for example, perioperative period, hypoxia,electrolyte disturbance, drug toxicity, or acute illness.

g. Sudden cardiac death when an individual survives sudden cardiac death that is not associated with a temporary or treatable cause, and when there is no definitive therapy available to reduce the risk of recurrent sudden cardiac death.

h. Pericarditis as follows: Chronic-

1. Constrictive pericarditis unless successful remedial surgery has been performed.

2. Serous pericarditis.

i. Valvular heart disease with cardiac insufficiency at functional capacity of Class II or worse as defined by the New York Heart Association. (See table 3-1.)

j. Ventricular premature contractions with frequent or continuous attacks, whether or not associated with organic heart disease, accompanied by discomfort or fear of such a degree as to interfere with the satisfactory performance of duty.

k. Recurrent syncope or near syncope of cardiovascular etiology that is not controlled, or when it interferes with the performance of duty, even if the etiology is unknown.

l. Any cardiovascular disorder requiring chronic drug therapy in order to prevent the occurrence of potentially fatal or severely symptomatic events that would interfere with duty performance.

3-20 VASCULAR SYSTEM

a. Arteriosclerosis obliterans when any of the following pertain:

1. Intermittent claudication of sufficient severity to produce discomfort and inability to complete a walk of 200 yards or less on level ground.

2. Objective evidence of arterial disease with symptoms of claudication, ischemic rest pain, or with gangrenous or ulcerative skin changes of a permanent degree in the distal extremity.

3. Involvement of more than one organ system, or anatomic region (the lower extremities comprise one region for this purpose) with symptoms of arterial insufficiency.

b. Major cardiovascular anomalies including coarctation of the aorta, unless satisfactorily treated by surgical correction other newly developed techniques, and without any residual abnormalities or complications.

c. Aneurysm of any vessel not correctable by surgery.

d. Periarteritis nodosa with definite evidence of functional impairment.

e. Chronic venous insufficiency (postphlebitic syndrome when more than mild and symptomatic despite elastic support).

f. Raynoud's phenomenon manifested by trophic changes of the involved parts characterized by scarring of the skin or ulceration.

g. Thromboangiitis obliterans with intermittent claudication of sufficient severity to produce discomfort and inability to complete a walk to 200 yards or less on level ground at 112 steps per minute without rest, or other complications.

h. Thrombophlebitis when repeated attacks requiring treatment are of such frequency as to interfere with the satisfactory performance of duty.

i. Varicose veins that are severe and symptomatic despite therapy.

3-21 MISCELLANEOUS CARDIOVASCULAR CONDITIONS

a. Erythromelalgia. Persistent burning pain in the soles or palms not relieved by treatment.

b. Hypertensive cardiovascular disease and hypertensive vascular disease.

1. Diastolic pressure consistently more than 110mm Hg following an adequate period of therapy in an ambulatory status, or

2. Any documented history of hypertension, regardless of the pressure values, if associated with one or more of the following:

(a) More than minimal changes in the brain.
(b) Heart disease.
(c) Kidney involvement, with moderate impairment of renal function.
(d) Grade III (Keith-Wagner-Barker) changes in the fundi.

c. Rheumatic fever, active, with or without heart damage. Recurrent attacks.

d. Grade III (Keith-Wagner-Barker) changes in the fundi.

c. Rheumatic fever, active, with or without heart damage. Recurrent attacks.

3-22 SURGERY AND OTHER INVASIVE PROCEDURES INVOLVING THE HEART, PERICARDIUM, OR VASCULAR SYSTEM (INCLUDING NEWLY DEVELOPED TECHNIQUES OR PROSTHESES NOT OTHERWISE COVERED IN THIS PARAGRAPH).

a. Permanent prosthetic valve implantation.

b. Implantation of permanent pacemakers, antitachyycardia and defibrillator devices, and similar newly developed devices.

c. Reconstructive cardiovascular surgery.

3-23 NONTUBERCULOUS DISORDERS

a. Asthma. Asthma of sufficient severity to interfere with satisfactory performance of duty, or with frequent attacks not controlled by oral bronchodilators or inhaled medication.

b. Atelectasis, or massive collapse of the lung. Moderately symptomatic with paroxysmal cough at frequent intervals throughout the day, or with moderate emphysema, or with residuals or complications which require repeated hospitalization.

c. Bronchiectasis or bronchiolectasis. Cylindrical or saccular type which is moderately symptomatic, with paroxysmal cough at frequent intervals, throughout the day, or with moderate emphysema with a moderate amount of bronchiectatic sputum, or with recurrent pneumonia, or with residuals or complications which require repeated hospitalization.

d. Bronchitis. Chronic, severe, persistent cough, with considerable expectoration, or with moderate emphysema, or with dyspnea at rest or on slight exertion, or with residuals or complications which require repeated hospitalization.

e. Cystic disease of the lung, congenital. Disease involving more than one lobe of a lung.

f. Diaphragm, congenital defect. Symptomatic.

g. Hemopneumothorax, hemothorax, or pyopneumothorax. More than moderate pleutric residuals with persistent underweight, or marked restriction of respiratory excursions and chest deformity, or marked weakness and fatigability on slight exertion.

h. Histoplasmosis. Chronic and not responding to treatment.

i. Pleurisy, chronic or pleural adhesions. Severe dyspnea or pain on mild exertion associated with definite evidence of pleural adhesions and demonstrable moderate reduction of pulmonary function.

j. Pneumothorax, spontaneous. Repeated episodes of pneumothorax not correctable by surgery.

k. Pneumoconiosis. Severe, with dyspnea on mild exertion.

l. Pulmonary calcification associated with significant respiratory embarrassment or active disease not responsive to treatment.

m. Pulmonary emphysema. Marked emphysema with dyspnea on mild exertion and demonstrable moderate reduction in pulmonary function.

n. Pulmonary fibrosis. Linear fibrosis or fibrocalcific residuals of such a degree as to cause dyspnea on mild exertion and demonstrable moderate reduction in pulmonary function.

o. Pulmonary sarcoidosis. If not responding to therapy and complicated by demonstrable moderate reduction in pulmonary function.

p. Stenosis, bronchus. Severe stenosis associated with repeated attacks of bronchopulmonary infections requiring hospitalization of such frequency as to interfere with the satisfactory performance of duty.

3-24 SURGERY OF THE LUNGS AND CHEST

Lobectomy: If pulmonary function (ventilatory tests) is impaired to a moderate degree or more.

3-25 MOUTH, ESOPHAGUS, NOSE, PHARYNX, LARYNX AND TRACHEA

a. Esophagus.

1. Achalasia unless controlled by medical therapy.

2. Esophagitis, persistent and severe.

3. Diverticulum of the esophagus of such a degree as to cause frequent regurgitation, obstruction and weight loss, which does not respond to treatment.

4. Stricture of the esophagus of such a degree as to almost restrict diet to liquids, require frequent dilatation and hospitalization, and cause difficulty in maintaining weight and nutrition.

b. Larynx.

1. Paralysis of the larynx characterized by bilateral vocal cord paralysis seriously interfering with speech and adequate airway.

2. Stenosis of the larynx of a degree causing respiratory embarrassment upon more than minimal exertion.

c. Obstructive edema of glottis. If chronic, not amenable to treatment, and requires tracheotomy.

d. Rhinitis. Atrophic rhinitis characterized by bilateral atrophy of nasal mucous membrane with severe crusting, concomitant severe headaches and foul, fetid odor.

e. Sinusitis. Severe, chronic sinusitis which is suppurative, complicated by polyps, and which does not respond to treatment.

f. Trachea. Stenosis of trachea.

3-26 NEUROLOGICAL DISORDERS

a. Amyotrophic sclerosis, lateral.

b. Atrophy, muscular, myelopathic - includes severe residuals of poliomyelitis.

c. Progressive muscular atrophy.

d. Chorea - chronic, progressive.

1. Definitions.

a. Seizure: Transient neurologic dysfunction due to excessive repetitive discharge of neurons.

b. Pseudoseizure: A behavioral event resembling a seizure but caused by psychological factors and not associated with abnormal discharge of neurons.

c. Epilepsy: Recurrent seizures over a 30-day period or longer without definable extrinsic cause.

2. Seizures by themselves are not disqualifying unless they are manifestations of epilepsy. However, they may be considered along with other disabilities in judging fitness.

3. In general, epilepsy is disqualifying.

4. Recurrent pseudoseizures are disqualifying under the same rules as epilepsy.

d. Friedreich's ataxia.

e. Hepatolenticular degeneration.

f. Migraine - when the cause is unknown, and manifested by frequent incapacitating attacks or attacks which last for several consecutive days, and unrelieved by treatment.

g. Multiple sclerosis.

h. Myelopathy, transverse.

i. Narcolepsy - when attacks are not controlled by medications.

j. Paralysis agitans (Parkinson's Disease).

k. Peripheral nerve conditions.

1. Neuralgia. When symptoms are severe, persistent and not responsive to treatment.

2. Neuritis. When manifested by more than moderate, permanent

functional impairment.

3. Injury to peripheral nerves. When manifested by paralysis or other permanent severe functional impairments.

n. Syringomyelia.

o. General. Any other neurological condition, regardless of etiology, when after adequate treatment, there remain residuals, such as persistent severe headaches, convulsions not controlled by medications, weakness or paralysis of important muscle groups, deformity, incoordination, pain or sensory disturbance, disturbance of consciousness, speech or mental defects, or personality changes of such a degree as to definitely interfere with the performance of duty.

NOTE: Diagnostic concepts and terms utilized in paragraphs 3-27 through 3-32 below are in consonance with the DSM-III-R Manual, American Psychiatric Association, 1987. The minimum psychiatric evaluation will include Axis I, II and III.

3-27 DISORDERS WITH PSYCHOTIC FEATURES

Mental disorders not secondary to intoxication, infectious, toxic or other organic causes, with gross impairment in reality testing, resulting in interference with duty or social adjustment.

3-28 AFFECTIVE DISORDERS (MOOD DISORDERS)

Persistence or reoccurrence of symptoms sufficient to require extended or recurrent hospitalization, necessity for limitations of duty or duty in protected environment or resulting in interference with effective performance.

3-29 ANXIETY, SOMATOFORM, OR DISSOCIATIVE DISORDERS

Persistence or recurrence of symptoms sufficient to require extended or recurrent hospitalization, necessity for limitations of duty or duty in protected environment or resulting in interference with effective military performance.

3-30 ORGANIC MENTAL DISORDERS

Persistence of symptoms or associated personality change sufficient to interfere definitely with the performance of duty or social adjustment.

3-31 PERSONALITY OR FACTITIOUS DISORDERS; DISORDERS OF IMPULSE CONTROL NOT ELSEWHERE CLASSIFIED; PSYCHOACTIVE DISORDERS.

These conditions may render an individual administratively unfit rather than unfit because of physical disability. Interference with performance of effective duty in association with these conditions will be dealt with through appropriate administrative channels.

3-32 ADJUSTMENT DISORDERS.

Transient, situational maladjustments due to acute or special stress do not render an individual unfit because of physical disability, but may be the basis for administrative separation if recurrent and causing interference with duty.

3-33 DISORDERS USUALLY FIRST EVIDENT IN INFANCY, CHILDHOOD OR ADOLESCENCE.

These disorders to include development disorders, do not render an individual unfit because of physical disability but may result in administrative unfitness if the individual does not show satisfactory performance of duty.

3-34 SKIN AND CELLULAR TISSUES.

a. Acne. Severe, unresponsive to treatment, and interfering with the satisfactory performance of duty or wearing of the uniform or other military equipment.

b. Atopic dermatitis. More than moderate or requiring periodic hospitalization.

c. Amyloidosis. Generalized.

d. Cysts and tumors. (See paras 3-38 through 3-40.)

e. Dermatitis herpetiformis. Not responsive to therapy.

f. Dermatomyositis.

g. Dermographism. Interfering with the satisfactory performance of duty.

h. Eczema, chronic. Regardless of type, when there is more than minimal involvement and the condition is unresponsive to treatment and interferes with the satisfactory performance of duty.

i. Elephantiasis or chronic lymphedema. Not responsive to treatment.

j. Epidermolysis bullosa.

k. Erythema multiform. More than moderate, chronic or recurrent.

l. Exfoliative dermatis. Chronic.

m. Fungus infectious, superficial or systemic types. If not responsive to therapy and interfering with the satisfactory performance of duty.

n. Hidradenitis suppurative and folliculitis decalvans.

o. Hyperhidrosis. On the hands or feet, when severe or complicated by a dermatitis or infection, either fungal or bacterial and not amendable to treatment.

p. Leukemia cutis and mycosis fungoides.

q. Lichen planus. Generalized and not responsive to treatment.

r. Lupus erythematosus. Chronic discoid variety with extensive involvement of the skin and mucous membranes and when the condition does not respond to treatment.

s. Neurofibromatosis. If repulsive in appearance or when interfering with the satisfactory performance of duty.

t. Panniculitis. Relapsing, febrile, nodular.

u. Parapsoriasis. Extensive and not controlled by treatment.

v. Pemphigus. Not responsive to treatment and with moderate constitutional or systematic symptoms, or interfering with the satisfactory performance of duty.

w. Psoriasis. Extensive and not controllable to treatment.

x. Radiodermatitis. If resulting in malignant degeneration at a site not amenable to treatment.

y. Scars and keloids. So extensive or adherent that they seriously interfere with the function of an extremity.

z. Scleroderma. Generalized, or of the linear type which seriously interferes with the function of an extremity.

aa. Tuberculosis of the skin.

ab. Ulcers of the skin. Not responsive to treatment after an appropriate period of time or if interfering with the satisfactory performance of duty.

ac. Urticaria. Chronic, severe and not amendable to treatment.

ad. Xanthoma. Regardless of type, but only when interfering with the satisfactory performance of duty.

ae. Other skin disorders. If chronic, or of a nature which requires frequent medical care or interferes with the satisfactory performance of military duty.

3-35 SPINE, SCAPULAE, RIBS AND SACROILIAC JOINTS.

a. Congenital anomalies.

1. Dislocation, congenital, of hip.

2. Spina bifida - demonstrable signs and moderate symptoms of root or cord involvement.

3. Spondylolysis or spondylolisthesis - with more than mild symptoms resulting in repeated outpatient visits, or repeated hospitalization or significant assignment limitations.

b. Coxa vara. More than moderate with pain, deformity and arthritic changes.

c. Herniation of nucleus pulposus. More than mild symptoms following appropriate treatment or remedial measures, with sufficient objective findings to demonstrate interference with the satisfactory performance of duty.

d. Kyphosis. More than moderate, interfering with function, or causing unmilitary appearance.

e. Scoliosis. Severe deformity with over 2 inches deviation of tips of spinous process from the midline.

3-36 SYSTEMATIC DISEASES.

a. Amyloidosis.

b. Blastomycosis.

c. Brucellosis - chronic with substantiated, recurring febrile episodes, severe fatigability, lassitude, depression or general malaise.

d. Leprosy - any type which seriously interferes with performance of duty or is not completely responsive to appropriate treatment.

e. Lupus erythematosus disseminated chronic.

f. Myasthenia gravis.

g. Mycosis - active, not responsive to therapy or requiring prolonged treatment, or when complicated by residuals which themselves are unfitting.

h. Panniculitis, relapsing, febrile, nodular.

i. Porphyria, cutanea tarda.

j. Sarcoidosis - progressive with severe or multiple organ involvement and not responsive to therapy.

k. Tuberculosis.

1. Meningitis, tuberculosis.

2. Pulmonary tuberculosis, tuberculous empyema, and tuberculous pleurisy.

3. Tuberculosis of the male genitalia. Involvement of the prostate or seminal vesicles and other instances not corrected by surgical excision, or when residuals are more the minimal or are symptomatic.

4. Tuberculosis of the female genitalia.

5. Tuberculosis of the kidney.

6. Tuberculosis of the larynx.

7. Tuberculosis of the lymph nodes, skin, bone, joint, eyes, intestines and peritoneum or mesentery. These will be evaluated on an individual basis considering the associated involvement, residuals and complications.

3-37 GENERAL AND MISCELLANEOUS CONDITIONS AND DEFECTS.

a. Allergic manifestations.

1. Allergic rhinitis (See para 3-39d and e.)

2. Asthma. (See para 3-27 a.)

3. Allergic dermatoses (See para 3-34.)

4. Visceral, abdominal or cerebral allergy. Severe or not responsive to therapy.

b. Cold injury. Evaluate on severity and extent of residuals, or loss of parts as outlined in paragraphs 3-12 and 3-13.

c. Miscellaneous conditions and defects. Conditions and defects, individually or in combination, if-

1. The conditions result in interference with satisfactory performance of duty as substantiated by the individual's commander or supervisor.

2. The individual's health or well-being would be compromised if he or she were to remain in the service.

3-38 MALIGNANT NEOPLASMS

a. Malignant neoplasms which are unresponsive to therapy, or when the residuals of treatment are in themselves unfitting under other provisions of this chapter.

b. Malignant neoplasms in individuals on active duty when they are of such a nature as to preclude satisfactory performance of duty.

c. Presence of malignant neoplasms or reasonable suspicion thereof when an individual is unwilling to undergo treatment or appropriate diagnostic procedures.

3-39 NEOPLASTIC CONDITIONS

Neoplastic conditions of the lymphoid and blood-forming tissues.

3-40 BENIGN NEOPLASMS

a. Benign tumors, except as noted in b below, are not generally a cause of unfitness because they are usually remediable. Individuals who refuse treatment should be considered unfit only if their condition precludes their satisfactory performance of duty.

b. The following, upon the diagnosis thereof, are normally considered to render the individual unfit for further service.

1. Ganglioneuroma.

2. Meningeal fibroblastoma, when the brains is involved.

3-41 SEXUALLY TRANSMITTED DISEASES

a. Symptomatic neurosyphilis in any form.

b. Complications of residuals of sexually transmitted disease of such chronicity or degree that the individual is incapable of performing useful duty.

Table 1–1
Methods of assessing cardiovascular disability

Class	New York Heart Association Functional Classification	Canadian Cardiovascular Society Functional Classification	Specific activity scale (Goldstein et al: Circulation 64 1227, 1981)	New York Heart Association Functional Classification (Revised)
I.	Patient with cardiac disease but without resulting limitations of physical activity. Ordinary physical activity does not cause undue fatigue, palpitations, dyspnea, or anginal pain.	Ordinary physical activity, such as walking and climbing stairs, does not cause angina. Angina with strenuous or rapid or prolonged exertion at work or recreation.	Patients can perform to completion any activity requiring 7 metabolic equivalents: e.g., can carry 24 lbs up eight steps, carry objects that weigh 80 lbs, do outdoor work (shovel snow, spade soil), do recreational activities (skiing, basketball, squash, handball, jog and walk 5 mph).	Cardiac status uncompromised.
II.	Patients with cardiac disease resulting in slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea, or anginal pain.	Slight limitations of ordinary activity. Walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, in cold, in wind, or when under emotional stress, or only during the few hours after awakening. Walking more than two blocks on the level and climbing more than one flight of ordinary stairs at a normal pace and in normal conditions.	Patient can perform to completion any activity requiring ≥ 5 metabolic equivalents, but cannot and does not perform to completion activities requiring metabolic equivalents: e.g., have sexual intercourse without stopping, garden, rake, weed, roller skate, dance fox trot, walk at 4 mph on level ground.	Slightly compromised.
III.	Patients with cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary physical activity causes fatigue, palpitation, dyspnea, or anginal pain.	Marked limitation of ordinary physical activity. Walking one to two blocks on the level and climbing more than one flight in normal conditions.	Patient can perform to completion any activity requiring ≥ 2 metabolic equivalents but cannot and does not perform to completion any activities requiring ≥ 5 metabolic equivalents: e.g., shower without stopping, strip and make bed, clean windows, walk 2.5 mph, bowl, play golf, dress without stopping.	Moderately compromised.
IV.	Patient with cardiac disease resulting in inability to carry on any physical activity without discomfort. Symptoms of cardiac insufficiency or of the anginal syndrome may be present even at rest. If any physical activity is undertaken, discomfort is increased.	Inability to carry on any physical activity without discomfort—anginal syndrome may be present at rest.	Patient cannot or does not perform to completion activities requiring ≥ 2 metabolic equivalents. Cannot carry out activities listed above (specific activity scale, Class III).	Severely compromised.

New York Heart Association Therapeutic Classification

Therapeutic classification	Revised classification (prognosis)
Class A—Patients with cardiac disease whose physical activity need not be restricted.	Class I—Good.
Class B—Patients with cardiac disease whose ordinary physical activity need not be restricted, but who should be advised against severe or competitive physical efforts.	Class II—Good with therapy.
Class C—Patients with cardiac disease whose ordinary physical activity should be moderately restricted, and whose more strenuous efforts should be discontinued.	Class III—Fair with therapy.
Class D—Patients with cardiac disease whose ordinary physical activity should be markedly restricted.	Class IV—Guarded despite therapy.
Class E—P	

REVISION TO MEDICAL FITNESS STANDARDS FOR RETENTION
(RE-ENLISTMENT) IN THE
MASSACHUSETTS STATE POLICE

EFFECTIVE DATE: March 1, 2000

Section 3-12 Miscellaneous Conditions of the Extremities

d. Joints:

5. Prosthetic replacement of a joint, unless adequate documentation is supplied showing that the prosthetic joint will not preclude the satisfactory performance of the essential tasks of a Massachusetts State Police Trooper.

REVISION TO MEDICAL FITNESS STANDARDS FOR RETENTION (RE-ENLISTMENT) IN THE MASSACHUSETTS STATE POLICE

EFFECTIVE DATE: October 22, 1998

Paragraph: 3-21 Miscellaneous Cardiovascular Conditions

b. Hypertensive Cardiovascular Disease and Hypertensive Vascular Disease:

1. Blood pressure greater than 180/105 on three (3) separate readings following an adequate period of therapy will be cause for failure of a retention medical examination in the Department of State Police. Blood pressure values greater than 108/105 may require a temporary change in duty status while the individual undergoes further medical evaluation. Blood pressure 160-180/91-105 will need to be treated and documentation of recorded readings and medication must be provided within three (3) months. When blood pressure readings are below 161/91, the trooper will be qualified for retention under this standard.

REVISION TO MEDICAL FITNESS STANDARDS FOR RETENTION (RE-ENLISTMENT) IN THE MASSACHUSETTS STATE POLICE

EFFECTIVE DATE: October 25, 1997

Paragraph: 3-15 KIDNEY REPRODUCTIVE AND URINARY TRACT SYSTEM

1. Incontinence of urine. When it is not amenable to treatment and of such severity as to necessitate frequent absence from duty.

2. Kidney.
   1. Renal disease with progression to chronic renal failure requiring dialysis
   2. Nephrotic renal disease not responsive to treatment.
   3. Severe renal tubular dysfunction with erratic and difficult to control electrolyte abnormalities.
   4. Symptomatic chronic renal insufficiency.

3. Reproductive

Reproductive abnormalities that render trooper unable to perform the tasks required of a Massachusetts State Police Trooper.

REVISION TO MEDICAL FITNESS STANDARDS FOR RETENTION
(RE-ENLISTMENT) IN THE
MASSACHUSETTS STATE POLICE

EFFECTIVE DATE: August 15, 1996

Section: 3-15 GENITOURINARY SYSTEM

Paragraph: 3.16i

Renal failure or Recipient of a kidney transplant. Renal failure that progresses to the point which requires renal replacement therapy in the form of peritoneal or hemodialysis excludes a trooper from duty.

If a renal transplant is performed, the trooper is excluded from work during the post renal transplant period until the newly transplanted kidney's function and the trooper's overall medical condition are such that the treating nephrologist are prepared to recommend to the State Police Surgeon that s/he be allowed to return to work

A dialysis dependent trooper will be excluded from duty.

Section: 3-15 GENITOURINARY SYSTEM

Paragraph: 3.16j

Kidney donor. If a trooper donates a kidney, fitness for duty will be based on a re-evaluation of his/her post operative medical condition.

REVISION TO MEDICAL FITNESS STANDARDS FOR RETENTION
(RE-ENLISTMENT) IN THE
MASSACHUSETTS STATE POLICE

EFFECTIVE DATE: July 5, 1996

Section: 3-5 GASTROINTESTINAL AND ABDOMINAL SURGERY

Paragraph: c.

Ileostomy. Permitted when no complications. It must be located to allow gun belt use.

REVISION TO MEDICAL FITNESS STANDARDS FOR RETENTION
(RE-ENLISTMENT) IN THE
MASSACHUSETTS STATE POLICE

EFFECTIVE DATE: October 12, 1995

Section: .3-19 HEART

Paragraph: a.4.

Fixed obstructive coronary artery disease, asymptomatic, but with significant objective evidence of myocardial ischemia.

Massachusetts State Police Vision and Hearing Standards (as of March 2001)

3-14 e. Visual acuity

1. *Distance vision worse than 20/40 binocular, with correction if necessary.*
2. *Combined horizontal peripheral field of vision of less than 120 degrees.*
3. *Severe color vision deficiency, inadequate to identify the colors red, green, and amber.*

3-8 Hearing

A hearing deficit in either ear, with or without a hearing aid, in the pure tone thresholds greater than an average of 30 dB at 500 Hz, 1000 Hz, and 2000 Hz.

Massachusetts State Police Trooper Essential Task List September, 1995

HUMAN PERFORMANCE SYSTEMS, INC.

MASSACHUSETTS STATE POLICE TROOPER ESSENTIAL TASK LIST
September 1995

LIFT/CARRY

1. (3) *With* assistance, lift and carry individual resisting arrest (e.g., protester, suspect) 1–50 feet.

2. (4) *Without* assistance, lift and carry individual resisting arrest (e.g., protester, suspect) 1–50 feet.

3. (8) Lift and carry objects weighing 10 to 25 lbs. (e.g., briefcase, radar kit, flare box, cones, signs, boxes of office supplies) and carry 50 feet.

PUSH/PULL

4. (15) Physically restrain/subdue (e.g., hold) a resistive individual using reasonable force (e.g., suspect, mental patient, drugged person).

5. (16) Handcuff a suspect.

6. (18) *With* assistance, place resistive violator in back seat of cruiser.

7. (19) *Without* assistance, place resistive violator in back seat of cruiser.

8. (21) Steady and assist a drunk person out of car and/or into cruiser.

9. (23) Frisk/pat down individuals for weapons or drugs by running hands over clothing.

10. (29) Ignite and set flare pattern.

11. (31) Assist motorist with car trouble (e.g., out of gas, mechanical problem, jump car).

CLIMB/CRAWL

12. (42) Climb guardrail or median barrier.

13. (58) Crawl in confined areas (e.g., attics, under trucks, ductwork, overturned vehicles) to search for evidence, weapons, or individuals.

BEND/STOOP

14. (59) Bend to search for physical evidence under seats or dash, in trunk, and under hood of vehicle.

15. (60) Bend to look under furniture for physical evidenc at crime/accident scene.

16. (61) Bend to look under vehicle or tractor trailer.

17. (62) Bend to set flares.

18. (63) Bend over to assist handcuffed suspect from a prone position to a standing position.

RUN

19. (65) Run in pursuit of fleeing suspect.

20. (66) Run up stairs.

21. (67) Physically restrain a combative suspect after running.

WALK

22. (68) Walk continuously (e.g., 15 minutes or more) to patrol (e.g., beach area, airport) or to conduct search.

23. (69) Assist conscious individuals (e.g., elderly, injured, or drunk person) in/out of cruiser or walking out of buildings (e.g., evacuating buildings).

24. (70) Walk up stairs

25. (71) Walk backwards to cruiser (20 ft.) while monitoring vehicle pullover.

STAND

26. (72) Stand and direct traffic (1 to 2 hours).

27. (73) Stand for extended periods of time 1 to 2 hours (e.g., during stakeout, accident/crime scene, crowd control).

SIT

28. (74) Sit for an extended period of time in cruiser or other vehicle during to monitor area or activities of suspect (e.g., surveillance).

29. (75) Sit for extended periods of time for desk duty or court cases.

DRIVE

30. (76) Drive cruiser on open road (i.e., uncongested) at high speeds in response to call or emergency.

31. (77) Drive cruiser through congested areas at high speeds in response to call or emergency.

32. (78) Drive through assigned area while on duty.

33. (79) Drive in pursuit of suspect fleeing on foot.

34. (80) Perform U-turn or turn around on 2 or 4 lane roads.

36. (82) Transport prisoner/suspect to jail, hearings, hospitals, or station.

OPERATE HAND CONTROLS

37. (85) Operate radio while driving cruiser.

38. (86) Operate portable radio.

39. (87) Operate sirens and lights while driving.

40. (88) Set up stationary or mobile radar unit.

41. (89) Operate radar (e.g., gun, dash mounted) to identify speeding vehicles.

42. (90) Operate breathalyzer unit.

43. (91) Operate hand spotlight while driving.

44. (94) Operate computer in station to enter and retrieve data.

45. (95) Operate camera to take pictures of crime/accident scene, victim, evidence.

FIREARMS

46. (97) Load and unload handgun.

47. (98) Clean handgun.

48. (99) Fire 110 (i.e., 39, 39, 32) rounds with handgun at target during practice or firearms qualification from all positions (prone, crouched, kneel, behind barricade).

49. (101) Draw and hold handgun on felony suspect until back-up arrives.

QUICK MOVEMENTS

50. (104) Quickly get out of cruiser in response to an emergency call or to chase suspect.

51. (105) Quickly get into cruiser to pursue suspect in car or to assist another officer in an emergency.

52. (107) Block and evade blows, punches, kicks, etc., with arms, hands, or legs.

53. (108) Move across on-coming traffic on a congested highway or street.

EMERGENCY PROCEDURES

54. (112) Administer first aid to injured/wounded persons as first responder.

READ

55. (114) Read manuals, books, and documents to gather information.

56. (115) Read reports consisting of short, descriptive phrases (e.g., Face sheets [sp–12] incident reports, lab reports, investigative reports, prisoner records, posted lists, I.D. cards, rap sheets, field contact cards).

57. (116) Read operator's license, vehicle registration, vehicle identification number, and insurance documentation.

58. (117) Read map to determine location of incident.

59. (118) Read and interpret legal documents and state, county, and federal laws and codes.

60. (119) Review forms (e.g., subpoenas, warrants) for completeness and accuracy.

61. (120) Read and interpret coded material (e.g., NCIC printout, DMV drivers' records).

62. (121) Read MDT computer screen.

63. (122) Read indicated speed from radar unit.

COMPREHEND

64. (123) Identify troublesome locations and times in patrol area.

65. (124) Determine whether probable cause exists to search persons or property.

66. (125) Survey crime scene and quickly gather information to immediately determine appropriate course of action (e.g., additional manpower).

67. (126) Determine whether to issue a summons, warn violator, or make a custodial arrest.

68. (127) Assess the reliability of information received regarding emergency situations and criminal offenses.

69. (128) Recognize inconsistencies in suspects' behavior and verbal statements.

70. (129) Analyze and compare cases for similarity of M.O.

71. (130) Classify incidents to determine the appropriate report form to complete.

72. (131) Estimate and bend to measure skid marks and other marks on roadway as part of accident investigation.

73. (132) Administer field test for intoxication (e.g., horizontal gaze, 9 steps & turn, one leg stand).

WRITE

76. (135) Maintain field notebook or daily diary.

77. (136) Complete reports consisting of short descriptive phrases and/or fill in the blanks (e.g., face sheet [SP–12], accident report).

78. (137) Complete narrative reports (e.g., record of investigation [SP–12], application for search warrant/restraining order [#209], "to/froms").

79. (138) Write summons for offenses (e.g., traffic citations, vehicle weight violations, criminal summons).

80. (139) Label and secure evidence.

81. (140) Record interview and descriptive information obtained from suspects, witnesses, or prisoners (e.g., name, address, phone, DOB, etc.).

82. (141) Summarize information from telephone or radio call conversation.

83. (142) Sketch/draw scene of accident or crime in notebook.

84. (143) Takes notes on items of concern during announcements, roll call, or staff meeting.

85. (144) Prepare court papers for presentation at trial or hearing.

86. (145) Correspond with dispatcher or other officers through written messages on MDT and station computers.

CALCULATE

87. (146) Perform simple arithmetic calculations (add, subtract, multiply, divide).

COMMUNICATE

88. (147) Communicate description of individuals or vehicles to officers, dispatcher, or supervisors under stressful conditions (e.g., in pursuit, officer down, witness to violent event).

89. (148) Provide accurate and factual information associated with a crime, accident, or arrest to others (e.g., officers, suspects).

90. (149) Use radio to report routine or emergency incidents and locations.

91. (150) Identify self as police officer and inform suspect of his/her legal rights.

92. (151) Talk to citizens to answer their questions and respond to their concerns.

93. (152) Diffuse arguments (domestic and other arguments) by talking to individuals.

94. (157) Use vehicle external speaker to communicate information to others.

95. (158) Discuss case/provide information to prosecutors.

96. (159) Testify at a trial or hearing.

97. (160) Lecture to outside agencies (or schools) as a representative of the department.

98. (161) Use telephone to gather/exchange information with other police departments, other officers, witnesses, etc.

HEAR

99. (162) Hear an order or instruction spoken in a normal tone from a distance of 10–25 feet.

100. (163) Hear conversation over the sounds of machinery/traffic while interviewing individuals or receiving instructions at accident/crime scene.

101. (164) Listen to radio and distinguish appropriate calls.

102. (165) Identify speech and voice characteristics over the phone (e.g., sex, age, accent) while recording message accurately.

103. (166) Hear sounds that should be investigated and approximate their origin (e.g., breaking glass, gun shots, alarm, screeching tires, angry or fearful voices).

104. (167) Listen for sounds while searching an area for an individual/suspect (e.g., whispering, movement, breathing).

105. (168) Listen to radar pitch and determine speed of vehicles.

106. (169) Listen for traffic approaching behind your back as you are investigating an accident or talking to the driver of a stopped vehicle.

VISION

107. (170) Check residences, parks, and businesses to determine whether conditions appear to be in order (e.g., try doors to determine point of entry).

108. (171) Search wooded areas for evidence, suspects, weapons.

109. (172) Search buildings/structures for evidence, suspects, weapons.

110. (173) Survey accident/crime scene from a distance while approaching in immediate area.