

**TRADOC
Standardized
Physical Training Guide**

PCU

5 November 2003

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PREFACE

The physical fitness of soldiers is acquired through the challenge of a precise, progressive and integrated physical training program. The softening influences of our modern society make the challenge of conditioning soldiers more important than ever before. A well-conceived plan of military physical training must be an integral part of every unit-training program.

This guide is descriptive in nature and is one in a series of guides adaptable to the missions of Initial Military Training (IMT). It is definitive in its guidance to leaders in the progression toward achieving physical fitness through the conditioning of all soldiers in the areas of strength, endurance and mobility. It also provides leaders guidance on the planning and execution of programs that ensure individual soldiers are physically capable of meeting the physical fitness standards established in TRADOC Regulations.

The United States Army Physical Fitness School is the “specified proponent” for Army Physical Fitness IAW AR 5-22, The Army Proponent System. AR 350-1, Army Training and Education, outlines the Army physical fitness program. TRADOC Regulation 350-6 governs all training, to include physical training, in Initial Entry Training. To contact the United States Army Physical Fitness School, send e-mail to:

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CHAPTER 1

STANDARDIZED PHYSICAL TRAINING IN THE PHYSICAL CONDITIONING UNIT

Section 1 – Physical Conditioning Unit (PCU) Mission

The PCU is one of three elements of the Fitness Training Unit (FTU). The FTU also consists of the Physical Training Rehabilitation Program (PTRP) and the Army Physical Fitness Test (APFT) Completion Program. The PTRP rehabilitates and physically prepares soldiers that become injured after assignment to a training unit. The APFT Completion Program provides additional training for soldiers that are not physically able to meet the APFT graduation requirements.

As stated in TRADOC Regulation 350-6:

“The mission of the PCU is to physically and mentally prepare BCT/OSUT soldiers for reentry into training. The program is designed to graduate success-oriented soldiers capable of meeting the physical demands of IET.”

1. All pre-BCT/OSUT soldiers are given an assessment while at a U.S. Army RECBN. Fitness Training Unit cadre or qualified RECBN drill sergeants administer the assessment. They then identify and assign soldiers physically deficient for training to PCU prior to shipping to the training unit. Below are the **entrance** criteria for the PCU.

PCU ENTRANCE CRITERIA		
EVENT	MALE	FEMALE
Push-ups	0-12	0-2
Sit-ups	0-16	0-16
Run	8:31 or slower	10:31 or slower

2. Soldiers assigned to a PCU receive up to 4 weeks of training. Fitness assessments are given each week to determine if a soldier has reached a level of physical conditioning sufficient to reenter BCT/OSUT. Below are the **exit** criteria to determine if soldiers are ready to enter BCT/OSUT.

PCU EXIT CRITERIA		
EVENT	MALE	FEMALE
Push-ups	13 or greater	3 or greater
Sit-ups	17 or greater	17 or greater
Run	8:30 or faster	10:30 or faster

3. Once soldiers attain the required physical standards specified above, cadre conduct interviews to ensure soldiers have the motivation and attitude to successfully complete BCT/OSUT. The unit commander reviews the performance of the soldier before authorizing shipment from the PCU. If a soldier fails to meet the exit criteria after 4 weeks in the PCU, the PCU chain-of-command evaluates each individual on a case-by-case basis to determine the action required.

a Based on the soldier's demonstrated continuous improvement while in the PCU, and the recommendations of the PCU chain-of-command, the commander may authorize the soldier to enter BCT/OSUT.

b The commander will consider for discharge any soldier not showing continuous improvement and not recommended for release by the PCU chain-of-command.

c In some circumstances, the commander may authorize select soldiers for retention in the PCU beyond 4 weeks.

Section 2 – The Purpose of Standardized Physical Training (PT)

The purpose of Standardized PT is to improve and/or maintain physical fitness while controlling injuries. Therefore, a standardized PT program will:

- Improve physical fitness while controlling injuries.
- Progressively condition and toughen soldiers.
- Develop soldiers' self-confidence and discipline.

Soldiers entering the Army range widely in their levels of physical fitness. Standardized PT involves safe training that challenges all soldiers while improving their physical fitness levels to meet Army standards. Standardization fosters development and sustainment of a high state of physical proficiency among soldiers and units throughout the Army. Standardization is accomplished through the universal application of uniformed practices and procedures. PT standardization is accomplished through an organized schedule of prescribed physical training activities. These activities are methodically sequenced to adequately challenge soldiers entering the Army at a high level of physical fitness while also providing appropriate progression for those soldiers entering the Army at lower fitness levels. Standardized PT emphasizes progressive conditioning of the entire body. Standardized PT embodies the fundamental components of strength, endurance and mobility. Training of these components is guided by the overarching principles of exercise: precision, progression, and integration. Strict adherence to standardized PT safeguards soldiers by progressively increasing training intensity while controlling injuries.

Section 3 - Physical Fitness

Physical Fitness enables the soldier to effectively function in work, training and other activities while maintaining optimal health and well being. Physical fitness is essential to combat readiness. Army physical fitness contains three interrelated components: strength, endurance and mobility. Refer to Figure 1-1.

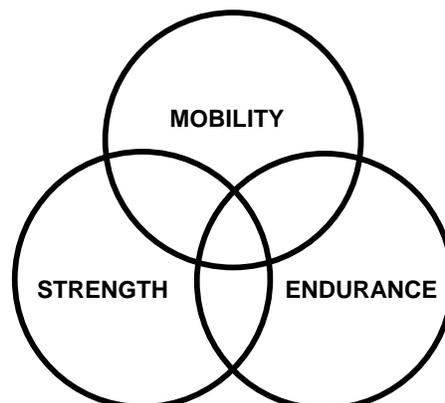


Figure 1-1.

Strength is the ability to overcome resistance. Soldiers need strength to march under load, enter and clear a building or trenchline, repeatedly load heavy rounds, lift equipment, and transport a wounded soldier to the casualty collection point. The goal of strength training is to attain the strength required to perform functional movements against resistance. A well-designed strength training program improves performance and controls injuries. Calisthenics are the foundation of Army strength training and body management. The conditioning drills contain a structured sequence of calisthenics designed to develop the fundamental movement skills necessary for soldiers to manipulate their own body weight. Strength is further developed through the use of pull-ups, rope climbing, obstacle negotiation, free weights and strength training machines.

Endurance is the ability to sustain activity. Endurance training enhances both the ability to sustain high intensity activity of short duration (anaerobic) and low-intensity activity of long duration (aerobic). Examples of anaerobic training are sprinting, individual movement techniques, and negotiating obstacles. Examples of aerobic training are continuous running, foot marching, cross-country movement, and water survival. A properly planned and executed endurance-training program will be balanced with respect to both aerobic and anaerobic training. Endurance training programs based solely on distance running, while likely to improve aerobic endurance, may fail to prepare units for the anaerobic endurance requirements of soldier common tasks.

Mobility is movement proficiency. The component of mobility functionally applies strength and endurance to enhance performance of physical tasks. For example, strength with mobility allows a soldier to squat low, in order to achieve a safe and effective position to lift a casualty. Without sufficient mobility, a strong soldier may have difficulty executing the same casualty transport technique. Likewise, endurance without mobility may be fine for a distance runner, but for soldiers performing individual movement techniques (IMT), both components are essential for success. Mobility consists of eight qualitative performance factors: agility, balance, coordination, posture, stability, flexibility speed and power.

1. Agility is the ability to stop, start, change direction and efficiently change body position. Performing guerrilla drills, the shuttle run, and negotiating obstacles all improve agility.

2. Balance is the ability to maintain equilibrium. It is an essential component of movement. External forces, such as gravity and momentum, act on the body constantly. Sensing these forces and responding appropriately, leads to quality movements. The activities in this manual are designed to challenge and improve balance.

3. Coordination is the ability to perform multiple tasks. Driving military vehicles and operating various machinery and weaponry requires coordination. Coordination of arm, leg, and trunk movements is essential in climbing and IMT.

4. Posture is any position in which the body resides. Posture is fluid and constantly changing as the body shifts to adapt to the forces of gravity and momentum. Good posture is important to military bearing and optimal body function. Proper carriage of the body during standing, sitting, lifting, marching, and running is essential to movement quality, performance, and injury control.

5. Stability is possessing the structural integrity to maintain or restore equilibrium when acted on by forces trying to displace it. Stability is dependent upon structural strength and body management. It is developed through regular, precise performance of calisthenics and strength training activities.

6. Flexibility is the range of motion at or around a joint; including the surrounding muscle groups. Functional flexibility is dependent upon good posture and stability. Quality movements through a full range of motion, such as lifting a heavy load from the ground to an overhead position, require stability to ensure optimal performance without injury.

7. Speed is rate of movement. Many soldier tasks require speed. Speed is improved through better technique and conditioning. For example, running speed is improved by lengthening stride (improving technique) and increasing pace (improving conditioning).

8. Power is the product of strength and speed. Throwing, jumping, striking, and moving explosively from a starting position require both speed and strength. Power is generated from the hips and torso. Developing strength and mobility is important to increasing power.

Body composition is the amount of body fat a soldier has in comparison to his lean body mass. Body composition is a component of health and well being, contributing to physical performance. Improving the components of strength, endurance and mobility through a sound PT program, accompanied by good nutritional practices, will promote the maintenance of appropriate body composition. **Refer to AR 600-9, The Army Weight Control Program, for specific information on diet, weight control and body composition guidelines.**

Section 4 – Exercise Principles

Adherence to certain basic exercise principles is essential to an effective and well-balanced PT program that safely challenges all soldiers. There are three principles of exercise (Precision, Progression and Integration) that must be followed to ensure safe training at an optimal level. Refer to Figure 1-2.

Precision is the strict adherence to optimal execution standards for PT activities. Precision is based on the premise that the quality of movement is just as important as the weight lifted or repetitions performed. It is important not only for improving physical skills and abilities, but also for decreasing the likelihood of injury due to faulty movement. A precise execution standard in the conduct of all PT activities ensures the development of body management and fundamental movement skills.

Progression is the systematic increase in the intensity and/or duration of PT activities. Proper progression allows the body to positively adapt to the stresses of training. When progression is violated by too rapid an increase in intensity and/or duration, the soldier is unable to adapt to the demands of training. The soldier is then unable to recover which leads to overtraining or the possibility of injury.

Integration is the use of multiple training activities to achieve balance in the PT program and appropriate recovery between PT activities. Because most common soldier tasks require a blend of strength, endurance and mobility, PT sessions are designed to challenge all three components in an integrated manner.

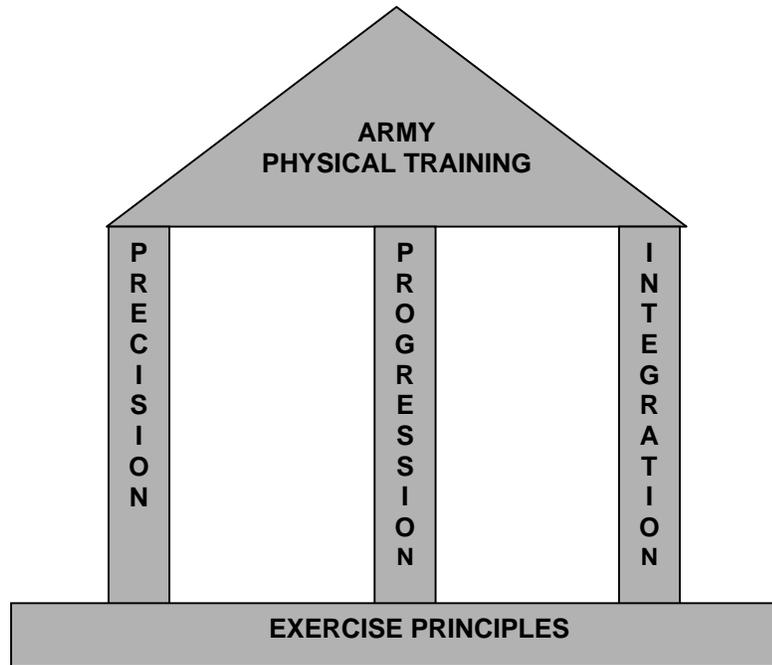


Figure 1-2.

Section 5 – PT Assessment and Evaluation

The Army standard for assessing physical fitness is the Army Physical Fitness Test (APFT). The APFT measures baseline physical fitness, qualifying soldiers to wear the uniform. Refer to FM 21-20, Chapter 14 for procedures to conduct the APFT.

Section 6 – Summary

Army Standardized PT is a prescriptive and progressive system that embodies the three fundamental components of strength, endurance and mobility. Training of these components is guided by the overarching exercise principles of precision, progression and integration. Strict adherence to these principles in a well-developed program enhances physical fitness while controlling injuries.

The Standardized PT Program

1. Prescriptive and progressive PT system
2. Trains the components of Strength, Endurance and Mobility
3. Guided by the principles of Precision, Progression and Integration
4. Controls injuries

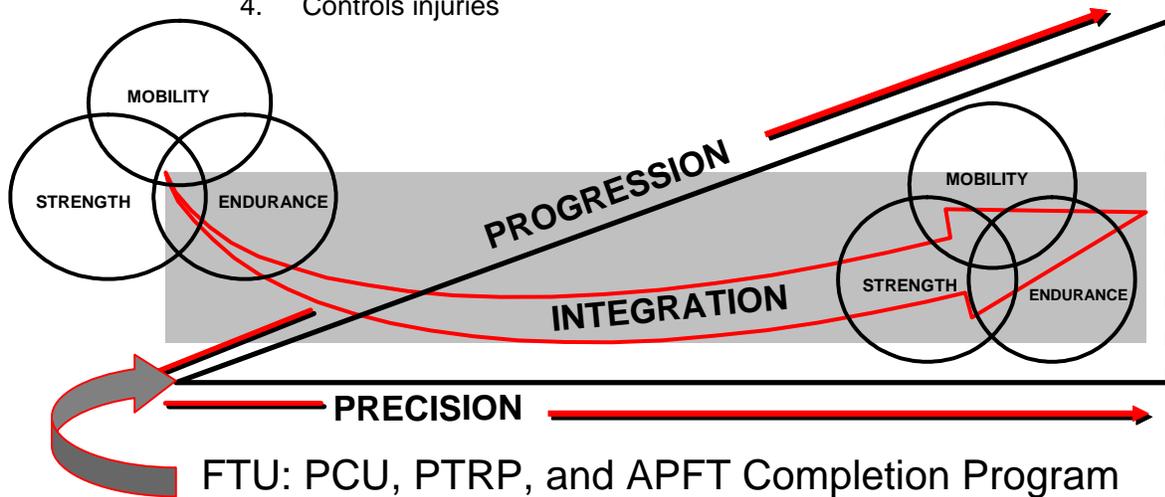


Figure 1-3.

CHAPTER 2

STANDARDIZED PT EXECUTION

Section 1 – Execution of Standardized PT

The key to success of Standardized PT execution is skillful leadership that employs command voice and organized instruction in the extended rectangular formation with a demonstrator and trained assistant instructors (AIs). This chapter describes in detail the Standardized PT formation, positions and commands.

Section 2 – Extended Rectangular Formation

The Army's traditional formation for PT activities is the extended rectangular formation. It is simple, easy to assume and may be applied with equal facility and promptness, which makes it best to employ for large numbers of soldiers. The PT leader will position the unit in a line formation so that the unit will be centered and five paces away from the PT platform after they have assumed the extended rectangular formation. The PT leader gives the following commands:

- ***“Extend to the left, MARCH.”*** Soldiers in the right flank file stand fast with their left arm extended sideward with palms down, fingers and thumb extended and joined.
- **All other soldiers turn to the left and double-time forward.** After taking the sufficient number of steps, all soldiers face the front and extend both arms sideward with palms down, fingers and thumbs extended and joined. The distance between fingertips is approximately 12 inches and dress is to the right.
- ***“Arms downward, MOVE.”*** The soldiers lower their arms smartly to their sides. Soldiers in the right flank file lower their left arms to their sides.
- ***“Left, FACE.”*** Soldiers execute the left face.
- ***“Extend to the left, MARCH.”*** Soldiers in the right flank file stand fast with their left arm extended sideward with palms down, fingers and thumb extended and joined. All other soldiers turn to the left and double-time forward. After taking the sufficient number of steps all soldiers face the front and extend both arms sideward with palms down, fingers and thumbs extended and joined. The distance between fingertips is approximately 12 inches and dress is to the right.
- ***“Arms downward, MOVE.”*** Soldiers lower their arms smartly to their sides. Soldiers in the right flank file lower their left arms to their sides.
- ***“Right, FACE.”*** Soldiers execute the right face.
- ***“From front to rear, COUNT OFF.”*** The front soldier in each column turns the head to the right rear and calls off, "ONE", and faces the front. Successive soldiers in each column call off in turn "TWO," "THREE," "FOUR," and so on. The last soldier in each column will not turn the head and eyes to the right while sounding off.
- ***“Even numbers to the left, UNCOVER.”*** Even-numbered soldiers side step to the left squarely in the center of the interval, bringing their feet together.

To reassemble the formation, the PT leader gives the following command:

- ***“Assemble to the right, MARCH.”*** All soldiers double-time to their original positions in the formation. Refer to Figures 2-1 and 2-2, Rectangular and Extended Rectangular Formations.

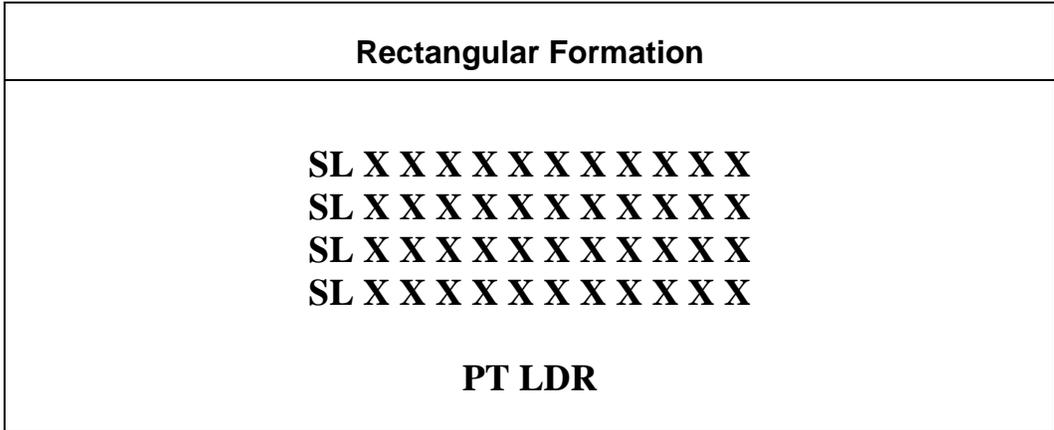


Figure 2-1.

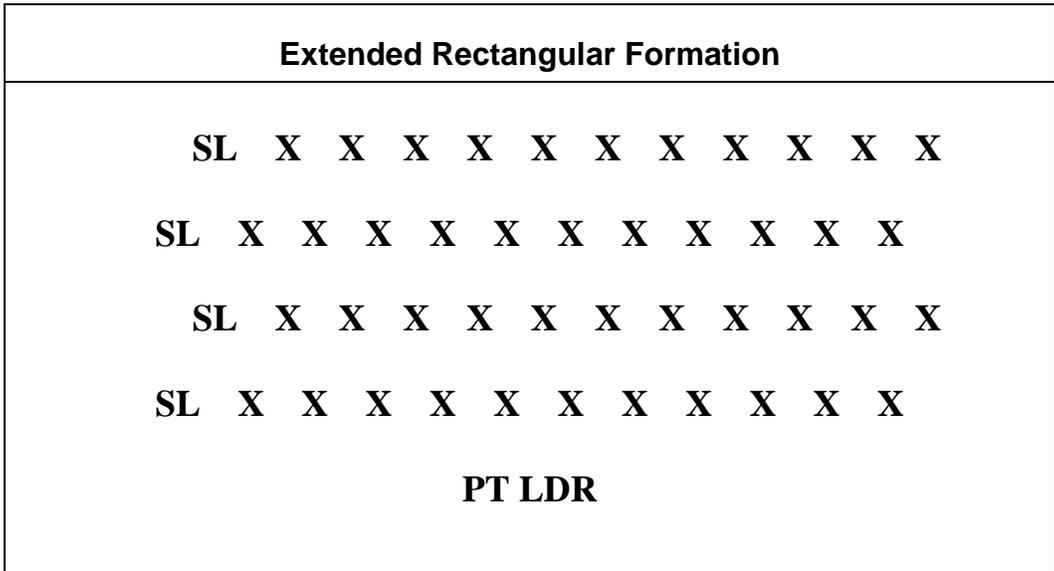


Figure 2-2.

Section 3 – PT Positions

Starting Positions: When a set of conditioning exercises is employed, soldiers assume the proper starting position of each exercise on the command, “*Starting position, MOVE.*” When conducting exercises, soldiers are commanded to return to the position of attention from the terminating position of the exercise, before being commanded to assume the starting position for the next exercise.

Squat Position: From the position of attention, lower the body by bending the knees and placing the hands with palms down and fingers spread, shoulder width in front of the body, in between the legs. Raise the heels, supporting body weight on the balls of the feet and hands. The head and eyes are directed to a point approximately two feet in front of the body.



Figure 2-3.

Front Leaning Rest Position: The front leaning rest position is assumed by performing two movements. From the position of attention move to the squat position then thrust the feet backward to the front leaning rest position. If a soldier has difficulty with the squat thrust, they can step back with the left leg, then with the right leg to obtain the front leaning rest position. In the front leaning rest, maintain straight body alignment from head to heels. Body weight is supported on the hands (shoulder width) and balls of the feet. The feet and legs are together.

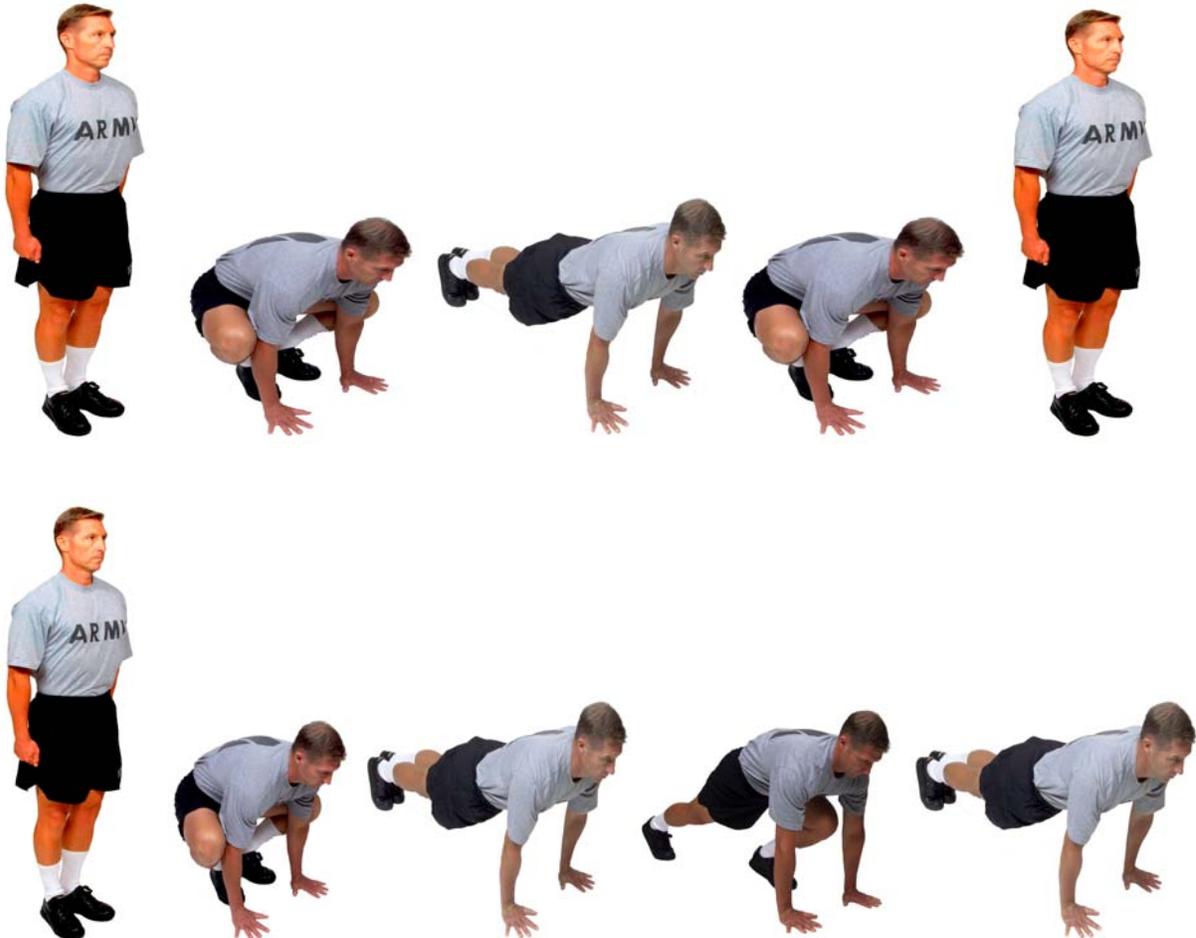


Figure 2-4.

Six-point Stance: The six-point stance is assumed by dropping to the knees from the front leaning rest position. A straight line is maintained from the head to the knees.



Figure 2-5.

Straddle Stance: Stand with feet straight ahead and aligned with the shoulders.



Figure 2-6.

Forward Leaning Stance: Bend trunk forward 45-degrees, knees bent 45-degrees with the heels flat on the ground and the feet aligned with the shoulders. Keep the back straight, maintaining a straight line from the head to the hips.



Figure 2-7.

Prone Position: The prone position is assumed by performing three movements. From the position of attention move to the squat position, thrust the feet backward to the front leaning rest position, then lower the body slowly to the ground. Elbows are close to the body and point directly to the rear.

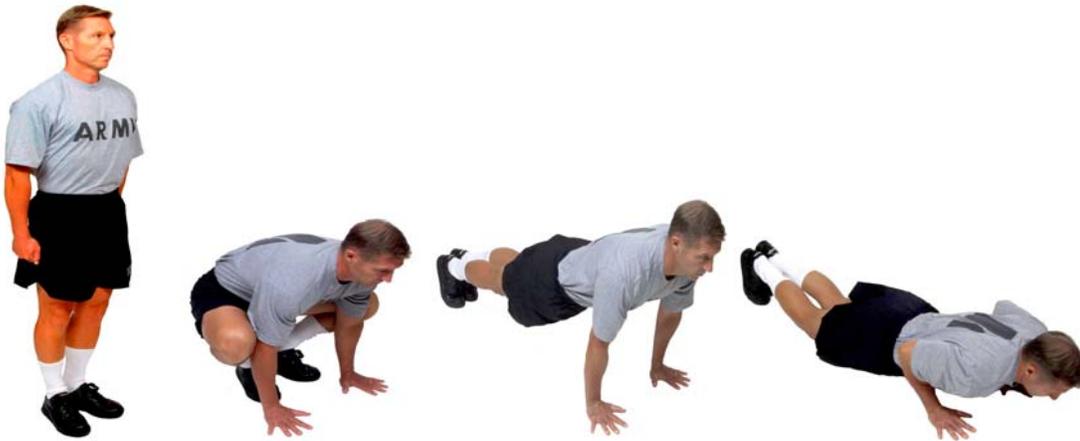


Figure 2-8.

Supine Position: To assume the supine position without using the hands, from the standing position, place one foot behind the other and slowly lower your body until the rear knee touches the ground. Sit back onto buttocks, and then lay on back with feet and legs together. When returning to the standing position, sit up and rock forward on one knee. From this position, step up with the other leg and stand without using the hands for assistance.



Figure 2-9.

If soldiers have difficulty assuming this position, have them place their hands on the ground as they slowly lower their bodies to the seated position. If soldiers are unable to attain the standing position without using their hands, they should place them on the ground to either side of the body and push up while standing from the seated position.



Figure 2-10.

To return to a standing position from the supine position, soldiers perform the actions in reverse order.

Section 4 – PT Commands

The importance of proper commands in conducting PT cannot be underestimated. Invariably, the performance directly reflects the command. Indifferent commands produce indifferent performance. When the command is given distinctly, concisely, with energy, and with proper regard to rhythm, the performance will reflect the command.

There are two kinds of commands used in PT; preparatory commands and commands of execution. The preparatory command describes and specifies what is required. All preparatory commands are given with rising inflection. The command of execution calls into action what has been prescribed. The interval between the two commands is long enough to permit the soldier to understand the first one before the second one is given.

When a set of conditioning exercises is employed, soldiers assume the proper starting position of each exercise on the command, “***Starting Position, MOVE.***” When conducting exercises, soldiers are commanded to return to the position of attention from the terminating position of the exercise, before being commanded to assume the starting position for the next exercise. PT leaders use the command, “***Position of Attention, MOVE***” to command soldiers to the position of attention from the terminating position of an exercise.

Section 5 – PT Cadence

Cadence speed is described as SLOW or MODERATE. The speed of each cadence is listed below:

- **SLOW – 50 counts per minute.**
- **MODERATE – 80 counts per minute.**

Once soldiers have learned the exercises by the numbers, the PT leader merely needs to indicate the name of the exercise, command the soldiers to assume the starting position, and start them exercising to cadence. For example, this is how the PT leader begins Exercise 1 of Conditioning Drill 1, The Bend and Reach to cadence:

- The PT leader states, **“The Bend and Reach.”**
- The soldiers respond, **“The Bend and Reach.”**
- The PT leader commands, **“Starting Position, MOVE.”** Soldiers assume the starting position.
- The PT leader commands, **“In Cadence,”** (soldiers respond, **“In Cadence”**), **“EXERCISE.”**
- The command **EXERCISE** initiates movement to the position of count one.

Counting cadence ensures that exercises are performed at the appropriate speed. The cadence count indicates termination of movement to each position. The cumulative count is a method of indicating the number of repetitions of an exercise on the fourth count of a 4-count exercise. The use of the cumulative count is required for the following reasons:

- It provides the PT leader with an excellent method of counting the number of repetitions performed.
- It serves as motivation. Soldiers like to know the number of repetitions they are expected to perform.
- It prescribes an exact amount of exercise for any group.

A 4-count exercise is counted as follows:

- The PT leader counts, **“ONE, TWO, THREE.”**
- The soldiers respond, **“ONE.”**
- The PT leader counts, **“ONE, TWO, THREE.”**
- The soldiers respond, **“TWO.”**
- The PT leader counts, **“ONE, TWO, THREE.”**
- The soldiers respond, **“THREE,”** etc.

To terminate an exercise, the PT leader will raise the inflection of his voice while counting out the cadence of the last repetition. The soldiers and PT leader respond with **HALT** upon returning to the starting position.

A 4-count exercise is terminated as follows:

- The PT leader counts, “**ONE, TWO, THREE.**”
- The soldiers respond, “**NINE.**”
- The PT leader counts, “**ONE, TWO, THREE.**” (with voice inflection).
- The soldiers and PRT leader respond, “**HALT.**”
- The PT leader commands, “*Position of Attention, MOVE.*” Soldiers assume the position of attention.

Section 6 – Military Movement Drill Commands

The PT leader states, “**Verticals**”. (the entire formation repeats “**Verticals**”) After this, there is no need to say “Verticals” again or to have the formation say “Verticals” again.

The first rank takes one step forward, but remains at the position of attention. On the command “**Ready,**” the first rank moves into the starting position. On the command “**GO,**” the first rank begins the movement.

In a typical formation with four ranks, the PT leader will have the front squad remaining in the formation move forward. This is done immediately after the previous front squad starts the movement. The other ranks should remain in place, waiting for further instructions. To accomplish this, the PT leader says, “*Next rank, MOVE FORWARD.*” Once the rank conducting the movement is about 12 yards into the verticals, the PT leader says “**Ready,**” and the next squad moves into the starting position. Immediately after all soldiers are in the starting position, the command “**GO**” is given.

This sequence of commands is repeated until all ranks have performed the verticals. (The PT leader does the movement with the last squad in the formation.) If there are less than four ranks, ensure that a 3:1 rest to work ratio is followed when performing the Military Movement Drill. The above commands are followed when performing **Verticals** and **Laterals**. The difference for the **Shuttle Sprint** is that the second rank is not moved forward until the rank performing the Shuttle Sprint has completed the second turn and begins the sprint.

Section 7 – Stretch Drill Commands

When performing The Stretch Drill, no verbal cadence is used. Soldiers move in and out of the starting position and each exercise position on the PT leader’s commands. Soldiers hold each exercise position for 20 seconds during cool-down. **Do not count the seconds out loud.** This is how the PT leader conducts Exercise 1, The Overhead Arm Pull, of The Stretch Drill:

The PT leader states, “**The Overhead Arm Pull.**” (The soldiers respond, “**The Overhead Arm Pull.**”) The PT leader commands, “*Starting Position, MOVE.*” (The soldiers move into the starting position, straddle stance with hands on hips).

“The command to begin the stretch is **Ready, STRETCH.** Raise the right arm overhead and place the right hand behind the head. Grasp above the right elbow with the left hand and pull to the left, leaning the body to the left. Hold this position for 20 seconds. The PT leader commands, “*Starting Position, MOVE.*” (The soldiers move into the starting position.)

“The command to stretch the other side of the body is “**Change Position, Ready, STRETCH.**” Raise the left arm overhead and place the left hand behind the head. Grasp above the left elbow

with the right hand and pull to the right, leaning the body to the right. Hold this position for 20 seconds.

The PT leader commands, “**Starting Position, MOVE.**” (The soldiers assume the starting position.) The PT leader assumes the Position of Attention and commands, “**Position of Attention, MOVE.**” (The soldiers assume the position of attention.)

Section 8 – Conditioning Drill 2 Commands

Exercise 1 of Conditioning Drill 2, The Push-up and Exercise 2 of Conditioning Drill 2, The Sit-up are 4-count exercises conducted to cadence (see “Cadence” for execution of 4-count exercises).

Exercises 3, 4, and 5 of Conditioning Drill 2 are 2-count exercise conducted to cadence. The commands, **UP** and **DOWN** are used to direct the soldiers to perform the exercise movements and to control the speed of movement. This is how the PT leader conducts Exercise 4 of Conditioning Drill 2, The Pull-up:

- Soldiers assemble into groups of three, 1 exerciser and 2 spotters.
- The PT leaders states, “**The Pull-up.**”
- The soldiers respond, “**The Pull-up.**”
- The PT leader commands, “**Starting Position, MOVE.**” The soldiers assume the starting position at a dead hang, with spotters front and rear.
- The PT leader commands, “**Ready, UP,**” (soldiers perform count one.)
- The PT leader commands, “**DOWN,**” (soldiers perform count two.)
- The soldiers state, “**ONE.**”
- The PT leader commands, “**UP, DOWN.**”
- The soldiers respond, “**TWO.**”
- The PT leader counts, “**UP, DOWN.**” The soldiers respond, “**THREE.**”
- The PT leader counts, “**UP, DOWN.**” The soldiers respond, “**FOUR.**”
- The PT leader commands, “**UP, DOWN.**” (with voice inflection). The soldiers respond, “**HALT.**”
- The PT leader commands, “**DISMOUNT.**” Soldiers dismount the bar utilizing the footsteps and change position with one of the spotters.

Section 9 – Mirror Effect

When leading exercise in front of the formation, the PT leader begins the movements in count one to the right and continues to mirror the soldier’s movements while facing them throughout the exercise.

Section 10 – Summary

Successful execution of Standardized PT is dependent upon the leadership of competent instructors and AIs. PT leaders must not only possess the knowledge, skills and ability to execute the program, but also present a positive image of physical fitness.

CHAPTER 3

WARM-UP

The standardized PT session will always include the following elements: warm-up, activity and cool-down. The warm-up should last approximately 10 to 15 minutes and occur just before the endurance and mobility or strength and mobility activities of the PT session. The performance of Conditioning Drill 1 (1 set x 5 repetitions) followed by The Military Movement Drill (1 set x 1 repetition) comprises the warm-up for **ALL** PT sessions. After the warm-up, soldiers are ready for more intense conditioning activities. A Warm-up Drill Card is provided in Appendix A.

WARM-UP

Conditioning Drill 1	
1. The Bend and Reach	(5 repetitions - slow)
2. The Rear Lunge	(5 repetitions - slow)
3. The High Jumper	(5 repetitions - moderate)
4. The Rower	(5 repetitions - slow)
5. The Squat Bender	(5 repetitions - slow)
6. The Windmill	(5 repetitions - slow)
7. The Forward Lunge	(5 repetitions - slow)
8. The Prone Row	(5 repetitions - slow)
9. The Bent-leg Body Twist	(5 repetitions - slow)
10. The Push-up	(5 repetitions - moderate)
The Military Movement Drill	
1. Verticals	(1 repetition)
2. Laterals	(1 repetition)
3. The Shuttle Sprint	(1 repetition)

Figure 3-1.

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Conditioning Drill 1

Exercise 1: The Bend and Reach

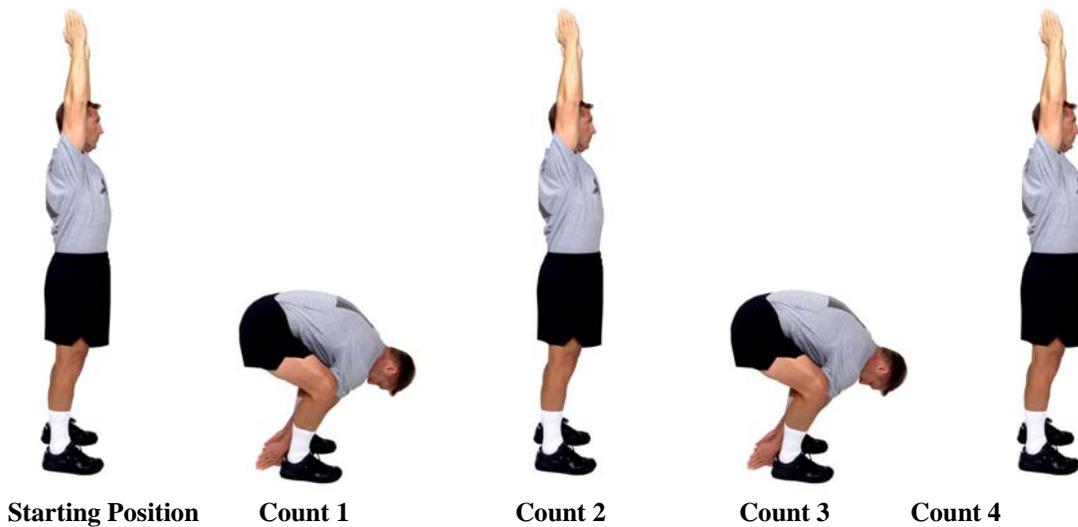
Purpose: This exercise develops the ability to squat and reach through the legs. It also serves to prepare the spine and extremities for more vigorous movements, moving the hips and spine through full flexion.

Starting Position: Straddle stance with arms overhead.

Cadence: SLOW.

Count:

1. Squat with the heels flat as the spine rounds forward to allow the straight arms to reach as far as possible between the legs.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Check Points:

- From the starting position, ensure that soldiers have their hips set, their abdominals tight, and their arms fully extended overhead.
- The neck flexes to allow the gaze to the rear. This brings the head in line with the bend of the trunk.
- The heels and feet remain flat on the ground.
- On counts two and four, do not go past the starting position.

Precautions: This exercise is always performed at a slow cadence. To protect the back, move into the count one position in a slow, controlled manner. Do not bounce into or out of this position in a ballistic manner, as this may place an excessive load on the back.

Conditioning Drill 1

Exercise 2: The Rear Lunge

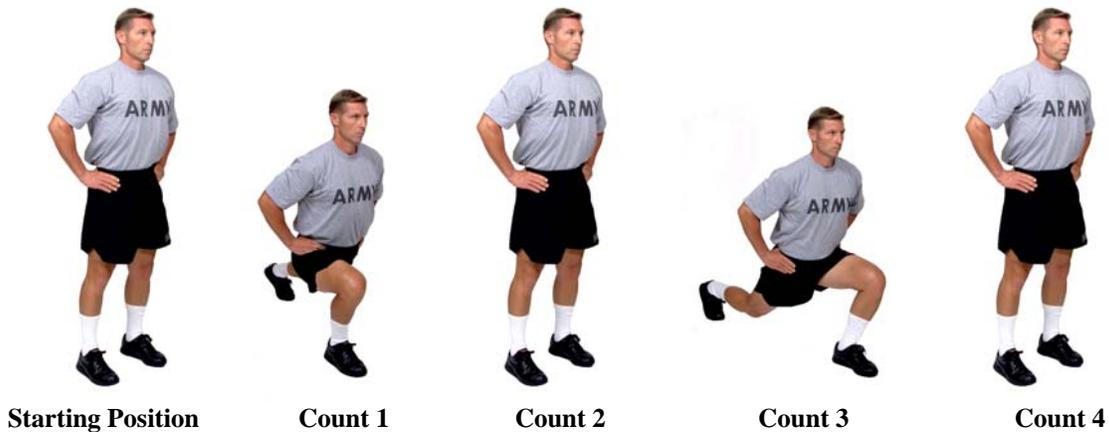
Purpose: This exercise promotes balance, opens up the hip and trunk on the side of the lunge and develops leg strength.

Starting Position: Straddle stance with hands on hips.

Cadence: SLOW.

Count:

1. Take an exaggerated step backward with the left leg, touching down with the ball of the foot.
2. Return to the starting position.
3. Repeat count one with the right leg.
4. Return to the starting position.



Check Points:

- ❑ Maintain straightness of the back by keeping the abdominal muscles tight throughout the motion.
- ❑ After the foot touches down, allow the body to continue to lower. This promotes flexibility of the hip and trunk.
- ❑ On counts one and three, step straight to the rear, keeping the feet directed forward. When viewed from the front, the feet maintain their distance apart both at the starting position and at the end of counts one and three.
- ❑ Keep the rear leg as straight as possible but not locked.

Precautions: This exercise is always performed at a slow cadence. On counts one and three, move into position in a slow, controlled manner. If the cadence is too fast, it will be difficult to go through a full range of motion.

Conditioning Drill 1

Exercise 3: The High Jumper

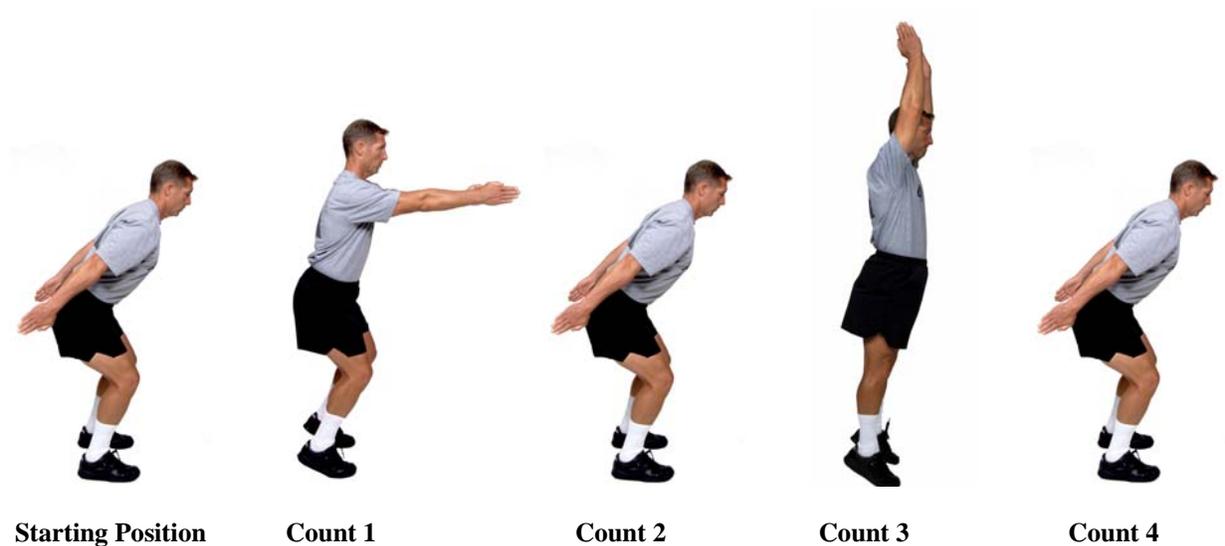
Purpose: This exercise reinforces correct jumping and landing, stimulates balance and coordination, and develops explosive strength.

Starting Position: Forward Leaning Stance.

Cadence: MODERATE.

Count:

1. Swing arms forward and jump a few inches.
2. Swing arms backward and jump a few inches.
3. Swing arms forward and vigorously overhead while jumping forcefully.
4. Repeat count two. On the last repetition, return to the starting position.



Check Points:

- At the starting position, the shoulders, the knees, and the balls of the feet should form a straight vertical line.
- On count one, the arms are parallel to the ground.
- On count three, the arms should be extended fully overhead. The trunk and legs should also be in line.
- On each landing, the feet should be directed forward and maintained at shoulder distance apart. The landing should be “soft” and proceed from balls of the feet to the heels. The vertical line from the shoulders through the knees to the balls of the feet should be demonstrated on each landing.

Precautions: N/A.

Conditioning Drill 1

Exercise 4: The Rower

Purpose: This exercise improves the ability to move in and out of the supine position to a seated posture. It coordinates the action of the trunk and extremities while challenging the abdominal muscles.

Starting Position: Supine position, arms overhead, feet together and pointing upward. The chin is tucked and the head is 1-2 inches above the ground. Arms are shoulder-width, palms facing inward with fingers and thumbs extended and joined.

Cadence: SLOW.

Count:

1. Sit up while swinging arms forward and bending at the hip and knees. At the end of the motion, the arms will be parallel to ground, palms facing inward.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- ❑ At the starting position, the low back must not be arched excessively off the ground. To prevent this, tighten the abdominal muscles to tilt the pelvis and low back toward the ground.
- ❑ At the end of counts one and three, the feet are flat and pulled near the buttocks. The legs stay together throughout the exercise and the arms are parallel to the ground.

Precautions: This exercise is always performed at a slow cadence. Do not arch the back to assume counts one and three.

Conditioning Drill 1

Exercise 5: The Squat Bender

Purpose: This exercise develops strength, endurance and flexibility of the lower back and lower extremities.

Starting Position: Straddle stance with hands on hips.

Cadence: SLOW.

Count:

1. Squat while leaning slightly forward at the waist with the head up and extend the arms to the front, with arms parallel to the ground and palms facing inward.
2. Return to the starting position.
3. Bend forward and reach toward the ground with both arms extended and palms inward.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Point:

- ❑ At the end of counts one, the shoulders, knees and balls of the feet should be aligned. The heels remain on the ground and the back is straight.
- ❑ On count three, round the back slightly while bending forward, keeping the head aligned with the spine and the knees slightly bent.

Precautions: This exercise is always performed at a slow cadence. Allowing the knees to go beyond the toes on count one increases stress to the knees

Conditioning Drill 1

Exercise 6: The Windmill

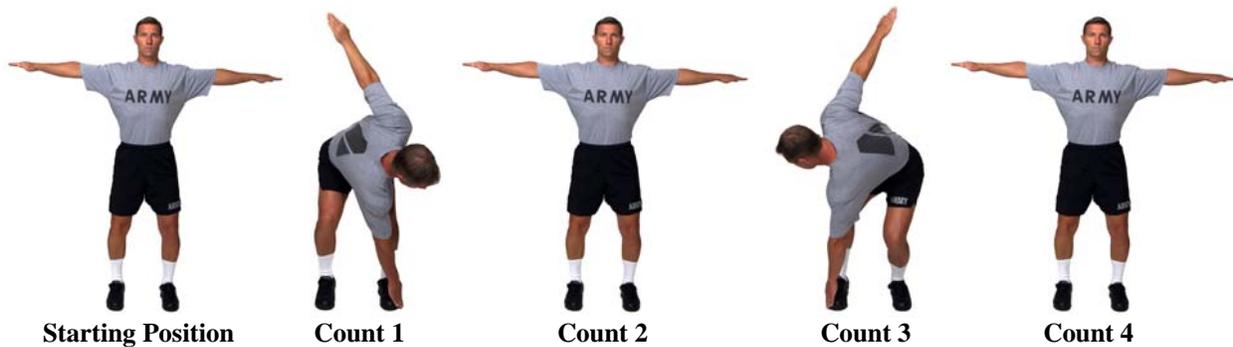
Purpose: This exercise develops the ability to safely bend and rotate the trunk. It conditions the muscles of the trunk, legs, and shoulders.

Starting Position: Straddle stance with arms sideward, palms facing down.

Cadence: SLOW.

Count:

1. Bend the hips and knees while rotating to the left. Reach down and touch the outside of the left foot with the right hand while looking toward the rear. The left arm is pulled rearward to maintain a straight line with the right arm.
2. Return to the starting position.
3. Repeat count one to the right.
4. Return to the starting position.



Check Points:

- From the starting position, feet are straight ahead, arms parallel to the ground, hips set, and abdominals tight.
- On counts one and three, ensure that the knees bend during the rotation. Head and eyes are directed to the rear on count one on count three.

Precautions: This exercise is always performed at a slow cadence.

Conditioning Drill 1

Exercise 7: The Forward Lunge

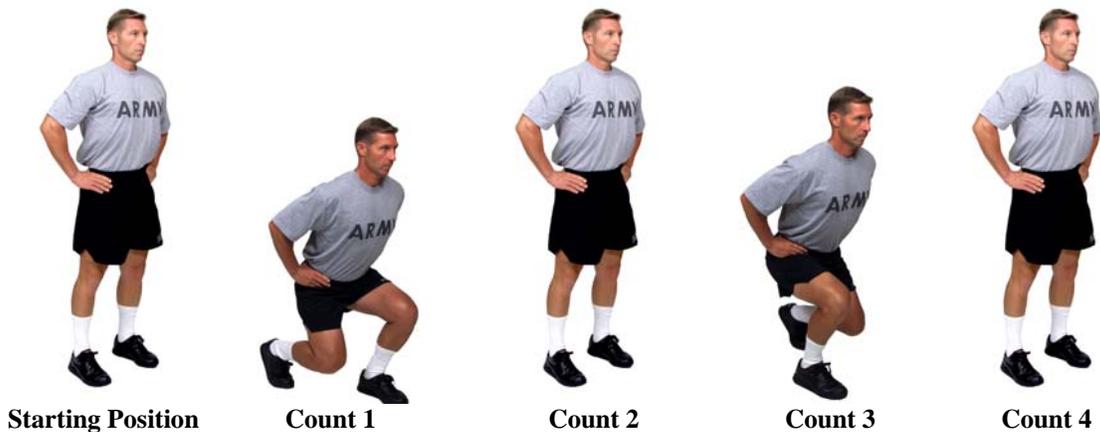
Purpose: This exercise promotes balance and develops leg strength.

Starting Position: Straddle stance with hands on hips.

Cadence: SLOW.

Count:

1. Take a step forward with the left leg, allowing the left knee to bend until the thigh is parallel to the ground. Lean slightly forward, keeping the back straight.
2. Return to the starting position.
3. Repeat count one with the right leg.
4. Return to the starting position.



Check Points:

- Keep the abdominal muscles tight throughout the motion.
- On counts one and three, step straight forward, keeping the feet directed forward. When viewed from the front, the feet maintain their distance apart both at the starting position and at the end of counts one and three.
- On counts one and three, the rear knee may bend naturally but do not touch the ground. The heel of the rear foot should be off the ground.

Precautions: This exercise is always performed at a slow cadence. On counts one and three, move into position in a controlled manner. Spring off of the forward leg to return to the starting position. This avoids jerking the trunk to create momentum.

Conditioning Drill 1

Exercise 8: The Prone Row

Purpose: This exercise develops strength of the back and shoulders.

Starting Position: Prone position with the arms overhead, palms down 1-2 inches off the ground and toes pointed to the rear.

Cadence: SLOW.

Count:

1. Raise the head and chest slightly while lifting the arms and pulling them rearward. Hands make fists as they move toward the shoulders.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- At the starting position, the abdominal muscles are tight and the head is inline with the spine.
- On counts one and three, the forearms are parallel to the ground and slightly higher than the trunk.
- On counts one and three, the head is raised to look forward but not skyward.
- Throughout the exercise, the legs and toes remain in contact with the ground.

Precautions: This exercise is always performed at a slow cadence. Prevent overarching of the back by maintaining contractions of the abdominal and buttocks muscles throughout the exercise.

Conditioning Drill 1

Exercise 9: The Bent-leg Body Twist

Purpose: This exercise strengthens trunk muscles and promotes control of trunk rotation.

Starting Position: Supine position with the hips and knees bent to 90-degrees, arms sideward, palms down with fingers spread. Legs and feet are together.

Cadence: SLOW.

Count:

1. Rotate the legs to the left while keeping the upper back and arms in place.
2. Return to the starting position.
3. Repeat count one to the right.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- Tighten the abdominal muscles in the starting position and maintain this contraction throughout the exercise.
- The head should be off the ground with the chin slightly tucked.
- Ensure that the hips and knees maintain 90-degree angles.
- Keep the feet and knees together throughout the exercise.
- Attempt to rotate the legs to about 8-10 inches off the ground. The opposite shoulder must remain in contact with the ground.

Precautions: This exercise is always performed at a slow cadence. Do not rotate the legs to a point beyond which they can no longer maintain contact with the ground with the opposite arm and shoulder.

Conditioning Drill 1

Exercise 10: The Push-up

Purpose: This exercise strengthens the muscles of the chest, shoulders, arms, and trunk.

Starting Position: Front Leaning Rest position.

Cadence: MODERATE.

Count:

1. Bend the elbows, lowering the body until the upper arms are parallel with the ground.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- ❑ The hands are directly below the shoulders with fingers spread (middle fingers point straight ahead).
- ❑ On counts one and three the upper arms stay close to the trunk, elbows pointing rearward.
- ❑ On counts two and four the elbows straighten but do not lock.
- ❑ The trunk should not sag. To prevent this, tighten the abdominal muscles while in the starting position and maintain this contraction throughout the exercise.

Precautions: N/A.

Variation: Soldiers should assume the six-point stance on their knees when unable to perform repetitions correctly to cadence.



The Military Movement Drill

The purpose of The Military Movement Drill is to dynamically prepare the body for more vigorous activities and develop motor efficiency. Any level area of adequate size is appropriate for conducting the movement drill. Beware of hazards, such as holes, uneven terrain and rocks. Use caution when conducting The Military Movement Drill on wet terrain. This drill is conducted using the extended rectangular formation performed by rank. The Military Movement Drill consists of three exercises performed at 25-yard intervals: verticals, laterals and the shuttle sprint.

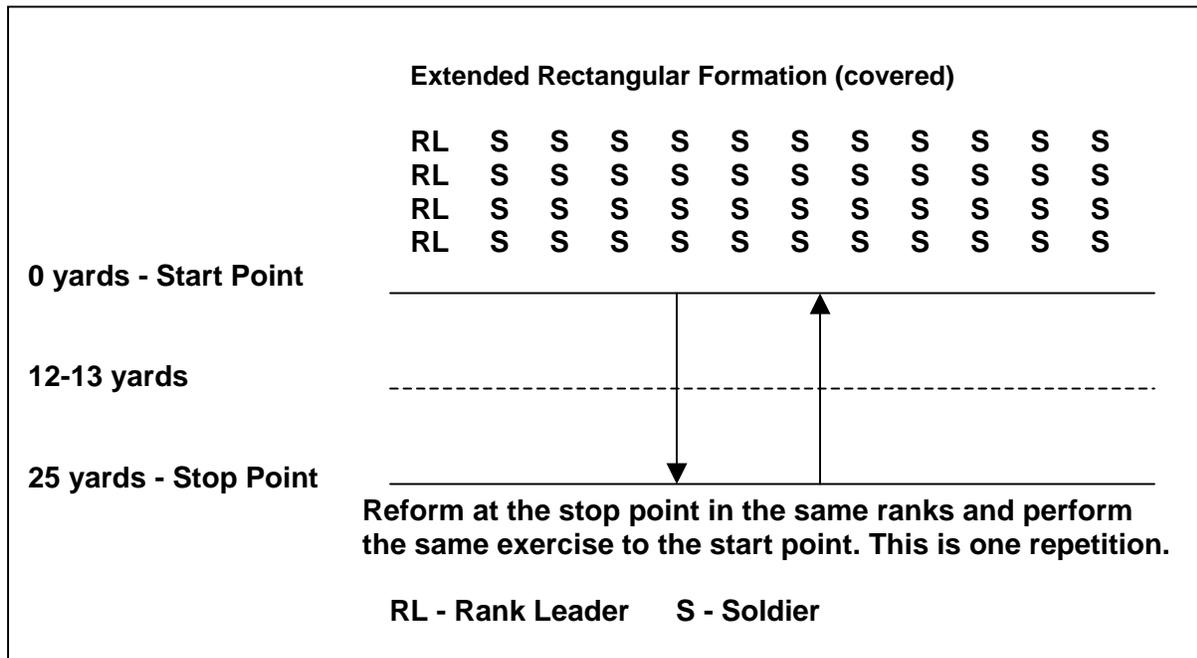


Figure 3-2.

The Military Movement Drill

Exercise 1: Verticals

Purpose: This exercise helps to develop proper running form.

Starting Position: Staggered Stance with the right foot forward. The right heel is even with the toes of the left foot. The right arm is to the rear with the elbow slightly bent and the left arm is forward. The head is up looking straight ahead and the knees are slightly bent.

Movement: Bring the hips quickly to 90-degrees of bend without raising the knees above waist level. Ground contact should be primarily with the balls of the feet. When the left leg is forward, the right arm swings forward and the left arm swings to the rear. When the right leg is forward, the left arm swings forward and the right arm swings to the rear.



Starting Position



Checkpoints:

- Arm swing is strong and smooth with the forward arm at 90-degrees and the rearward arm relatively straight.
- Arm swing is from front to rear, not side to side, with the upper part of the forward arm reaching parallel to the ground as it swings to the front.
- Keep a tall stance with a stable, upright trunk. The back remains perpendicular to the ground. There should not be any back swing of the legs.

Precautions: N/A.

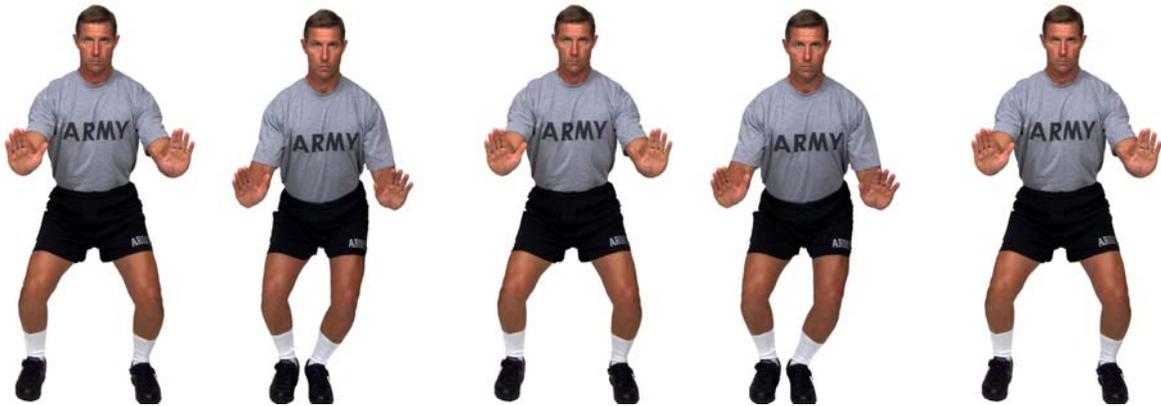
The Military Movement Drill

Exercise 2: Laterals

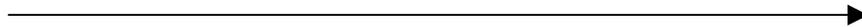
Purpose: This exercise develops the ability to move laterally.

Starting Position: Straddle Stance, slightly crouched, with the back straight, arms at the side with elbows bent at 90-degrees and palms facing forward. Face perpendicular to the direction of movement.

Movement: Step out with the lead leg and then bring the trail leg up and toward the lead leg. Always face the same direction so that the first 25-yards is moving to the left and the second 25-yards is moving to the right.



Starting Position



Checkpoints:

- Pick the feet up with each step. Avoid dragging the feet along the ground.
- Crouch slightly while keeping the back straight.
- Avoid hitting the feet and ankles together on each step.
- Rank leaders will face their rank throughout the exercise.

Precautions: N/A.

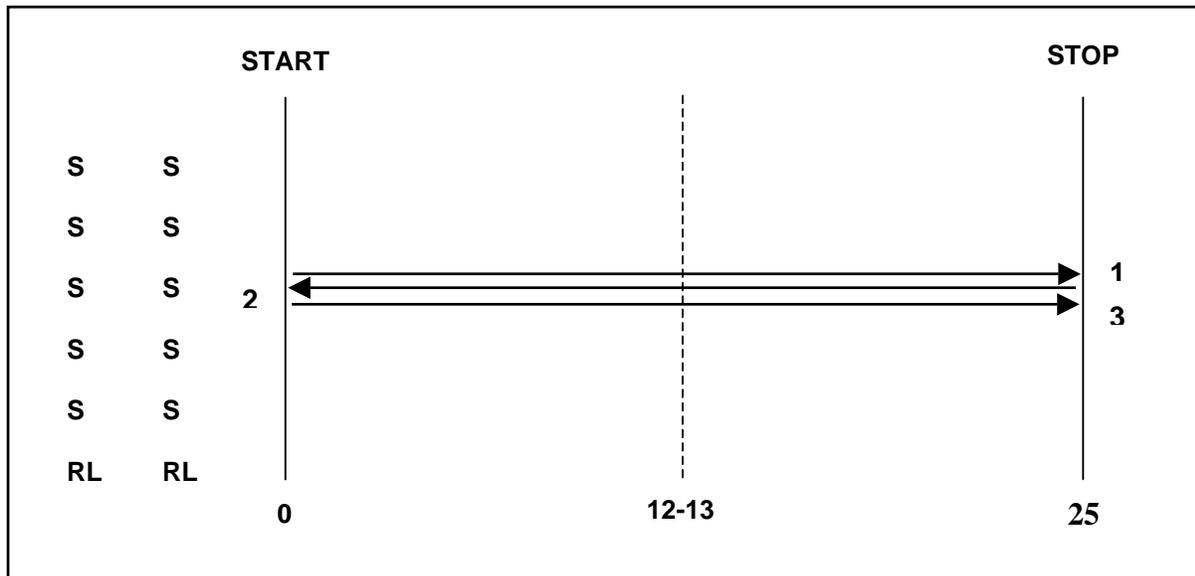
The Military Movement Drill

Exercise 3: The Shuttle Sprint

Purpose: This exercise develops anaerobic endurance, leg speed, and agility.

Starting Position: Staggered Stance with the right foot forward. The right heel is even with the toes of the left foot. The right arm is to the rear with the elbow slightly bent and the left arm is forward. The head is up looking straight ahead and the knees are slightly bent.

Movement: Run quickly to the 25-yard mark. Turn clockwise while planting the left foot and bending and squatting to touch the ground with the left hand. Run quickly back to the starting line and plant the right foot, turn counter-clockwise and touch the ground with the right hand. Run back to the 25-yard mark gradually accelerating to near maximum speed.



Checkpoints:

- Soldiers should slow their movement before planting feet and changing direction.
- Soldiers should squat while bending the trunk when reaching to touch the ground as they change direction.
- Soldiers touch the ground with their left hand on the first turn, then with their right hand on the second turn.
- Accelerate to near maximum speed during the last 25-yard interval.

Precautions: Soldiers should use caution when performing this exercise on wet terrain.

CHAPTER 4

COOL-DOWN

The cool-down serves to gradually slow the heart rate and helps prevent pooling of the blood in the legs and feet. Soldiers should begin the cool down by walking until their heart rates return to less than 100 beats per minute and heavy sweating stops.

The cool-down should last approximately 10 to 15 minutes and occur immediately after the endurance and mobility or strength and mobility activities of the PT session. The performance of Conditioning Drill 1 (1 set x 5 repetitions) followed by The Stretch Drill (hold for 20 seconds) comprises the cool-down for **ALL** PT sessions. Cool-down safely brings soldiers back to their pre-exercise state after performing intense conditioning activities. Performance of the cool-down also helps to improve flexibility and range of motion. A Cool-down Drill Card is provided in Appendix A.

COOL-DOWN

Conditioning Drill 1	
1. The Bend and Reach	(5 repetitions - slow)
2. The Rear Lunge	(5 repetitions - slow)
3. The High Jumper	(5 repetitions - moderate)
4. The Rower	(5 repetitions - slow)
5. The Squat Bender	(5 repetitions - slow)
6. The Windmill	(5 repetitions - slow)
7. The Forward Lunge	(5 repetitions - slow)
8. The Prone Row	(5 repetitions - slow)
9. The Bent-leg Body Twist	(5 repetitions - slow)
10. The Push-up	(5 repetitions - moderate)

The Stretch Drill	
1. The Overhead Arm Pull	(hold 20 seconds)
2. The Rear Lunge	(hold 20 seconds)
3. The Extend and Flex	(hold 20 seconds)
4. The Thigh Stretch	(hold 20 seconds)
5. The Single-leg Over	(hold 20 seconds)

Figure 4-1.

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Conditioning Drill 1

Exercise 1: The Bend and Reach

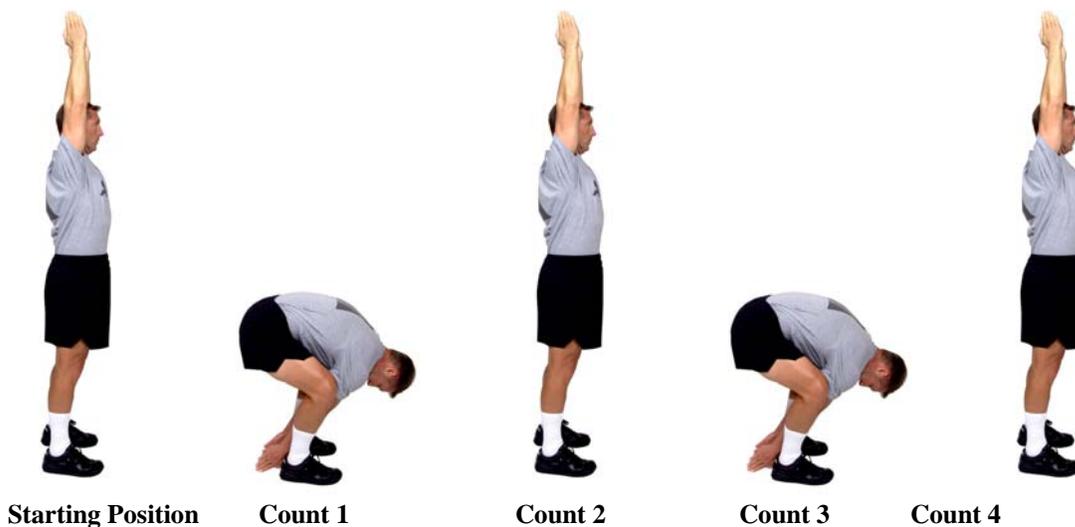
Purpose: This exercise develops the ability to squat and reach through the legs. It also serves to prepare the spine and extremities for more vigorous movements, moving the hips and spine through full flexion.

Starting Position: Straddle stance with arms overhead.

Cadence: SLOW.

Count:

1. Squat with the heels flat as the spine rounds forward to allow the straight arms to reach as far as possible between the legs.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Check Points:

- ❑ From the starting position, ensure that soldiers have their hips set, their abdominals tight, and their arms fully extended overhead.
- ❑ The neck flexes to allow the gaze to the rear. This brings the head in line with the bend of the trunk.
- ❑ The heels and feet remain flat on the ground.
- ❑ On counts two and four, do not go past the starting position.

Precautions: This exercise is always performed at a slow cadence. To protect the back, move into the count one position in a slow, controlled manner. Do not bounce into or out of this position in a ballistic manner, as this may place an excessive load on the back.

Conditioning Drill 1

Exercise 2: The Rear Lunge

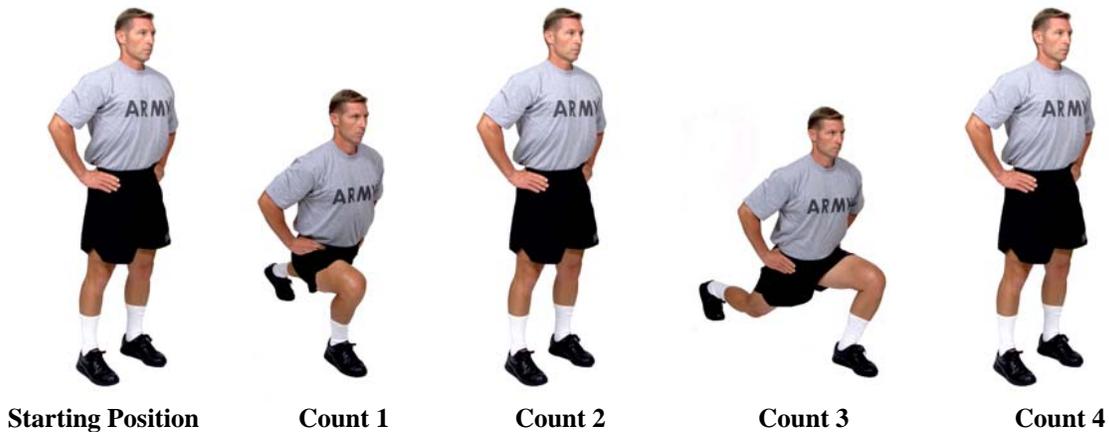
Purpose: This exercise promotes balance, opens up the hip and trunk on the side of the lunge and develops leg strength.

Starting Position: Straddle stance with hands on hips.

Cadence: SLOW.

Count:

1. Take an exaggerated step backward with the left leg, touching down with the ball of the foot.
2. Return to the starting position.
3. Repeat count one with the right leg.
4. Return to the starting position.



Check Points:

- ❑ Maintain straightness of the back by keeping the abdominal muscles tight throughout the motion.
- ❑ After the foot touches down, allow the body to continue to lower. This promotes flexibility of the hip and trunk.
- ❑ On counts one and three, step straight to the rear, keeping the feet directed forward. When viewed from the front, the feet maintain their distance apart both at the starting position and at the end of counts one and three.
- ❑ Keep the rear leg as straight as possible but not locked.

Precautions: This exercise is always performed at a slow cadence. On counts one and three, move into position in a slow, controlled manner. If the cadence is too fast, it will be difficult to go through a full range of motion.

Conditioning Drill 1

Exercise 3: The High Jumper

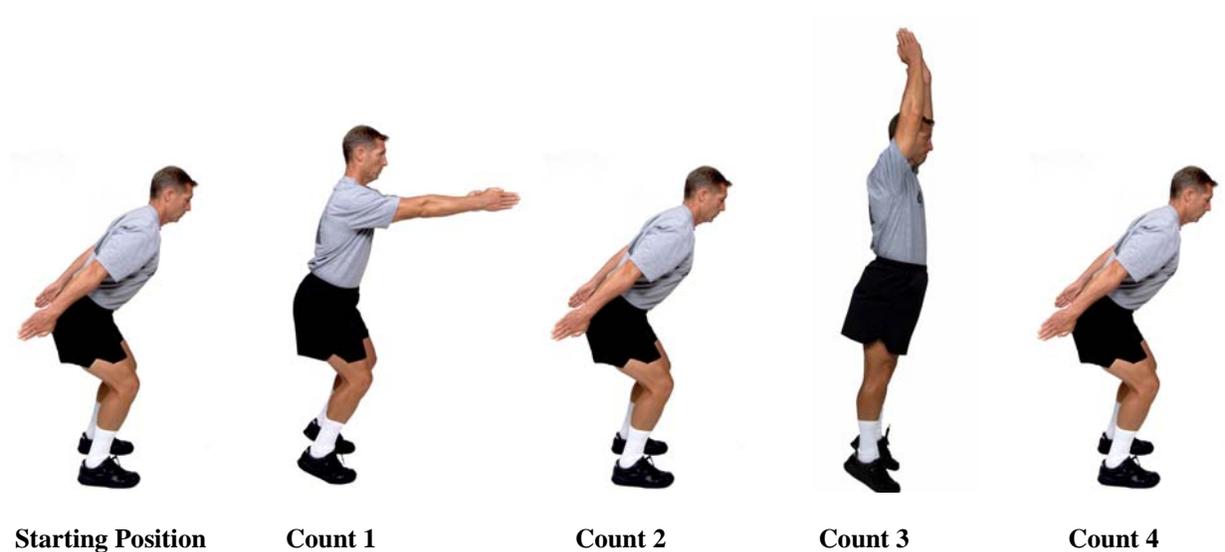
Purpose: This exercise reinforces correct jumping and landing, stimulates balance and coordination, and develops explosive strength.

Starting Position: Forward Leaning Stance.

Cadence: MODERATE.

Count:

1. Swing arms forward and jump a few inches.
2. Swing arms backward and jump a few inches.
3. Swing arms forward and vigorously overhead while jumping forcefully.
4. Repeat count two. On the last repetition, return to the starting position.



Check Points:

- At the starting position, the shoulders, the knees, and the balls of the feet should form a straight vertical line.
- On count one, the arms are parallel to the ground.
- On count three, the arms should be extended fully overhead. The trunk and legs should also be in line.
- On each landing, the feet should be directed forward and maintained at shoulder distance apart. The landing should be “soft” and proceed from balls of the feet to the heels. The vertical line from the shoulders through the knees to the balls of the feet should be demonstrated on each landing.

Precautions: N/A.

Conditioning Drill 1

Exercise 4: The Rower

Purpose: This exercise improves the ability to move in and out of the supine position to a seated posture. It coordinates the action of the trunk and extremities while challenging the abdominal muscles.

Starting Position: Supine position, arms overhead, feet together and pointing upward. The chin is tucked and the head is 1-2 inches above the ground. Arms are shoulder-width, palms facing inward with fingers and thumbs extended and joined.

Cadence: SLOW.

Count:

1. Sit up while swinging arms forward and bending at the hip and knees. At the end of the motion, the arms will be parallel to ground, palms facing inward.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- ❑ At the starting position, the low back must not be arched excessively off the ground. To prevent this, tighten the abdominal muscles to tilt the pelvis and low back toward the ground.
- ❑ At the end of counts one and three, the feet are flat and pulled near the buttocks. The legs stay together throughout the exercise and the arms are parallel to the ground.

Precautions: This exercise is always performed at a slow cadence. Do not arch the back to assume counts one and three.

Conditioning Drill 1

Exercise 5: The Squat Bender

Purpose: This exercise develops strength, endurance and flexibility of the lower back and lower extremities.

Starting Position: Straddle stance with hands on hips.

Cadence: SLOW.

Count:

1. Squat while leaning slightly forward at the waist with the head up and extend the arms to the front, with arms parallel to the ground and palms facing inward.
2. Return to the starting position.
3. Bend forward and reach toward the ground with both arms extended and palms inward.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Point:

- ❑ At the end of counts one, the shoulders, knees and balls of the feet should be aligned. The heels remain on the ground and the back is straight.
- ❑ On count three, round the back slightly while bending forward, keeping the head aligned with the spine and the knees slightly bent.

Precautions: This exercise is always performed at a slow cadence. Allowing the knees to go beyond the toes on count one increases stress to the knees

Conditioning Drill 1

Exercise 6: The Windmill

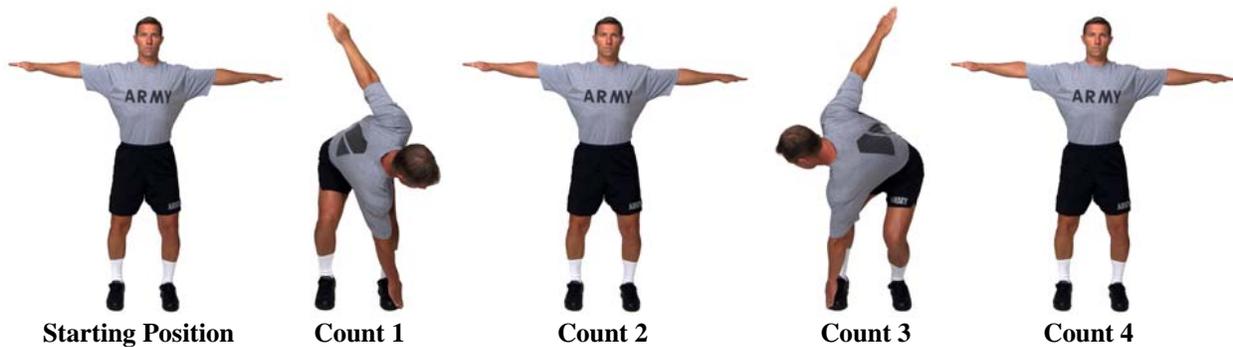
Purpose: This exercise develops the ability to safely bend and rotate the trunk. It conditions the muscles of the trunk, legs, and shoulders.

Starting Position: Straddle stance with arms sideward, palms facing down.

Cadence: SLOW.

Count:

1. Bend the hips and knees while rotating to the left. Reach down and touch the outside of the left foot with the right hand while looking toward the rear. The left arm is pulled rearward to maintain a straight line with the right arm.
2. Return to the starting position.
3. Repeat count one to the right.
4. Return to the starting position.



Check Points:

- From the starting position, feet are straight ahead, arms parallel to the ground, hips set, and abdominals tight.
- On counts one and three, ensure that the knees bend during the rotation. Head and eyes are directed to the rear on count one on count three.

Precautions: This exercise is always performed at a slow cadence.

Conditioning Drill 1

Exercise 7: The Forward Lunge

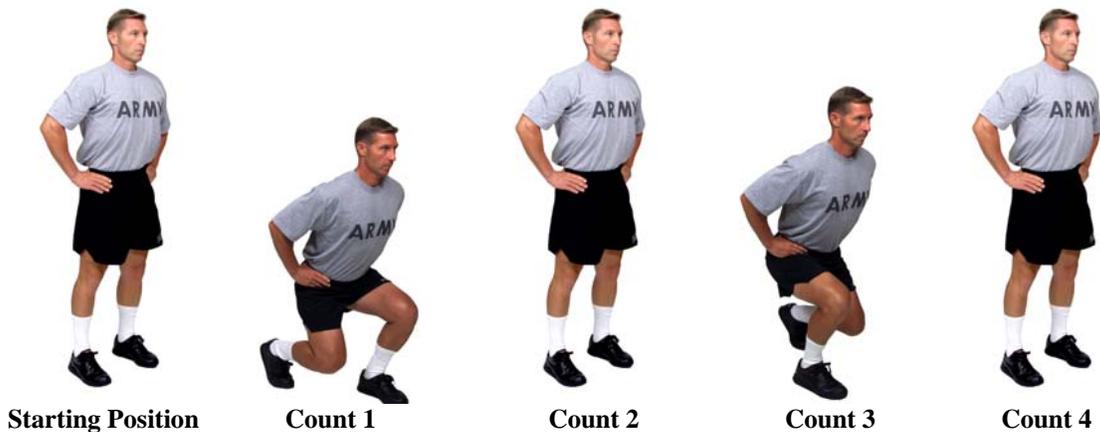
Purpose: This exercise promotes balance and develops leg strength.

Starting Position: Straddle stance with hands on hips.

Cadence: SLOW.

Count:

1. Take a step forward with the left leg, allowing the left knee to bend until the thigh is parallel to the ground. Lean slightly forward, keeping the back straight.
2. Return to the starting position.
3. Repeat count one with the right leg.
4. Return to the starting position.



Check Points:

- Keep the abdominal muscles tight throughout the motion.
- On counts one and three, step straight forward, keeping the feet directed forward. When viewed from the front, the feet maintain their distance apart both at the starting position and at the end of counts one and three.
- On counts one and three, the rear knee may bend naturally but do not touch the ground. The heel of the rear foot should be off the ground.

Precautions: This exercise is always performed at a slow cadence. On counts one and three, move into position in a controlled manner. Spring off of the forward leg to return to the starting position. This avoids jerking the trunk to create momentum.

Conditioning Drill 1

Exercise 8: The Prone Row

Purpose: This exercise develops strength of the back and shoulders.

Starting Position: Prone position with the arms overhead, palms down 1-2 inches off the ground and toes pointed to the rear.

Cadence: SLOW.

Count:

1. Raise the head and chest slightly while lifting the arms and pulling them rearward. Hands make fists as they move toward the shoulders.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- At the starting position, the abdominal muscles are tight and the head is inline with the spine.
- On counts one and three, the forearms are parallel to the ground and slightly higher than the trunk.
- On counts one and three, the head is raised to look forward but not skyward.
- Throughout the exercise, the legs and toes remain in contact with the ground.

Precautions: Prevent overarching of the back by maintaining contractions of the abdominal and buttocks muscles throughout the exercise.

Conditioning Drill 1

Exercise 9: The Bent-leg Body Twist

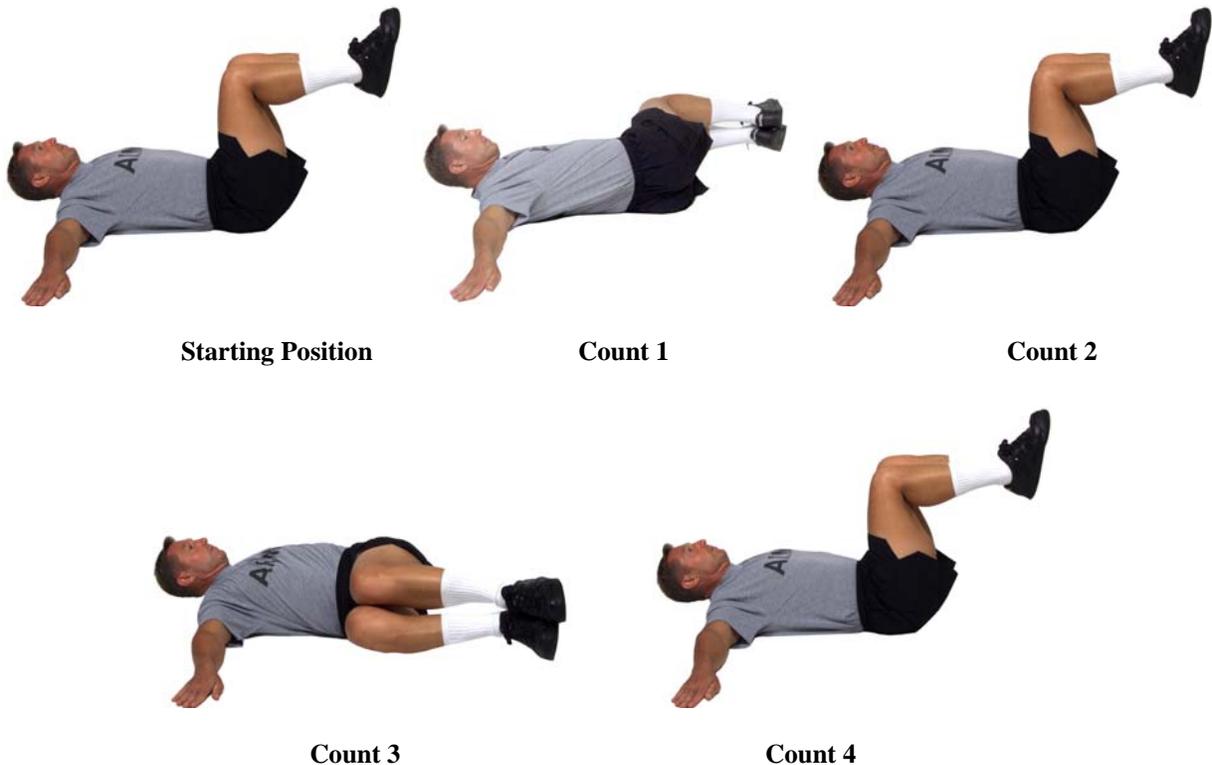
Purpose: This exercise strengthens trunk muscles and promotes control of trunk rotation.

Starting Position: Supine position with the hips and knees bent to 90-degrees, arms sideward, palms down with fingers spread. Legs and feet are together.

Cadence: SLOW.

Count:

1. Rotate the legs to the left while keeping the upper back and arms in place.
2. Return to the starting position.
3. Repeat count one to the right.
4. Return to the starting position.



Check Points:

- Tighten the abdominal muscles in the starting position and maintain this contraction throughout the exercise.
- The head should be off the ground with the chin slightly tucked.
- Ensure that the hips and knees maintain 90-degree angles.
- Keep the feet and knees together throughout the exercise.
- Attempt to rotate the legs to about 8-10 inches off the ground. The opposite shoulder must remain in contact with the ground.

Precautions: This exercise is always performed at a slow cadence. Do not rotate the legs to a point beyond which they can no longer maintain contact with the ground with the opposite arm and shoulder.

Conditioning Drill 1

Exercise 10: The Push-up

Purpose: This exercise strengthens the muscles of the chest, shoulders, arms, and trunk.

Starting Position: Front Leaning Rest position.

Cadence: MODERATE.

Count:

1. Bend the elbows, lowering the body until the upper arms are parallel with the ground.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- ❑ The hands are directly below the shoulders with fingers spread (middle fingers point straight ahead).
- ❑ On counts one and three the upper arms stay close to the trunk, elbows pointing rearward.
- ❑ On counts two and four the elbows straighten but do not lock.
- ❑ The trunk should not sag. To prevent this, tighten the abdominal muscles while in the starting position and maintain this contraction throughout the exercise.

Precautions: N/A.

Variation: Soldiers should assume the six-point stance on their knees when unable to perform repetitions correctly to cadence.



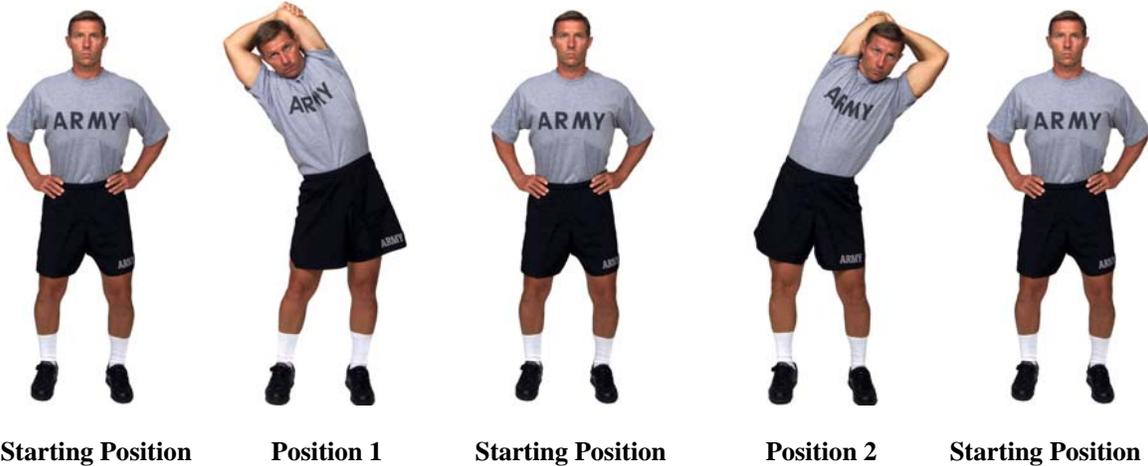
The Stretch Drill

Exercise 1: The Overhead Arm Pull

Purpose: This exercise develops flexibility of the arms, shoulders, and trunk muscles.

Starting Position: Straddle stance with hands on hips.

- On the command, “*Ready, STRETCH*”, raise the left arm overhead and place the left hand behind the head. Grasp above the left elbow with the right hand and pull to the right, leaning the body to the right. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, assume the starting position.
- On the command, “*Change Position, Ready, STRETCH*”, raise the right arm overhead and place the right hand behind the head. Grasp above the right elbow with the left hand and pull to the left, leaning the body to the left. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, return to the starting position.



Check Points:

- Throughout the exercise, keep the hips set and the abdominals tight.
- In positions 1 and 2, lean the body straight to the side, not to the front or back.

Precautions: N/A.

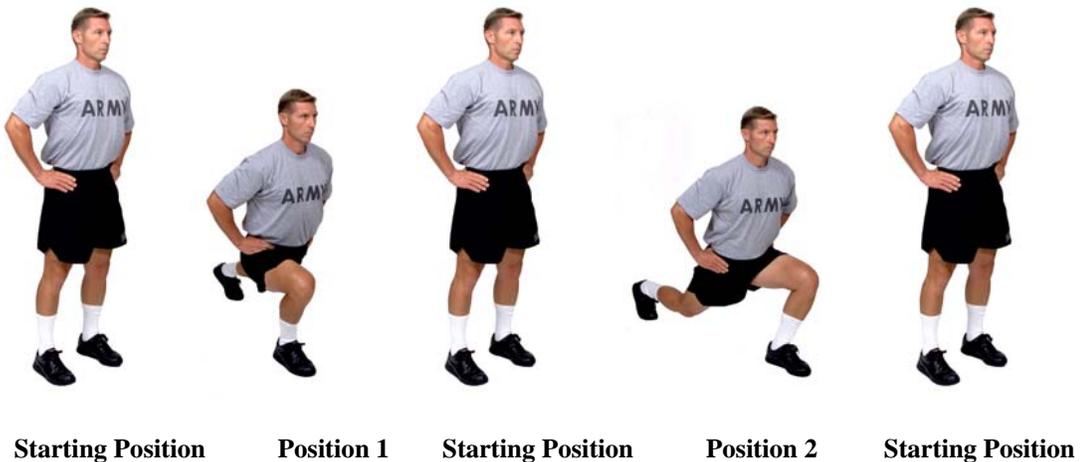
The Stretch Drill

Exercise 2: The Rear Lunge

Purpose: This exercise develops flexibility of the hip flexors and trunk muscles.

Starting Position: Straddle stance, hands on hips.

- On the command, “*Ready, STRETCH*”, take an exaggerated step backward with the left leg, touching down with the ball of the foot. This is the same position as count 1 of The Rear Lunge in Conditioning Drill 1. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, assume the starting position.
- On the command, “*Change Position, Ready, STRETCH*”, take an exaggerated step backward with the right leg, touching down with the ball of the foot. This is the same position as count 3 of The Rear Lunge in Conditioning Drill 1. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, return to the starting position.



Check Points:

- Maintain straightness of the back by keeping the abdominal muscles tight throughout the motion.
- After the foot touches down on positions 1 and 2, allow the body to continue to lower.
- Lunge and step in a straight line, keeping the feet directed forward. Viewed from the front, the feet are shoulder width apart, both at the starting position, and at the end of positions 1 and 2.
- Keep the forward knee over the ball of the foot on positions 1 and 2.

Precaution: When lunging to the left or right do not let the knee move forward of the toes.

The Stretch Drill

Exercise 3: The Extend and Flex

Purpose: This exercise develops flexibility of the hip flexors, abdominals, hip (Position 1 - extend) and the low back, hamstrings and calves (Position 2 -flex).

Starting Position: The front leaning rest position.

- On the command, “*Ready, STRETCH*”, lower the body, sagging in the middle, keeping the arms straight and look upward. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, assume the starting position.
- On the command, “*Change Position, Ready, STRETCH*”, slightly bend the knees and walk the hands back toward the legs. Straighten the legs and try to touch the ground with the heels. Keep the feet together and hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, return to the starting position.



Starting Position



Position 1



Starting Position



Position 2



Starting Position

Check Points:

- In position 1, the thighs and pelvis rest on the ground. Relax the back muscles while bearing the bodyweight through the straight arms. Toes point to the rear.
- In position 2, the legs are straight and the arms are shoulder width apart, palms down on the ground.
- Feet are together throughout the exercise.

Precaution: N/A.

The Stretch Drill

Exercise 4: The Thigh Stretch

Purpose: This exercise develops flexibility of the front of the thigh and the hip flexor muscles.

Starting Position: Seated position, arms at sides and palms on the floor.

- On the command, **“Ready, STRETCH”**, roll onto the right side and place the right forearm on the ground, perpendicular to the chest. The right hand makes a fist on the ground with the thumb side up. Grasp the left ankle with the left hand and pull the left heel toward the buttocks and pull the entire leg rearward. Push the left thigh further to the rear with the bottom of the right foot. Hold this position for 20 seconds.
- On the command, **“Starting Position, MOVE”**, assume the starting position.
- On the command, **“Change Position, Ready, STRETCH”**, lay on the left side and place the left forearm on the ground, perpendicular to the chest. The left hand makes a fist on the ground with the thumb side up. Grasp the right ankle with the right hand and pull the right heel toward the buttocks and pull the entire leg rearward. Push the right thigh further to the rear with the bottom of the left foot. Hold this position for 20 seconds.
- On the command, **“Starting Position, MOVE”**, return to the starting position.



Starting Position



Position 1



Starting Position



Position 2



Starting Position

Check Points:

- Keep the abdominal muscles tight throughout this stretch in order to keep the trunk straight.
- Do not pull the heel forcefully to the buttock if there is discomfort in the knee joint.

Precaution: N/A.

The Stretch Drill

Exercise 5: The Single-leg Over

Purpose: This exercise develops flexibility of the hips and lower back muscles.

Starting Position: Supine position with arms sideward, palms down.

- On the command, “**Ready, STRETCH**”, turn the body to the right, bend the left knee to 90-degrees over the right leg, and grasp the outside of the left knee with the right hand and pull toward the right. Hold this position for 20 seconds.
- On the command, “**Starting Position, MOVE**”, assume the starting position.
- On the command, “**Change Position, Ready, STRETCH**”, turn the body to the left, bend the right knee to 90-degrees over the left leg, and grasp the outside of the right knee with the left hand and pull toward the left. Hold this position for 20 seconds.
- On the command, “**Starting Position, MOVE**”, return to the starting position.



Starting Position



Position 1



Starting Position



Position 2



Starting Position

Check Points:

- At the starting position, the arms are directed to the sides at 90-degrees to the trunk, the fingers and thumbs are extended and joined.
- In position 1, keep the left shoulder, arm, and hand on the ground.
- In position 2, keep the right shoulder, arm, and hand on the ground.

Precaution: N/A.

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CHAPTER 5

CONDITIONING DRILL 2

Conditioning Drill 2 exercises all of the major muscle groups of the upper body. Conditioning Drill 2 is listed below:

Conditioning Drill 2	
1. The Push-up	4-count, moderate (10-20 repetitions)
2. The Sit-up	4-count, moderate (10-20 repetitions)
3. The Straight-arm Pull	2-count, moderate (5 repetitions)
4. The Pull-up	2-count, moderate (5 repetitions)
5. The Leg Tuck	2-count, moderate (5 repetitions)

Figure 5-1.

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Conditioning Drill 2

Conditioning Drill 2 consists of five exercises that develop upper body strength, endurance, and mobility. As in Conditioning Drill 1, all exercises are to be performed in the sequence listed. Push-ups and Sit-ups are performed in cadence starting with ten (4-count) repetitions and progressing to 20 (4-count) repetitions. The push-up and the sit-up may be performed to the standards listed in FM 21-20, Chapter 14. The Straight-arm Pull, The Pull-up and The Leg Tuck are performed in cadence for five (2-count) repetitions using spotters and progressing to five (2-count) repetitions unassisted.

Spotting the Pull-up

Two spotters are used during the pull-up to ensure precision, adherence to proper cadence, and safety by assisting soldiers who are unable to properly perform the desired number of repetitions. **All soldiers performing the pull-up are required to use spotters unless they demonstrate the ability to perform five repetitions of the pull-up and give a verbal cue that “no spot” is needed.** As soldiers develop more strength, they will require less assistance.

The front spotter assumes a staggered stance with his palms towards the exerciser at approximately chest level. The front spotter’s primary role in spotting is to support the exerciser if their grip gives out. There should be no contact with the exerciser unless the exerciser’s grip fails.

The rear spotter assumes a staggered stance and spots the soldier performing the pull-up by bringing the feet to their thighs or abdomen. The hands are placed above the ankles on the lower legs to hold them securely. The exact location will vary depending on the height of the exerciser, the height of the spotter, and the height of the pull-up bar. The exerciser must communicate verbally which foot position is more comfortable (abdomen or thighs). The role of the rear spotter is to provide a stable base for the exerciser to push against with his legs. When spotting is performed correctly, the spotter will neither have to lift nor go up and down with the exerciser. The rear spotter must anticipate the last repetition and release the spot when the “down” command is given and before the “dismount” command.

Soldiers are required to use the foot pegs when mounting and dismounting the bar. This is done to ensure safety and to reduce injuries.

Spotting the Leg Tuck

Two spotters are used during the leg tuck to ensure precision, adherence to proper cadence, and safety by assisting soldiers who are unable to properly perform the desired number of repetitions. **All soldiers performing the leg tuck are required to use spotters unless they demonstrate the ability to perform five repetitions of the leg tuck and give a verbal cue that “no spot” is needed.** As soldiers develop more strength, they will require less assistance.

One spotter stands on each side of the exerciser in the straddle stance. The rear hand of each spotter is placed in the small of the back, and the forward hand is placed beneath the thigh right above the back of the knee. Both hands remain in contact with the exerciser throughout the exercise. The rear hand is used primarily to prevent the exerciser from swaying, while the forward hand helps lift the legs into the “up” position.

Soldiers are required to use the foot pegs when mounting and dismounting the bar. This is done to ensure safety and to reduce injuries.

Conditioning Drill 2

Exercise 1: The Push-up

Purpose: This exercise strengthens the muscles of the chest, shoulders, arms, and trunk.

Starting Position: Front Leaning Rest position.

Cadence: MODERATE.

Count:

1. Bend the elbows, lowering the body until the upper arms are parallel with the ground.
2. Return to the starting position.
3. Repeat count one.
4. Return to the starting position.



Starting Position



Count 1



Count 2



Count 3



Count 4

Check Points:

- The hands are placed wherever is comfortable for the soldier performing the exercise.
- The feet are together or up to 12 inches apart.
- On counts two and four the elbows straighten but do not lock.
- The trunk should not sag. To prevent this, tighten the abdominal muscles while in the starting position and maintain this contraction throughout the exercise.

Precautions: N/A.

Variation: Soldiers should assume the six-point stance on their knees when unable to perform repetitions correctly to cadence.



Conditioning Drill 2

Exercise 2: The Sit-up

Purpose: This exercise strengthens the abdominal and hip-flexor muscles.

Starting Position: Supine position with hands behind head, fingers interlaced and knees bent at 90-degrees. Feet are together or up to twelve inches apart and flat on the ground. Hands are touching the ground.

Cadence: MODERATE.

Count:

1. Raise the upper body to the vertical position so that the base of the neck is above the base of the spine.
2. Return to the starting position in a controlled manner until the bottom of the shoulder blades touch the ground. The head and hands need not touch the ground.
3. Repeat count one.
4. Repeat count two and return to the starting position at the completion of the final repetition.



Starting Position

Count 1



Count 2

Count 3

Count 4

Check Points:

- The hands are behind the head with the fingers interlaced.
- Feet are together or up to twelve inches apart and both heels must remain in contact with the ground throughout the exercise.
- On counts one and three do not raise the hips or arch the back to assume the vertical position.

Precautions: Soldiers should not jerk on the head or neck to assume the vertical position.

Conditioning Drill 2

Exercise 3: The Straight-arm Pull

Purpose: This exercise develops the ability to initiate the pull-up motion by isolating the muscles of the shoulder and upper back.

Starting Position: Extended hang using the overhand grip.

Cadence: MODERATE.

Count:

1. Keeping the arms straight, pull upward with the shoulders and upper back muscles.
2. Return to the starting position.



Starting Position

Count 1

Count 2

Hand Position

The hand position for the pull-up is the overhand grip, with the palms facing away from the face



Check Points:

- Throughout the exercise, arms are shoulder width, palms facing away from the body, with thumbs around the bar.
- Throughout the exercise, keep arms straight, but not locked.
- On count 1, pull the body up by engaging the shoulder muscles (squeeze the shoulder blades together).

Precautions: N/A.

Conditioning Drill 2

Exercise 4: The Pull-up

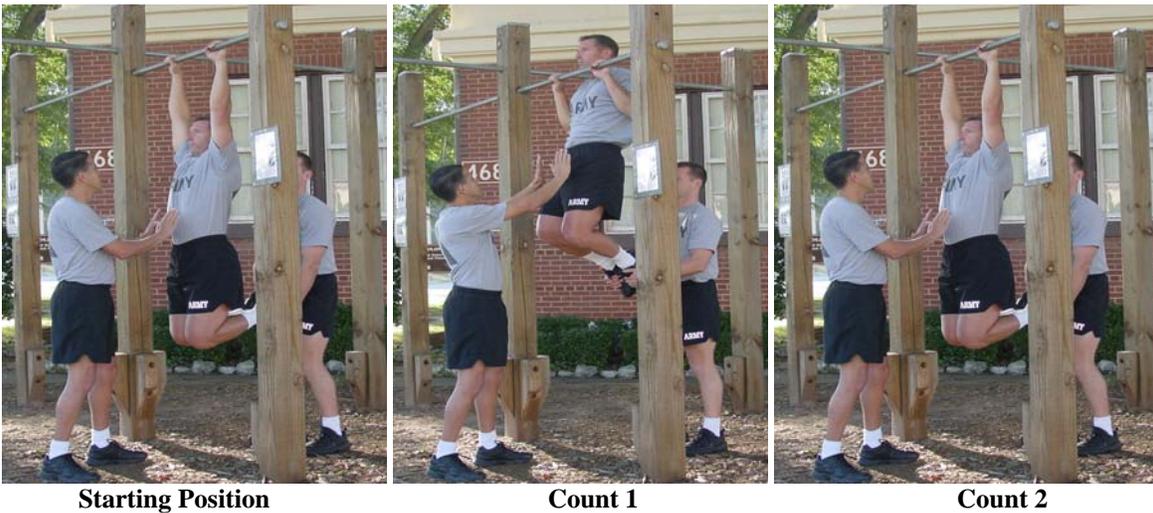
Purpose: This exercise strengthens the forearm, arm and back muscles.

Starting Position: Extended hang using the overhand grip with the thumbs around the bar.

Cadence: MODERATE.

Count:

1. Pull the body upward keeping the body straight until the chin is above the bar.
2. Return to the starting position in a controlled manner.



Hand Position

The hand position for the pull-up is the overhand grip, with the palms facing away from the face



Check Points:

- Throughout the exercise keep the feet and legs together.
- Throughout the exercise, arms are shoulder width, palms facing away from the body, with thumbs around the bar.
- Avoid kipping or swinging to achieve the up position.

Precautions: See spotting instructions at the beginning of this chapter.

Conditioning Drill 2

Exercise 5: The Leg Tuck

Purpose: This exercise develops the abdominal, hip flexor, and grip strength essential to climbing a rope..

Starting Position: Extended hang using the alternating grip, left or right.

Cadence: MODERATE.

Count:

1. Pull up with the arms and raise the knees toward the chest until the elbows touch the thighs just above the knees.
2. Return to the starting position.



Starting Position



Count 1



Count 2

Hand Positions

The hand position for the leg tuck is the alternating grip left or right, with the palms alternating on the bar.



Alternating Grip Left



Alternating Grip Right

Check Points:

- Throughout the exercise keep the feet together.
- On count one, the thighs and elbows touch just above the knees.

Precautions: See spotting procedures at the beginning of this chapter.

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CHAPTER 6

RUNNING

Running is a vigorous activity that contributes to the overall conditioning of the soldier by developing endurance and speed. Endurance spans a continuum between aerobic and anaerobic systems. Aerobic endurance involves performing low to moderate intensity activities for a long duration. Anaerobic endurance involves performing high intensity activities for a short duration. Aerobic training alone does not fully prepare soldiers for the functional endurance and strength requirements of common soldier physical tasks. In order to train the complete spectrum of endurance, both aerobic sustained running (ability group runs) and anaerobic speed running (30:60s). The following running activities described in this section may be performed individually or collectively.

Sustained Running Form

Running form varies from soldier to soldier. Anatomical variations cause a variety of biomechanical manifestations. Many individual variations may be successful. Attempts to force soldiers to conform to one standard may do more harm than good. However, there are some basic guidelines that may improve running efficiency without overhauling the natural stride. Generally, the form and technique for all types of running is fairly constant. The following information addresses optimal running form for the major body segments. Refer to Figure 6-1.



Figure 6-1.

Head

The head should be held high, with the chin neither pointing up nor down. Allowing the head to ride forward puts undue strain on the muscles of the upper back.

Shoulders

The shoulders should assume a neutral posture, neither rounded forward nor forcefully arched backward. Rounding the shoulders forward is the most common fault in everyday posture as well as with running. This is usually associated with tightness of the chest and shoulder muscles. Another problem occurs when the shoulders start to rise with fatigue or increased effort. This position not only wastes energy, but can also adversely affect breathing.

Arms

Throughout the arm swing, the elbows should stay at roughly a 90-degree bend. The wrists stay straight and the hands remain loosely cupped. The arm swing should be free of tension, but do not allow the hands to cross the midline of the body.

Trunk and Pelvis

The trunk should remain over its base of support, the pelvis. A common problem with fatigue is allowing the trunk to lean forward of the legs and pelvis. This forces the lower back muscles to expend too much energy resisting further trunk lean to the front.

Legs

For distance running, much of the power is generated from below the knee. Energy is wasted as the knees come higher and the large muscles of the hips and thighs are engaged. Practice getting a strong push-off from the ankle of the back leg. This helps to naturally lengthen the stride. Lengthening the stride by reaching forward with the front leg will be counterproductive.

Feet

The feet should be pointed directly forward while running. With fatigue and certain muscle imbalances, the legs and feet may start to rotate outward. This may hinder performance and create abnormal stresses that contribute to injury.

Breathing

Breathing should be rhythmic in nature and coordinated with the running stride.

Ability Group Run

Ability group runs (AGRs) train soldiers in groups of near-equal ability. Each ability group runs at a prescribed pace intense enough to produce a training effect for that group and each soldier in it. Leaders should program these runs for specific lengths of time, not miles to be run IAW the AGR training progression chart. See Figure 6-3. This training method provides a challenge for each ability group while controlling injuries.

To assign soldiers to ability groups within the PCU, utilize 1-mile run time that the soldier obtained in the reception battalion. Soldiers running the 1-mile in 7:15 and faster will be assigned to ability group A. Soldiers running the 1-mile from 7:16 to 8:15 will be assigned to ability group B. Soldiers running the 1-mile from 8:16 to 10:15 will be assigned to ability group C. Soldiers running the 1-mile in 10:16 and slower will be assigned to ability group D.

AGRs must be conducted at the intensity and duration specified in the AGR chart.

- ❑ **Because soldiers progress at different rates, they should move to faster groups when they are ready.**
- ❑ Those who have difficulty maintaining the specified pace within an ability group should be placed in a slower ability group.
- ❑ Supervision will prevent a constant shifting of soldiers between groups due to lack of individual effort.

The frequency of AGRs is one or two times per week. **AGR, speed running, and foot marching (greater than 5 Km) should not be conducted on the same or consecutive days. The running duration is determined by time, not distance.** The PCU ability group progression chart is provided below in Figure 6-3 and in Appendix A, PT Leader Drill Cards.

Running Routes and Sustained Running Pace

Routes used for sustained running in ability groups should be well-lighted, free from hazards and traffic, and marked at quarter-mile intervals. Ability group leaders will ensure running is at the proper pace prescribed for their group by checking their split times at each quarter-mile marker along the route. Refer to figure 6-2 for the appropriate quarter-mile split time based on the ability group running pace. (The ¼ mile split times are rounded to the nearest whole second)

1-Mile Time	6:30	6:45	7:00	7:15	7:30	7:45
1/4 Mile Split	1:37	1:41	1:45	1:48	1:52	1:56
1-Mile Time	8:00	8:15	8:30	8:45	9:00	9:15
1/4 Mile Split	2:00	2:03	2:07	2:11	2:15	2:18
1-Mile Time	9:30	9:45	10:00	10:15	10:30	10:45
1/4 Mile Split	2:22	2:26	2:30	2:33	2:37	2:41
1-Mile Time	11:00	11:15	11:30	11:45	12:00	
1/4 Mile Split	2:45	2:48	2:52	2:56	3:00	

Figure 6-2.

PCU Ability Group Run Time (4 Groups)

Group	AGR Times
A	15 min @ 7:15
B	15 min @ 8:30
C	12 min @ 10:00
D	12 min @ 11:00

Soldiers running the one-mile in **7:15 and faster** will be assigned to ability group **A**.
Soldiers running the one-mile from **7:16 to 8:45** will be assigned to ability group **B**.
Soldiers running the one-mile from **8:46 to 10:15** will be assigned to ability group **C**.
Soldiers running the one-mile in **10:16 and slower** will be assigned to ability group **D**.

Figure 6-3.

Speed Running

Speed running is based on the training principle that a greater amount of intense work can be performed if the work is interspersed with periods of recovery. Improvements in physical fitness are affected to a greater extent by the intensity of training than by the frequency or duration of the training. During speed running, soldiers perform a work interval in a specified time for a specific number of repetitions. The work intervals are followed immediately by an active recovery interval. Multiple work intervals cause the onset of fatigue many times during a single training session. Speed running improves the resistance to fatigue of the active muscles by repeatedly exposing them to high intensity effort. As a result of their increased anaerobic and aerobic endurance, soldiers will be able to sustain performance of physically demanding tasks at a higher intensity for a longer duration. The training stimulus associated with speed running occurs from the combination of work and recovery. A very short recovery period may not allow the body to recover sufficiently to perform the next work interval at the desired intensity. A very long recovery period may allow the body to recover too much and some of the training effect would be lost. Generally, duration of the recovery period depends on the intensity and duration of the work interval. An appropriate work to recovery ratio for improving soldier physical fitness is 1:2. Speed running has three variables: work duration, recovery duration, and the number of repetitions. The speed running activity appropriate for soldiers to improve physical fitness is 30:60s. The PCU Speed Running chart is provided in Figure 6-5 and Appendix A, PT Leader Drill Cards.

30:60s

Soldiers will perform 30:60s, adhering to a work to recovery ratio of 1:2. During the work interval, soldiers will sprint for 30 seconds. During the recovery interval, soldiers will walk for 60 seconds. This is one repetition of a 30:60. All ability groups should run at a slow pace (jog) ¼ - mile prior to beginning 30:60s. The soldiers in ability groups C and D will finish their 30:60s before those soldiers in groups A and B. The soldiers in ability groups C and D will continue to walk until ability groups A and B have completed their 30:60s. All ability groups should walk a minimum of 3 minutes prior to performing additional activities or Cool-down.

Training Areas for Speed Running

The training area for the conduct of speed running is, ideally, a quarter-mile oval running track. The PT leader has all soldiers in sight and whistle commands to start and stop walking and running intervals are easily heard by all soldiers. If speed running is conducted on a road, the route **MUST** be wide enough for soldiers to turn around and not collide. The recommended distances for conducting 30:60s on a straight road course is a minimum of 100 yards and a maximum of 200 yards. Refer to Figure 6-4.

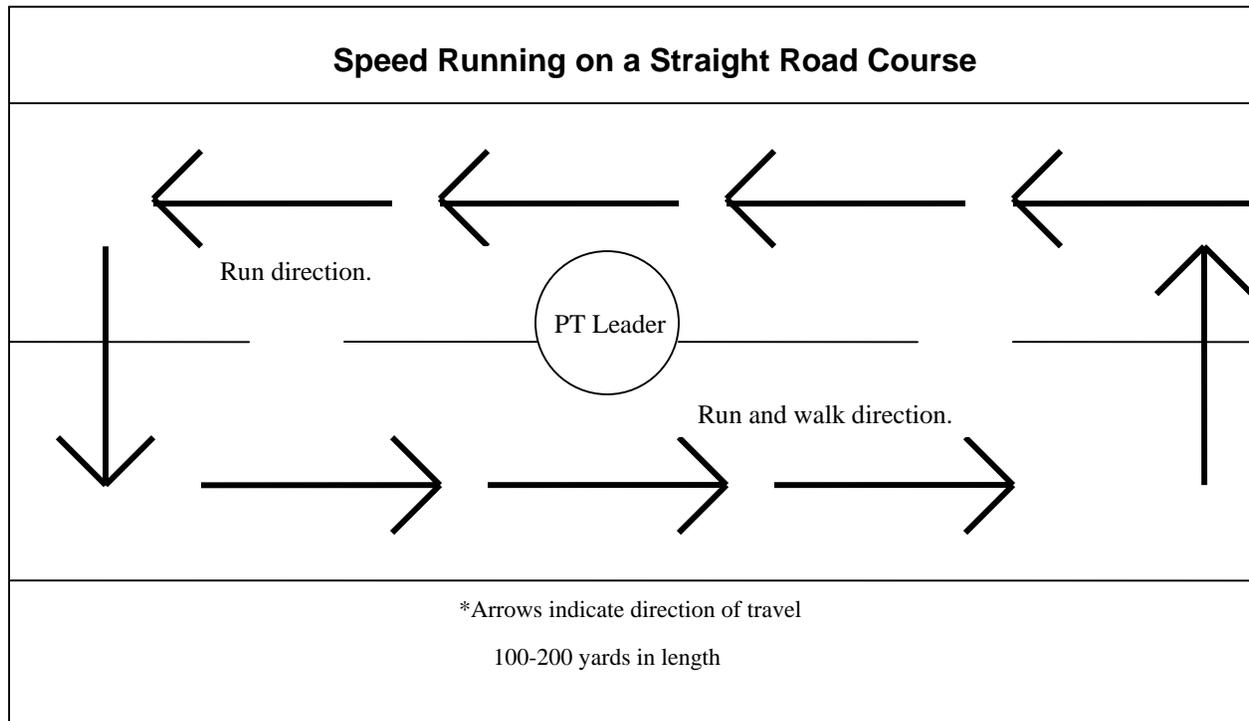


Figure 6-4.

PCU Speed Running

Group	Repetitions
A	8 reps 30:60
B	8 reps 30:60
C	6 reps 30:60
D	6 reps 30:60

All ability groups should run at a slow pace (jog) ¼ - mile prior to beginning 30:60s.

All ability groups should walk a minimum of 2-3 minutes prior to performing additional activities or Cool-down.

Figure 6-5.

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CHAPTER 7

Planning Considerations

Adherence to the principles of precision, progression and integration is essential for program effectiveness and injury control. These principles of exercise were employed in the development of the PT schedule.

Precision is the strict adherence to the optimal execution standards for PT activities.

Precision is based on the premise that the quality of movement is just as important as the weight lifted, repetitions performed or distance run.

Progression is the systematic increase in the intensity and/or duration of PT activities.

Proper progression allows the body to positively adapt to the stresses of training. In the PCU, however, there is no allowance for progression in the training schedule due to the nature of the PCU. Adhering to the intensity and duration listed on the PT schedule will prepare the soldier to meet the requirements to enter BCT. For example, a male soldier may only be able to perform 8 push-ups on the initial 1-1-1 assessment. As he performs the PT in the PCU, he will progress to doing 13 or more push-ups, which allows him to enter BCT. The PCU PT sessions are sequenced to ensure adequate recovery. The sessions should be conducted in the order listed.

Integration is the use of multiple training activities to achieve balance in the PT program and appropriate recovery between PT activities. Because most common soldier tasks require a blend of strength, endurance and mobility, PT activity schedules are designed to precisely progress soldiers in their physical activity in an integrated manner. Several different exercises and activities are employed to develop all three components of fitness.

The PT schedule provides a well-rounded program that develops all of the components of fitness equitably. The drills include exercises that condition all major muscle groups for a total body workout. Failure to adhere to the training schedule, as written, will result in an emphasis on one component at the expense of another. The activities in the PT schedules will allow soldiers to improve overall physical fitness and to meet the physical fitness standard required to enter BCT.

The standardized PT schedule for the PCU is a one-week schedule that is repeated every week. It contains three days of running and three days of push-up/sit-up improvement.

The afternoon is used to teach new soldiers entering the PCU the standardized PT activities. When a soldier first arrives at the PCU, the soldier does not participate in PT that first morning. Instead, the soldier participates in the instructional session that afternoon. All standardized PT activities are taught during this afternoon session, to include: Conditioning Drill 1, The Military Movement Drill, The Stretch Drill, Conditioning Drill 2, and speed running. The following morning, that soldier will then attend regular PT with the rest of the PCU soldiers. The afternoon training session will only be conducted when new soldiers arrive in the PCU. This block of instruction is not designed to be a second PT session for the soldiers in the PCU.

The following recommendations are provided to the commander on how PT and other training activities may impact on one another. Knowledge of these PT recommendations will assist commanders as they issue specific training guidance.

- **Do not conduct endurance training (running) days consecutively.**
- **Do not conduct strength training (CD 2) days consecutively.**
- **Speed running is performed once per week, preferably in the middle of the week.**
- **A minimum of two strength and mobility and two endurance and mobility days are conducted weekly.**

CHAPTER 8

PCU PT Schedule

The standardized PT schedule for the PCU is a one-week schedule that is repeated every week. It contains three days of running and three days of push-up/sit-up improvement.

The afternoon is used to teach new soldiers entering the PCU the standardized PT activities. When a soldier first arrives at the PCU, the soldier does not participate in PT that first morning. Instead, the soldier participates in the instructional session that afternoon. All standardized PT activities are taught during this afternoon session, to include: Conditioning Drill 1, The Military Movement Drill, The Stretch Drill, Conditioning Drill 2, ability group running, and speed running. The following morning, the soldier will then attend regular PT with the rest of the PCU soldiers. The afternoon training session will only be conducted when new soldiers arrive in the PCU. This block of instruction is not designed to be a second PT session for the soldiers in the PCU.

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PCU Physical Training Schedule (conducted every week)

<p>MONDAY Endurance and Mobility</p>	<p>Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition) Activity: Ability Group Run or BCT Entrance Assessment (as needed) Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds)</p>
<p>TUESDAY Strength and Mobility</p>	<p>Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition) Activity: Conditioning Drill 2 (10/10/5/5/5 repetitions) Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds)</p>
<p>WEDNESDAY Endurance and Mobility</p>	<p>Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition) Activity: 30:60s Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds)</p>
<p>THURSDAY Strength and Mobility</p>	<p>Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition) Activity: Conditioning Drill 2 (10/10/5/5/5 repetitions) Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds)</p>
<p>FRIDAY Endurance and Mobility</p>	<p>Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition) Activity: Ability Group Run Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds)</p>
<p>SATURDAY Strength and Mobility</p>	<p>Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition) Activity: Conditioning Drill 2 (10/10/5/5/5 repetitions) Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds)</p>

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Chapter 9

Posture and Body Mechanics

“Good posture has many values for the soldier. First, a soldier is often judged by his appearance – the man with good posture looks like a good soldier, he commands attention. Secondly, It is an accepted psychological fact that good posture is associated with good morale – a man with good posture feels better and is more positive. A man with poor posture cannot feel as positive, consequently he may develop a negative and discouraged attitude. Thirdly, good posture permits the body to function most efficiently.”

FM 21-20, Physical Training (January 1946)

Posture and body mechanics are critical factors for soldier performance, allowing them to move efficiently, with an ability to create great force and absorb heavy resistance. Posture is any position in which the body resides. It is further defined by the relationship of body segments to one another. Body mechanics is posture in motion. Though posture is often thought of as a stationary position, control of moving postures is perhaps even more important in task performance and injury control.

SECTION 1- POSTURE

EFFECT OF POSTURE

When body segments are aligned properly, movement is efficient and injury risk is minimized. When body segments are not aligned properly, movement is less efficient and risk of injury is increased. Consider a soldier attempting to lift a heavy load from the ground with their legs straight and trunk twisted. Not only will the load seem heavier than if his knees were bent and back straight, but he is at risk for injury. The back injury that occurs during an improper lift is an obvious example of the relationship between posture, body mechanics, performance and health. Less obvious, but just as damaging, is the daily stress that takes its toll on the body when faulty postures are consistently assumed.

EFFECT OF GRAVITY

Gravity molds body tissues. The body adapts to the stresses placed upon it. Gravity exerts a constant influence. When body segments are not aligned properly, such as when the head is too far forward, gravity works to further pull the head forward, placing undue stress on the structures of the neck and upper back. Over time, the neck adapts to faulty posture and natural neck movements may become restricted. Another example of this effect is seen among those who allow their shoulders to round forward. Gravity compounds this effect, limiting overhead range-of-motion as shown in Figure 9-1. By simply pulling the shoulders back as in Figure 9-2, the arms are then free to move fully overhead. To maintain this optimal position, soldiers will need to regularly stretch the chest muscles that are prone to tightness and strengthen the upper back muscles that promote proper carriage of the shoulder girdle. More importantly, they need greater awareness of the manner in which they carry the shoulder girdle while performing everyday tasks. Rounding of the shoulders is a common postural problem among soldiers, perhaps from emphasizing pushing exercises at the expense of pulling motions.



Figure 9-1.



Figure 9-2.

EFFECT OF EXERCISE

Like gravity, exercise also molds body tissues. As previously noted, imbalanced exercise practices may adversely affect posture. The exercise drills and activities listed in this manual, when regularly performed with precision, will enhance posture and improve body mechanics. For example, Exercise 1 of Conditioning Drill 1, The Bend and Reach, provides an excellent stretch of the lower back and shoulders, muscle groups that is prone to tightness.



Figure 9-3.

IMPROVING POSTURE

Improving posture must be built upon the desire to move correctly and efficiently at all times. Regardless of the amount of instruction given and exercise performed, soldiers will habitually assume good postures only if they want to. Good standing and sitting postures are characterized by vertical alignment of certain body segments. However, posture is not improved by forcefully holding the body in a position of ideal alignment. In fact, excessive effort to hold the body in a given posture will only serve to increase muscular tension and fatigue. Assuming naturally balanced postures shifts the weight of the body onto the bones, relieving muscles of the need to support weight bearing. Though the following recommendations are given in the form of a checklist, don't force your body to immediately conform to these ideals. Habits that have been reinforced over decades will take time to correct. Regular and precise performance of the standardized PT activities in this manual will enhance posture and body mechanics.

Checkpoints for Sitting:

- Center the head between the shoulders and keep the chin level.
- Draw the shoulders comfortably back; don't allow them to round forward.
- Carry the chest comfortably up and out.
- Maintain the inward curve of the lower back; don't allow it to roll outward or inward excessively. Use a firm support between the lower spine and the backrest of the seat or chair to assist in maintaining the proper position.
- Maintain 90-degree angles at the hips and knees with the feet flat on the floor.



Figure 9-4.

Checkpoints for Standing:

- Stand as tall as possible. The head should not be tilted or the shoulders raised.
- Center the head between the shoulders and keep the eyes and chin level.
- Slightly draw the chin inward by pressing the neck back toward the collar. Moderately elevate the chest without strain. If the chest is raised properly, the abdomen flattens normally. Don't draw in the stomach to the extent that normal breathing is restricted.
- Relax the shoulders and let them fall evenly. If the shoulders round forward, draw them back slightly, without strain.
- Set the pelvis and hips level.
- Keep the knees straight but not locked.
- Direct the feet forward without strain. Variations in skeletal alignment will prevent some individuals from assuming the feet-forward position.
- Distribute the weight evenly between the heels and balls of your feet.



Figure 9-5.

Compensating for the Effects of Common Postures

Given the broad definition of posture (any position in which the body resides), the number of postures soldiers may assume is infinite. However, soldiers assume the same few postures throughout most of the duty day. The postures can be categorized as: 1) the flexed posture, associated with sitting, bending forward, lifting, and crouching; and 2) the upright posture, associated with standing, walking, marching, and running. The body will eventually conform to accommodate these postures. Some muscles will become over-stretched and weak, while others will tighten and lose flexibility. The resulting muscle imbalances will hinder natural movement and increase the likelihood of injury. It is important to regularly compensate for time spent in these prolonged postures by performing exercises or activities that restore the optimal flexibility of muscles and joints:

Performing extension compensates for flexion. The most common posture for many individuals is seated. This posture is associated with flexion of the spine. Unless great effort is made to sit straight (or a roll is used to maintain the inward curve of the low back), the trunk tends to assume a C-shape. The longer this flexed posture is assumed, the greater will be the effect on muscles around the trunk. The back muscles and ligaments become over-stretched and weak, while muscles on the other side of the trunk (for example, hip flexors) get tighter and pull the pelvis into an unbalanced position. In Figure 9-6 below, the soldier on the right is in a flexed position. Compensation for prolonged time in this position would occur if the soldier assumed the prone position of extension demonstrated by the soldier on the left. To prevent the imbalances associated with too much flexion, soldiers should regularly perform extension exercises and activities such as those in Figure 9-7.



Figure 9-6.



Figure 9-7.

Performing decompression compensates for compression. Many soldiers spend the majority of their day on their feet. The weight of the body and equipment creates a compressive effect on the spine and other weight-bearing joints. In fact, at the end of the day enough fluid will have been compressed out of the spinal discs that height measurements will usually indicate that soldiers are noticeably shorter. Joints that are overly compressed may eventually compromise mobility. In order to compensate for compressive forces on the spine, it is useful to perform exercises or activities that decompress as shown in Figure 9-8.



Figure 9-8.

Body Mechanics

Body mechanics (posture in motion) is the ability to control body movement. Many discussions of posture are limited to static positions, such as sitting and standing. Good posture during movement is imperative to efficiency and injury control. Just as good posture requires balanced alignment of the body, so does exercise. Many soldiers use awkward movements as they struggle to perform one last repetition. **When body mechanics are poor, the exercise serves little purpose and may do more harm than good.** The activities in standardized PT were designed to reinforce proper body mechanics. Of special importance to PT leaders are the checkpoints given for each exercise. Adherence to these checkpoints ensures optimal execution of the exercise. Over time, skillful movements become second nature to the soldier. When this occurs, physical fitness is enhanced and injury risk is minimized.

Preparing the Trunk and Pelvic Muscles

Muscles work to initiate and control movement. Because movement is more apparent than the lack of it, the focus is most often on the movement that muscles create. Less obvious though is the "braking" force that muscles apply to movement. Without this braking force, nearly all movement would be extremely sloppy and potentially dangerous. Around the trunk and pelvis, this braking action of the muscles becomes extremely important for two reasons. First, the spine and pelvis form the base of attachment for many muscles that power the arms and legs. Without a strong, stable base of support, using these muscles is like firing a cannon from a canoe. Secondly, the body's center of gravity is within the trunk and pelvic area. Keeping it there leads to balanced, skillful movement. This is the job of the trunk and pelvic muscles and they do it primarily by putting on the brakes. The ability to maintain balanced postures is often referred to as stabilization. The load on the soldiers shown in Figure 9-9 demands strength and stability from the trunk and pelvis.



Figure 9-9.

To promote stable postures during exercise, it is essential that soldiers learn to prepare the trunk and pelvis. A simple, two-part action prepares the trunk and pelvis for exercise:

- ❑ **Set the hips.** This is also referred to as the neutral position of the pelvis. This position is found by first tilting the pelvis forward (buttocks goes back, belly goes forward, and the inward curve of the low back is increased), Figure 9-10a. Second, tilt the pelvis backward (the buttocks and belly draw inward as far as possible, flattening the curve of the low back), Figure 9-10b. Then settle in between these two extremes, Figure 9-10c.
- ❑ **Tighten the abdominal muscles.** Once the hips are set, tightening the abdominal muscles will ensure readiness of the muscles that control and protect the trunk. To contract the correct muscles, imagine drawing the gut straight inward as if preparing for a blow to the mid-section or trying to appear slimmer than you really are. Keep the hips set as the abdominals are tightened, Figure 9-10c.

After setting the hips and tightening the abdominal muscles, the soldier's posture should appear balanced and ready for exercise. The soldier should not associate these two actions with a stiff, awkward posture. The goal is not to eliminate all movement from the trunk and pelvis, but to simply control the natural motion that will occur.

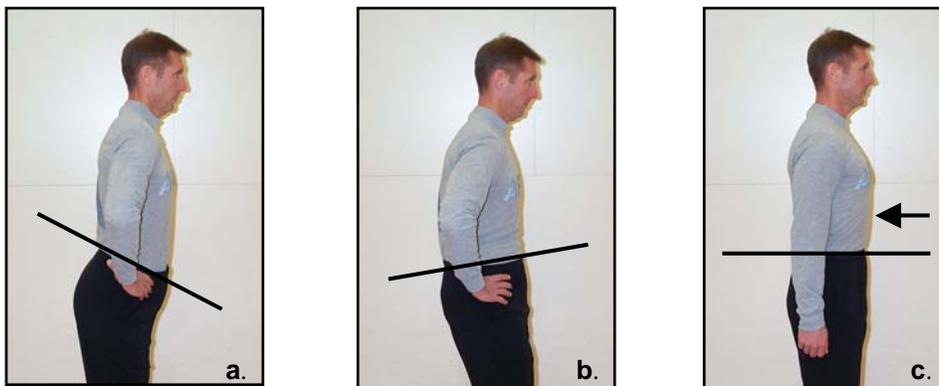


Figure 9-10.

Power position

Proper body mechanics are essential for the powerful movements required of soldiers. From the power position, the soldier is ready to:

- respond to or deliver aggression
- squat to lower or lift a heavy load
- accept a heavy load being passed from another individual
- sprint to cover



Figure 9-11.

To assume the power position, first, set the hips and tighten the abdominals as described above. From the straddle stance, placing one leg six to eight inches behind the other, and crouch so that the hips go rearward and the trunk counterbalances by leaning slightly forward. The balls of the feet accept most of the body weight. The shoulder blades are pulled slightly back, but not forced. The chest is high, head is level, and elbows and knees are comfortably bent (about 45-degrees).

LIFTING FROM THE GROUND

- Power the lift with the legs, not the back. Then continue to bend at the hips and knees to lower the body. In order to protect the back, keep the hips set and the abdominal muscles tight throughout the lift. Keep the load close to the body from start to finish. When soldiers must turn under load, do so by pivoting the feet rather than twisting the trunk.



Figure 9-12.

Lifting Overhead

Most of the power for pushing an object overhead comes from the legs. To transmit leg strength through the trunk and arms to the object being pushed, set the hips and tighten the abdominal muscles. Hands should be placed shoulder width apart with the upper arms in line with the trunk. Squat slightly then forcefully straighten the legs in a coordinated effort with the action of the arms.



Figure 9-13.

Pushing

Push with the hands in front of the shoulders and the upper arms close to the body. This technique creates a mechanical advantage that is lost the farther the hands and arms are from this position. Because this method is the most functional, the calisthenic drills use this technique.



Figure 9-14

Pulling/Climbing

When pulling an object that is on the ground or horizontal to it, soldiers must assume the power position first. Set the shoulder girdle by pulling the shoulder blades slightly to the rear. This is also important when pulling the body upward from an overhead grasp. Climbing will often require the legs to power the accent or gain leverage on support structures. This will often demand significant strength from the trunk and pelvic muscles. The exercises in the climbing drill prepare soldiers for these demands.

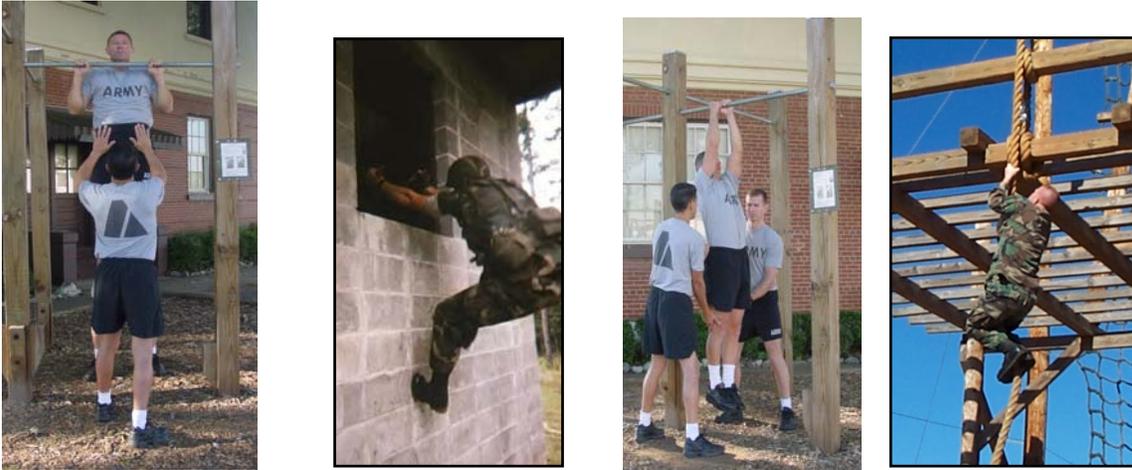


Figure 9-15.

Rotation

Prepare the body's trunk and pelvis to control rotation. Coiling (rotating) the body then quickly uncoiling is the primary source of power for many soldier and athletic tasks such as throwing a punch, heaving an object onto a platform, or kicking a ball. Each of these activities produces a torque on the spine and other joints that may cause injury if the forces are uncontrolled. Control comes from setting the hips, tightening the abdominals, and allowing the hips and knees to bend so as to absorb some of the stress of rotation.

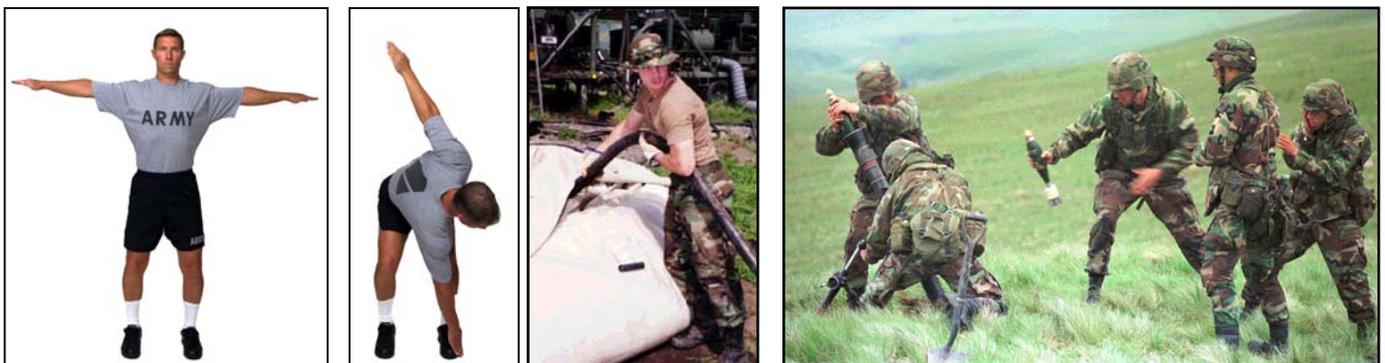


Figure 9-16.

Jumping and Landing

Land softly with alignment of the shoulders, knees, and balls of the feet. Land first on the balls of the feet with the heels touching down last. Bending of the hips and knees allows the legs to serve as coils that absorb the impact of the landing. The trunk should be straight but leaning forward so that, when viewed from the side, the shoulders knees and balls of the feet are aligned.



Figure 9-17.

Lunging

Maintain the knee of the forward leg in vertical alignment with the ball of the foot. Do not allow the knee to go beyond the toes nor to the right or left of the foot. Lunging is a component of many soldier tasks. The picture below, demonstrates soldiers performing a proper lunge as they begin a sprint for cover. Calisthenic and dumbbell exercises that involve lunging prepare soldiers for functional tasks such as this.



Figure 9-18.

Marching

The head and trunk checkpoints for standing also apply to marching. Allow the arms to swing naturally, though crossing the midline of the body is excessive. Allow the hips to naturally rotate forward with each stride. Do not allow the knees to lock at any point in the walking cycle. Stride naturally, landing on the heel and pushing off with most of the weight toward the big toe. The feet remain directed forward. Do not strain to keep the feet directed forward, since variations in skeletal alignment will prevent some individuals from assuming the feet-forward position. Foot marching with a load on the back will require some forward lean of the trunk. Do not, however, allow the trunk and shoulders to round forward.



Figure 9-19.

Running

Changing Direction

Soldiers may be required to quickly change direction while maintaining forward movement or to reverse direction. To maintain forward movement, plant on the outside leg with plenty of bend in the hips and knees. The foot should turn slightly inward toward the change of direction. To reverse direction, as in the shuttle run, reduce forward speed and crouch so that the body is directed approximately 90 degrees from the forward direction. At the lowest point of the crouch, body weight should rest primarily on the leg closest to the new direction of travel, shifting momentum in that direction.

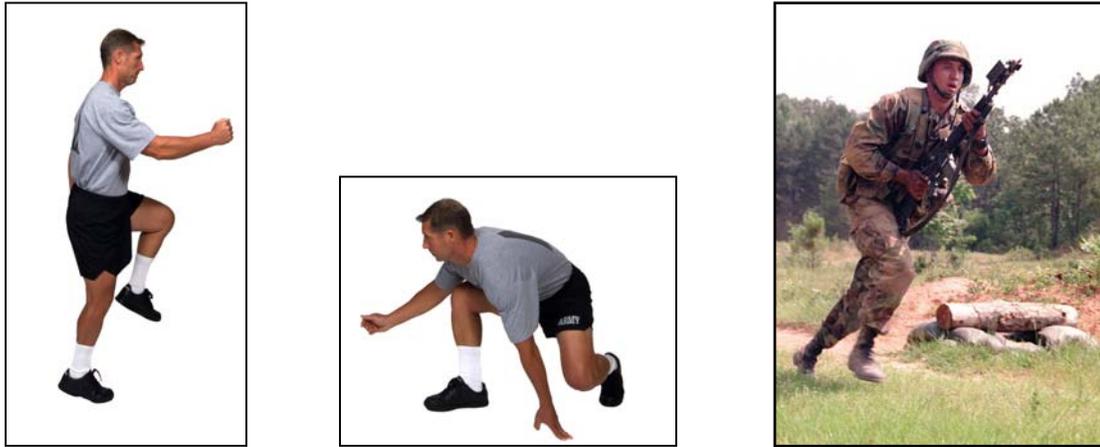


Figure 9-20.

Summary

Posture matters. Soldiers are often judged by their appearance. A balanced, alert posture portrays readiness, while sloppy posture does just the opposite. PT leaders must understand the fundamental principles of posture and body mechanics. They must demonstrate proper carriage of the body and demand the same from their soldiers, not only during PT, but also throughout the day. When soldiers live in good postures, the results are better performance, fewer injuries, and a confidence borne of grace, balance and power.

“In the training of anyone, nothing equals the importance of proper posture; it is the very foundation upon which the entire fabric of a successful course in physical training must be founded.”

LTC Herman J. Koehler

CHAPTER 10

NUTRITION AND BODY COMPOSITION

Your weight and/or body fat were measured during your medical exam or last weigh in. Take a look at the weight allowed for your height as shown in Table 1. If you exceed the weight listed for your height, you may not necessary be over fat. Some well-muscled individuals have body weights that far exceed the values for weight listed on the charts for their age, gender, and height. Yet, only a small percentage of their total body mass may be fat. If you don't fall into the well-muscled category, it's time to starting making some changes to your lifestyle.

This exercise program meets the requirement to be physically active everyday. However, you will still need to make some small changes to your diet to so that you can report to basic training at an appropriate body composition. Losing one to two pounds a week is a realistic goal, which is best accomplished by a combination of eating less and exercising more.

Height (inches)	Female Maximum Weight (pounds)				Male Maximum Weight (pounds)			
	Age				Age			
	17-20	21-27	28-39	40 +	17-20	21-27	28-39	40 +
58	109	112	115	119	N/A	N/A	N/A	N/A
59	112	116	119	123	N/A	N/A	N/A	N/A
60	116	120	123	127	132	136	139	141
61	120	124	127	131	136	140	144	146
62	125	129	132	137	141	144	148	150
63	129	133	137	141	145	149	153	155
64	133	137	141	145	150	154	158	160
65	137	141	145	149	155	159	163	165
66	141	146	150	154	160	163	168	170
67	145	149	154	159	165	169	174	176
68	150	154	159	164	170	174	179	181
69	154	158	163	168	175	179	184	186
70	159	163	168	173	180	185	189	192
71	163	167	172	177	185	189	194	197
72	167	172	177	183	190	195	200	203
73	172	177	182	188	195	200	205	208
74	178	183	189	194	201	206	211	214
75	183	188	194	200	206	212	217	220
76	189	194	200	206	212	217	223	226
77	193	199	205	211	218	223	229	232
78	198	204	210	216	223	229	235	238
79	203	209	215	222	229	235	241	244
80	208	214	220	227	234	240	247	250
Max Allowable Body Fat	30%	32%	34%	36%	20%	22%	24%	26%

Table 1. Screening table weight. Reproduced from AR 600-9, table 1.

People always want to know if a particular food is good or bad for them. No single food choice is necessarily a bad choice. Too many bad choices over time can accumulate into a poor diet. Poor choices like a lunch of soda, chips, and a greasy hamburger once in a while will be balanced out by a better choice like a turkey sandwich with low-fat dressing on whole wheat bread and fruit on a regular basis. Eating for performance and health doesn't mean that you have to give up your favorite foods.

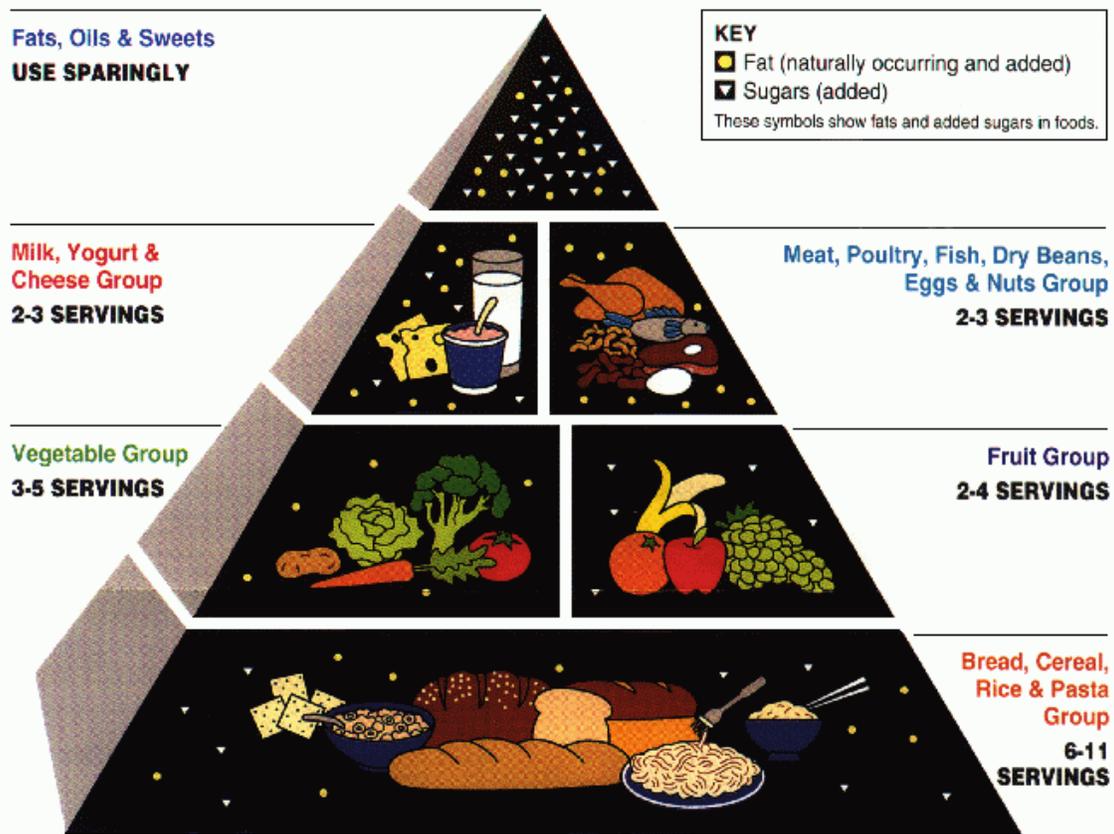


Figure 10-1.

Build a healthy base by eating a variety of foods. Different foods contain different nutrients and other healthful substances. No single food can supply all the nutrients in the amounts you need. To make sure you get all the nutrients and other substances you need for health, build a healthy base by using the Food Guide Pyramid (Figure 10-1) as a starting point. Choose the recommended number of daily servings from each of the five major food groups.

Breads, Cereals, Rice, and Pasta Group: Foods made from grains (wheat, rice, and oats) should form the foundation of a nutritious diet. They provide vitamins, minerals, carbohydrates (starch and dietary fiber), and other substances that are important for good health. Grain products are low in fat, unless fat is added in processing, in preparation, or at the table. Whole grains differ from refined grains in the amount of fiber and nutrients they provide, and different whole grain foods differ in nutrient content, so choose a variety of whole and enriched grains. Eating plenty of whole grains, such as whole wheat bread or oatmeal may help protect you against many chronic diseases. You should consume at least 6-11 servings daily from the base of the pyramid.

Consuming the recommended daily intake is not difficult if you understand serving sizes. A ½ cup of cooked rice, cereal, or pasta is about the same size as your fist. The best choices from this food group are bran cereals, oat bran, low fat bagels (pumpernickel, rye, whole wheat), whole grain muffins (bran, corn and oat bran), whole grain breads and rice, and stoned wheat and whole grain crackers.

Vegetable Group: The vegetable group is one area where many people regularly fail to consume enough. Vegetables are nature's vitamins. To ensure that you get essential vitamins and minerals, you should strive for 3-5 servings per day from this group. A serving size of raw or cooked vegetables is only ½ cup, and most people eat more. One cup of leafy raw vegetables is also a serving size, which is much smaller than the regular salad served with a restaurant dinner. A ½ cup of vegetables is about the size of a tennis ball. To maximize the vitamin and mineral content of your vegetables, don't overcook. Cook in a microwave, steamer, or wok only until tender crisp. The lighter colored vegetables, such as cucumbers, iceberg lettuce, and celery are mostly fiber and water with very little calories, vitamins, or minerals. Choose dark green, orange, and yellow vegetables. The darker the vegetable, the more likely it is to have large amounts of vitamins and minerals. A variety of different vegetables should be consumed to ensure that you receive a variety of nutrients. Broccoli, spinach, green peppers, tomatoes, cauliflower, Brussels sprouts, collards, carrots, or winter squash are the best choices. A ¾ cup of vegetable juice also constitutes a serving from this group.

Fruit Group: The fruit group, in addition to providing vitamins and minerals, also provides fiber. Two to four servings of fruits are recommended each day. Breakfast is a good opportunity to eat some fruit. Drinking a glass of fruit juice for breakfast is a convenient way to get half of the minimum daily servings. Other good choices are citrus fruits, bananas, cantaloupe, kiwi, strawberries, and dried fruit. A serving size for the fruit group is one piece of medium sized fruit or melon wedge, or a ½ cup of chopped, canned, or cooked fruit. A ½ cup of fruit is about the same size as a tennis ball. If you choose fruit juice, make sure that it is not mostly sugar and contains a good amount of vitamins and minerals. A ¾ cup of fruit juice equals one serving. Juice that you can see through (apple, grape, or cranberry juice) usually contains more processed sugar than one that you cannot see through (orange juice, peach nectar, or prune juice).

Milk, Yogurt, and Cheese Group: These dairy products are a great source of protein, vitamins, and minerals (fortified by law) especially calcium and riboflavin. The milk group, however, can also contain a large amount of fat. Many no-fat or low-fat dairy products are available, including cheese, milk, sour cream, and yogurt. Top choices are 1% or skim milk, low-fat cheese, and yogurt. The recommended number of servings per day for this group is 2-3, and is easily attainable for most soldiers. One cup of milk or yogurt, a ½ cup of natural cheese (Cheddar or Swiss), or 2 ounces of processed cheese (American) is considered a serving size. 1 ounce of cheese is about the size of four dice.

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts Group: The Meat and Beans Group is very important for obtaining protein, vitamins, and minerals. Like the milk group, this group can contain large amounts of fat as well. Quick and easy choices include canned tuna, chicken, peanut butter, lentil soup, and beans. Two to three servings from this group are required each day. Most people are at one extreme or the other by consuming too much or not enough from this group. The serving sizes typically consumed greatly exceed the nutritional requirement. For example, a typical chicken breast (8 oz) equals 2 servings (and about 50 grams of protein) while the 16-ounce steak at your favorite restaurant equals 4 servings (and about 120 grams of protein) from this group. A serving size of cooked fish, poultry, or red meat is 2 to 3 ounces (the size of a regular deck of playing cards), a ½ cup of cooked dry beans, a 2 ½ ounce soyburger, 1 egg, 2 tablespoons of peanut butter, or 1/3 cup of nuts.

Fats, Oils, and Sweets Group: At the top of the food pyramid are the items that should be eaten in moderation. However, it does not mean that you should never eat these items. Most fats and sugars are nutrient poor. Foods from this group should be chosen in moderation because they

often replace nutrient dense foods, so you may not get your daily requirement for the essential nutrients. For this reason, they are referred to as “empty” calories. This means that they provide nothing to the body except calories; no vitamins, minerals, fiber, water, or protein. Foods from this group are still an important part of a performance diet. Sweets add taste and flavor, while fat provides essential fatty acids like linoleic acid (part of every cell membrane), which can't be made by the body. A better food preparation choice is baking, roasting, or grilling, however, frying food in fat (cooking oil) once in a while is all right. Top choices from this group include olive oil, walnuts, molasses, berry jams, or a favorite dessert. There are no suggested servings for the top of the pyramid because you always have plenty of opportunity to add these to their diet without even trying.

Choose natural or less processed foods whenever possible. An apple is a better choice than applesauce, which is a better choice than apple juice, which is a better choice than apple pie. A baked potato is a better choice than mashed potatoes, which is a better choice than potato chips. Whole grain (wheat) bread is usually a better choice nutritionally than white bread. Food processing tends to remove vitamins, minerals, and fiber and add undesirable or questionable additives.

Your pattern of eating is also important. Snacks and meals eaten away from home provide a large part of daily calories for many people. Choose them wisely. Try fruits, vegetables, whole grain foods, or a cup of low-fat milk or yogurt for a snack. When eating out, choose small portions of foods. If you choose fish, poultry, or lean meat, ask that it be grilled rather than fried. Also, notice that many of the meals and snacks you eat contain items from several food groups. For example, a sandwich may provide bread from the grains group, turkey from the meat and beans group, and cheese from the milk group.

CHOOSE SENSIBLY

The carbohydrates, fats, and proteins in food supply energy, which is measured in calories. High-fat foods contain more calories than the same amount of other foods, so they can make it difficult for you to avoid excess calories. However, low fat doesn't always mean low calorie. Sometimes extra sugars are added to low-fat muffins or desserts, for example, and they may be just as high in calories.

Fats supply energy and essential fatty acids, and they help absorb the fat-soluble vitamins A, D, E, and K, and carotenoids. You need some fat in the food you eat, but choose sensibly. Some kinds of fat, especially saturated fats, increase the risk for coronary heart disease by raising the blood cholesterol. In contrast, unsaturated fats (found mainly in vegetable oils) do not increase blood cholesterol. Fat intake in the United States as a proportion of total calories is lower than it was many years ago, but most people still eat too much saturated fat. Eating lots of fat of any type can provide excess calories. The Nutrition Facts Label will state the number of grams of fat and sugar as well as protein, fiber, and sodium.

Saturated Fats: Foods high in saturated fats tend to raise blood cholesterol. These foods include high-fat dairy products (like cheese, whole milk, cream, butter, and regular ice cream), fatty fresh and processed meats, the skin and fat of poultry, lard, palm oil, and coconut oil. Keep your intake of these foods low.

Dietary Cholesterol: Foods that are high in cholesterol also tend to raise blood cholesterol. These foods include liver and other organ meats, egg yolks, and dairy fats.

Trans Fatty Acids: Foods high in trans fatty acids tend to raise blood cholesterol. These foods include those high in partially hydrogenated vegetable oils, such as many hard margarines and shortenings. Foods with a high amount of these ingredients include some commercially fried foods and some bakery goods.

Unsaturated Fats: Unsaturated fats (oils) do not raise blood cholesterol. Unsaturated fats occur in vegetable oils, most nuts, olives, avocados, and fatty fish like salmon. Unsaturated oils include both monounsaturated fats and polyunsaturated fats. Olive, canola, sunflower, and peanut oils are some of the oils high in monounsaturated fats. Vegetable oils such as soybean oil, corn oil, and cottonseed oil and many kinds of nuts are good sources of polyunsaturated fats. Some fish, such as salmon, tuna, and mackerel, contain omega-3 fatty acids that are being studied to determine if they offer protection against heart disease. Use moderate amounts of food high in unsaturated fats, taking care to avoid excess calories.

Following the tips listed below will help you keep your intake of saturated fat at less than 10 percent of your total calories:

Fats and Oils

- Choose vegetable oils rather than solid fats (meat and dairy fats, shortening).
- If you need fewer calories, decrease the amount of fat you use in cooking and at the table.

Meat, Poultry, Fish, Shellfish, Eggs, Beans, and Nuts

- Choose 2 to 3 servings of fish, shellfish, lean poultry, other lean meats, beans, or nuts daily. Trim fat from meat and take skin off poultry. Choose dry beans, peas, or lentils often.
- Limit your intake of high-fat processed meats such as bacon, sausages, salami, bologna, and other cold cuts. Try the lower fat varieties (check the Nutrition Facts Label).
- Limit your intake of liver and other organ meats.
- Use egg yolks and whole eggs in moderation. Use egg whites and egg substitutes freely when cooking since they contain no cholesterol and little or no fat.

Dairy Products

- Choose fat-free or low-fat milk, fat-free or low-fat yogurt, and low-fat cheese most often. Try switching from whole to fat-free or low-fat milk. This decreases the saturated fat and calories but keeps all other nutrients the same.

Prepared Foods

- Check the Nutrition Facts Label to see how much saturated fat and cholesterol are in a serving of prepared food. Choose foods lower in saturated fat and cholesterol.

Foods at Restaurants or Other Eating Establishments

- Choose fish or lean meats as suggested above. Limit ground meat and fatty processed meats, marbled steaks, and cheese.
- Limit your intake of foods with creamy sauces, and add little or no butter to your food.
- Choose fruits as desserts most often.

CHOOSE BEVERAGES AND FOODS THAT MODERATE YOUR INTAKE OF SUGARS.

Sugars are carbohydrates and a source of energy (calories). Dietary carbohydrates also include the complex carbohydrates starch and dietary fiber. During digestion all carbohydrates except fiber break down into sugars. Sugars and starches occur naturally in many foods that also supply other nutrients. Examples of these foods include milk, fruits, some vegetables, breads, cereals, and grains.

Added sugars

Added sugars are sugars and syrups added to foods in processing or preparation, not the naturally occurring sugars in foods like fruit or milk. The body cannot tell the difference between naturally occurring and added sugars because they are identical chemically. Foods containing added sugars provide calories, but may have few vitamins and minerals. In the United States, the number one source of added sugars is nondiet soft drinks (soda or pop). Sweets and candies, cakes and cookies, and fruit drinks and fruitades are also major sources of added sugars. Intake of a lot of foods high in added sugars, like soft drinks, is of concern. Consuming excess calories from these foods may contribute to weight gain or lower consumption of more nutritious foods. Some foods with added sugars, like chocolate milk, presweetened cereals, and sweetened canned fruits, also are high in vitamins and minerals. These foods may provide extra calories along with the nutrients and are fine if you need the extra calories.

Choose and prepare foods with less salt.

You may be able to reduce your chances of developing high blood pressure by consuming less salt. There is no way to tell who might develop high blood pressure from eating too much salt. However, consuming less salt or sodium is not harmful and can be recommended for the healthy, normal person. At present, the firmest link between salt intake and health relates to blood pressure. High salt intake also increases the amount of calcium excreted in the urine. Eating less salt may decrease the loss of calcium from bone. Loss of too much calcium from bone increases the risk of osteoporosis and bone fractures. Salt is found mainly in processed and prepared foods. Salt (sodium chloride) is the main source of sodium in foods. Only small amounts of salt occur naturally in foods. Most of the salt you eat comes from foods that have salt added during food processing or during preparation in a restaurant or at home. Some recipes include table salt or a salty broth or sauce, and some cooking styles call for adding a very salty seasoning such as soy sauce. Not all foods with added salt taste salty. Some people add salt or a salty seasoning to their food at the table. Your preference for salt may decrease if you gradually add smaller amounts of salt or salty seasonings to your food over a period of time.

Use of dietary supplements

Food supplementation is a multimillion-dollar business. There are thousands of supplements on the market, most of which are easily accessible to soldiers. Supplements were traditionally defined as any product made of one or more of the essential nutrients such as vitamins or protein. That definition has to been broadened to include any product intended for ingestion as a supplement to the diet. Supplements include vitamins, minerals, herbs, amino acids, botanicals, as well as concentrates, metabolites, constituents, and extracts of these substances. Supplement product labels must include the words “dietary supplement”. Most products that meet this definition are not strictly regulated and are therefore not subject to any tight standards on makeup or claims. Your primary goal should be to always strive to obtain the nutrients you need from the foods in your diet. Eating a variety of foods on a regular basis is the most important step toward this goal. Supplement powders and bars can be a convenient and portable method for busy people to ensure they are consuming adequate supplies of the essential nutrients. Variety is still important because bars and powders are not always low fat, inexpensive, or easily digested by all. Supplementation should be part of a larger plan for an optimal performance diet not a replacement for poor habits and choices. Nor are supplements a substitute for regular exercise. There is no one magic pill or powder that you can take that will make you stronger, skinnier, or give you more energy. If you are considering supplements, you must weight the purported benefits against the potential risks (and cost) before deciding to use any product. Information is key. If a product makes claims that sound too good to be true, the claims probably are too good to be true.

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CHAPTER 11

SAFETY CONSIDERATIONS

Reference: FM 21-20, TRADOC Regulation 350-6

Overuse injuries can be common in IET. However, they can be controlled by carefully following the exercise principles of precision and progression. Research suggests that there is a dose-response relationship between the amount of training and the risk of injury (i.e. the more physical activity a group performs, the more injuries will occur). Furthermore, there are thresholds of training above which fitness does not improve substantially but injury rates still increase. Physical fitness training must be progressive, disciplined training which challenges the soldier's physical ability. The progressive nature of the PT program is essential for the most beneficial development and safety of all soldiers. Strict adherence to the PT schedule in Section 7 will ensure that all of the principles of exercise are appropriately employed and that the degree of challenge is increased in logical increments throughout the training cycle. The standards for performance of all exercises must be strictly applied. The duration and intensity of PT sessions may need to be adjusted to compensate for other physically demanding activities.

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APPENDIX A

PT Leader Drill Cards

The PT Leader Drill Cards are intended for use as a reference when leading the PT drills in Army Physical Training Standardization. The drills must be performed in the order listed to the standards prescribed or they lose much of their value.

The drill cards are sized to 3" x 5". Cut around the outside of the figure below; fold in the middle so that the two sides are back-to-back, and laminate.

WARM-UP	COOL-DOWN
Conditioning Drill 1 (1 set x 5 reps)	Conditioning Drill 1 (1 set x 5 reps)
1. The Bend And Reach (4-count, SLOW)	1. The Bend And Reach (4-count, SLOW)
2. The Rear Lunge (4-count, SLOW)	2. The Rear Lunge (4-count, SLOW)
3. The High Jumper (4-count, MODERATE)	3. The High Jumper (4-count, MODERATE)
4. The Rower (4-count, SLOW)	4. The Rower (4-count, SLOW)
5. The Squat Bender (4-count, SLOW)	5. The Squat Bender (4-count, SLOW)
6. The Windmill (4-count, SLOW)	6. The Windmill (4-count, SLOW)
7. The Forward Lunge (4-count, SLOW)	7. The Forward Lunge (4-count, SLOW)
8. The Prone Row (4-count, SLOW)	8. The Prone Row (4-count, SLOW)
9. The Bent-leg Body Twist (4-count, SLOW)	9. The Bent-leg Body Twist (4-count, SLOW)
10. The Push-up (4-count, MODERATE)	10. The Push-up (4-count, MODERATE)
The Military Movement Drill (1 set x 1 rep)	The Stretch Drill (1 set x 1 rep)
1. Verticals	1. The Overhead Arm Pull (20 seconds)
2. Laterals	2. The Rear Lunge (20 seconds)
3. The Shuttle Sprint	3. The Flex and Extend (20 seconds)
	4. The Thigh Stretch (20 seconds)
	5. The Single-leg Over (20 seconds)

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Conditioning Drill 2 (10-20/5/5/5 reps)

1. The Push-up (4-count, MODERATE)

2. The Sit-up (4-count, MODERATE)

3. The Straight-arm Pull (2-ct., MODERATE)

4. The Pull-up (2-count, MODERATE)

5. The Leg Tuck (2-count, MODERATE)

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PCU Ability Group Progression (4 Groups)

Group	AGR Times
A	15 min @ 7:15
B	15 min @ 8:30
C	12 min @ 10:00
D	12 min @ 11:00

Soldiers running the one-mile in **7:15 and faster** will be assigned to ability group **A**.
Soldiers running the one-mile from **7:16 to 8:45** will be assigned to ability group **B**.
Soldiers running the one-mile from **8:46 to 10:15** will be assigned to ability group **C**.
Soldiers running the one-mile in **10:16 and slower** will be assigned to ability group **D**.

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PCU Speed Running Progression

Group	Repetitions
A	8 reps 30:60
B	8 reps 30:60
C	6 reps 30:60
D	6 reps 30:60

All ability groups should run at a slow pace (jog) ¼ mile prior to beginning 30:60s or 60:120s.

All ability groups should walk a minimum of 2-3 minutes prior to performing additional activities or Cool-down.

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APPENDIX B

Climbing Bars



Figure B-1.

Climbing Bars Specifications

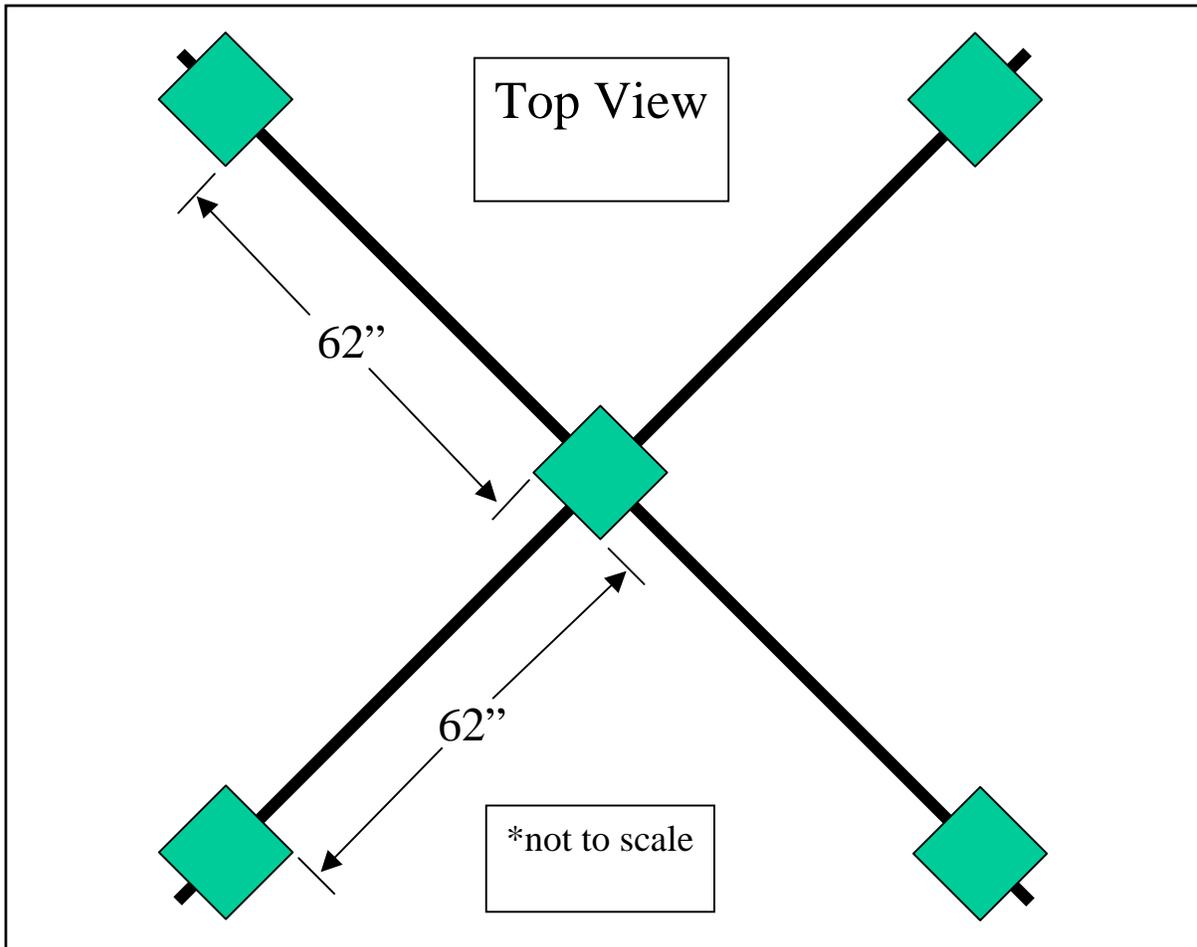


Figure B-2.

The specifications for the climbing bars are as follows:

- ❑ The posts (5) are 6" x 6" x 12' and sunk 3 feet into the ground.
- ❑ The bars (2) are threaded water pipe, 1.5 inch outside diameter, 12 feet long with 1-inch end caps (4).
- ❑ The bars are through the 6x6s at 7.5 and 8 feet above the ground.
- ❑ The distance from inside post edge to inside post edge is approximately 62 inches (refer to Figure B-2). This is to allow enough bar space to conduct all exercises safely.
- ❑ The step-ups (16 inches long) are cut from 4" x 4" x 8' posts and secured to the 6x6s with 3 inch screws that are counter sunk.
- ❑ The step-ups on the outside 6x6 posts are 18 inches from the ground, the step-ups on the inside post are 24 inches above the ground (refer to Figure DB-3).

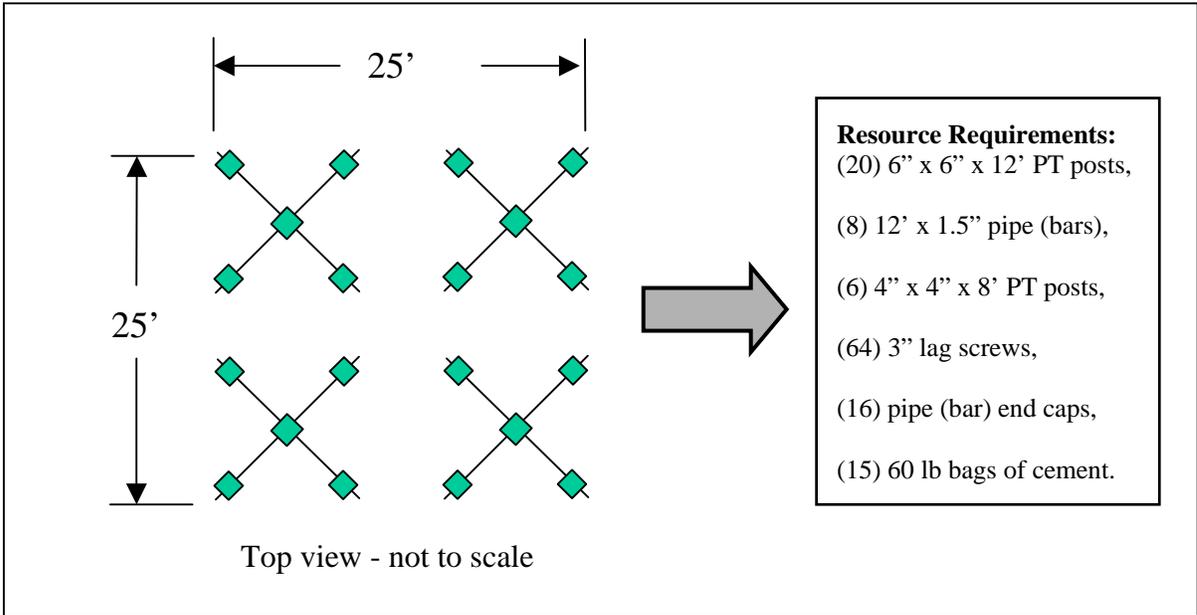


FIGURE B-4.