UNITED STATES MARINE CORPS
Marine Corps University
Corporals Noncommisioned Officers Program

CPL 0101
Aug 02

STUDENT HANDOUT

Physical Conditioning Program

LEARNING OBJECTIVES

a. TERMINAL LEARNING OBJECTIVE: Given a group of Marines in appropriate PT gear, a training site, and with the aid of references, lead a unit in physical fitness conditioning per the references. (CPL 23.1)

b. ENABLING LEARNING OBJECTIVES : Given a scenario on physical conditioning and without the aid of but per the references, identify the following:

(1) Marine Corps Order on the Physical Conditioning Program. (CPL 23.1a)
(2) Physical conditioning. (CPL 23.1b)
(3) Principles of physical conditioning. (CPL 23.1c)
(4) Components of physical conditioning.. (CPL 23.1d)
(5) Types of physical conditioning programs. (CPL 23.1e)
(6) FITT factors. (CPL 23.1f)
(7) Specific physical conditioning programs. (CPL 23.1g)
(8) Climatic considerations. (CPL 23.1h)
(9) Physiological differences between the sexes. (CPL 23.1i)
(10) How age affects physical activity. (CPL 23.1j)
(11) Nutrition guidelines. (CPL 23.1k)

OUTLINE.

1. MARINE CORPS ORDER ON PHYSICAL CONDITIONING PROGRAM.

a. SCOPE. Every Marine must be physically fit, regardless of age, grade, or duty assignment. Fitness is essential to the day-to-day effectiveness and combat readiness of the Marine Corps. Furthermore, physical fitness is an indispensable aspect of leadership. The habits of self-discipline required to gain and maintain a high level of physical fitness are inherent to the Marine Corps way of life and must be a part of the character of every Marine. Marines who are not physically fit can be a detriment to the readiness and combat efficiency of their unit. Accordingly, every Marine will engage in an effective PCP on a continuing and progressive basis.

b. The physical conditioning program requires each Marine to receive a minimum of 3 hours physical fitness training per week, to be tested semiannually, and obtain a minimum standard of

third class. The attainment of a higher level score is encouraged since PFT scores are figured into composite scores; however, do not overemphasize PT to the point where it is detrimental to the development of the total Marine.

c. The order that provides physical fitness requirements for the Marine Corps is MCO P6100.12, Marine Corps Physical Fitness Test and Body Composition Program Manual (MCPFTBCPM).

2. PHYSICAL CONDITIONING. The definition of physical fitness is subjective to those defining it. The Marine Corps considers physical fitness to be the ability of a Marine to meet the physical demands of any combat or duty situation without undue fatigue. To achieve this state of physical fitness, physical conditioning should incorporate the components and principles.

3. PRINCIPLES OF PHYSICAL CONDITIONING. There are several different principles to consider when developing an effective PCP:

a. Progression. Conditioning programs must incorporate a systematic means to increase training load.

b. Regularity. To realize a conditioning effect, training programs must conduct physical conditioning sessions at least 3-5 times per week.

c. Overload. Only when the various systems of the body are overloaded will they become able to handle greater load.

d. Variety. Varying a program from time to time maintains interest and prevents staleness.

e. Recovery. Essential for allowing the systems overloaded during conditioning to adapt and become stronger.

f. Balance. Balanced conditioning programs ensure all the components of physical fitness conditioning (strength, endurance, and mobility) are properly addressed.

g. Specificity. Conditioning that is specific in nature yields specific gains. For example, stationary bike riding is of little value in improving running.

4. COMPONENTS OF PHYSICAL CONDITIONING. To capitalize on those components that can benefit conditioning efforts, the following categories of exercises should be included in both individual and unit PCPs:

a. Strength. Muscular strength refers to the ability of the muscular system to move the body through resistance. Many associate strength training with progressive resistive exercises using weights and machines. However, the ability of a Marine to effectively handle their own body weight should be a prerequisite before integrating strength training with machines into their program. Strength training can be broadly separated into two categories, general and specific.

(1) General Strength Training. This type of training strengthens the muscular system by focusing on a full body workout for strength and size. In this type of training, the major muscle groups are exercised without a specific task or functional goal in mind. This type of strength training contributes to overall health.

(2) Specific Strength Training. This type of strength training is task specific. For example, Marines desiring to climb a rope better would do rope climb training wearing body armor, and focus their strength training on muscles involved in rope climbing. A company of Marines expecting to operate in hilly terrain would focus their strength training primarily on lower body strength.

b. Endurance. Two types of endurance conditioning are needed for a Marine to meet the physical demands of combat, aerobic and anaerobic.

(1) Aerobic Endurance. Aerobic activity, meaning "in the presence of oxygen," is categorized by physical demands that are sub-maximal (not an "all out" effort) and involve activity that is continuous in nature (lasting more than 3-5 minutes). Two examples are road marching and long distance running.

(2) Anaerobic Endurance. Anaerobic activity, meaning "without oxygen," is categorized by physical demands that are high intensity and of shorter (less than 2-3 minutes) duration. Examples are rope climbing, most forms of weight lifting, and running short, quick distances.

c. Mobility. Mobility condition is geared towards improving quality of movement. Quality of movement depends on the following:

(1) Posture
(2) Balance and stability
(3) Agility
(4) Coordination
(5) Power
(6) Speed
(7) Flexibility

5. TYPES OF PHYSICAL CONDITIONING PROGRAMS.

a. Developmental Program. Marines in a beginning or poor state of physical readiness need a program, which will develop strength, endurance, physical skills and character traits, which are beneficial to the successful accomplishment of Marine Corps, missions.

b. Maintenance Program. This program is designed to maintain an individual or unit at their current level of fitness. This is the most common type seen in the Marine Corps.

c. Remedial Program. Remedial programs are for those who possess substandard physical fitness levels. Those who are overweight, fail to reach physical fitness test standards, or who have

missed extended periods of conditioning due to illness, injury, or other absence. Light or no duty Marines should be included as much as their condition will allow.

6. FITT FACTORS AND HOW THEY RELATE TO PHYSICAL CONDITIONING.

a. Frequency: This factor applies to how often you conduct PT. You get physically fit because your body sees a need to adapt itself to a different set of conditions, such as an increased demand on your heart or certain muscles. If this increased demand is only occasionally applied, then your body will not see a need to adapt. By order, Marines are required to participate in physical training at a minimum of 3 hours a week. This means that you will have three, one hour long, PT sessions per week. For optimal results, leaders should strive to conduct five, one hour long, PT session per week.

b. Intensity: Training at the right intensity is the biggest problem in unit programs. The intensity should vary with the type of exercise being done. Exercise for (CR) cardio-respiratory development must be strenuous enough to elevate the heart rate to between 60-90 percent of the heart rate reserve. Appendix A contains a more detailed discussion of heart rate reserve and how to determine what yours is. Those with low fitness levels should start exercising at a lower training heart rate of about 60 percent of heart rate reserve. For muscular strength and endurance, intensity refers to the percentage of the maximum resistance that is used for a given exercise.

c. Time: Like intensity, the time spent exercising depends on the type of exercise being done. At least 20 to 30 continuous minutes of intense exercise must occur in order to improve any level of fitness.

d. Type: Type refers to the kind of exercise performed.

(1) CR training requires rhythmic and continuous use of large muscle groups.

(2) Muscular training requires progressive work against resistance, to include - weights, machines, and natural body weight (sit-ups, pull-ups, and push-ups).

(3) Flexibility exercises, for safety reasons, should be static (slow, gradual, and controlled) stretching. This type of stretching is least likely to cause injury and is preferred by professionals.

7. SPECIFIC PHYSICAL CONDITIONING PROGRAMS.

a. Daily 16 Program. The Daily 16 Program is a comprehensive series of warmup, conditioning, and cool-down exercises replacing the former Daily 7 Program. This all-encompassing program can be incorporated into any unit aerobic or anaerobic conditioning session, or can be used as a conditioning session in of itself.

(1) Warmup Exercises. The Daily 16 warm-up exercises facilitate gradual distribution of blood flow to the muscles, preparing both the cardiovascular and musculoskeletal systems for the exercise session, by effectively targeting both the upper and lower body. The increased blood flow

to the muscles produces a warming effect, increasing the elasticity of the muscles and connective tissue, which is believed to reduce injury.

(2) Conditioning Exercises. The Daily 16 conditioning exercises provide a total body workout through the proper execution of traditional calisthenics. Conditioning exercises can be used as a workout session in and of itself, or to augment the main fitness event (e.g., squad ability run or obstacle course).

(3) Cool-down Exercises. The Daily 16 cool-down exercises (which are basically the same as the warm-up exercises) allow the body to gradually return to the pre-exercise state.

b. Occupational Conditioning. This conditioning is comprised of general physical conditioning exercises that will develop and maintain strength, endurance, and the physical skills necessary to sustain a Marine during combat. Good examples of occupational conditioning that prepares Marines to successfully handle the demands of their particular MOS/billet are Physical Readiness Training (PRT), progressive load-bearing marches, martial arts training, dry net training, Military Operation in Urban Terrain (MOUT) training, combat water survival training, obstacle course, and confidence course.

c. Competitive Conditioning. Competitive conditioning activities consist of teams or individuals competing against an opponent to win. This includes a combination of sports and military skills designed to foster the unit's combat readiness, competitive spirit, and esprit de corps. Some good examples are speed marches reaction courses, orienteering, water-can re-supply relays, and stretcher or fireman carry relays.

d. Remedial Physical Conditioning Program (RPCP). All Marines who fail the PFT, demonstrate poor physical performance in MOS-related skills, or who are assigned to the BCP will be assigned to a RPCP. Remedial physical conditioning is a process by which Marines are conditioned in a progressive manner to meet prescribed standards. The goal is to provide challenging conditioning sessions, using the spectrum of aerobic conditioning, resistance conditioning, and other related exercises that will afford the Marines an opportunity to rebuild themselves after a weight and body fat increase, injury/illness, pregnancy, or a period that lacked a structured fitness program. The philosophy of remedial conditioning is not punitive in nature, but is intended to encourage improvement in overall fitness or to supplement a BCP. Comprehensive guidance for the development of a command directed RPCP is contained in paragraph 2400 and appendix C of this Manual.

e. Alternate Aerobic Conditioning. In cases of lower limb injury or related medical conditions that prevent running or hiking, Marines may opt to perform other low impact activities to supplement the requirement for cardiovascular conditioning. Swimming, deep water running, cycling, cross-country skiing, stair stepping, and rowing are excellent examples of low impact, endurance exercises that provide good augmentation or substitution for running or hiking regimens. For example, the advantages of swimming include the use of all major muscle groups during exercise, reducing lower body stress due to partial body weight being supported by the water, and the absence of impact on bones and joints. Additionally, the body’s position in the water increases the efficiency of the circulation back to the heart during exercise. Although these types of aerobic

conditioning alternatives may not improve overall running ability (e.g., speed and endurance), it can enhance a current running or hiking regimen, while minimizing related injuries.

8. CLIMATIC CONSIDERATIONS.

a. Temperature Regulation. The body constantly produces heat, especially during exercise. To maintain a constant normal temperature, it must pass this heat on to the environment. Life-threatening circumstances can develop if the body becomes too hot or cold. In the case of overheating, the body can produce heat at a rate of 10 to 20 times greater than during rest. To survive, it must get rid of the excess heat. Heat moves from warm to cool area. An example of this is sweating; the body's most important means for heat loss. Any condition that slows or blocks the transfer of heat from the body by evaporation causes an increase in body temperature. This could result in heat related injuries, (i.e. heat cramps, heat stroke, or heat exhaustion.) To prevent heat injuries, leaders must do the following:

(1) Adjust the intensity to fit the temperature and humidity.

(2) Ensure Marines drink enough water before, during, and after exercise.

(3) Avoid highly concentrated liquids such as sodas and those with a high sugar content, because they slow down the absorption of water by the stomach.

(4) Avoid consuming hot liquids such as coffee and tea. Because they act as a diuretic, they make you urinate more frequently and this fluid loss could result in dehydration.

b. Exercising in Hot, Humid Environments. A Marine's ability to perform effectively in hot, humid conditions depend on both his acclimatization and level of fitness. Some important changes occur as a result of acclimatization to a hot environment. The following adaptations help the body cope with a hot environment.

(1) Sweating occurs at a lower body temperature.

(2) Sweat production is increased.

(3) Blood volume is increased

(4) Heart rate is less at any given workload.

c. Exercising in Cold Environments. Contrary to popular belief, there are few real dangers of exercising in temperatures well below freezing. Since the body produces large amounts of heat during exercise, it has little trouble maintaining a normal temperature. There is no danger of freezing the lungs. However, without proper precautions, hypothermia, frostbite, and dehydration can occur. One of the most important precautions to prevent cold weather injuries is being properly dressed when conducting PT in cold weather. Clothing for cold whether should protect, insulate, and ventilate. The following are some guidelines that should be followed:

(1) Preserve body heat by covering as large an area of the body as possible.

(2) Insulation will occur by trapping air, which has been warmed by the body, and holding it near the skin.

(3) Ventilate by allowing a two-way exchange of air through the various layers of clothing.

(4) Clothing should leave your body slightly cool rather than hot.

(5) Clothing should be loose enough to allow movement.

(6) Clothing soaked with perspiration should be removed if reasonably possible.

d. Acclimatization to High Altitudes. Elevations below 5,000 feet have little or no effect on healthy people. However, at higher elevations the atmospheric pressure is reduced and the body tissues get less oxygen. This means that Marines cannot work or exercise as well at high altitudes. The time it takes to acclimatize depends on the altitude and the fitness level of the individual and can vary from eight days to three weeks; however, 30 days is recommended before a Marine runs a P.F.T. for score.

9. PHYSIOLOGICAL DIFFERENCES BETWEEN THE SEXES. Marines vary in their physical makeup. Each body reacts differently to varying degrees of physical stress. No two bodies react exactly the same way. Leaders must be aware of these differences and plan the training to provide maximum benefit for everyone. The following describe the most important physical and physiological differences between men and women:

a. Size: The average 18 year-old man is 70.2 inches tall and weighs 144.8 pounds, whereas women of the same age are 64.4 inches tall and weigh 126.6 pounds. This difference in size affects the absolute amount of physical work that can be performed by men and women.

b. Muscles: Men have 50 percent greater muscle mass, based on weight than do women. A woman who is the same size as her male counterpart is generally only 80 percent as strong. Therefore, men usually have an advantage in strength, speed, and power over women.

c. Fat: Women carry about 10 percent more body fat than do men of the same age. Also, because the center of gravity is lower in women than in men, women must overcome more resistance in activities that require movement of the lower body.

d. Heart Size and Rate: The average women's heart is 25 percent smaller than the average man's. Thus, the man's heart can pump more blood with each beat. The larger heart size contributes to the slower resting heart rate in males.

e. Flexibility: Women are generally more flexible than men.

f. Lungs: The lung capacity of men is 25 to 30 percent greater than that of women. This gives men still another advantage in the processing of oxygen and in doing aerobic work such as running.

10. HOW AGE AFFECTS PHYSICAL ACTIVITY. Marines who are older represent the senior leadership in the Marine Corps. They must lead other Marines under conditions of severe stress. Increased age usually brings increased responsibility which, in many instances, leads to a routine that can become devoid of physical activity. To meet this challenge and set a good example, these leaders must maintain and demonstrate a high level of physical fitness. Since their normal duties may be stressful but nonphysical, they must take part regularly in a physical fitness program. The need to be physically fit does not decrease with increased age. People undergo many changes as they grow older, some of these changes are:

a. Heart: The amount of blood the heart can pump per beat per minute decreases during maximum exercise, as does the maximum heart rate. This lowers a person's physical ability and performance suffers.

b. Fat: The percent of body weight composed of fat generally increases, while total muscle mass decreases. The result is muscle strength and endurance suffers.

c. Peak Fitness Levels: Men tend to maintain their peak levels of muscular strength and endurance and cardio-respiratory until age 30. After 30 there is a gradual decline throughout their lives. Women tend to reach their peak in physical capability shortly after puberty and then undergo a progressive decline.

11. NUTRITION. Body composition plays a big role in a persons fitness level. Good dietary habits will bring performance to the maximum potential; however, you must combine both aspects of nutrition and exercise to reap the benefits.

a. The following are some guidelines to go by when choosing the foods you eat.

* Eat a variety of foods.
* Maintain healthy body weight.
* Eat foods that are low in fat, saturated fat and cholesterol.
* Eat plenty of vegetables, fruits and grains.
* Use sugars, salt, and sodium in moderation.
* If you drink alcoholic beverages, do it moderately.

b. Types of Nutrients: There are many types of nutrients found in food. We will only cover a few of them.

(1) Protein: Protein is used to build, maintain, and repair muscle tissue, and forms an important part of enzymes, hormones, and body fluids. It helps to form antibodies that fight off infections. There are 4 calories in each gram of protein. The recommended daily allowance for protein should constitute 15 - 20% of your caloric intake. For some, depending on their fitness

program and goals, the intake may be slightly higher or lower in percentage. Protein is found mostly in meats, but also is other things, such as nuts.

(2) Carbohydrates: Carbohydrates supply food energy and help to use fat efficiently. There are 4 calories in each gram of carbohydrates. Carbohydrates are found in pastas, breads, cereals, beans, and grains etc. The recommended daily allowance for carbohydrates should constitute 60 - 70% of your caloric intake. (Most Americans get only 45 - 55% of their caloric intake from carbohydrates.) This intake, again, may be slightly higher or lower depending on their fitness programs and goals. There are two types of carbohydrates that provide energy:

(a) Simple Carbohydrates: These are in the form of sugars. Sugars enter the blood faster, thus providing quick bursts of energy. They do not last long, and the tempo of the energy level dies quickly after consumption and use.

(b) Complex Carbohydrates: These are in the form of starches. Starches take longer for the body to digest, thus providing a long-term fuel source for longer endurance activities.

(3) Fats: Fat supplies food energy and essential fatty acids. They also help the body use certain other nutrients. There are 9 calories in every gram of fat. You can see that this is a significant increase of calories per gram over protein and carbohydrates. The recommended daily allowance is no more than 30% fat from your caloric intake. (Most Americans get 35 - 40% of their caloric
intake from fat. Fat comes in many varieties. There are two kinds of fat.

(a) Saturated Fat: Saturated fat is solid at room temperature and comes mainly from animal sources. Some non-animal sources are palm, coconut oils and cocoa butter.

(b) Unsaturated Fat: Unsaturated fat is usually liquid at room temperature. They are found in vegetables, fish, and poultry.

NOTE: Along with these fats is a special kind of waxy fat called sterol. This is found only in animals. A high level of cholesterol increases the risk of cardiovascular disease (clogging arteries). But, keep in mind the body manufactures it and is necessary for survival.

(4) Vitamins: Vitamins are used to regulate most body functions. They are also vital links in metabolism and help utilize proteins, carbohydrates and fats where needed. There are two types of vitamins:

(a) Water soluble: These vitamins are not stored in the body, and any extra is excreted by the body. Some of these vitamins include:

1. Vitamin C: They hold body cells together and strengthen the walls of blood vessels, heals wounds, builds resistance against infection and helps to build bones.

2. Vitamin B Complex: These help maintain the normal health of the skin, intestines, and the nervous system. They also help the cells of the body use oxygen.

(b) Fat Soluble: These vitamins are stored in the body, and if taken in excess may become toxic. Some of these vitamins include:

1. Vitamin A: This maintains healthy skin tone, helps build antibodies against infection and promotes growth.

2. Vitamin D: This is absorbed through the skin. It helps build strong bones and joints.

3. Vitamin E: This is needed to maintain healthy hair and skin, and delays the aging process.

c. Calorie Intake: Another aspect to look at is the calorie intake. A Marine must consume enough calories to meet their energy needs. Weight is maintained as long as the body is in an energy balance, (i.e. number of calories consumed equals the number of calories used). To estimate the number of calories used in daily activity, multiply your body weight by 13 if inactive, 14 if somewhat active, and 15 if moderately active. The result will provide an estimate of the number of calories needed to maintain your present body weight. This is known as an energy balance. Keep in mind a male should not get less than 1500 calories daily and a female not less than 1200 calories daily. Also, 3500 calories equals 1 pound, so in one week, to lose a pound, you must lower your caloric intake 500 calories daily.

d. Water: Water is very important in maintaining good nutritional habits. It is an essential nutrient that is critical to optimal physical performance. It's the body's cooling system when sweating occurs. Water must be consumed before, during, and after exercise to prevent poor performance and injuries. The following are some recommendations for fluid intake:

* Drink cool (about 40 degrees) water. Fluid also comes form milk, juice, soup, and other beverages.
* Do not drink coffee, tea, or soft drinks in excess even though they are fluids. The caffeine content acts as a diuretic which increases urine production and fluid loss. The caffeine also increases your heart rate.
* Drink large quantities of water one to two hours before exercise. This allows time for hydration and urination.
* Drink three to six ounces of fluid every 15 - 30 minutes during exercise.
* Replace fluid losses by monitoring your pre- and post-exercise body weights. Drink 2 cups for every pound lost.

OPPORTUNITY FOR QUESTIONS

1. QUESTIONS FROM THE CLASS.

2. QUESTIONS TO THE CLASS.

   a. QUESTION: What are three components of Physical Conditioning?
      ANSWER: Strength, Endurance, Mobility.

   b. QUESTION: What are the three comprehensive series of exercises ?
      ANSWER: Warm-up, Conditioning, and Cool Downs.

SUMMARY

During this class we covered the MCO on the physical conditioning program, the physical conditioning program, the principles of physical conditioning, components of physical conditioning, the types of physical conditioning, the FITT factors and how they apply to fitness, specific physical conditioning programs, climatic considerations, the physiological differences between men and women, how age effects physical activity, proper nutrition as it applies to physical fitness. Those students with the IRF's, fill them out and turn them in at this time. The rest of the class take a ten minute break.

APPENDIXES:

A. Monitoring Heart Rate.
B. Form for Physical Training.
C. Body Composition Program.
D. Body Fat Estimation.

REFERENCES:

MCO P6100.12, Marine Corps Physical Fitness Test and Body Composition Program Manual.
FMFRP 0-1B, Marine Physical Readiness Training for Combat

APPENDIX A

MONITORING THE HEART RATE

1. Keeping track of the heart rate lets you gauge the intensity of the cardio-respiratory exercise being conducted to ensure maximum effort is being exerted during physical training sessions. With this information, you can be sure that the intensity is enough to improve your cardio-respiratory fitness level. Remember, intensity is probably the single most important factor for improving performance.

a. Maximum Heart Rate (MHR). Determine your MHR by subtracting your age from 220.

EXAMPLE: MHR = 220 - age
MHR = 220 - 22 = 198 for a 22 year old Marine.

b. Resting Hear Rate (RHR). Next, figure your RHR. This is your heart rate when you are totally rested and relaxed. A good time to figure your RHR is in the morning as soon as you wake up. Check your pulse in your wrist or in your neck for 60 seconds. This gives you the most accurate reading.

c. Heart Rate Reserve (HRR). Next, figure your HRR. This is the heart rate that is between your Maximum Heart Rate and your Resting Heart Rate.

EXAMPLE: HRR = MHR - RHR
HRR = 198 - 68 = 130 for a 22 year old Marine with a RHR of 68.

d. Training Heart Rate (THR). The THR is the heart rate that you want to achieve during exercise. It is figured by adding 60 - 90% of your HRR to your RHR. The percent that you use will depend on what type of shape you are in.

* Poor shape = 60%
* Good shape = 70%
* Excellent shape = 85%

EXAMPLE: THR = (% x HRR) + RHR
THR = (.70 x 130) + 68 = 159 for a 22 year old Marine in good shape with a resting heart rate of 68. What this means in our example, is that this Marine should adjust the intensity of his exercise so that his heart rate is 159 beats per minute or more.

e. To check your heart rate during a work out, count your pulses in a ten second time limit and multiply by 6.

EXAMPLE: 27 (in 10 secs.) x 6 = 162 Beats Per Minute.

f. A Marine that maintains his THR throughout 20 - 30 minute exercise period is doing well and can expect improvement in his cardio-respiratory fitness level. Heart rates should be taken at approximately 5 minutes into the workout.

APPENDIX B

FORM FOR PHYSICAL TRAINING

NOTE: There is no drill movement in the drill manual on how to form for PT. There are actually several ways of doing it. This is merely one of those ways.

(P) To form for physical drill with or without arms.
(F) Platoon in column.
(W) Halted at attention. If armed with rifles, the rifles will be at order arms.
(C) The commands will be explained with each movement.

1. Before the movement is executed the unit leader will be placed 3 paces from the platoon guide and centered on the column.

2. COUNT OFF. The command is FROM FRONT TO REAR, COUNT OFF. The base for this movement is the squad leaders. The platoon guide will not count off. At the command of execution OFF, the squad leaders turn their heads to the right, smartly shouting ONE, as they turn their heads back to the front. When the Marine in front calls out a number, the next one turns his head to the right and smartly shouts the next higher number as the previous Marine turns his head back to the front.

3. TAKE INTERVAL TO THE LEFT. The next command is TAKE INTERVAL TO THE LEFT, MARCH.

a. Third Squad. The base for this movement is the third squad. On the command of execution MARCH, all members of the third squad cover in file and stand fast. They remain in this position until given another command.

b. First Squad. At the command of execution MARCH, all members of the first squad face left as in marching and take four 30 inch steps, halt, and execute a right face. They cover automatically without command. They remain in this position until given another command.

c. Second Squad. At the command of execution MARCH all members of the second squad face left as in marching and take two 30 inch steps, halt, execute a right face. They cover automatically without command. They remain in the this position until given another command.

d. Unit Leader. At the command of execution, MARCH, the unit leader faces to the right as in marching, takes the appropriate number of steps to get re-centered on the squad leaders and faces toward the platoon.

4. EVEN NUMBERS TO THE RIGHT. The next command is EVEN NUMBERS TO THE RIGHT, MOVE. At the command of execution, MOVE, all even numbered Marines in the formation and the platoon guide move to their right and to the middle of the interval between files by swinging the right leg sideways. They spring from the left foot and land on the right foot. They bring the left foot smartly against the right. They cover automatically without command.

5. REFORM THE UNIT. The command is ASSEMBLE, MARCH. At the command of execution MARCH, all odd numbered Marines of the third squad and the even number men of the second squad stand fast. All remaining members face as in marching and return on the double to their original position and stand fast. The unit leader faces to the left as in marching and re-centers himself on the column to verify that cover has been made. After verifying cover, the unit leader faces half right as in marching and moves to a position 6 paces and center on the column.

6. IF ARMED. If armed with rifles, all marching movements are executed by carrying the rifle at trail arms.

APPENDIX C

BODY COMPOSITION PROGRAM

1. Standards. The Marine Corps' weight and body fat standards are health and performance based, and not based on appearance. Marines are considered not within these standards when their body weight and body fat exceed the maximum limits. If tested and the Marine's percent body fat exceeds the maximum limit (18% for males, 26% for females), then the CO will evaluate the Marine's physical performance using the physical performance evaluation. If the Marine does not meet the Physical Performance Evaluation criteria, then the CO will have the Marine evaluated by a Medical Officer and assigned to the BCP. Marines assigned to the BCP will receive assistance in reducing body weight and in particular body fat, in order to attain and maintain a more healthy physical fitness state.

a. Responsibility. It is the CO's responsibility to ensure each Marine receives a semi-annual Body Composition Evaluation, and to closely monitor Marines assigned to the command's (BCP) Body Composition Program and (RPCP) Remedial Physical Conditioning Program. COs will:

(1) Continually monitor all Marines within the command to ensure adherence to established body composition standards.

(2) Identify Marines who exceed the weight and body fat standards by conducting periodic Body Composition Evaluations.

(3) Offer educational programs, events, and other motivational means to encourage Marines to achieve and maintain appropriate body composition standards. Such programs could include, but are not limited to: body composition seminars; health and fitness fairs; and individual consultations conducted by qualified dieticians, medical authorities, and Semper Fit personnel. Spouses should be encouraged to participate in these programs with the assigned Marine.

(4) Ensure the leadership understands that Marines may not have the education and experience needed to attain and maintain proper health and fitness, and that lifestyle changes may take time. However, if given the proper tools (e.g., education, supervision, and positive reinforcement), leaders can assist Marines in achieving and maintaining a healthy and fit lifestyle more quickly.

b. Objective. The objectives of the Marine Corps Body Composition are to:

(1) Establish healthy weight and body fat standards that ensure all Marines are physically capable of performing their duties.

(2) Contribute to the health and well being of every Marine by continuously monitoring weight, body fat, diet/nutrition, and physical fitness conditioning.

(3) Motivate all Marines to set the example by maintaining the established body composition standards.

(4) Ensure those Marines who do not meet established standards are counseled accordingly, and given the opportunity and proper guidance to achieve the standards through the BCP and RPCP.

c. Body Composition Evaluation. The Body Composition Evaluation is a semi-annual requirement designed to ensure Marines are within Marine Corps established height/weight or body fat standards. Every Marine must be evaluated twice a year during the January-June and July-December time frames. **"The Body Composition Evaluation will not occur within 14 days (prior to or after) of the semi-annual PFT."** In the case of unannounced inspections conducted by CG Inspection teams, the PFT and Body Composition Evaluation may take place on the same day. SMCR Marines will be evaluated on the drill weekend before or after the annual PFT. The objective is to prevent Marines from taking extreme measures for rapid and potentially unhealthy weight loss prior to the weigh-in portion of the PFT. This safety measure will afford Marines adequate time to hydrate and eat healthy prior to the PFT. This measure also will enable Marines to perform their best, while reducing the risks of injury (e.g., dehydration or heat injuries).

(1) Weigh-Ins. Regardless of duty status (full/light/limited duty), all Marines are required (at a minimum) to complete a semi-annual (annual for Reserves) Body Composition Evaluation as prescribed by the unit-training schedule. The Command Physical Training (PT) Representative and his/her designate are the **only** unit personnel authorized to conduct Body Composition Evaluations, and will record the results on the PFT and (BCP) Body Composition Worksheet. BCP worksheet is located in MCO P6100.12 appendix F, pg F-1.

(2) Uniform. Uniform for the evaluation is the USMC established green-on-green T-shirt and shorts, and socks. No other uniform or PT attire is permitted. Shoes will not be worn.

(3) Height Measurement. Height will be measured using a standard, non-stretching (cloth or fiberglass) tape measure that is secured to a wall and flush with the deck; weight scales that have a height measuring device will not be used. The Marine will stand with their back against the wall, heels flat on the deck, shoulders back, with arms to the side in a relaxed manner, and head straight forward. A ruler will be used to mark the Marine's exact height.

- Measurement is recorded to the nearest inch.

- If the height fraction is less than 1/2 inch, round down to the nearest inch. If height fraction is 1/2 inch or more, round up.

(4) Weight Measurement. Weight will be measured on a calibrated balance beam scale in the required PT uniform, without running shoes. A one-pound reduction will be granted for the PT uniform, no other weight reductions are authorized.

- Measurement is recorded to the nearest pound.

- If the weight fraction is 1/2 pound or less, round down to the nearest pound. If mor e than 1/2 pound, round up.

(5) Body Fat. If a Marine is not within height and weight standards, then the Marine will be measured for body fat immediately (same day). Body fat estimation is only performed on those Marines who exceed their maximum weight standard. The height and weight measurement conducted during this portion of the Body Composition Evaluation is what will be reported on the Fitness Report.

APPENDIX D

BODY FAT ESTIMATION

1. Body fat will be estimated using the circumference-based method. No substitute methods of assessment are permitted. This Department of Defense directed method of body fat estimation has been carefully evaluated for applicability to service members and represents the best approach that can be applied with minimal error (+/- 3 to 4%). This method is also valid because of the emphasis on abdominal circumference, the site of human body fat deposition which is most strongly associated with health risks, and which corresponds to other military goals including appropriate appearance and healthy exercise habits. Body fat measurements will be taken in the following manner:

2. Marines will report for body fat estimation in the required PT uniform. The Command PT Representative or his/her designate will conduct the measurements.

3. The tape measure used should be made of non-stretchable material, preferably fiberglass; cloth and steel tapes are unacceptable. The tape measure width should be 1/4 - 3/8 inch. The tape measure should be calibrated (i.e., compared with a yardstick or a metal ruler to ensure validity). This is done by aligning the fiberglass tape measure with the quarter inch markings on the ruler. The markings should match those on the ruler; if not, do not use that tape measure.

4. All measurements will be taken on bare skin with the only exception being the female hip measurement.

5. For use in the body fat estimation formula, Marines will have their height re-measured and recorded to the nearest 1/2-inch. If the measured height fraction is greater than an inch, round up to the nearest 1/2-inch. If the measured height fraction is greater than 1/2-inch, round up to the next whole inch.
If the measured height fraction is at 1/2 inch, use that measurement in the body fat estimation equation.

6. The height measured at the initial semi-annual (annual for Reserves) height/weight screen is what will be reported on the FitRpt, not the height used for the body fat estimation formula.

7. Without causing indentation, the tape will be applied to the skin with sufficient tension to hold it in place as the measurement is being read.

8. **Circumference measurements will be taken three times to ensure accuracy.** Each set of measurements will be completed sequentially to discourage assumption of repeated measurement readings. For males, complete one set of abdomen and neck measurements, **not**, for example, three abdominal circumferences followed by three neck circumferences. Continue the process by measuring the abdomen and neck in series until three sets of measurements are completed. For females, complete one set of waist, hip, and neck, measurements, **not**, for example, three waist measurements followed by three hip measurements. Continue the process by measuring the waist,

hip, neck series three sets of measurements are completed. The lower of the three body fat measurements will be recorded on the PFT/Body Composition Worksheet.

a. Procedures for Body Fat Estimation for Males:

(1) Measure the neck circumference by placing the edge of the tape measure flush with the bottom of the larynx and perpendicular to the long axis of the neck. The Marine should look straight ahead during the measurement, with shoulders down (not hunched). For neck measurements in excess of the whole inch, round the neck measurement up to the nearest 1/2-inch and record (e.g., round up 16 1/4 inches to 16 1/2 inches).

(2) Measure abdominal circumference against the skin at the navel, level and parallel to the deck. Arms are at the sides. Take measurement at the end of the Marine's normal, relaxed exhalation. Round the abdominal measurement down to the nearest 1/2-inch and record (e.g., round down 34 3/4 to 34 1/2 inches).

(3) Determine percent body fat by subtracting the neck from the abdominal measurement and comparing this value against the height measurement, (e.g., abdominal - neck = circumference value). Figure 0101-1 lists the value for each height that equals an 18% body fat. (A more complete table is in MCO P6100.12.

HEIGHT	60	61	61.5	62	62.5	63	63.5	64	64.5	65	65.5	66
18% VALUE	17	17	17.5	17.5	17.5	17.5	18	18	18	18	18	18.5

HEIGHT	66.5	67	67.5	68	68.5	69	69.5	70	70.5	71	71.5	72
18% VALUE	18.5	18.5	18.5	19	19	19	19	19.5	19.5	19.5	19.5	19.5

HEIGHT	72.5	73	73.5	74	74.5	75	75.5	76	76.5	77	77.5	
18% VALUE	20	20	20	20	20	20.5	20.5	20.5	20.5	21	21	

Figure 0101-1

b. Procedures for Body Fat Estimation for Females:

(1) Measure the neck circumference by placing the edge of the tape measure flush with the bottom of the larynx and perpendicular to the long axis of the neck. The Marine should look straight ahead during the measurement, with shoulders down (not hunched). To establish neck

measurements in excess of the whole inch, round the neck measurement up to the nearest 1/2-inch and record (e.g., round up 13 3/8 inches to 13 1/2 inches).

(2) Measure the natural waist circumference against the skin at the point of minimal abdominal circumference, usually located about halfway between the navel and the lower end of the sternum (breastbone). When this site is not easily observed, take several measurements at probable sites and use the smallest value. Ensure the tape is level and parallel to the deck. Arms are at the sides. Take measurements at the end of a normal, relaxed exhalation. Round natural waist measurement down to the nearest 1/2-inch and record (e.g., round down 28 5/8 inches to 28 1/2 inches).

(3) Measure the hip circumference while facing the Marine's right side by placing the tape around the hips so that it passes over the greatest protrusion of the buttocks as viewed from the side. Ensure the tape is level and parallel to the deck. Apply sufficient tension on the tape to minimize the effect of clothing. Round the hip measurement down to the nearest 1/2-inch and record (e.g., round down 38 3/8 inches to 38 inches).

(4) Determine percent body fat by adding the waist and the hip measurements, subtracting the neck measurement, and comparing values against the Marine's height measurement (e.g., waist + hip - neck = circumference value). Figure 0101-2 lists the value for each height that equals a 26% body fat. (A more complete table is in MCO P6100.12 chapter 3.

HEIGHT	58	58.5	59	59.5	60	60.5	61	61.5	62	62.5	63	63.5
26% VALUE	49.5	49.5	50	50	50.5	50.5	51	51	51.5	51.5	52	52

HEIGHT	64	64.5	65	65.5	66	66.5	67	67.5	68	68.5	69	69.5
26% VALUE	52.5	52.5	53	53	53.5	53.5	54	54	54.5	54.5	55	55

HEIGHT	70	70.5	71	71.5	72	72.5	73	73.5	74	74.5	75	75.5
26% VALUE	55.5	55.5	56	56	56.5	56.5	57	57	57.5	57.5	57.5	58

Figure 0101-2

c. Pregnancy/Postpartum Body Composition Requirements. Marines will be exempt from weight and body fat standards during pregnancy, but will maintain active participation in the Physical Conditioning Program (PCP) unless otherwise prescribed by her Medical Officer. Marines in a postpartum status will be required to meet weight and body fat standards no later than 6 months following a MO's authorization to (RTFD) return to full duty. This authorization normally coincides with the completion of the 6-week (postpartum) convalescence leave period.

d. Miscarriage/Stillbirth. A Marine whose pregnancy terminates prematurely or that results in a stillbirth will meet weight and body fat standards within a time period determined by a MO. Due to the varying disposition of this medical situation, it is important that an open dialogue exists between the Marine, the MO and her CO to determine the time needed to recover and conform to body composition standards. The recovery period in this case, however, will not exceed the 6 months authorized for full-term pregnancies.

(1) BCP Assignment. Marines who become pregnant while assigned to the BCP will remain on the Program in an "inactive" status. a. The only Unit Diary entry required when a Marine becomes pregnant while assigned to a BCP is to report MCTFS Duty Limitation Code of "N, PREGNANCY. An advisory message will be generated on the unit's Diary Feedback Report (DFR) as follows: "MARINE PLACED IN INACTIVE WT CNTL STATUS." All further advisories concerning the Marine's status in the BCP will be suppressed for the duration of the pregnancy and the medical related periods of limited duty immediately following the pregnancy.

(2) Medical Evaluation. Following the MO's medical evaluation, the Marine will be returned to either a full duty status, or reported to a non-medical related limited duty status. The Marine will then resume active participation in the BCP. All Marines will be assigned for a 6-month period, regardless of time spent on the Program prior to pregnancy. The unit will receive the following advisory message on their DFR: "MARINE RETURNED TO ACTIVE WT CNTL STATUS FOR SIX MONTHS."

(3) Promotion Eligibility. Marines will not be eligible for promotion if they are in an "inactive" status for a BCP assignment per paragraphs 1204.3n and 6009.2e of MCO P1400.32C. Only when the Marine returns to the weight and body fat standards and meets all other promotion requirements will she be promoted.

(4) Body Fat Standard. Marines who meet the body fat standards, 18% for males and 26% for females, will be considered within the Marine Corps' body composition standards. Marines who exceed the body fat standards will be further evaluated on criteria set forth in the Physical Performance Evaluation, MCO P6100.12.