# TRADOC
# Standardized
# Physical Training Guide

# BCT

**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. Few recruits enter the Army physically fit for the arduous duties ahead of them. 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, while controlling injuries. This guide is precise in its description of physical training activities. It 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 and Army Accessions Command (AAC) 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 PHILOSOPHY

## Section 1 – 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 2 - 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.

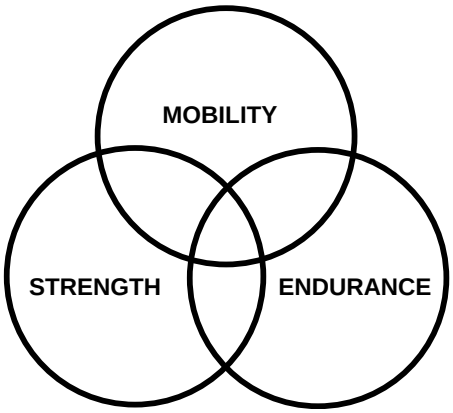


**Figure 1-1.**

**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 3 – 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.

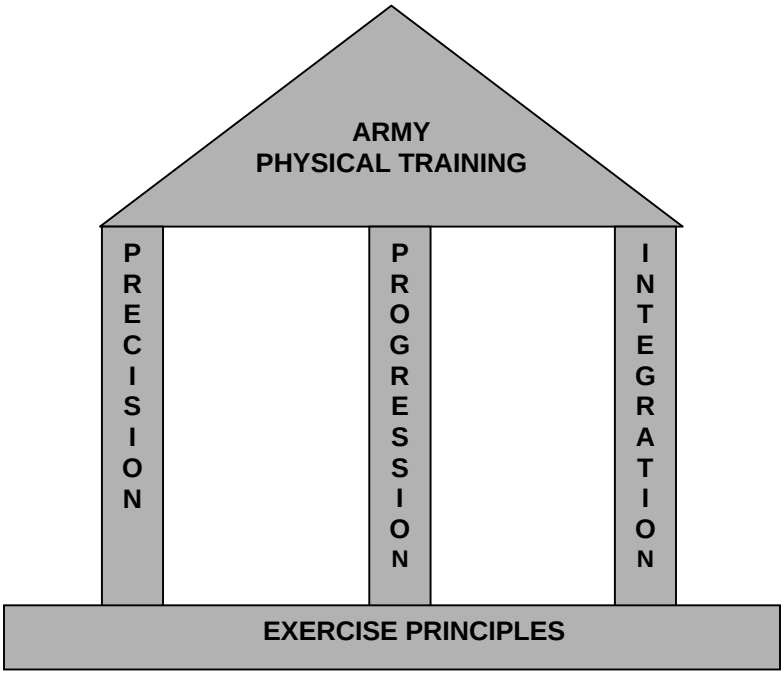


**Figure 1-2.**

**Section 4 – 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 Chapter 9 of this guide for procedures to conduct of the APFT.

The 1-1-1 Physical Fitness Assessment, described in Chapter 10 of this guide, is a tool for the commander to predict individual APFT potential.

**Section 5 – 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.

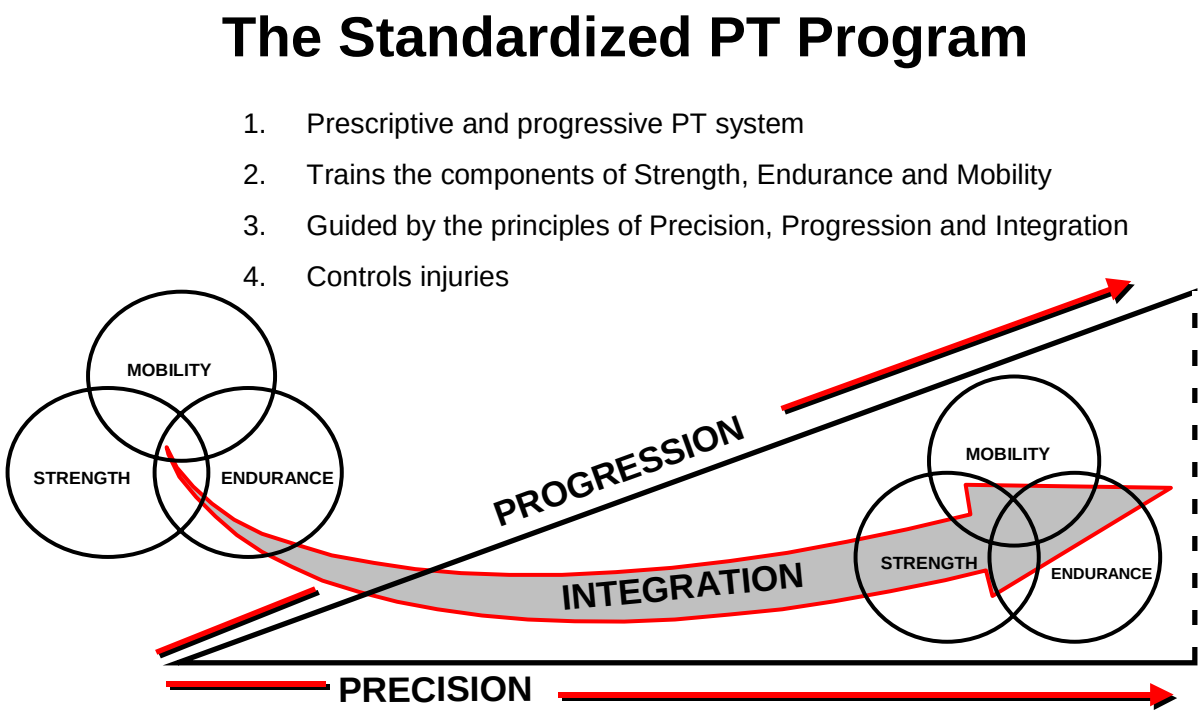


**Figure 1-3.**

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# 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 <u>other</u> 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.

| Rectangular Formation |
| --- |
| **SL X X X X X X X X X X X**<br>**SL X X X X X X X X X X X**<br>**SL X X X X X X X X X X X**<br>**SL X X X X X X X X X X X**<br><br>**PT LDR** |

**Figure 2-1.**

| Extended Rectangular Formation |
| --- |
| **SL X X X X X X X X X X X X**<br><br>**SL X X X X X X X X X X X X**<br><br>**SL X X X X X X X X X X X X**<br><br>**SL X X X X X X X X X X X X**<br><br>**PT LDR** |

**Figure 2-2.**

## Section 3 – PT Positions

**<u>Starting Positions:</u>** 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.

**<u>Squat Position:</u>** 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.**

**<u>Front Leaning Rest Position:</u>** 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.

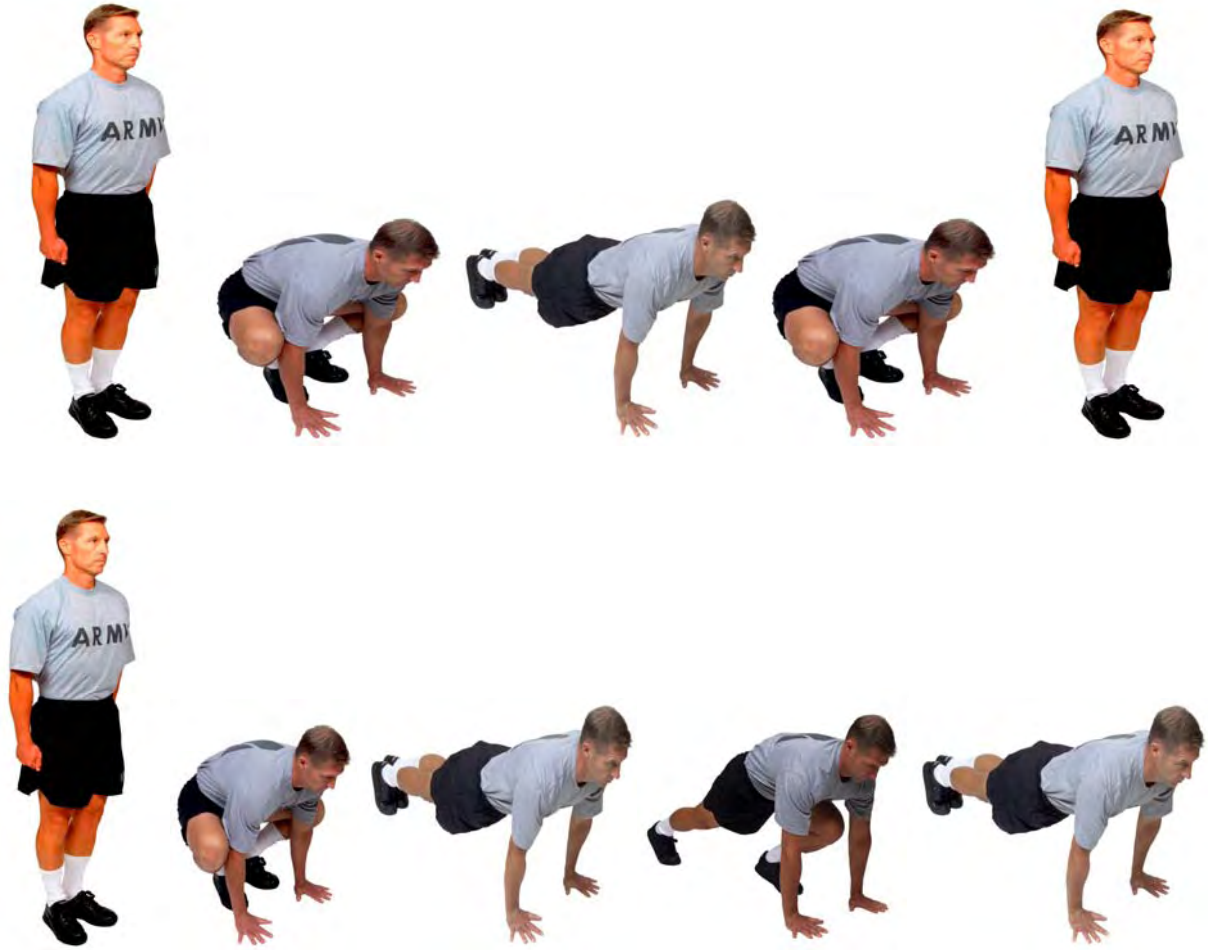

**Figure 2-4.**

**<u>Six-point Stance</u>:** The six-point stance is assumed by dropping to the knees form 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 staring 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 leaders 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 – 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 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 move into the starting position.)

"The command to stretch the other side of the body is ***"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.

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.)

The PT leader states the next exercise.

**Section 7 – 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 8 – 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 9 – 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: <u>SLOW</u>.**

**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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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: <u>This exercise is always performed at a slow cadence</u>**. 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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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: <u>SLOW.</u>**

**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: <u>This exercise is always performed at a slow cadence.</u>** 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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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 and 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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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: <u>SLOW</u>.**

**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: <u>This exercise is always performed at a slow cadence</u>**. 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.

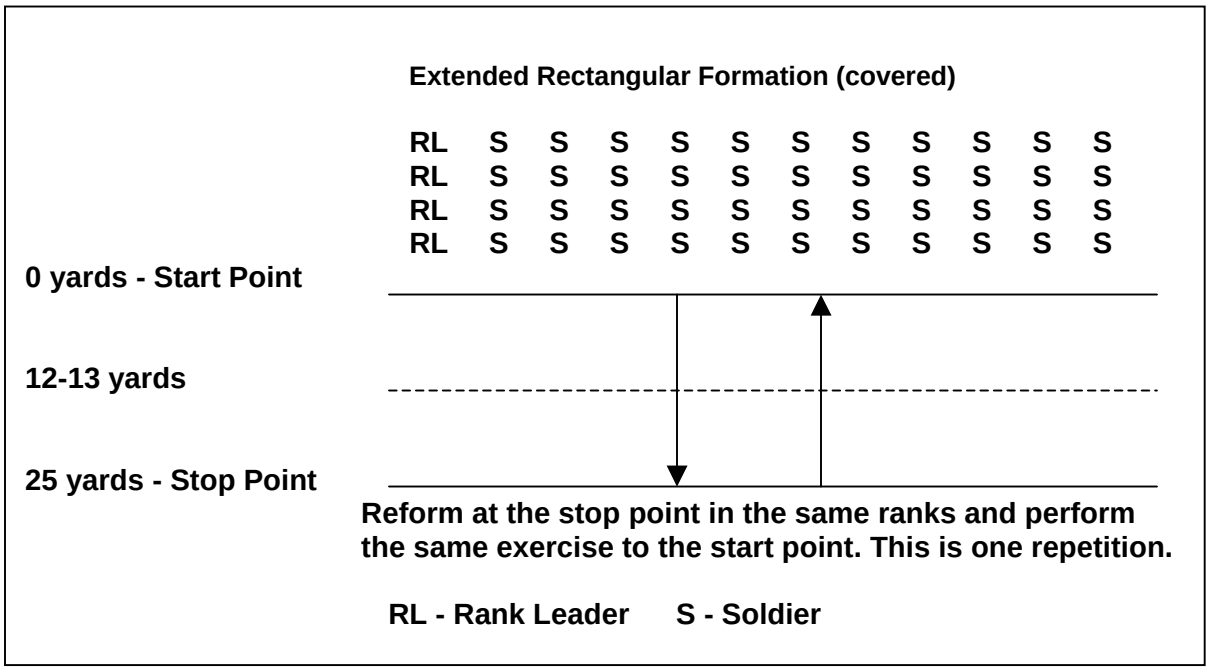



**Figure 3-2.**

# Exercise 1: Verticals

**Purpose:** This exercise helps to develop proper running form.

**Starting Position:** Staggered Stance.

**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.

# 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 to the side by rising slightly and bringing the trailing leg to the lead leg. Quickly hop to the side and land back in the crouch with the feet shoulder width apart. 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.

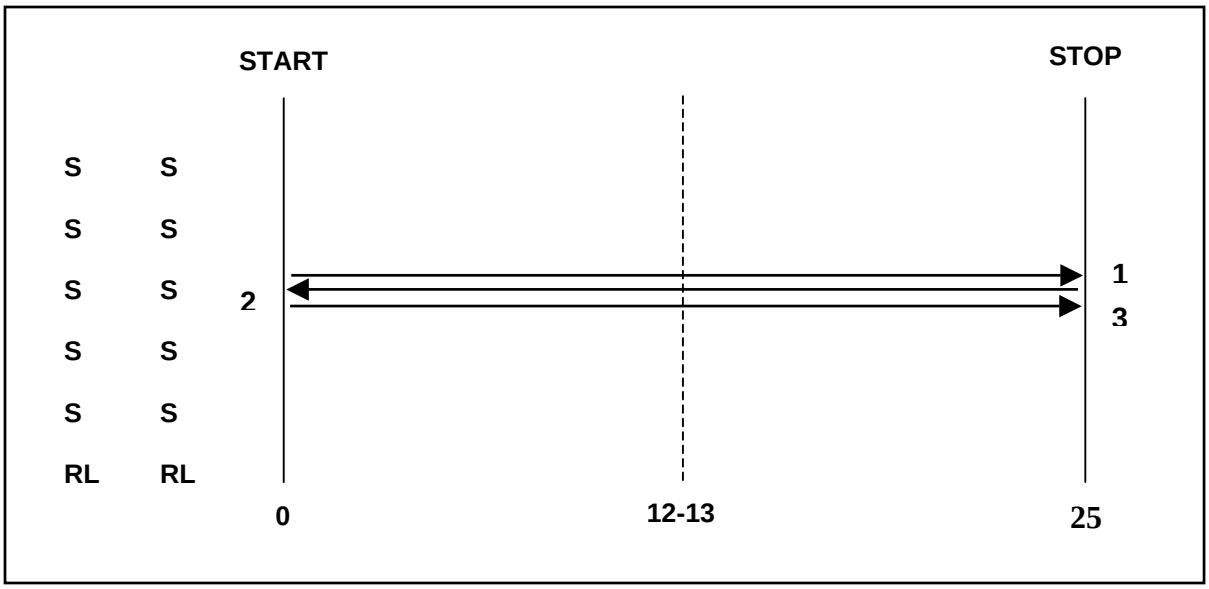
**Precautions:** N/A.

# Exercise 3: The Shuttle Sprint

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

**Starting Position:** Staggered Stance.

**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: <u>SLOW</u>.**

**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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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: <u>This exercise is always performed at a slow cadence</u>**. 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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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: <u>SLOW.</u>**

**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: <u>This exercise is always performed at a slow cadence.</u>** 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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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 and 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.

**Starting Position** **Count 1** **Count 2** **Count 3** **Count 4**

**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: <u>SLOW</u>.**

**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: <u>This exercise is always performed at a slow cadence</u>**. 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.

**Starting Position** **Position 1** **Starting Position** **Position 2** **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.

# 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.

**Starting Position** **Position 1** **Starting Position** **Position 2** **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 1and 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 1and 2.
- ❑ Keep the forward knee over the ball of the foot on positions 1and 2.

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

# 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 tough 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.

# 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**<br>4-count, moderate (10-20 repetitions)<br>2. **The Sit-up**<br>4-count, moderate (10-20 repetitions)<br>3. **The Straight-arm Pull**<br>2-count, moderate (5 repetitions)<br>4. **The Pull-up**<br>2-count, moderate (5 repetitions)<br>5. **The Leg Tuck**<br>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 sit-up may be performed to the standards specified 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.

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## 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 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.

## 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: <u>MODERATE.</u>**

**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 Positions**
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.

**Starting Position**

**Count 1**

**Count 2**

**Hand Positions**

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:** Spotters standing to the front and rear of the exerciser are used to ensure precision and safety by assisting soldiers when fatigued or unable to properly execute the desired number of repetitions. As soldiers become more proficient, they will need less assistance and will eventually be able to perform the exercises unassisted. Spotters must provide as much or as little assistance as needed so that the exercise is performed with precision.

## 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:** Spotters standing to the front and rear of the exerciser are used to ensure precision and safety by assisting soldiers when fatigued or unable to properly execute the desired number of repetitions. As soldiers become more proficient, they will need less assistance and will eventually be able to perform the exercises unassisted. Spotters must provide as much or as little assistance as needed so that the exercise is performed with precision.

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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/60:120s) and The 300-yard shuttle run must be performed. 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 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 utilize 1-mile run assessment times from session 2, week 1. 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, <u>not</u> distance.** The BCT running progression for ability groups A, B, C and D can be found in the Figure 6-3. The BCT ability group progression chart is provided 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.

| | | | | | | |
|---|---|---|---|---|---|---|
| **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.**

**BCT Ability Group Progression (4 Groups)**

| Group | WK 1 | WK 2 | WK 3 | WK 4 |
|---|---|---|---|---|
| **A** | 15 min @7:30 | 15 min @7:15 | 20 min @7:15 | 20 min @ 7:15 |
| **B** | 15 min @ 9:00 | 15 min @ 8:30 | 20 min @ 8:30 | 20 min @ 8:30 |
| **C** | 10 min @10:30 | 12 min @ 10:00 | 14 min @ 9:30 | 16 min @ 9:30 |
| **D** | 10 min @ 12:00 | 12 min @ 11:00 | 14 min @ 10:30 | 16 min @ 10:00 |

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.**

**BCT Ability Group Progression (4 Groups)**

| Group | WK 5 | WK 6 | WK 7 | WK 8/9 |
|---|---|---|---|---|
| **A** | 20 min @ 7:15 | 25 min @ 7:15 | 25 min @ 7:15 | 30 min @ 7:30 |
| **B** | 20 min @ 8:00 | 25 min @ 8:00 | 25 min @ 8:00 | 30 min @ 8:00 |
| **C** | 18 min @ 9:00 | 20 min @ 8:30 | 20 min @ 8:15 | 20 min @ 8:15 |
| **D** | 18 min @ 10:00 | 20 min @ 9:30 | 20 min @ 9:30 | 20 min @ 9:00 |

**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 activities appropriate for soldiers to improve physical fitness are 30:60s and 60:120s. The BCT 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.

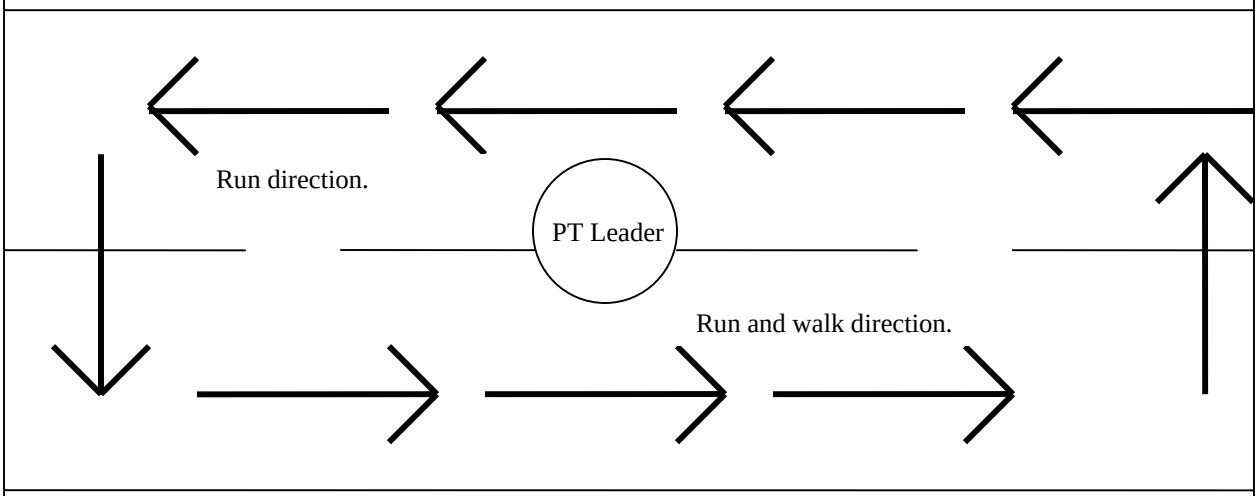
### 60:120s

Soldiers will perform 60:120s, adhering to a work to recovery ratio of 1:2. During the work interval, soldiers will sprint for 60 seconds. During the recovery interval, soldiers will walk for 120 seconds. This is one repetition of a 60:120. All ability groups should run at a slow pace (jog) ¼ - mile prior to beginning 60:120s. The soldiers in ability groups C and D will finish their 60:120s 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 60:120s. 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 and 60:120s on a straight road course is a minimum of 100 yards and a maximum of 200 yards. Refer to Figure 6-4.

**Speed Running on a Straight Road Course**




*Arrows indicate direction of travel

100-200 yards in length

**Figure 6-4.**

## BCT Speed Running Progression

| Group | WK 1 | WK 2 | WK 3 | WK 4 |
|---|---|---|---|---|
| **A** | 6 reps<br>30:60 | 6 reps<br>30:60 | 8 reps<br>30:60 | 8 reps<br>30:60 |
| **B** | 6 reps<br>30:60 | 6 reps<br>30:60 | 8 reps<br>30:60 | 8 reps<br>30:60 |
| **C** | 4 reps<br>30:60 | 4 reps<br>30:60 | 6 reps<br>30:60 | 6 reps<br>30:60 |
| **D** | 4 reps<br>30:60 | 4 reps<br>30:60 | 6 reps<br>30:60 | 6 reps<br>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.

## BCT Speed Running Progression

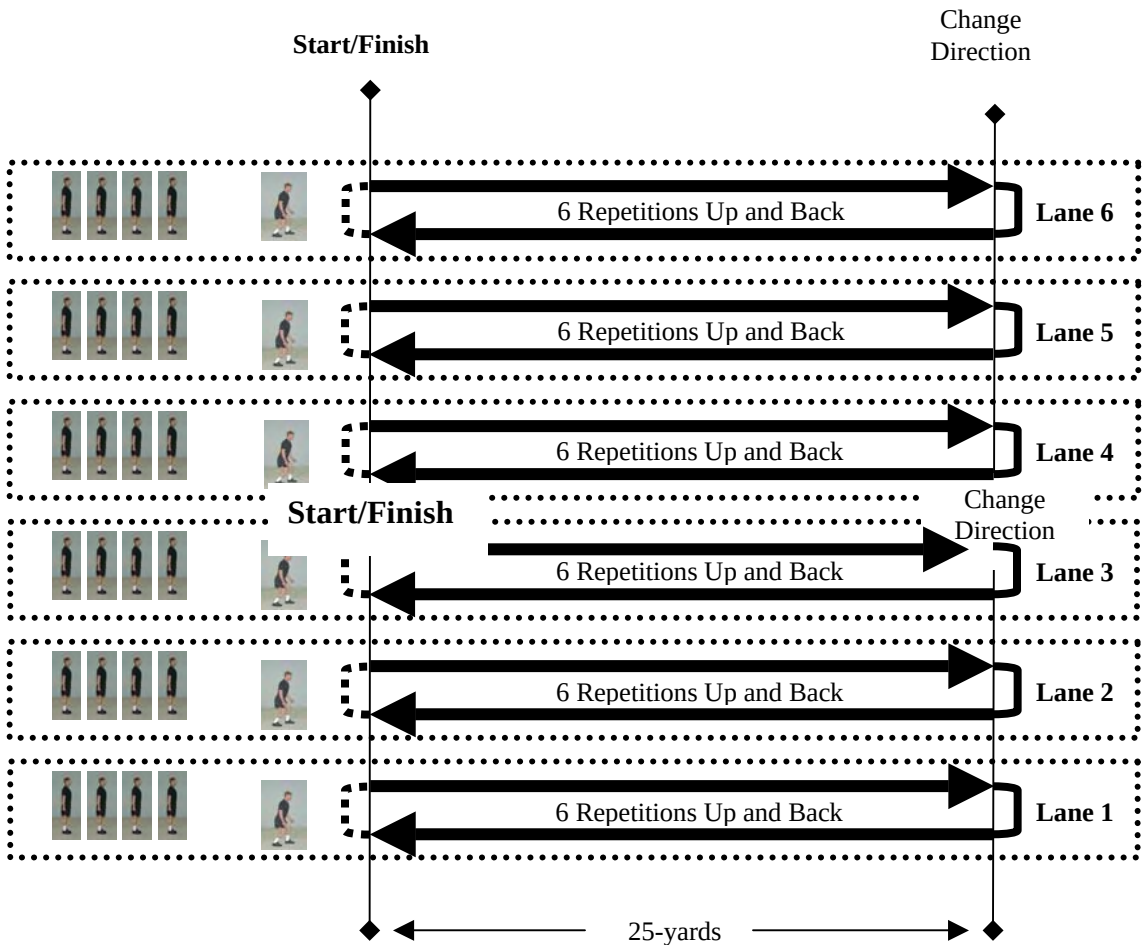
| Group | WK 5 | WK 6 | WK 7 | WK 8/9 |
|---|---|---|---|---|
| **A** | 10 reps<br>30:60s | 6 reps<br>60:120 | 6 reps<br>60:120 | 8 reps<br>60:120 |
| **B** | 10 reps<br>30:60s | 6 reps<br>60:120 | 6 reps<br>60:120 | 8 reps<br>60:120 |
| **C** | 8 reps<br>30:60 | 4 reps<br>60:120 | 4 reps<br>60:120 | 6 reps<br>60:120 |
| **D** | 8 reps<br>30:60 | 4 reps<br>60:120 | 4 reps<br>60:120 | 6 reps<br>60:120 |

**Figure 6-5.**

### The 300-yard Shuttle Run

The 300-yard shuttle run develops the ability to repeatedly sprint after changing direction. It is an indicator of the soldier's anaerobic endurance, speed, and agility. The 300-Yard Shuttle Run is conducted from the extended rectangular formation (covered) as shown in Figure 6-6. On the command, ***"Ready,"*** one soldier in each column will move behind the starting line and assume the ready position (staggered stance). On the command, **"GO,"** the soldier will sprint to a line 25-yards from the starting line. They must touch the line or beyond it with the left hand, then return to touch the starting/finish line with the right hand. **This is considered one repetition**. The soldier will perform six repetitions alternating touching the lines with opposite hands. On the last (sixth) repetition, the soldier will sprint past the starting/finish line without touching it. The PT leader and assistant instructors (AIs) will ensure that soldiers sprint in their own lanes and run with their heads up to watch for other soldiers who may be moving in an opposite direction.

**The 300-yard Shuttle Run**




**Checkpoints:**

- ❑ Soldiers should slow their movement before planting feet and changing direction.
- ❑ Soldiers should both bend the trunk and squat 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 and continue to alternate hand touches on each turn.
- ❑ Soldiers must sprint with their heads up and watch for other soldiers who may be moving in an opposite direction.

**Figure 6-6.**

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# CHAPTER 7

# FOOT MARCHING

Foot marching as a movement component of maneuver, is a critical soldier physical requirement. Soldier physical capabilities are severely challenged during foot marching. Leaders must understand and consider the myriad of demands placed on the physical capabilities of soldiers. The duration and intensity of the foot march; influenced by factors such as soldier's load, rate of march, terrain and environment directly impact foot march performance. A successful foot march is accomplished when soldiers arrive at their destination, at the prescribed time, physically able to execute their tactical mission.

Terrain marches apply the "Train as You Fight" concept to PT. Foot movement through local training areas, over hills and around obstacles improves mobility, endurance and the ability to stop, start and rapidly change direction. Terrain marches are conducted with small unit integrity. This type of foot movement is best performed by squads and sections. Distances are covered at an intensity relative to the terrain. Small unit leaders will form the unit in single file and maintain an interval suitable for the terrain and environmental conditions. Soldiers should perform terrain marches in BDUs and well-fitting boots, carrying a fighting load and progressing to approach march load. The intensity of exercise contributes more toward the improvement of physical fitness than does the duration.

Foot marching should be included as an activity of individual and unit PT. The discussion thus far has provided leaders the purpose and desired conditions for successful foot marches and clarified the key factors of load, rate of march time and distance as they effect the strength, endurance and mobility of soldiers. Warm-up prior to conducting a foot march is essential for the reduction of injuries. Proper progression regarding distance, while maintaining consistency in the load carried and rate of march is a primary factor for injury control for soldiers. Initially, only the time or distance to be marched is progressively increased from week to week. Foot marching is a sound way to strengthen the feet and legs. Running alone does not suffice as the sole aerobic endurance activity. Conditioning and movement drills strengthen the arch, ankle, calf, knee and hip musculature in order to withstand the dynamic forces of foot marching under load.

Foot marching should be conducted regularly under loads concurrent with Army fighting load and approach march load guidelines. Foot marches can be conducted as a PT activity. This approach to foot marching avoids the cumulative effects of lower injury trauma often associated with the conduct of foot marching as a additional physical training activity. Soldiers are expected to achieve the PT foot march assessment standard of 2.4 miles or 4 km in 1 hour under fighting load and progress to the Army foot march assessment standard of 4 km in 1 hour under approach march load IAW FM 21-18.

When planning foot marches, from a tactical perspective, leaders must have a clear understanding of soldier's ability to perform critical common tasks while under load. For this discussion, **load** is defined in much broader terms than just what a soldier carries. It is of critical importance due to its direct impact on the required distance and rate of march. Current Army doctrine limits the load carried by the soldier to the mission-essential equipment required by soldiers to fight, survive, and complete their combat mission.

The load is divided into "**fighting load**" and "**approach march load**". The fighting load is carried when enemy contact is expected and consists of the soldier's clothing, kevlar, load bearing equipment (LBE), weapon, bayonet, and ammunition. Current Army doctrine recommends no more than 48 lbs (or 30% body weight) for the fighting load. These load weights include all clothing and equipment that are worn and carried. The approach march load is carried for extended operations when the soldier must carry enough equipment and munitions for fighting and existing until resupply. The approach march load consists of the fighting load plus rucksack (assault pack), sleeping roll, extra clothing, extra rations, and extra ammunition. Current Army doctrine recommends no more than 72 lbs (or 45% body weight) for the approach march load.

Rate of march is directly impacted by the distance marched and the load a soldier must carry and is a significant factor when planning tactical or training foot marches. Appropriately designed physical training, properly utilizing foot marching as an endurance and strength activity, will progressively increase soldier physical abilities in regard to functional capacity for long duration aerobic activity. In fact, recent studies have shown that through a progressive increase in load, rate of march and required distance during the PT program, improvements in functional capacity were similar to those of a control group performing the traditional recruit training program involving only long distance running.

The commander considers all the factors that affect his mission accomplishment. The load, or rate of march, for his unit should be determined with the knowledge of his units physical capabilities, as well as the critical components of time and distance which will place his unit at its destination in the shortest time in combat-ready condition. Unit SOP's based on realistic performance oriented training, will usually state rates for marches on roads and cross-country, over normal terrain, under daylight or limited visibility. Rates of march, for physically capable soldiers under these conditions with fighting load are shown in Figures 7-1 through 7-4.

| DAY/ROAD (Rate of March = 4 kph) | | | |
|---|---|---|---|
| **DISTANCE** | **MARCH TIME** | **REST TIME** | **TOTAL TIME** |
| 4 km | 1:00 | 0:00 | 1:00 |
| 8 km | 2:00 | 0:15 | 2:15 |
| 12 km | 3:00 | 0:30 | 3:30 |
| 16 km | 4:00 | 0:45 | 4:45 |
| 20 km | 5:00 | 1:00 | 6:00 |
| 24 km | 6:00 | 1:15 | 7:15 |
| 28 km | 7:00 | 1:30 | 8:00 |
| 32 km | 8:00 | 1:45 | 9:45 |

**Figure 7-1.**

| LIMITED VISIBILITY/ROAD (Rate of March = 3.2 kph) | | | |
|---|---|---|---|
| DISTANCE | MARCH TIME | REST TIME | TOTAL TIME |
| 4 km | 1:15 | 0:00 | 1:15 |
| 8 km | 2:30 | 0:30 | 3:00 |
| 12 km | 3:45 | :45 | 4:30 |
| 16 km | 5:00 | 1:15 | 6:15 |
| 20 km | 6:15 | 1:30 | 7:45 |
| 24 km | 7:30 | 1:45 | 9:15 |
| 28 km | 8:45 | 2:00 | 10:45 |
| 32 km | 10:00 | 2:30 | 12:30 |

**Figure 7-2.**

| DAY/CROSS-COUNTRY (Rate of March = 2.4 kph) | | | |
|---|---|---|---|
| DISTANCE | MARCH TIME | REST TIME | TOTAL TIME |
| 4 km | 1:40 | 0:00 | 1:40 |
| 8 km | 3:20 | 0:45 | 4:05 |
| 12 km | 5:00 | 1:15 | 6:15 |
| 16 km | 6:40 | 1:30 | 8:10 |
| 20 km | 8:20 | 2:00 | 10:20 |
| 24 km | 10:00 | 2:30 | 12:30 |
| 28 km | 11:40 | 2:45 | 14:25 |
| 32 km | 13:20 | 3:15 | 16:35 |

**Figure 7-3.**

| LIMITED VISIBILITY/ CROSS-COUNTRY (Rate of March = 1.6 kph) | | | |
|---|---|---|---|
| DISTANCE | MARCH TIME | REST TIME | TOTAL TIME |
| 4 km | 2:30 | 0:30 | 3:00 |
| 8 km | 5:00 | 1:15 | 6:15 |
| 12 km | 7:30 | 1:45 | 9:15 |
| 16 km | 10:00 | 2:30 | 12:30 |
| 20 km | 12:30 | 3:00 | 15:30 |
| 24 km | 15:00 | 3:45 | 18:45 |
| 28 km | 17:30 | 4:15 | 21:45 |
| 32 km | 20:00 | 5:00 | 25:00 |

**Figure 7-4.**

Maintaining adherence to these rates of march, and utilization of the techniques of a reliable pace setter and proper halts, will enable all soldiers to physically train to a foot march readiness standard. Foot march training at too fast of a progression, increases the potential for injury. Using a pacesetter and planned halts effectively monitor the rate of the foot march. The pacesetter is an experienced soldier, carrying the same load as the majority of the other soldiers, and marching from 4 to 10 meters at the head of the column. The pace of the column must be governed by the most heavily loaded element. The pacesetters primary duty is to maintain the rate of march ordered by the column commander. He does this by establishing his pace (length of step) and cadence (number of steps per minute) to obtain the prescribed rate of march. The rate of march is the regulated speed of a column or element that is established by the individual in the lead element to maintain the prescribed average speed. For a foot march, the normal pace is 30 inches at a cadence of 106 steps per minute. The pacesetter should be of medium height so that average strides might be taken. Over or under striding tends to quickly tire the leg muscles and affects the efficiency of marching troops. The leader marching at the head of the column supervises the pacesetter to ensure that the pacesetter takes average strides and maintains a uniform cadence.

Distance is a fact derived from mission analysis and METT-TC. The current location of the unit and the distance required to march to a new location is a fact. The leader determines the rate of march based on the time available, the known distance and type of terrain (factors of METT-TC). The foot march tables previously listed above provide planning guidance. Leaders will assign a rate of march based on the specified tasks in the mission statement or scheme of maneuver. Load and rate of march are tactical planning factors that are inversely proportional. Studies have shown that as load increases the rate of march decreases. Increasing both load and rate of march has shown to increase the risk of injury.

During a foot march, halts are enforced routinely to rest personnel and adjust equipment. Units that foot march on a regular basis normally regulate halts by SOP. Under normal physical training for foot marching, the soldiers will be capable of sustaining the rates of march described with a 15-minute halt after 60 minutes of marching. Halts are taken to ensure the arrival of the unit in effective fighting condition.

**Nutritional Considerations**

Maintaining adequate carbohydrate reserves and preventing dehydration are significant challenges for soldiers during foot marching. Maintenance of a high carbohydrate (60 percent of caloric intake) diet with adequate protein, fat, and fluid intake is recommended to ensure that soldiers are sufficiently fueled prior to the foot march. Foot marches that last more than 90 minutes require soldiers to intake foods and fluids before, during, and after the march to re-hydrate and replenish carbohydrates, water, and electrolytes. The following nutritional guidelines should be considered when performing foot marches over 90 minutes in duration:

- The goal during the march is to keep the body in normal balance by consuming enough fluid to match sweat losses and enough carbohydrate to provide energy and help maintain blood sugar levels. Research has shown that endurance can be increased by eating 100-300 calories of carbohydrate per hour during activities of 90 minutes or more in duration.

- At least 16 ounces (about half of a one-quart canteen) of water should be consumed before the foot march. Fluids should also be consumed at regular intervals (8-10 ounces every 15-20 minutes), particularly when in a hot environment. In addition to plain water, a sports drink containing carbohydrate and electrolytes (sodium and potassium) can be consumed, starting early in the foot march. The ideal fluid replacement beverage is one that tastes good to the soldier, does not cause gastrointestinal discomfort, promotes rapid fluid absorption, and provides energy and electrolytes. The beverage should contain a small amount of sugar, about 50-80 calories per 8 ounces (4%-8% solution) and a small amount of sodium and potassium.

- Solid energy bars that are high in carbohydrate, vitamins, and electrolytes are also beneficial and convenient for foot marching. Ensure that adequate amounts of water are ingested with the consumption of energy bars for best results.

- After the foot march, the priority should be to replace fluids lost by sweating. Choices include fruit juices, fruit, high carbohydrate sports drinks, and water. Soldiers should drink at least 16 ounces of water immediately after the foot march and continue to drink at least 8 ounces every 15-20 minutes. Soldiers should also consume carbohydrate-rich foods and beverages (0.5 grams per pound of body weight) within the first two hours after the foot march. The body is more receptive to replacement of muscle glycogen (carbohydrate) immediately after strenuous activity. Recovery foods should also include some protein. A good ratio is to consume 1 gram of protein for every 4 grams of carbohydrate.

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# CHAPTER 8

# OBSTACLE NEGOTIATION

Obstacle course running develops physical capacities and fundamental skills and abilities that are important to soldiers in combat operations. Soldiers must be able to crawl, creep, climb, walk, run and jump in order to accomplish certain missions. Further, carrying full field equipment, they must be able to do all these things for long periods of time without exhaustion or injury, even after fatigue has set in.

Conditioning and Confidence Obstacle courses as prescribed in this chapter and that comply with installation safety requirements and this chapter. Soldiers will wear BDUs and boots. Considerable time and effort must be expended to teach soldiers how to correctly negotiate conditioning and confidence obstacles. Soldiers are required to receive instruction for each obstacle negotiated, have each obstacle demonstrated to standard by a PT leader or AI and be allowed to practice obstacle negotiation prior to course negotiation. **Conditioning obstacle courses may be run for time. Confidence obstacle courses incorporate complex obstacles that involve height and <u>will not</u> be run for time.** PT leaders will ensure that AIs are positioned at each conditioning and confidence obstacle to ensure proper negotiation and soldier safety. PT leaders are required to perform risk management procedures as specified by their installation. One of the objectives of PT is to develop soldiers who are proficient in military physical skills (such as running, jumping, climbing, and carrying). Fast and skillful execution of these skills may mean the difference between the success and failure of combat missions.

## RUNNING

Running is used to develop endurance. Soldiers should be exposed to running in various situations: on roads, over rough ground, up and down hills, across country, and over low obstacles.

## JUMPING

In long jumping, the takeoff foot is planted firmly and the spring comes from the extension of this leg as the other leg reaches for the far side of the obstacle (like a ditch). The arms are forcible raised forward and upward to assist in propelling the body. Landing may be on one or both feet, depending upon the length of the jump. In jumping downward from a height, the jumper should aim his feet at the desired landing spot and jump with the knees slightly bent, feet together, and the trunk inclined slightly forward. As the feet strike the ground, the shock is absorbed by bending the knees into a full squatting position. If the height is too great or the ground too hard to absorb the shock, then the jumper should execute a forward roll or side roll, thus absorbing some of the shock.

## DODGING

In combat situations it is often necessary to change directions quickly. To dodge while running, the lead foot (left foot if the direction is to the right, and right foot if the direction is to the left is firmly planted on the ground. The opposite foot is moved in the new direction. The knees are flexed slightly during the movement and the balanced center of gravity is low. The head and trunk are quickly turned in the new direction at the instant of directional change.

## CLIMBING AND SURMOUNTING

The soldier should know how to effectively climb and surmount various types of obstacles.

## VERTICAL CLIMBING A ROPE OR POLE

The techniques are similar, whether climbing a rope or pole. The hands grasp the rope or pole overhead with the palms toward the face, and the body is pulled upward with the arms and shoulders assisted by the feet, which grip and assist by pushing downward. If shoulder-girdle strength and body coordination are not adequate to permit alternating hands, the arms act together in pulling upward.

## CLIMBING OVER A WALL

When going over a wall, the body is as close to the top as possible to maintain a low silhouette (in combat operations, it is important to offer as small a target as possible, and in preparation for going over the wall, the rifle is slung across the back so that the hands are free). There are two methods commonly used for surmounting a wall of moderate height and one method for dropping from it.

## CHINNING

Approach the wall at either a walk or a slow run. Jump upward and grasp the top of the wall and chin yourself upward until it is possible to change into a pushup. Place the chest on the wall and kick vigorously upward and over with both legs. A creeping motion with the toes against the wall will help the upward progress of the chinning and pushing up.

## CREEPING

Approach the wall either at a walk or a slow run. Jump upward and grasp the top of the wall. Make contact with both knees and start a creeping motion upward. As the knees reach their limit of upward motion, place both feet against the wall and continue with a walking, creeping motion until one leg can be thrown over the top of the wall. Make sure a creeping walk is used.

## RUN, JUMP, AND VAULT

Approach the wall at a run, jump forward and upward at it, and place one foot against it as high up as possible. Use the foot in contact with the wall to help push the body upward while grasping the top of the wall with the hands. Pull the body up with the arms, assisted by pressure from the foot against the wall, and swing the legs over, propelling the body over the wall.

## HOOK AND SWING

Approach the wall at a run and jump forward and upward. Hook one elbow over the wall, locking the arm in place by pulling up until the top of the wall is underneath the armpit. Grasp the top of the wall with the other hand. Draw the leg that is closer to the wall up toward the abdomen as far as possible. Then, swing the outside leg over the wall. The body is then carried over with a rolling motion. Soldiers who are unable to draw up the leg as described can use a variation of this leg action. While hanging with both legs fully extended, start a swinging motion with the legs together. When the legs have enough momentum, swing the outside leg over the wall with a vigorous kick, and then follow with the body.

## DROPPING

Execute all drops from the wall in the same manner. Place one hand against the far side of the wall while the other hand grasps the top. From this position, roll over the wall and vault away from it with the legs swinging clear. As the body passes over the wall and drops, face the wall. This keeps the rifle and other equipment clear. Balance is maintained by retaining a grasp on the top of the wall as long as possible.

## CLIMBING LADDERS AND CARGO NETS

Rope ladders, stationary vertical ladders, and cargo nets require the same general climbing technique. Grasp the side supports firmly in the hands about shoulder height and place the feet on a rung, which will cause the body to be extended. To move up, obtain a higher grasp and move the opposite leg up a rung. The body is elevated as the knee straightens.

## TRAVERSING HORIZONTAL OBJECTS BY HAND

Traversing horizontal objects puts stress on the arms and shoulder-girdle area, when the feet are suspended in the air and the arms and shoulders support body weight.

## TRAVERSING HORIZONTAL ROPES OR PIPES

The hands grasp the horizontal support overhead with the palms facing. To propel the body forward, one hand is released and moved forward to secure a new grasp. At the same time, the opposite side of the body is swung forward. The other hand is then released and moved forward, as the soldier continues to move.

## TRAVERSING HORIZONTAL LADDERS

The movement is the same as used in traversing a rope or pipe. The hands, however, are placed on the rungs palms forward; otherwise, the technique is the same.

## VAULTING

Vaulting is employed to overcome low barriers or fences. The object to be surmounted is approached at an angle. The hand on the side next to the obstacle is placed on top of the obstacle, and with a straight-arm movement the body weight is pushed upward. At the same time, the leg on the side next to the obstacle is thrown upward and over the top, followed by the other leg. In landing, the weight comes down on the leading leg first, followed by regaining the balance on both legs. The free arm serves as a balance. A direct (front) approach can also be used, at which time both legs go over the object together.

## BALANCING

Balancing the body while walking or running on a narrow object, as when crossing obstacles, is a skill, which requires practice and confidence. Balance is required in negotiating a log placed across a stream, or in crossing any narrow beam or rail. To perform this skill, place the feet on the object to be crossed, hold the arms to the side at shoulder level, and fix the eyes on the object approximately 5 yards in front of the feet. Walk the object by placing first one foot and then the other in the center of the object, thereby moving forward, using the arms to aid in maintaining balance.

## CRAWLING

Crawling in combat situations is a useful skill. Crawling may be in the high or low stance.

## HIGH CRAWL

The soldier moves on his hands and knees, moving one hand and the opposite knee and then continuing to move the hands in alternation with the knees.

## LOW CRAWL

The soldier is in the prone position. Pulling with both arms and pushing with one leg accomplish forward movement. The other leg is dragged behind. The legs are alternated frequently to avoid fatigue.

## THROWING

Throwing may be from the kneeling or standing position. The object to be thrown is held in the throwing hand and the throwing arm is bent at the elbow; the hand is then moved to the rear until it is behind the ear. The body is turned so that the lead foot and balance (other) arm point toward the target. The balance arm is used to sight over and align the throwing hand with the target. When properly aligned, the elbow is move rapidly forward until it is at a point just in front of the body, where the arm is straightened and the wrist “snapped.” This whip motion propels the object to the target. Underhand throws get momentum by the thrower bending his knees and swinging the throwing arm to the rear. As the knees are straightened, the arm is forcefully swung forward from the shoulder and the object is released.

## FALLING

Injuries may be avoided if soldiers are taught to fall properly by using body momentum to their advantage during a fall rather than resisting it. If enough momentum is present, as in falling while running or in jumping from a height, the soldier can extend his hands to catch his weight and at the same time duck the head and forward roll onto his feet. The key to falling without injury from the standing position is relaxation and rolling the body to take the momentum of the fall on the outside of one leg, hip, and buttock.

## TYPES OF OBSTACLE COURSES

The conditioning course has low obstacles that must be negotiated quickly. Running the course challenges the soldier’s basic motor skills and physical condition. After soldiers receive instruction and practice negotiation skills, they may run the course against time.

The confidence course has higher more difficult obstacles than the conditioning course. It gives soldiers confidence in their mental and physical abilities and cultivates their spirit and daring. Soldiers are encouraged but not forced to negotiate each obstacle. Unlike conditioning courses, confidence courses are not run against time.

Conditioning obstacle courses are typically not standardized due varying topographical conditions. However, individual obstacles within the conditioning course are standardized for both construction and negotiation. Commanders should use ingenuity in constructing courses, making good use of streams, hill, trees, rocks and other natural obstacles. Since conditioning courses are run against time, they should not be made dangerous.

Conditioning Courses should be developed based on the following guidelines:

- Courses should be horseshoe-shaped with route signs and the finish close to the start.
- Total course distance ranges from 300 to 450 yards.
- Courses contain 15 to 25 obstacles placed 20 to 30 yards apart.
- Obstacles are arranged so that those that exercise the same muscle groups are separated and not performed consecutively.
- Obstacles must be solidly built with no sharp points or corners and landing pits must be filled with sawdust or ground tires.
- Lanes will be wide enough for 6 to8 soldiers to run course at the same time and avoid congestion.
- Courses will be built and marked so soldiers can not sidestep the obstacles or detour around them.
- To minimize the possibility of falls and injures due to fatigue, the last two or three obstacles should not be too difficult or involve high climbing.

## TYPES OF CONDITIONING OBSTACLES

## OBSTACLES FOR JUMPING

These obstacles include ditches soldiers can clear with one leap, trenches they can jump into and out of or hurdles.

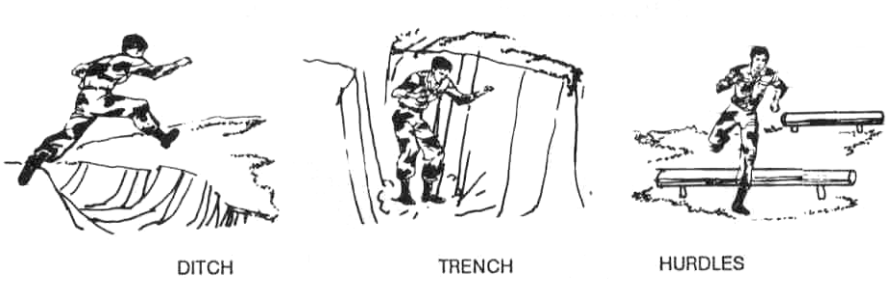



**Figure 8-1.**

## OBSTACLES FOR DODGING

These obstacles include mazes or lanes for change of direction. The maze is constructed from posts set in the ground at irregular intervals. The spaces between the posts are narrow so that soldiers must pick their way carefully through and around them. Lane guides are built to guide soldiers in dodging and change of direction.

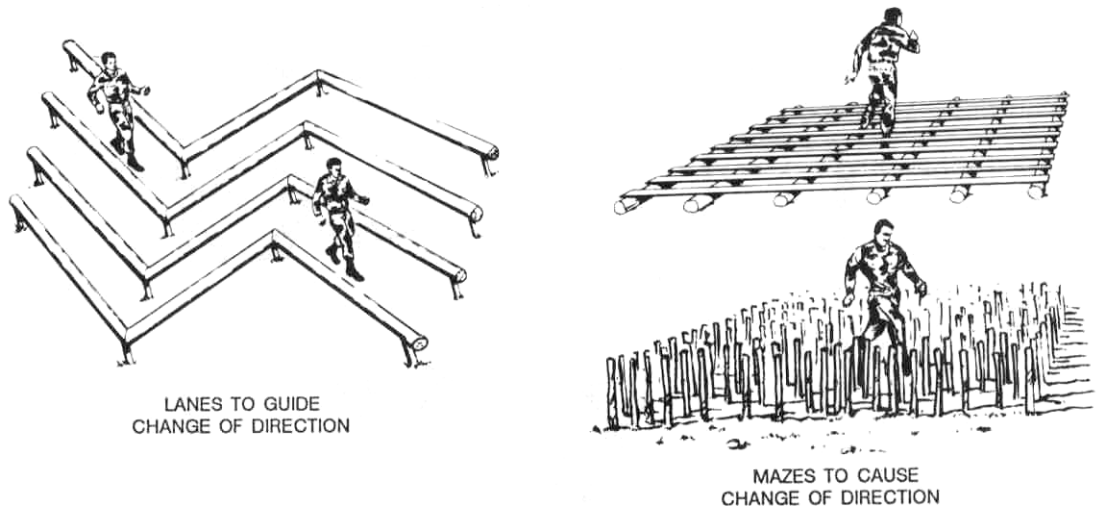



**Figure 8-2.**

## OBSTACLES FOR VERTICAL CLIMBING AND SURMOUNTING

These obstacles include climbing ropes 11/2 inches in diameter (plain or knotted), cargo nets, walls (7 or 8 feet high), or vertical poles (6 to 8 inches in diameter and 15 feet high).

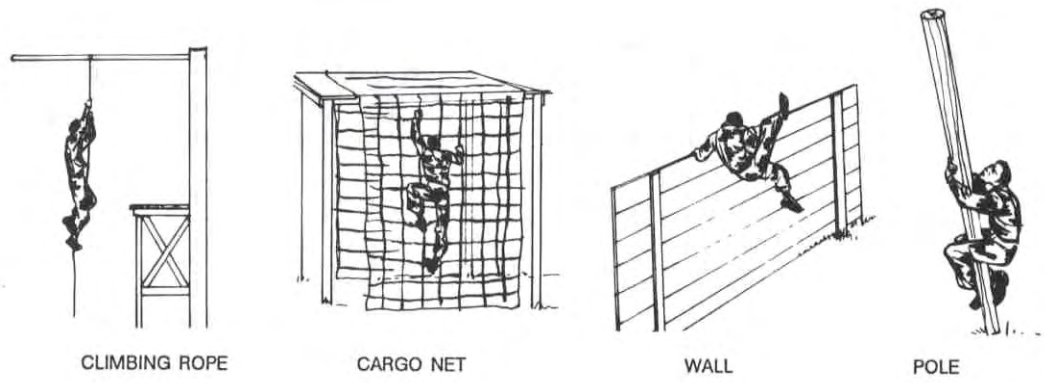



**Figure 8-3.**

## OBSTACLES FOR HORIZONTAL TRAVERSING

These obstacles include ladders, ropes, pipes or beams positioned 8 to 10 feet off the ground. These obstacles may be traversed using the arms only or a combination of arms and legs.

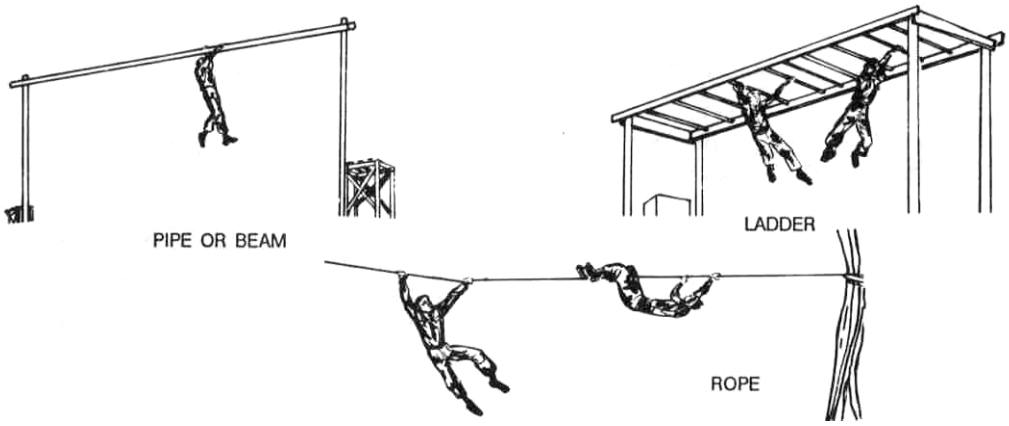



**Figure 8-4.**

## OBSTACLES FOR CRAWLING

These obstacles include large pipe sections (tunnels 4 feet in diameter and 8 feet long), low rails (8 inch diameter log, 8 feet long and 2 feet off the ground) and wire (all wire lanes will be 10 feet wide, 30 **feet long and 2 feet off the ground).**

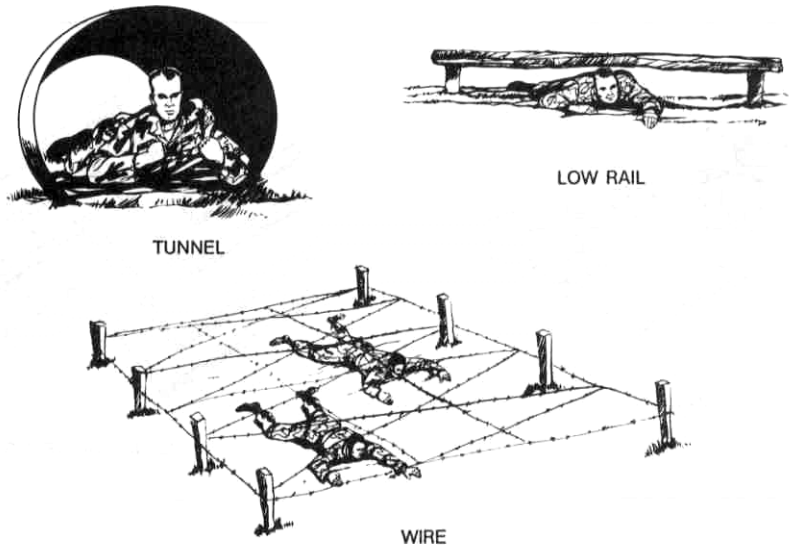



**Figure 8-5.**

## OBSTACLES FOR VAULTING

These obstacles include fences or low walls (3 to 31/2 feet high).

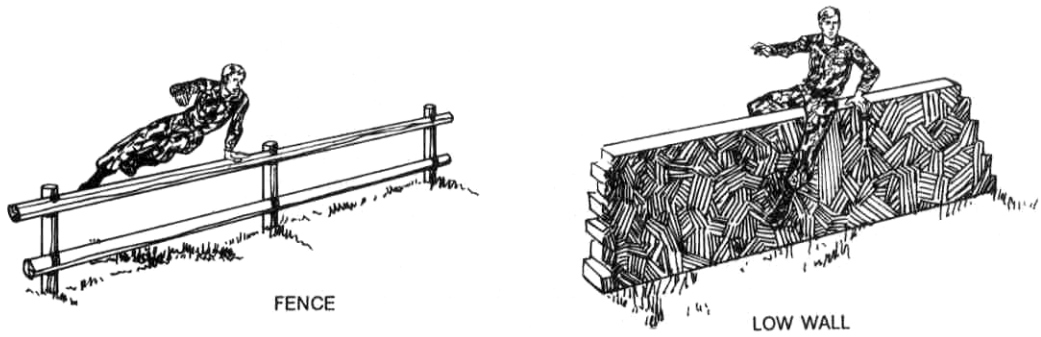



**Figure 8-6.**

## OBSTACLES FOR BALANCING

These obstacles include beams, logs or planks that span water obstacles or dry ditches (2 feet deep).

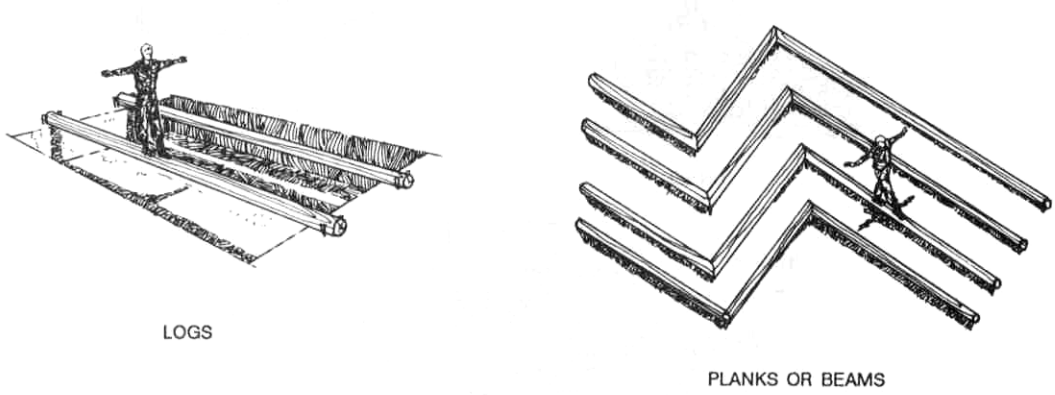



**Figure 8-7.**

## NEGOTIATION STANDARDS FOR CONDITIONING COURSES

### LANES TO GUIDE CHANGE OF DIRECTION

To successfully negotiate this obstacle you must enter and exit the change of direction lanes while running, using the following technique. To change direction while running, plant your lead foot (left foot if the direction is to the right; right foot if the direction is to the left) firmly on the ground. Then, move your opposite foot in the new direction. Your knees are flexed slightly and your center of gravity is low. Turn your head and trunk quickly in the new direction at the instant of the directional change.

### DITCH

To successfully negotiate this obstacle you must jump over the ditch while running and use the following technique. When jumping over a ditch, your takeoff foot is planted firmly and the spring comes from the extension of this leg as your other leg reaches for the opposite side of the ditch. Raise your arms forcibly forward and upward to assist in propelling your body. Your landing maybe on one or both feet, depending on the length of the jump.

### CLIMBING ROPE

To successfully negotiate this obstacle you must climb the rope, using the following technique. Grasp the rope overhead with your hands keeping your palms toward your face, then pull your body upward with your arms and shoulders. To assist with your feet on a knotted rope, squeeze the rope and push off the knot with the bottoms of the feet. To continue climbing, re-grasp the rope overhead, then raise your legs at the hips and reposition your feet as mentioned above. Continue this technique until reaching the top of the rope. Touch the beam above the anchor point and descend the rope to the ground.

### LOGS

To successfully negotiate this obstacle you must walk or run the log using the following technique. Place your feet on the log to be crossed, hold your arms at your sides at shoulder level and fix your eyes on the log approximately five yards in front of your feet. Walk or run the log by placing first one foot then the other in the center of the log, moving forward using your arms to maintain balance.

### HORIZONTAL LADDER

To successfully negotiate this obstacle you must traverse the ladder using the following technique. Grasp the first rung overhead with your palms facing forward and suspend your body. To propel your body forward, release one hand and move forward to secure a new grasp. At the same time, swing the opposite side of your body forward. Release your other hand and move it forward to re-grasp another rung. Continue this technique, grasping each and every rung, until you reach the last rung. Suspend your body from the last rung, then drop to the ground.

### ALTERNATE HIGH STEPPING

To successfully negotiate this obstacle you must enter and exit the maze while running and use the following technique. Run on the balls of the feet and raise the knees up high with each step while crossing over the obstacles and placing the each foot in adjacent grid squares.

**HORIZONTAL ROPE**
To successfully negotiate this obstacle you must traverse the rope using the following technique. Reach up and grasp the rope with your hands and swing your legs up to assume the position used when climbing a vertical rope. Leading with your head, traverse the rope horizontally by pulling with your arms. Your feet and legs are used to secure your position on the rope and may also be used assist in your movement as in the vertical rope climb. To complete negotiation of this obstacle one hand must touch the post securing the end anchor point.

**WIRE**
To successfully negotiate this obstacle you must enter and exit using the low crawl technique. Low crawl - Start in the prone position. To move forward, pull with both arms and push with one leg. Your other leg is dragged behind. Your legs are alternated frequently to avoid fatigue. Continue this technique until your body has cleared the low wire.

**CARGO NET**
To successfully negotiate this obstacle you must approach the net while running. Leap to grasp the rope rungs overhead and step up on the lower rope rungs. You may use either of the following methods to climb the cargo net: The first technique would be to perform alternating arm and leg movements (i.e. Reach up with your right arm to grasp a higher rung while simultaneously stepping up with your left leg). The second technique would be to grasp and step with the same side arm and leg, ascending the rope in a crawling fashion. Continue this technique to the top of the net, then propel your body over the platform and descend the net on the other side using a similar technique.

**FENCE**
To successfully negotiate this obstacle you must use the following technique. Vaulting - Approach the fence at an angle, your hand on the side next to the fence is placed on top of the fence and with a straight-arm movement push your body weight upward. At the same time, your leg on the side next to the fence is thrown upward and over the top, followed by your other leg. In landing, your weight comes down on the landing leg first, followed by regaining your balance on both legs. Your free arm also serves as a balance. A direct front approach can also be used, at which time both legs go over the fence together.

**TRENCH**
To successfully negotiate this obstacle you must use the following technique. Jump downward into the trench, aiming your feet at the desired landing spot with your knees slightly bent, feet slightly apart and trunk inclined slightly forward. As your feet strike the ground, absorb shock by bending your knees to a squatting position. If the height is too great or the ground too hard to absorb the shock, then you should land with your feet together and execute a forward or side roll to absorb some of the shock. To exit the trench, use one of the following techniques: Approach the trench wall at a run, jump forward and upward at it and place one foot against the trench wall as high as possible. Use your foot in contact with the wall to help push your body upward while grasping the top of the trench with your hands. Pull your body up with your arms, assisted by the pressure of your foot against the wall and swing your legs over to propel yourself out of the trench. Using the second technique, approach the trench wall at a run and jump forward and upward. Hook one elbow over the top of the trench, locking your arm in place by pulling up until the top of the trench is under your armpit. Grasp the top of the trench with your other hand. Draw your leg that is closest to the trench wall up toward your abdomen as far as possible, then swing the outside legs over the top of the trench. Your body is then carried over with a rolling

motion. Soldiers who are unable to draw up the leg as described can use a variation of this leg action. While hanging with both legs fully extended, start a swinging motion with your legs together. When your legs have enough momentum, swing your outside leg over the trench wall with a vigorous kick, then follow with your body to exit the trench.

**LOW RAILS**
To successfully negotiate this obstacle you must use the low crawl technique to move under the low rails.

**PLANKS AND BEAMS**
To successfully negotiate this obstacle you must use the same technique listed to traverse the logs.

**WALL**
To successfully negotiate this obstacle you may use either of the following techniques to surmount the wall. Run, jump and vault. When using this method approach the wall at a run, jump forward and upward at it and place one foot against the wall as high as possible. Use your foot in contact with the wall to help push your body upward while grasping the top of the wall with your hands. Pull your body up with your arms, assisted by the pressure of your foot against the wall and swing your legs over to propel yourself over the wall. The second technique is the Hook and swing - Approach the wall at a run and jump forward and upward. Hook one elbow over the wall, locking your arm in place by pulling up until the top of the wall is under your armpit. Grasp the top of the wall with your other hand. Draw your leg that is closest to the wall up toward your abdomen as far as possible, then swing the outside leg over the wall. Your body is then carried over with a rolling motion. A variation of this leg action can be used by soldiers who are unable to draw up the leg as described. While hanging with both legs fully extended, start a swinging motion with your legs together. When your legs have enough momentum, swing the outside leg over the wall with a vigorous kick, then follow with your body. To drop from the wall to the ground, place one hand against the far side of the wall while the other hand grasps the top. From this position, roll over the wall and vault away from it with your legs swinging clear. As your body passes over the wall and drops, face the wall. Balance is maintained by retaining your grasp on the top of the wall as long as possible and then drop to your feet.

**DITCH**
To successfully negotiate this obstacle you must jump over the ditch while running and use the following technique. When jumping over a ditch, your takeoff foot is planted firmly and the spring comes from the extension of this leg as your other leg reaches for the opposite side of the ditch. Raise your arms forcibly forward and upward to assist in propelling your body. Your landing maybe on one or both feet, depending on the length of the jump.

**LOW WALL**
To successfully negotiate this obstacle you must use the following technique. Vaulting - Approach the fence at an angle, your hand on the side next to the fence is placed on top of the fence and with a straight-arm movement push your body weight upward. At the same time, your leg on the side next to the fence is thrown upward and over the top, followed by your other leg. In landing, your weight comes down on the landing leg first, followed by regaining your balance on both legs. Your free arm also serves as a balance. A direct front approach can also be used, at which time both legs go over the fence together.

**HURDLE**
To successfully negotiate this obstacle you may leap over the hurdle one leg at a time or step on the hurdle with one leg and leap down from the hurdle with the other or both legs to the ground.

**PLATFORM**
To successfully negotiate this obstacle, surmount the platform by using the support beams to step up and pull you to the top. When jumping down from the platform to the ground, perform the same technique used for jumping downward from a height as in negotiating the Trench above.

**TUNNEL**
To successfully negotiate this obstacle, two crawling methods may be used. High crawl – This technique is performed on your hands and knees. Propel yourself forward by moving one hand forward while simultaneously moving your opposite knee forward. Continue moving on your hands and knees in an alternating fashion. The second technique is the Low crawl – Start in the prone position. To move forward, pull with both arms and push with one leg. Your other leg is dragged behind. Your legs are alternated frequently to avoid fatigue. Continue this technique until exiting the tunnel.

**LANES TO GUIDE CHANGE OF DIRECTION**
To successfully negotiate this obstacle you must enter and exit the change of direction lanes while running, using the following technique. To change direction while running, plant your lead foot (left foot if the direction is to the right; right foot if the direction is to the left) firmly on the ground. Then, move your opposite foot in the new direction. Your knees are flexed slightly and your center of gravity is low. Turn your head and trunk quickly in the new direction at the instant of the directional change.

## CONDUCTING THE CONDITIONING OBSTACLE COURSE

Before soldiers run the conditioning obstacle course in its entirety, they should be taken to each obstacle and instructed in the proper negotiation techniques previously mentioned. In each case the techniques should be explained in detail with emphasis on avoidance of injury. All soldiers should be given the opportunity to practice on each obstacle until they become proficient at negotiation. Before the course is run against time, several practice runs should be run at a slower pace. During such practice runs, PT leaders and AIs observe their performance and make appropriate corrections. Soldiers should never be permitted to run conditioning obstacle courses for time until they have mastered all obstacles thoroughly. The best method of timing soldiers on the obstacle course is to have the timer stand at the finish and call out minutes and seconds as each soldier crosses the finish line. If soldiers fail to negotiate an obstacle a predetermined penalty (5 to 10 seconds) should be assessed.

## CONFIDENCE OBSTACLE COURSES

Confidence obstacle courses challenge soldiers' strength, endurance and mobility while instilling self-confidence and promoting teamwork. Soldiers do not negotiate these obstacles at high speed or against time. Obstacles vary in difficulty, with some very high obstacles. Safety nets are provided for these high obstacles. Soldiers may skip any obstacle they are unwilling to attempt. PT leaders and AIs should encourage, but not force soldiers to attempt every obstacle. Fearful soldiers should be encouraged to negotiate the easier obstacles before attempting the higher more

difficult ones. Some of the higher, more difficult obstacles may be negotiated as a group effort, with stronger soldiers assisting those unable to negotiate the obstacles by themselves. Gradually, as their confidence and negotiation skills improve, the weaker soldiers will be able to successfully negotiate all obstacles individually. PT leaders and AIs should be available to assist soldiers in proper obstacle negotiation throughout the course. At no time are PT leaders or AIs to try to make obstacles more difficult to negotiate by shaking ropes, rolling logs, and so forth. This practice destroys confidence and greatly jeopardizes safety. Confidence obstacle courses must be constructed IAW Folio Number 1, "Training Facilities", Corps of Engineers Drawing number 28-13-95. Contact your installation Directorate of Public Works for blueprints. The Army's standardized confidence obstacle course consists of 24 obstacles, grouped into color-coded quadrants with six obstacles in each. Negotiation becomes more difficult beginning with the Black Quadrant followed by the Blue Quadrant, White Quadrant and Red Quadrant. All soldiers will begin confidence course obstacle negotiation in the Black Quadrant. Soldiers will progress to the more difficult quadrants (Blue, White and Red) when they become proficient and successfully negotiate obstacles in the previous quadrants.

## TYPES OF CONFIDENCE COURSES OBSTACLES

## BLACK QUADRANT

**HIGH STEP OVER**
Soldiers step over each bar: they either alternate legs or use the same leg each time while making an effort not to use their hands. (Shorter soldiers may be required to use hands). Soldiers must be spaced so as to prevent kicking each other.

**THE SWINGER**
Obstacle no longer used. TRADOC Regulation 350-6, Appendix K.

**LOW WIRE**
Soldiers move forward under wire, on their backs while raising wire with their hands to clear their bodies while moving to the end of the obstacle.

**THE SWING, STOP AND JUMP**
Soldiers gain momentum with a short run, grasp the rope, and swing their bodies forward to the top of the wall. They release the rope while standing on the wall and jump to the ground.

**SIX VAULTS**
Soldiers vault over each log using one or both hands.

**EASY BALANCER**
Soldiers walk up one incline log and down the one on the other side to the ground. Running is not authorized.

**BLACK QUADRANT**

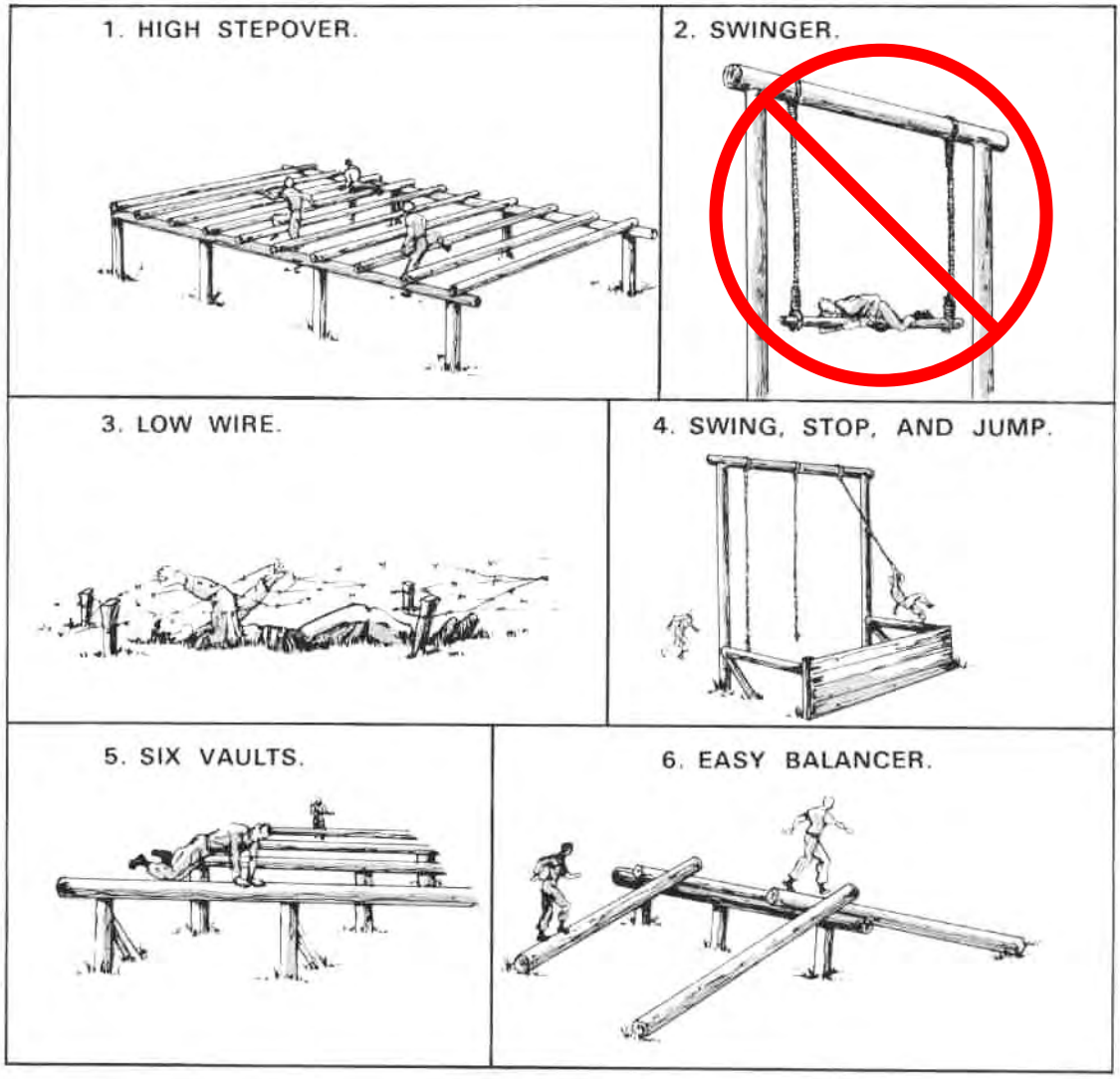



**Figure 8-8.**

## BLUE QUADRANT

**THE BELLY BUSTER.**
Soldiers vault, jump or climb over a moving log.

**REVERSE CLIMB**
Soldiers approach the underside of the climbing ladder, climb up to and over the top of the ladder, then climb down the opposite side.

**THE WEAVER**
Soldiers move from one end of the obstacle to the other by weaving their bodies under one bar and over the next.

**HIP-HIP**
Soldiers step over each bar by either alternating legs or using the same leg each time while making an effort not to use their hands.

**BALANCING LOGS**
Soldiers walk or run along logs while maintaining their balance.

**ISLAND HOPPERS**
Soldiers jump from one log to another until obstacle is negotiated from near to far side.

## BLUE QUADRANT

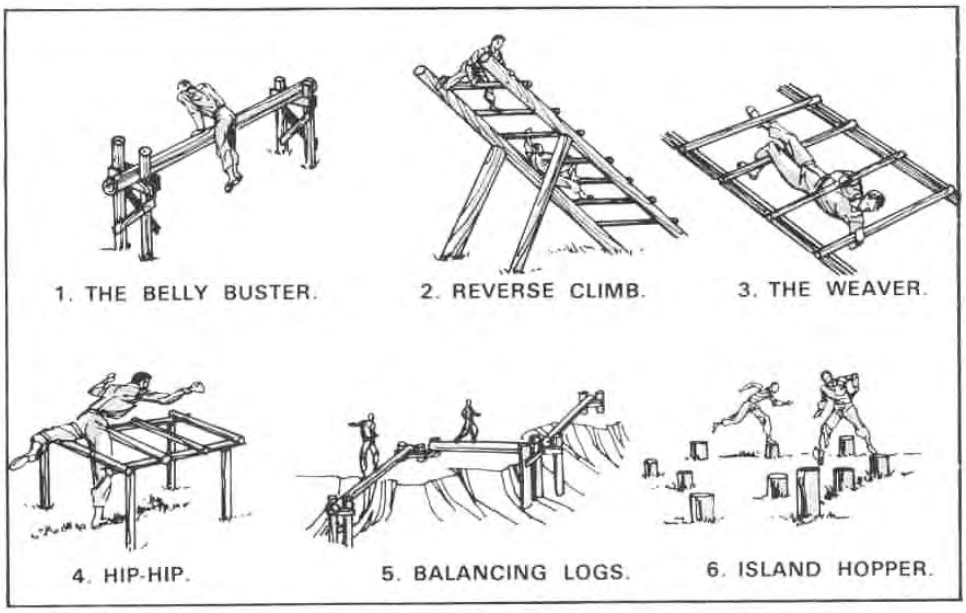



**Figure 8-9.**

## WHITE QUADRANT

**THE TOUGH NUT**
Soldiers step over each “X” in each lane.

**THE SLIDE FOR LIFE**
Soldiers climb the tower, mount the center of the platform, grasp rope firmly with hands and perform a heel hook. Soldiers begin traversing down the rope by moving hand-over-hand and reaching with the legs. Soldiers brake by use of hands, legs and feet. Soldiers traverse rope to a marked release point. Soldiers dismount the rope by removing their legs from the rope, hanging with arms fully extended and drop to the ground landing on their feet. If during negotiation, the soldier’s legs come off the rope, soldiers should attempt to heel hook and lock legs back on the rope. Soldiers must be instructed on proper technique for landing in the net if they should fall from the obstacle. Soldiers need to draw their knees towards their chest, tuck their chin and attempt to land on their back or side. Only one soldier is allowed on the rope at a time. This obstacle is dangerous if the rope is wet. This obstacle requires one instructor on the platform and one at the release point. Net will extend from below the platform to the release point.

**LOW BELLY OVER**
Soldiers mount the low log and jump onto the high log. They grasp over the top of the log with both arms, keeping the belly area in contact with it. Soldiers swing their legs over the log, then lower themselves to the ground.

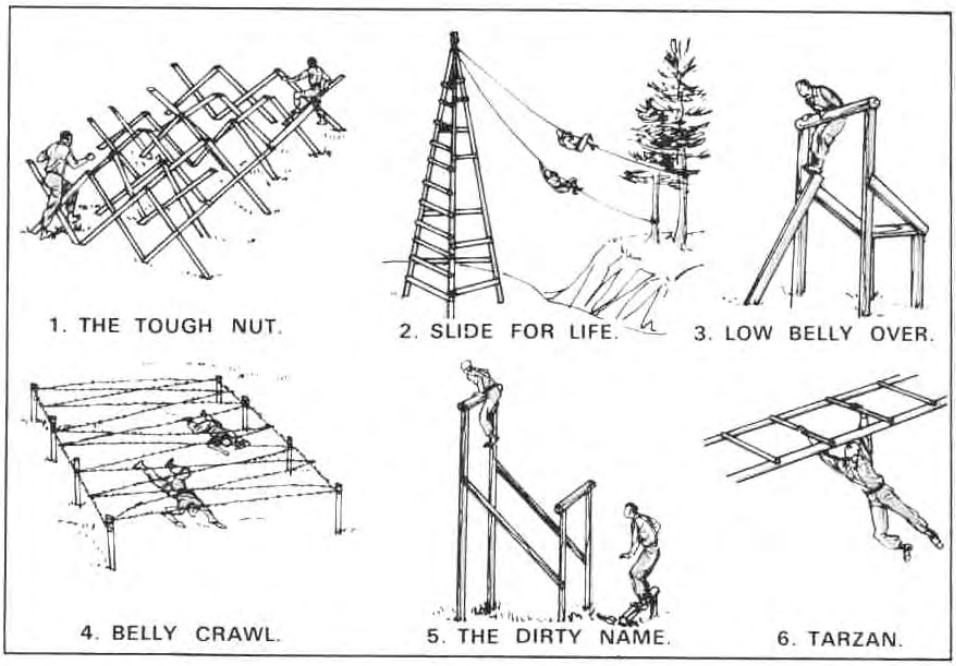
**BELLY CRAWL**
Soldiers move forward under the wire on their stomachs, to the end of the wire obstacle.

**THE DIRTY NAME**
Soldiers mount the low log and jump onto the high log. Soldiers swing their legs over the top log, then lower themselves to the ground.

**THE TARZAN**
Soldiers mount the lowest log and maintain balance while walking the length of it. Soldiers then mount the higher log and maintain balance until they reach the horizontal ladder. Soldiers then step onto the foot blocks and grasp the first rung of the ladder. Begin traversing the ladder by releasing one hand at a time and swinging forward, grasping a more distant rung each time. Upon reaching the last rung, soldiers hang with arms fully extended and drop to the ground landing on their feet.

## WHITE QUADRANT

**Figure 8-10.**




## RED QUADRANT

**INCLINING WALL**
Soldiers approach the underside of the wall, jump up and grasp the top and pull themselves over the top. Soldiers slide or jump down the incline to the ground.

**SKYSCRAPER**
A team of soldiers (4+) jumps or climbs to the first floor and either climb the corner posts or help one another to higher floors. All climbing from the second to the fourth floor is accomplished only on sides containing safety nets. Crash pads are positioned on the non-climbing sides of the obstacle. The top of the obstacle is off limits and will not be negotiated. Only one team should be on the obstacle at a given time. Soldiers descend from floor to floor individually or as a team. Soldiers should not jump to the ground from above the first floor. Soldiers must be instructed on proper technique for landing in the net if they should fall from the obstacle. Soldiers need to draw their knees towards their chest, tuck their chin and attempt to land on their back or side.

**JUMP AND LAND**
This obstacle is no longer authorized for use.

**CONFIDENCE CLIMB**
Soldiers climb the vertical ladder to the second rung from the top, climb over the rung and descend the other side. Only one soldier is allowed on the obstacle at a time. An instructor is harnessed in at the top of the obstacle to assist soldiers with obstacle negotiation. Soldiers must be instructed on proper technique for landing on the pad if they should fall from the obstacle. Soldiers need to draw their knees towards their chest, tuck their chin and attempt to land on their back or side. Pads will be placed at the base of the obstacle on both climbing sides.

**BELLY ROBBER**
Soldiers step on the lower log and assume a prone position on the horizontal logs. Soldiers crawl over the logs to the opposite end of the obstacle. Rope gaskets must be attached to the ends of the logs to keep the hands from being pinched and to ensure logs cannot fall from the perpendicular cradle.

**THE TOUGH ONE**
Soldiers climb the cargo net up and over at the low end of the obstacle (13 ft.). Soldiers move across the top of the logs and climb the ladder and over the log at the high end (33 ft.). An instructor is harnessed in at the high end of the obstacle to assist soldiers with obstacle negotiation. Soldiers then climb down the cargo net to the ground. Net will extend from below the log walk and crash pads are positioned at the base of each cargo net. Soldiers must be instructed on proper technique for landing in the net if they should fall from the obstacle. Soldiers need to draw their knees towards their chest, tuck their chin and attempt to land on their back or side.

**Red Quadrant**

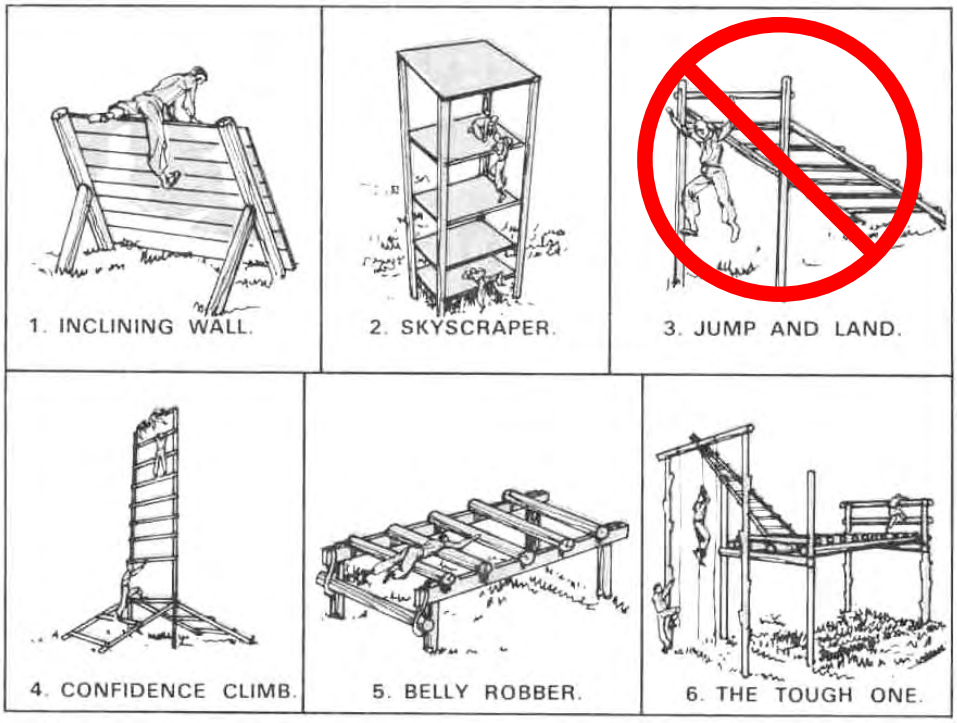



**Figure 8-11.**

**SUMMARY**

Obstacle courses provide soldiers with an activity that challenges their strength, endurance and mobility while honing critical combat skills and instilling confidence. They are an integral part of the PT program and should be performed regularly. Confidence obstacle course negotiation is high-risk training. PT leaders must follow appropriate risk management and safety practices.

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# CHAPTER 9

# THE ARMY PHYSICAL FITNESS TEST (APFT)

The intent of the Army Physical Fitness Test (APFT) is to provide an assessment of the PT program. Physical fitness testing is designed to ensure the maintenance of a base level of physical fitness essential for every soldier in the Army, regardless of MOS or duty assignment. Unit and individual PT programs must be developed to take this base level of conditioning and raise it to help meet or exceed mission-related physical performance tasks. Commanders must ensure that physical fitness testing does not form the foundation of unit or individual PT programs. Temporary training periods solely devoted toward meeting APFT requirements are highly discouraged.

## APFT OVERVIEW

The APFT provides a measure of upper and lower body muscular endurance. It is a performance test that indicates a soldier's ability to perform physically and handle his or her own body weight. APFT standards are adjusted for age and physiological differences between the genders.

The APFT consists of push-ups, sit-ups, and a 2-mile run, done in that order on the same day. Soldiers are allowed a minimum of ten minutes and a maximum of twenty minutes rest between events. All three events must be completed within two hours. The test period is defined as the period of time that elapses from the start to the finish of the three events.

IAW AR 350-1, all soldiers must attain a score of at least 60 points on each event and an overall score of at least 180 points. The maximum score a soldier can attain on the APFT is 300 points. ***The use of extended scale scoring <u>is not</u> authorized.*** Soldiers in basic combat training must attain 50 points in each event and an overall score of 150 points.

APFT results will be recorded on DA Form 705 (Physical Fitness Scorecard) which will be maintained for each service member. The scorecard will be kept in a central location in the unit and will accompany the individual military personnel records jacket at time of permanent change of station. Units and separate offices will have a system for monitoring performance and progress of their soldiers. Individual soldiers are not authorized to administer the APFT to themselves for the purpose of satisfying diagnostic or record test requirements. A minimum of three soldiers is required to administer an APFT; event scorer, event timer and a holder to secure the soldier’s ankles during the sit-up event.

Any piece of clothing not prescribed as a component of the physical fitness uniform (PFU), battle-dress uniform (BDU), commander authorized civilian attire, device or equipment that offers the potential for an unfair advantage is not permitted for wear during the APFT. The wearing of such items as: nasal strips, weight lifting gloves, back braces, radios/compact disc players, elastic bandages or braces is not authorized unless prescribed as part of a medical profile. AR 670-1 specifies the components of the PFU ensemble.

## APFT ADMINISTRATION

The success of any physical fitness testing program depends on obtaining valid and accurate test results. Therefore, the APFT must be administered properly and to standard to accurately evaluate individual soldier and unit physical fitness. Supervision of the APFT is necessary to insure that the objectives of the physical fitness program are met. Proper supervision provides for uniformity in the following:

- Test scoring.
- Training of test personnel.
- Test preparation.
- Control of performance factors.

Preparation for the APFT should be directed at securing the most accurate evaluation of personnel participating in the test. Preparatory requirements include the following:

- Selecting and training of event supervisors, scorers, demonstrators and support personnel.
- Equipment inventory.
- Securing the test site.

The commander should ensure that testing is consistent with regards to events, scoring, clothing, equipment and facilities. Testing should be planned to permit each soldier to perform at his maximal level. They should ensure the following:

- Soldiers are not tested when fatigued or ill.
- Soldiers do not participate in tiring duties before taking an APFT.
- Weather and environmental conditions do not inhibit physical performance.
- Risk analysis conducted.

## DUTIES OF TEST PERSONNEL

APFT test personnel must be familiar with all aspects of administration of the APFT. Supervision of soldiers and laying out the test area are essential duties. The following test personnel are required to conduct an APFT: OIC and/or NCOIC, event supervisor, scorer, demonstrator, and support personnel.

The **OIC and NCOIC** are responsible for the administration of the APFT. Responsibility includes the following:

- Administers the test.
- Procures all necessary equipment and supplies.
- Arranges and lays out the test area.
- Trains event supervisors, scorers, demonstrators and support personnel.
- Ensures the test is properly administered, events explained, demonstrated and scored according to standard.
- Reports results of test.

The **Event Supervisors** are responsible for administration of test events. Responsibility includes the following:

- Administers one or more test events.
- Insures necessary equipment is on hand for each event(s).
- Reads APFT event instructions.
- Conducts APFT event demonstration.
- Supervises event scoring to standard.
- Answers questions on scoring discrepancies and informs OIC/NCOIC.

The **Event Scorers** are responsible for scoring events to standard. Responsibility includes the following:

- Enforces test standards.
- Records the correct number of repetitions in the raw score block on DA 705.
- Records initials in initials box on DA 705.
- Performs other duties assigned by OIC or NCOIC.
- Receives training conducted by OIC/NCOIC to ensure scoring is to standard.

The **Demonstrators** are responsible for demonstrating the push-up and sit-up events to standard. Responsibility includes the following:

- Assists event supervisor by demonstrating push-ups and sit-ups to standard during the reading of event instructions.
- Performs other duties assigned by OIC or NCOIC.
- Receives training conducted by OIC/NCOIC to ensure demonstration of push-ups and sit-ups are to standard.

The **Support Personnel** assist in preventing unsafe acts and ensure smooth operation of the APFT. The use of support personnel depends on local policy and unit SOPs. Medical support on site is not required unless specified by local policy. The OIC and/or NCOIC should have a plan for medical support if required.

**TEST SITE**

The **OIC and NCOIC** should select a test site that is flat and free of debris. The test site should have the following:

- A briefing area for the reading of event instructions.
- A warm-up area (briefing and warm-up area can be the same).
- A soft, flat, dry area for push-ups and sit-ups.
- A flat, 2-mile running course with a solid surface.
- The 2-mile run course should be no more than three-percent grade.
- Free of any significant hazards.

Sound judgment must be used in the selection of a 2-mile run course. 2-mile run courses are not required to be surveyed. Test site free of significant hazards includes, for example, no traffic, slippery road surfaces or areas where heavy pollution is present. Running tracks may be used to administer the 2-mile run event. If a 400-meter track is used, the OIC/NCOIC must add an

additional 61 feet, 4 inches to the standard 8 laps to ensure the 2-mile distance is covered during the test. One lap on a 400-meter track is 92 inches shorter than one lap on a 440-yard track. Eight laps on a 400-meter track is 736 inches shorter than eight laps (2 miles) on a 440-yard tack. Therefore, soldiers running on a 400-meter track must run an additional 61 feet, 4 inches.

**TEST PROCEDURES**

The test sequence is the push-up, sit-up and 2-mile run (or an approved alternate aerobic event). The order of events cannot be changed. There are no exceptions to this sequence. Soldiers are allowed a minimum of 10 minutes and a maximum of 20 minutes to recover between events. The OIC or NCOIC determines the recovery time between events. Recovery time is based on the number of soldiers taking the test. If large numbers of soldiers are being tested, staggered start times should be planned to allow for proper recovery between test events. Under no circumstances is the APFT valid if soldiers cannot begin and end all three events in two hours or less. The following paragraphs describe procedures for administration of the APFT.
On test day, the OIC or NCOIC brief soldiers on the purpose and organization of the APFT. The OIC or NCOIC explain test administration: to include, the scorecard, scoring standards and test sequence. In addition, the wearing of unauthorized items such as: nasal strips, braces, elastic bandages, weight lifting gloves and radios/compact disc players are addressed. The following instructions are read aloud to all soldiers taking the APFT:

**"YOU ARE ABOUT TO TAKE THE ARMY PHYSICAL FITNESS TEST, A TEST THAT WILL MEASURE YOUR UPPER AND LOWER BODY MUSCULAR ENDURANCE. THE RESULTS OF THIS TEST WILL GIVE YOU AND YOUR COMMANDERS AN INDICATION OF YOUR STATE OF FITNESS AND WILL ACT AS A GUIDE IN DETERMINING YOUR PHYSICAL TRAINING NEEDS. LISTEN CLOSELY TO THE TEST INSTRUCTIONS, AND DO THE BEST YOU CAN ON EACH OF THE EVENTS."**

If the DA Form 705 (APFT scorecard) has not been issued, the scorecards will be handed out at this time. The OIC or NCOIC will then instruct the soldiers to fill in the appropriate spaces with the required personal data. The following instructions are read aloud to all soldiers taking the APFT:

**"IN THE APPROPRIATE SPACES, PRINT IN INK THE PERSONAL INFORMATION REQUIRED ON THE SCORECARD."** (The preceding remark is omitted if scorecards were issued prior to arrival at the test site.)

Soldiers are then given time to complete the required information. The OIC or NCOIC then explains procedures for use of the scorecard during testing. The following instructions are read aloud to all soldiers taking the APFT:

**"YOU ARE TO CARRY THIS CARD WITH YOU TO EACH EVENT. BEFORE YOU BEGIN, HAND THE CARD TO THE SCORER. AFTER YOU COMPLETE THE EVENT, THE SCORER WILL RECORD YOUR RAW SCORE, INITIAL THE CARD AND RETURN IT TO YOU."**

The OIC or NCOIC then explains how raw scores are converted to point scores. At this point in time, soldiers will be assigned to groups. The following instructions are read aloud to all soldiers taking the APFT:

**"EACH OF YOU WILL BE ASSIGNED TO A GROUP. STAY WITH YOUR TEST GROUP FOR THE ENTIRE TEST. WHAT ARE YOUR QUESTIONS ABOUT THE TEST AT THIS POINT?"**

**INSTRUCTIONS**

The OIC, NCOIC or event supervisor will conduct the following prior to the start of the test:

**PUSH-UP**

The event supervisor must read the following:

**"THE PUSH-UP EVENT MEASURES THE ENDURANCE OF THE CHEST, SHOULDER, AND TRICEPS MUSCLES. ON THE COMMAND 'GET SET', ASSUME THE FRONT-LEANING REST POSITION BY PLACING YOUR HANDS WHERE THEY ARE COMFORTABLE FOR YOU. YOUR FEET MAY BE TOGETHER OR UP TO 12 INCHES APART. WHEN VIEWED FROM THE SIDE, YOUR BODY SHOULD FORM A GENERALLY STRAIGHT LINE FROM YOUR SHOULDERS TO YOUR ANKLES. ON THE COMMAND 'GO', BEGIN THE PUSH-UP BY BENDING YOUR ELBOWS AND LOWERING YOUR ENTIRE BODY AS A SINGLE UNIT UNTIL YOUR UPPER ARMS ARE AT LEAST PARALLEL TO THE GROUND. THEN, RETURN TO THE STARTING POSITION BY RAISING YOUR ENTIRE BODY UNTIL YOUR ARMS ARE FULLY EXTENDED. YOUR BODY MUST REMAIN RIGID IN A GENERALLY STRAIGHT LINE AND MOVE AS A UNIT WHILE PERFORMING EACH REPETITION. AT THE END OF EACH REPETITION, THE SCORER WILL STATE THE NUMBER OF REPETITIONS YOU HAVE COMPLETED CORRECTLY. IF YOU FAIL TO KEEP YOUR BODY GENERALLY STRAIGHT, TO LOWER YOUR WHOLE BODY UNTIL YOUR ARMS ARE AT LEAST PARALLEL TO THE**

**GROUND, OR TO EXTEND YOUR ARMS COMPLETELY, THAT REPETITION WILL NOT COUNT, AND THE SCORER WILL REPEAT THE NUMBER OF THE LAST CORRECTLY PERFORMED REPETITION.**

**IF YOU FAIL TO PERFORM THE FIRST TEN PUSH-UPS CORRECTLY, THE SCORER WILL TELL YOU TO GO TO YOUR KNEES AND WILL EXPLAIN TO YOU WHAT YOUR MISTAKES ARE. YOU WILL THEN BE SENT TO THE END OF THE LINE TO BE RETESTED. AFTER THE FIRST TEN PUSH-UPS HAVE BEEN PERFORMED AND COUNTED, HOWEVER, NO RESTARTS ARE ALLOWED. THE TEST WILL CONTINUE, AND ANY INCORRECTLY PERFORMED PUSH-UPS WILL NOT BE COUNTED. AN ALTERED, FRONT-LEANING REST POSITION IS THE ONLY AUTHORIZED REST POSITION. THAT IS, YOU MAY SAG IN THE MIDDLE OR FLEX YOUR BACK. WHEN FLEXING YOUR BACK, YOU MAY BEND YOUR KNEES, BUT NOT TO SUCH AN EXTENT THAT YOU ARE SUPPORTING MOST OF YOUR BODY WEIGHT WITH YOUR LEGS. IF THIS OCCURS, YOUR PERFORMANCE WILL BE TERMINATED. YOU MUST RETURN TO, AND PAUSE IN, THE CORRECT STARTING POSITION BEFORE CONTINUING. IF YOU REST ON THE GROUND OR RAISE EITHER HAND OR FOOT FROM THE GROUND, YOUR PERFORMANCE WILL BE TERMINATED. YOU MAY REPOSITION YOUR HANDS AND/OR FEET DURING THE EVENT AS LONG AS THEY REMAIN IN CONTACT WITH THE GROUND AT ALL TIMES. CORRECT PERFORMANCE IS IMPORTANT. YOU WILL HAVE TWO MINUTES IN WHICH TO DO AS MANY PUSH-UPS AS YOU CAN. WATCH THIS DEMONSTRATION."**

**Figure 9-1.**

**"WHAT ARE YOUR QUESTIONS?"**

**Additional Points to Demonstrate for the Push-up Event**

- Your chest may touch the ground during the push-up as long as the contact does not provide an advantage. You cannot bounce off the ground.
- If a mat is used, your entire body must be on the mat. Sleeping mats are not authorized for use.
- Your feet will not be braced during the push-up event.
- You may do the push-up event on your fists.
- You may not cross your feet while doing the push-up event.
- You may not take any APFT event in bare feet.
- You should not wear glasses while performing the push-up event.

Refer to FM 21-20, Chapter 14, Figure 14-4.

**SIT-UP**

The event supervisor must read the following:

**"THE SIT-UP EVENT MEASURES THE ENDURANCE OF THE ABDOMINAL AND HIP-FLEXOR MUSCLES. ON THE COMMAND 'GET SET', ASSUME THE STARTING POSITION BY LYING ON YOUR BACK WITH YOUR KNEES BENT AT A 90-DEGREE ANGLE. YOUR FEET MAY BE TOGETHER OR UP TO 12 INCHES APART. ANOTHER PERSON WILL HOLD YOUR ANKLES WITH THE HANDS ONLY. NO OTHER METHOD OF BRACING OR HOLDING THE FEET IS AUTHORIZED. THE HEEL IS THE ONLY PART OF YOUR FOOT THAT MUST STAY IN CONTACT WITH THE GROUND. YOUR FINGERS MUST BE INTERLOCKED BEHIND YOUR HEAD AND THE BACKS OF YOUR HANDS MUST TOUCH THE GROUND. YOUR ARMS AND ELBOWS NEED NOT TOUCH THE GROUND. ON THE COMMAND "GO", BEGIN RAISING YOUR UPPER BODY FORWARD TO, OR BEYOND, THE VERTICAL POSITION. THE VERTICAL POSITION MEANS THAT THE BASE OF YOUR NECK IS ABOVE THE BASE OF YOUR SPINE. AFTER YOU HAVE REACHED OR SURPASSED THE VERTICAL POSITION, LOWER YOUR BODY UNTIL THE BOTTOM OF YOUR SHOULDER BLADES TOUCH THE GROUND. YOUR HEAD, HANDS, ARMS, OR ELBOWS DO NOT HAVE TO TOUCH THE GROUND. AT THE END OF EACH REPETITION, THE SCORER WILL STATE THE NUMBER OF SIT-UPS YOU HAVE CORRECTLY COMPLETED. A REPETITION WILL NOT COUNT IF YOU FAIL TO REACH THE VERTICAL POSITION, FAIL TO KEEP YOUR FINGERS INTERLOCKED BEHIND YOUR HEAD, ARCH OR BOW YOUR BACK AND RAISE YOUR BUTTOCKS OFF THE GROUND TO RAISE YOUR UPPER BODY, OR LET YOUR KNEES EXCEED A**

**90-DEGREE ANGLE. IF A REPETITION DOES NOT COUNT, THE SCORER WILL REPEAT THE NUMBER OF YOUR LAST CORRECTLY PERFORMED SIT-UP. THE UP POSITION IS THE ONLY AUTHORIZED REST POSITION. IF YOU STOP AND REST IN THE DOWN (STARTING) POSITION, THE EVENT WILL BE TERMINATED. AS LONG AS YOU MAKE A CONTINUOUS PHYSICAL EFFORT TO SIT UP, THE EVENT WILL NOT BE TERMINATED. YOU MAY NOT USE YOUR HANDS OR ANY OTHER MEANS TO PULL OR PUSH YOURSELF UP TO THE UP (RESTING) POSITION OR TO HOLD YOURSELF IN THE REST POSITION. IF YOU DO SO, YOUR PERFORMANCE IN THE EVENT WILL BE TERMINATED. CORRECT PERFORMANCE IS IMPORTANT. YOU WILL HAVE TWO MINUTES TO PERFORM AS MANY SIT-UPS AS YOU CAN. WATCH THIS DEMONSTRATION."**

**Figure 9-2.**

**"WHAT ARE YOUR QUESTIONS?"**

**Additional Points to Demonstrate for the Sit-up Event**

- If a mat is used, your entire body must be on the mat. Sleeping mats are not authorized for use.
- You may not swing your arms or use your hands to pull yourself up or push off the ground to obtain the up position. If this occurs your performance in the event will be terminated.
- You may wiggle to obtain the up position, but while in the up position, you may not use your elbows or any part of the arms to lock on to or brace against the legs. Your elbows can go either inside or outside the knees, but may not be used to hold yourself in the up position. If this occurs your performance in the event will be terminated.
- During the your performance of the sit-up, your fingers must be interlocked behind your head. As long as any of your fingers are overlapping to any degree, they are considered to be interlocked as shown in Figure 9-3. If they do not remain interlocked that repetition will not count and the scorer will repeat the number of the last correct repetition performed.

- Both heels must stay in contact with the ground as shown in 9-3. If either foot breaks contact with the ground during a repetition, that repetition will not count and the scorer will repeat the number of the last correct repetition performed.

Refer to FM 21-20, Chapter 14, Figure 14-6.

**Figure 9-3.**

**2-MILE RUN**

The event supervisor must read the following:

**"THE 2-MILE RUN IS USED TO ASSESS YOUR AEROBIC FITNESS AND YOUR LEG MUSCLES' ENDURANCE. YOU MUST COMPLETE THE RUN WITHOUT ANY PHYSICAL HELP. AT THE START, ALL SOLDIERS WILL LINE UP BEHIND THE STARTING LINE. ON THE COMMAND "GO", THE CLOCK WILL START. YOU WILL BEGIN RUNNING AT YOUR OWN PACE. TO RUN THE REQUIRED TWO MILES, YOU MUST COMPLETE (DESCRIBE THE NUMBER OF LAPS, START AND FINISH POINTS, AND COURSE LAYOUT). YOU ARE BEING TESTED ON YOUR ABILITY TO COMPLETE THE TWO-MILE COURSE IN THE SHORTEST TIME POSSIBLE. ALTHOUGH WALKING IS AUTHORIZED, IT IS STRONGLY DISCOURAGED. IF YOU ARE PHYSICALLY HELPED IN ANY WAY (FOR EXAMPLE, PULLED, PUSHED, PICKED UP, AND/OR CARRIED) OR LEAVE THE DESIGNATED RUNNING COURSE FOR ANY REASON, YOU WILL BE DISQUALIFIED. (IT IS LEGAL TO PACE A SOLDIER DURING THE TWO-MILE RUN. AS LONG AS THERE IS NO PHYSICAL CONTACT WITH THE PACE SOLDIER AND IT DOES NOT PHYSICALLY HINDER OTHER SOLDIERS TAKING THE TEST, THE PRACTICE OF RUNNING AHEAD OF, ALONG SIDE OF, OR BEHIND THE TESTED SOLDIER, WHILE SERVING AS A PACER, IS PERMITTED. CHEERING OR CALLING OUT THE ELAPSED TIME IS ALSO PERMITTED.) THE NUMBER ON YOUR CHEST IS FOR IDENTIFICATION. YOU MUST MAKE SURE IT IS VISIBLE AT ALL TIMES. TURN IN YOUR NUMBER WHEN YOU FINISH THE**

**RUN. THEN, GO TO THE AREA DESIGNATED FOR THE COOL DOWN AND STRETCH. DO NOT STAY NEAR THE SCORERS OR THE FINISH LINE AS THIS MAY INTERFERE WITH THE TESTING. WHAT ARE YOUR QUESTIONS ON THIS EVENT?"**

## EQUIPMENT

The following equipment is required for administration of the APFT: two stopwatches, clipboards and black pens for each scorer, run numbers and DA 705s for each soldier being tested.

## FACILITIES

The following facilities are required for administration of the APFT:

- Designated area for preparation and recovery.
- One test station (6 feet wide by 15 feet deep) for every 8 soldiers for the push-up and sit-up events.
- A measured 2-mile run course.

## PERSONNEL

The following personnel are required for administration of the APFT: OIC and/or NCOIC (may function as the timer), event supervisor (may function as the timer or back-up timer), one event scorer for every eight soldiers being tested and required support personnel.

## TIMER

The OIC and/or NCOIC or event supervisor begins each push-up or sit-up assessment with the command **"GET SET"**. On the command **"GO"** time starts on both watches. The timer indicates time remaining at one minute (with the command **"ONE MINUTE REMAINING"**), 30 seconds (with the command **"30 SECONDS REMAINING"**), and counts down the remaining ten seconds (with the command **"10, 9, 8, 7, 6, 5, 4, 3, 2, 1, STOP"**). The OIC and/or NCOIC or event supervisor begins the 2-mile run assessment with the command **"GET SET"**. The 2-mile run time starts on both watches on the command **"GO"**. As soldiers near the finish line, the timer calls out time in minutes and seconds (for example: **"FOURTEEN-FIFTY-EIGHT, FOURTEEN-FIFTY-NINE, FIFTEEN MINUTES, FIFTEEN-O-ONE"**).

## SCORER

The scorer will count the correct number of repetitions out loud, repeats the last number of the correct repetitions when incorrect repetitions are performed and verbally corrects push-up and sit-up performance. The scorer will record the correct number of repetitions for the push-up and sit-up events and the 2-mile run time and initial the DA 705. During the push-up event, scorers sit or kneel three feet from the soldier's left shoulder at a 45-degree angle. Scorer's head should be even with the soldier's left shoulder when he is in the front-leaning rest position. During the sit-up event, the scorer kneels or sits three feet from the soldier's left hip. The scorer's head should be even with the soldier's shoulder when he is in the vertical (up) position. During the 2-mile run event, the scorer is at the finish line. Upon completion of entering the soldier's 2-mile

run time on the DA 705, the scorer will convert raw scores into point scores for each event and enter the total on the DA 705. Scorer then returns all DA 705s to the OIC or NCOIC.

## TEST FAILURES

Soldiers that fail to achieve the minimum passing score for their age and gender on any event are considered test failures. If a soldier is ill or becomes injured during the APFT and fails to achieve the minimum passing score for their age and gender on any event he is considered a test failure. Soldiers who fail a record APFT or fail to take the APFT within the required period will be flagged according to AR 600-8-2. The required period is defined as scheduled record APFT dates to include make-up test dates. A soldier will be flagged when he or she fails to take the APFT and does not possess an authorized absence (TDY, Leave, Duty). In the event of a record test failure, commanders may allow soldier to retake the test as soon as the soldier and the commander feel the soldier is ready. AC, AGR and USAR TPU soldiers without medical profile will be tested not later than 3 months following the initial APFT failure. ARNG TPU soldiers, not on active duty and without medical profile, will be tested no later than 6 months following the initial APFT failure.

As previously mentioned in this chapter, alternate APFT events are designed for soldiers with **permanent physical profiles** which preclude them from taking the 2-mile run or soldiers with **temporary profiles of long duration (more than 3 months)**, if approved by the commander after input from health care personnel. Soldiers must be given 3 months to prepare for the alternate event from either the date of the profile or the date recommended by health care personnel.

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# CHAPTER 10

# THE 1-1-1 PHYSICAL FITNESS ASSESSMENT

The 1-1-1 Physical Fitness Assessment consists of the following three fitness tests: 1-minute push-up, 1-minute sit-up and 1-mile run. The intent of the 1-1-1 is to provide commanders with a test score that reflects their soldiers' APFT performance and places them in appropriate ability groups for running activities. This assessment is not as strenuous or time-consuming as conducting an APFT, so it may be performed as part of a PT session. Soldiers may be allowed to grade each other. **DO NOT** record 1-1-1 Assessment results on a DA 705. Push-up and Sit-up scores and 1-mile run times can be simply recorded on a roster, next to the name of each soldier performing the assessment.

**The 1-1-1 Overview**

The 1-1-1 provides a measure of upper and lower body muscular endurance. It is a performance test that indicates a soldier's ability to perform physically and handle his or her own body weight. The 1-1-1 consists of push-ups, sit-ups, and a 1-mile run, done in that order on the same day. Soldiers are allowed a minimum of ten minutes and a maximum of twenty minutes rest between events.

**Test Procedures**

The test sequence is the push-up, sit-up and 1-mile run. The order of events cannot be changed. There are no exceptions to this sequence. Soldiers are allowed a minimum of 5 minutes and a maximum of 10 minutes to recover between events. Recovery time is based on the number of soldiers taking the assessment. In addition, the wearing of unauthorized items such as: nasal strips, braces, elastic bandages, weight lifting gloves and radios/compact disc players are addressed. Equipment, uniform, testing area and conduct of the assessment is similar to the APFT, with less formality and more ease of execution.

The following instructions are read aloud to all soldiers taking the 1-1-1 Assessment:

**"YOU ARE ABOUT TO TAKE THE 1-1-1 PHYSICAL FITNESS ASSESSMENT. THIS ASSESSMENT MEASURES YOUR UPPER AND LOWER BODY MUSCULAR ENDURANCE. THE RESULTS OF THIS ASSESSMENT WILL GIVE YOU AND YOUR COMMANDERS AN INDICATION OF YOUR STATE OF FITNESS AND WILL ACT AS A GUIDE IN DETERMINING YOUR ABILITY GROUPS FOR RUNNING ACTIVITIES. LISTEN CLOSELY TO THE INSTRUCTIONS, AND DO THE BEST YOU CAN ON EACH OF THE EVENTS."**

## INSTRUCTIONS

The OIC, NCOIC or event supervisor will conduct the following prior to the start of the test:

**PUSH-UP**

The event supervisor must read the following:

**"THE PUSH-UP EVENT MEASURES THE ENDURANCE OF THE CHEST, SHOULDER, AND TRICEPS MUSCLES. ON THE COMMAND 'GET SET', ASSUME THE FRONT-LEANING REST POSITION BY PLACING YOUR HANDS WHERE THEY ARE COMFORTABLE FOR YOU. YOUR FEET MAY BE TOGETHER OR UP TO 12 INCHES APART. WHEN VIEWED FROM THE SIDE, YOUR BODY SHOULD FORM A GENERALLY STRAIGHT LINE FROM YOUR SHOULDERS TO YOUR ANKLES. ON THE COMMAND 'GO', BEGIN THE PUSH-UP BY BENDING YOUR ELBOWS AND LOWERING YOUR ENTIRE BODY AS A SINGLE UNIT UNTIL YOUR UPPER ARMS ARE AT LEAST PARALLEL TO THE GROUND. THEN, RETURN TO THE STARTING POSITION BY RAISING YOUR ENTIRE BODY UNTIL YOUR ARMS ARE FULLY EXTENDED. YOUR BODY MUST REMAIN RIGID IN A GENERALLY STRAIGHT LINE AND MOVE AS A UNIT WHILE PERFORMING EACH REPETITION. AT THE END OF EACH REPETITION, THE SCORER WILL STATE THE NUMBER OF REPETITIONS YOU HAVE COMPLETED CORRECTLY. IF YOU FAIL TO KEEP YOUR BODY GENERALLY STRAIGHT, TO LOWER YOUR WHOLE BODY UNTIL YOUR ARMS ARE AT LEAST PARALLEL TO THE GROUND, OR TO EXTEND YOUR ARMS COMPLETELY, THAT REPETITION WILL NOT COUNT, AND THE SCORER WILL REPEAT THE NUMBER OF THE LAST CORRECTLY PERFORMED REPETITION.**

**IF YOU FAIL TO PERFORM THE FIRST TEN PUSH-UPS CORRECTLY, THE SCORER WILL TELL YOU TO GO TO YOUR KNEES AND WILL EXPLAIN TO YOU WHAT YOUR MISTAKES ARE. YOU WILL THEN BE SENT TO THE END OF THE LINE TO BE RETESTED. AFTER THE FIRST TEN PUSH-UPS HAVE BEEN PERFORMED AND COUNTED, HOWEVER, NO RESTARTS ARE ALLOWED. THE TEST WILL CONTINUE, AND ANY INCORRECTLY PERFORMED PUSH-UPS WILL NOT BE COUNTED. AN ALTERED, FRONT-LEANING REST POSITION IS THE ONLY AUTHORIZED REST POSITION. THAT IS, YOU MAY SAG IN THE MIDDLE**

**OR FLEX YOUR BACK. WHEN FLEXING YOUR BACK, YOU MAY BEND YOUR KNEES, BUT NOT TO SUCH AN EXTENT THAT YOU ARE SUPPORTING MOST OF YOUR BODY WEIGHT WITH YOUR LEGS. IF THIS OCCURS, YOUR PERFORMANCE WILL BE TERMINATED. YOU MUST RETURN TO, AND PAUSE IN, THE CORRECT STARTING POSITION BEFORE CONTINUING. IF YOU REST ON THE GROUND OR RAISE EITHER HAND OR FOOT FROM THE GROUND, YOUR PERFORMANCE WILL BE TERMINATED. YOU MAY REPOSITION YOUR HANDS AND/OR FEET DURING THE EVENT AS LONG AS THEY REMAIN IN CONTACT WITH THE GROUND AT ALL TIMES. CORRECT PERFORMANCE IS IMPORTANT. YOU WILL HAVE ONE MINUTE IN WHICH TO DO AS MANY PUSH-UPS AS YOU CAN. WATCH THIS DEMONSTRATION."**

**Figure 9-1.**

**"WHAT ARE YOUR QUESTIONS?"**

**Additional Points to Demonstrate for the Push-up Event**

- Your chest may touch the ground during the push-up as long as the contact does not provide an advantage. You cannot bounce off the ground.
- If a mat is used, your entire body must be on the mat. Sleeping mats are not authorized for use.
- Your feet will not be braced during the push-up event.
- You may do the push-up event on your fists.
- You may not cross your feet while doing the push-up event.
- You may not take any APFT event in bare feet.
- You should not wear glasses while performing the push-up event.

Refer to FM 21-20, Chapter 14, Figure 14-4.

**SIT-UP**

The event supervisor must read the following:

**"THE SIT-UP EVENT MEASURES THE ENDURANCE OF THE ABDOMINAL AND HIP-FLEXOR MUSCLES. ON THE COMMAND 'GET SET', ASSUME THE STARTING POSITION BY LYING ON YOUR BACK WITH YOUR KNEES BENT AT A 90-DEGREE ANGLE. YOUR FEET MAY BE TOGETHER OR UP TO 12 INCHES APART. ANOTHER PERSON WILL HOLD YOUR ANKLES WITH THE HANDS ONLY. NO OTHER METHOD OF BRACING OR HOLDING THE FEET IS AUTHORIZED. THE HEEL IS THE ONLY PART OF YOUR FOOT THAT MUST STAY IN CONTACT WITH THE GROUND. YOUR FINGERS MUST BE INTERLOCKED BEHIND YOUR HEAD AND THE BACKS OF YOUR HANDS MUST TOUCH THE GROUND. YOUR ARMS AND ELBOWS NEED NOT TOUCH THE GROUND. ON THE COMMAND "GO", BEGIN RAISING YOUR UPPER BODY FORWARD TO, OR BEYOND, THE VERTICAL POSITION. THE VERTICAL POSITION MEANS THAT THE BASE OF YOUR NECK IS ABOVE THE BASE OF YOUR SPINE. AFTER YOU HAVE REACHED OR SURPASSED THE VERTICAL POSITION, LOWER YOUR BODY UNTIL THE BOTTOM OF YOUR SHOULDER BLADES TOUCH THE GROUND. YOUR HEAD, HANDS, ARMS, OR ELBOWS DO NOT HAVE TO TOUCH THE GROUND. AT THE END OF EACH REPETITION, THE SCORER WILL STATE THE NUMBER OF SIT-UPS YOU HAVE CORRECTLY COMPLETED. A REPETITION WILL NOT COUNT IF YOU FAIL TO REACH THE VERTICAL POSITION, FAIL TO KEEP YOUR FINGERS INTERLOCKED BEHIND YOUR HEAD, ARCH OR BOW YOUR BACK AND RAISE YOUR BUTTOCKS OFF THE GROUND TO RAISE YOUR UPPER BODY, OR LET YOUR KNEES EXCEED A 90-DEGREE ANGLE. IF A REPETITION DOES NOT COUNT, THE SCORER WILL REPEAT THE NUMBER OF YOUR LAST CORRECTLY PERFORMED SIT-UP. THE UP POSITION IS THE ONLY AUTHORIZED REST POSITION. IF YOU STOP AND REST IN THE DOWN (STARTING) POSITION, THE EVENT WILL BE TERMINATED. AS LONG AS YOU MAKE A CONTINUOUS PHYSICAL EFFORT TO SIT UP, THE EVENT WILL NOT BE TERMINATED. YOU MAY NOT USE YOUR HANDS OR ANY OTHER MEANS TO PULL OR PUSH YOURSELF UP TO THE UP (RESTING) POSITION OR TO HOLD YOURSELF IN THE REST POSITION. IF YOU DO SO, YOUR PERFORMANCE IN THE EVENT WILL BE TERMINATED.**

**CORRECT PERFORMANCE IS IMPORTANT. YOU WILL HAVE ONE MINUTE TO PERFORM AS MANY SIT-UPS AS YOU CAN. WATCH THIS DEMONSTRATION."**

**Figure 9-2.**

**"WHAT ARE YOUR QUESTIONS?"**

**Additional Points to Demonstrate for the Sit-up Event**

- If a mat is used, your entire body must be on the mat. Sleeping mats are not authorized for use.
- You may not swing your arms or use your hands to pull yourself up or push off the ground to obtain the up position. If this occurs your performance in the event will be terminated.
- You may wiggle to obtain the up position, but while in the up position, you may not use your elbows or any part of the arms to lock on to or brace against the legs. Your elbows can go either inside or outside the knees, but may not be used to hold yourself in the up position. If this occurs your performance in the event will be terminated.
- During the your performance of the sit-up, your fingers must be interlocked behind your head. As long as any of your fingers are overlapping to any degree, they are considered to be interlocked as shown in Figure 10-3. If they do not remain interlocked that repetition will not count and the scorer will repeat the number of the last correct repetition performed.
- Both heels must stay in contact with the ground as shown in 10-3. If either foot breaks contact with the ground during a repetition, that repetition will not count and the scorer will repeat the number of the last correct repetition performed.

Refer to FM 21-20, Chapter 14, Figure 14-6.

**Figure 9-3.**

**1-MILE RUN**

The event supervisor must read the following:

**“THE 1-MILE RUN IS USED TO ASSESS YOUR AEROBIC FITNESS AND YOUR LEG MUSCLES’ ENDURANCE. YOU MUST COMPLETE THE RUN WITHOUT ANY PHYSICAL HELP. AT THE START, ALL SOLDIERS WILL LINE UP BEHIND THE STARTING LINE. ON THE COMMAND “GO”, THE CLOCK WILL START. YOU WILL BEGIN RUNNING AT YOUR OWN PACE. TO RUN THE REQUIRED ONE MILE, YOU MUST COMPLETE (DESCRIBE THE NUMBER OF LAPS, START AND FINISH POINTS, AND COURSE LAYOUT). YOU ARE BEING TESTED ON YOUR ABILITY TO COMPLETE THE ONE-MILE COURSE IN THE SHORTEST TIME POSSIBLE. ALTHOUGH WALKING IS AUTHORIZED, IT IS STRONGLY DISCOURAGED. IF YOU ARE PHYSICALLY HELPED IN ANY WAY (FOR EXAMPLE, PULLED, PUSHED, PICKED UP, AND/OR CARRIED) OR LEAVE THE DESIGNATED RUNNING COURSE FOR ANY REASON, YOU WILL BE DISQUALIFIED. (IT IS LEGAL TO PACE A SOLDIER DURING THE ONE-MILE RUN. AS LONG AS THERE IS NO PHYSICAL CONTACT WITH THE PACE SOLDIER AND IT DOES NOT PHYSICALLY HINDER OTHER SOLDIERS TAKING THE TEST, THE PRACTICE OF RUNNING AHEAD OF, ALONG SIDE OF, OR BEHIND THE TESTED SOLDIER, WHILE SERVING AS A PACER, IS PERMITTED. CHEERING OR CALLING OUT THE ELAPSED TIME IS ALSO PERMITTED.) THE NUMBER ON YOUR CHEST IS FOR IDENTIFICATION. YOU MUST MAKE SURE IT IS VISIBLE AT ALL TIMES. TURN IN YOUR NUMBER WHEN YOU FINISH THE RUN. THEN, GO TO THE AREA DESIGNATED FOR THE COOL DOWN AND STRETCH. DO NOT STAY NEAR THE SCORERS OR THE FINISH LINE AS THIS MAY INTERFERE WITH THE TESTING. WHAT ARE YOUR QUESTIONS ON THIS EVENT?”**

## SUMMARY

The 1-1-1 Physical Fitness Assessment is an excellent tool that commanders may use for the following purposes:

- Safely assess new soldiers coming into the unit.
- Safely assess soldiers re-entering regular unit PT from the Reconditioning Program.
- Assign soldiers to appropriate ability groups for running activities.
- Assess new recruits entering IET to predict success on the end-of-cycle APFT.
- Take a snapshot of the unit's APFT proficiency with little disruption of regularly scheduled PT activities.

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# CHAPTER 11

# 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. 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 and the possibility of injury. The intensity (number of repetitions, pace) and/or duration are gradually increased to produce the desired physiological effect. For example, the duration of the ability group runs progress from 20 minutes to 30 minutes gradually over the training cycle. The pace of individual soldiers or the group also gradually increases over time as well. Conditioning Drill 2 progresses in difficulty through increasing the number of repetitions performed. Adhering to the intensity and duration listed on the PT schedule will avoid too much progression too soon. Progression is also dependent upon the regular performance of challenging activities coupled with an adequate amount of rest and recovery. PT time during the training cycle is precious. Every PT session is designed to improve strength, endurance and mobility. PT sessions must be conducted for at least 45-60 minutes at least four to six times per week for improvement to occur. **If PT cannot be conducted first thing in the morning, it should be conducted at some other time during the day.** The sessions are sequenced to ensure adequate recovery. Whenever possible, the sessions for a given week 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. Leaders should balance the PT schedule with the POI to avoid conflicts with physically demanding events that can lead to overtraining. For example, if the confidence obstacle course is the day's main training event, leaders should not schedule strength training for PT. If conflicts cannot be resolved, it is more desirable to perform PT after a physically demanding event (in the evening), rather than before the event (in the morning).

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 achieve the APFT graduation standards.

The standardized PT schedule contained in Chapter 12 is synchronized with the BCT POI. The first two weeks of the schedule consist of PT instruction, and **WILL BE** performed in order, beginning with session 1-1 and ending with session 2-6. See the BCT Training Schedule sessions 1-1 through 2-6 in Chapter 12.

Beginning with week three, commanders and PT leaders schedule the PT sessions based on the number of days available for the week of training. For example, during week three (BRM), if only three PT days are available, perform session 3-1 through 3-3. Week four will begin with session 4-1 and continue through session 4-6 (if six PT days are available).

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.**
- **Do not conduct foot marches and endurance training days consecutively later in the training cycle.**
- **The standardized warm-up should be conducted prior to all foot marches and the standardized cool-down should be conducted upon completion of foot marches.**
- **If the APFT is not conducted on a Monday, then NO PT is conducted on the day before the APFT.**
- **Speed running is performed once per week, preferably in the middle of the week.**
- **A minimum of two MSE and two CR days are conducted weekly.**

# CHAPTER 12

# BCT PT Schedule

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| Week 1 | BCT |
|---|---|
| Session 1-1 | Conditioning Drill 1 **(INSTRUCTION)** |
| Session 1-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill **(INSTRUCTION)**<br>Activity: 1-mile timed run (to establish ability groups)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill **(INSTRUCTION)** |
| Session 1-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 **(INSTRUCTION)**<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 1-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 30:60s and 60:120s **(INSTRUCTION)**<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 1-5 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 1-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run **(INSTRUCTION)**<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Week 2 | BCT |
|---|---|
| Session 2-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 2-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 2-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 300-yard Shuttle Run **(INSTRUCTION)** and 30:60s<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 2-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 2-5 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: None<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 2-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 1-1-1 Physical Fitness Assessment<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Week 3 | BCT |
|---|---|
| Session 3-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 3-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 10/10/5/5/5 and 1 set 5/5/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 3-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 300-yard Shuttle Run and 30:60s<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 3-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 10/10/5/5/5 and 1 set 5/5/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 3-5 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 3-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 10/10/5/5/5 and 1 set 5/5/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Week 4 | BCT |
|---|---|
| Session 4-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 300-yard Shuttle Run and Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 4-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets 10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 4-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 30:60s<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 4-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets 10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 4-5 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 4-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets 10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Week 5 | BCT |
|---|---|
| Session 5-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 300-yard Shuttle Run and Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 5-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 15/15/5/5/5 and 1 set 10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 5-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 30:60s<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 5-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 15/15/5/5/5 and 1 set x 10/10/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 5-5 | NO PT |
| Session 5-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activity: APFT (diagnostic)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Week 6 | BCT |
|---|---|
| Session 6-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 6-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets x 15/15/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 6-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 300-yard Shuttle Run and 60:120s<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 6-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets x 15/15/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 6-5 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 6-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets x 15/15/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Week 7 | BCT |
|---|---|
| Session 7-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 300-yard Shuttle Run and Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 7-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets x 15/15/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 7-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 1-mile Timed Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 7-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (2 sets x 15/15/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 7-5 | **NO PT** |
| Session 7-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activity: APFT (RECORD)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Weeks 8 | BCT |
|---|---|
| Session 8-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 8-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 20/20/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 8-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 60:120s<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 8-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 20/20/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 8-5 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 8-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 20/20/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

| Weeks 9 | BCT |
|---|---|
| Session 9-1 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 9-2 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 20/20/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 9-3 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: 60:120s<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 9-4 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 20/20/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 9-5 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Ability Group Run<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |
| Session 9-6 | Warm-up: Conditioning Drill 1 (5 repetitions) and The Military Movement Drill (1 repetition)<br>Activities: Conditioning Drill 2 (1 set x 20/20/5/5/5)<br>Cool-down: Conditioning Drill 1 (5 repetitions) and The Stretch Drill (20 seconds) |

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# Chapter 13

# 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 consistantly 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 13-1. By simply pulling the shoulders back as in Figure 13-2, 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 13-1.**

**Figure 13-2.**

## 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 13-3.**

## 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.

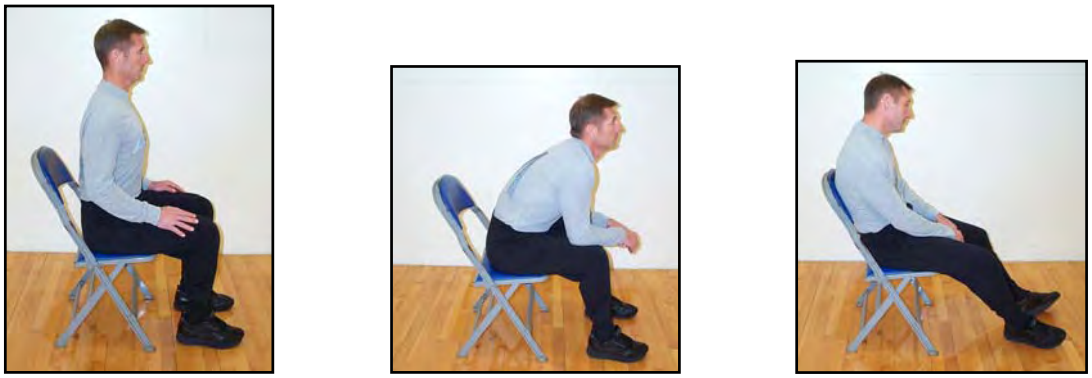

**Figure 13-4.**

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 13-5.**

**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 13-6 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 13-7.

**Figure 13-6.**

**Figure 13-7.**

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 13-8.

**Figure 13-8.**

## 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 13-9 demands strength and stability from the trunk and pelvis.

**Figure 13-9.**

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 13-13a. Second, tilt the pelvis backward (the buttocks and belly draw inward as far as possible, flattening the curve of the low back), Figure 13-13b. Then settle in between these two extremes, Figure 13-13c.

- **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 13-10c.

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.

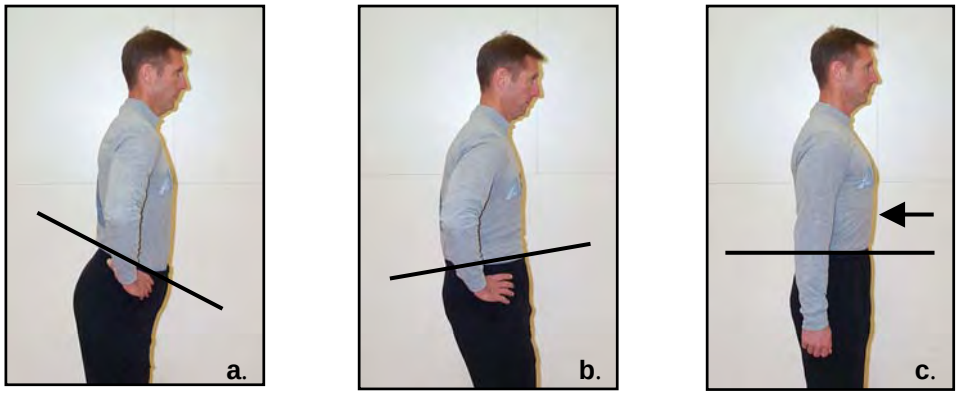


**Figure 13-10.**

**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 13-11.**

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 13-12.**

**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 13-13.**

**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 13-14**

**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 13-15.**

**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 13-16.**

**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 13-17.**

**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 13-18.**

**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 13-19.**

**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.

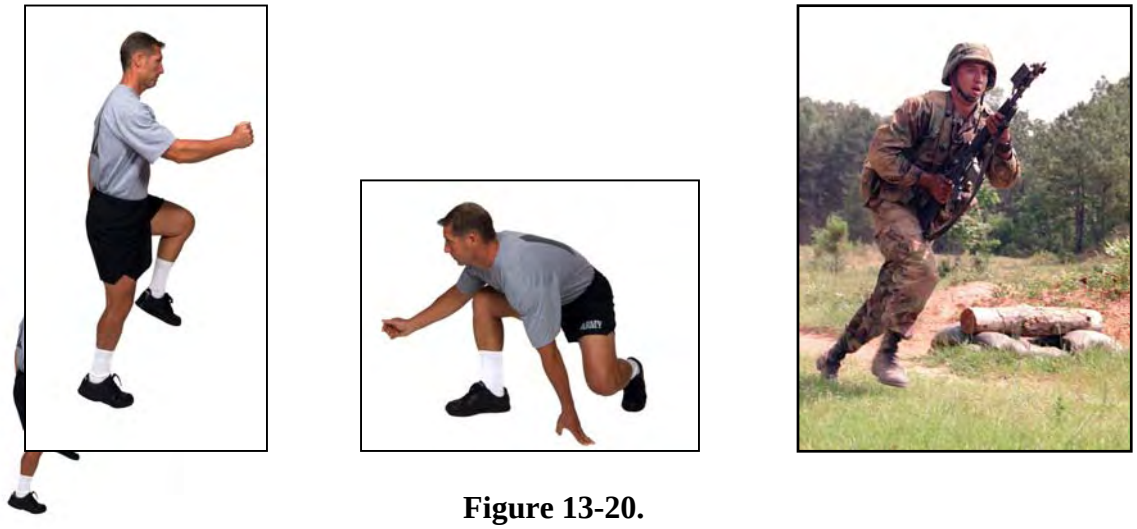

**Figure 13-20.**

**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 14

# 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 start 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.

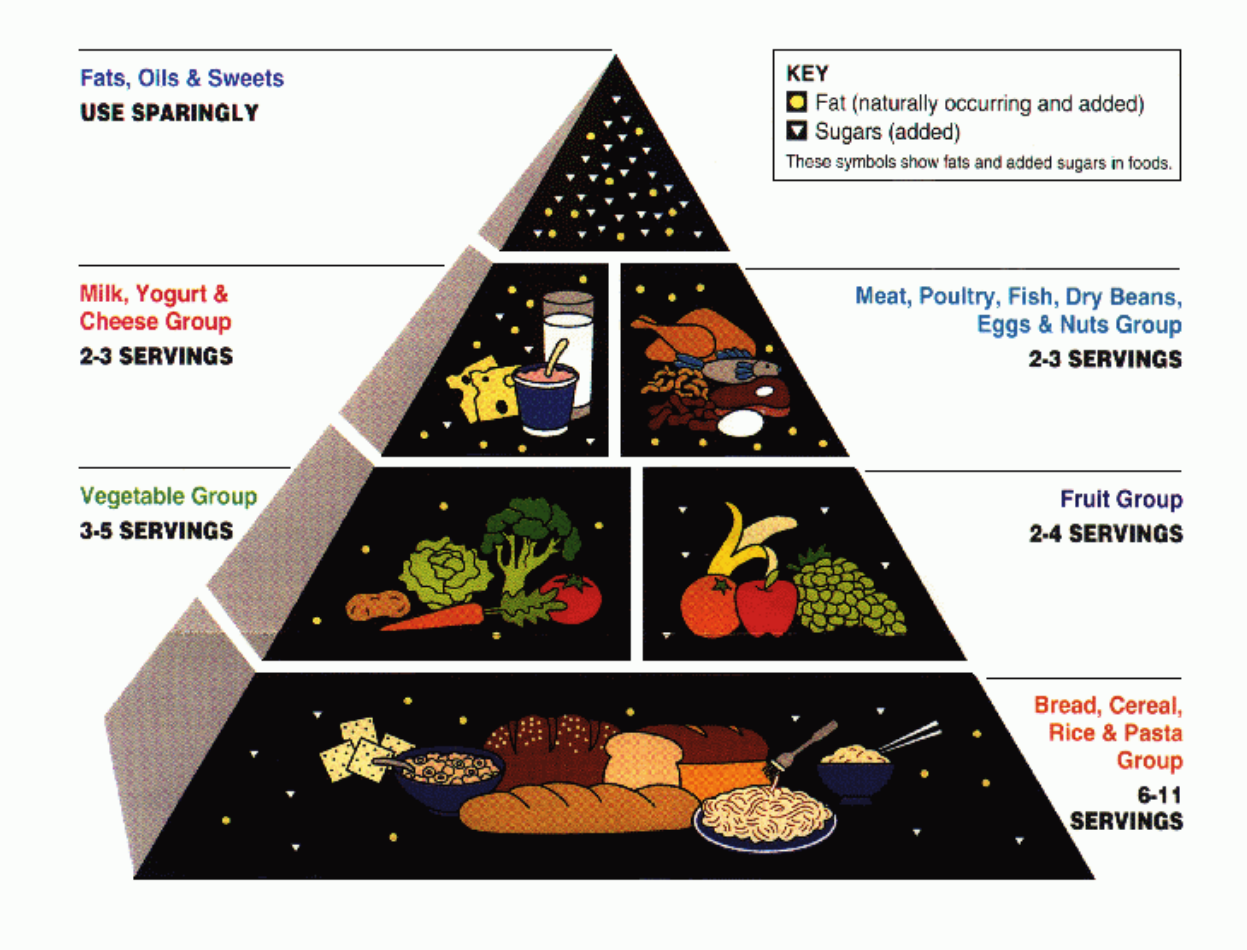


**Figure 14-1.**

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 14-1) 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 15

# 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 recovery 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 Chapter 12 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 |
|---|
| **Conditioning Drill 1 (1 set x 5 reps)** |
| 1. The Bend And Reach (4-count, SLOW) |
| 2. The Rear Lunge (4-count, SLOW) |
| 3. The High Jumper (4-count, MODERATE) |
| 4. The Rower (4-count, SLOW) |
| 5. The Squat Bender (4-count, SLOW) |
| 6. The Windmill (4-count, SLOW) |
| 7. The Forward Lunge (4-count, SLOW) |
| 8. The Prone Row (4-count, SLOW) |
| 9. The Bent-leg Body Twist (4-count, SLOW) |
| 10. The Push-up (4-count, MODERATE) |
| **The Military Movement Drill (1 set x 1 rep)** |
| 1. Verticals |
| 2. Laterals |
| 3. The Shuttle Sprint |

| COOL-DOWN |
|---|
| **Conditioning Drill 1 (1 set x 5 reps)** |
| 1. The Bend And Reach (4-count, SLOW) |
| 2. The Rear Lunge (4-count, SLOW) |
| 3. The High Jumper (4-count, MODERATE) |
| 4. The Rower (4-count, SLOW) |
| 5. The Squat Bender (4-count, SLOW) |
| 6. The Windmill (4-count, SLOW) |
| 7. The Forward Lunge (4-count, SLOW) |
| 8. The Prone Row (4-count, SLOW) |
| 9. The Bent-leg Body Twist (4-count, SLOW) |
| 10. The Push-up (4-count, MODERATE) |
| **The Stretch Drill (1 set x 1 rep)** |
| 1. The Overhead Arm Pull (20 seconds) |
| 2. The Rear Lunge (20 seconds) |
| 3. The Extend and Flex (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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**BCT Ability Group Progression (4 Groups)**

| Group | WK 1 | WK 2 | WK 3 | WK 4 |
|---|---|---|---|---|
| **A** | 15 min @7:30 | 15 min @7:15 | 20 min @7:15 | 20 min @ 7:15 |
| **B** | 15 min @ 9:00 | 15 min @ 8:30 | 20 min @ 8:30 | 20 min @ 8:30 |
| **C** | 10 min @10:30 | 12 min @ 10:00 | 14 min @ 9:30 | 16 min @ 9:30 |
| **D** | 10 min @ 12:00 | 12 min @ 11:00 | 14 min @ 10:30 | 16 min @ 10:00 |

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.**

**BCT Ability Group Progression (4 Groups)**

| Group | WK 5 | WK 6 | WK 7 | WK 8/9 |
|---|---|---|---|---|
| **A** | 20 min @ 7:15 | 25 min @ 7:15 | 25 min @ 7:15 | 30 min @ 7:30 |
| **B** | 20 min @ 8:00 | 25 min @ 8:00 | 25 min @ 8:00 | 30 min @ 8:00 |
| **C** | 18 min @ 9:00 | 20 min @ 8:30 | 20 min @ 8:15 | 20 min @ 8:15 |
| **D** | 18 min @ 10:00 | 20 min @ 9:30 | 20 min @ 9:30 | 20 min @ 9:00 |

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## BCT Speed Running Progression

| Group | WK 1 | WK 2 | WK 3 | WK 4 |
|---|---|---|---|---|
| **A** | 6 reps<br>30:60 | 6 reps<br>30:60 | 8 reps<br>30:60 | 8 reps<br>30:60 |
| **B** | 6 reps<br>30:60 | 6 reps<br>30:60 | 8 reps<br>30:60 | 8 reps<br>30:60 |
| **C** | 4 reps<br>30:60 | 4 reps<br>30:60 | 6 reps<br>30:60 | 6 reps<br>30:60 |
| **D** | 4 reps<br>30:60 | 4 reps<br>30:60 | 6 reps<br>30:60 | 6 reps<br>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.

## BCT Speed Running Progression

| Group | WK 5 | WK 6 | WK 7 | WK 8/9 |
|---|---|---|---|---|
| **A** | 10 reps<br>30:60s | 6 reps<br>60:120 | 6 reps<br>60:120 | 8 reps<br>60:120 |
| **B** | 10 reps<br>30:60s | 6 reps<br>60:120 | 6 reps<br>60:120 | 8 reps<br>60:120 |
| **C** | 8 reps<br>30:60 | 4 reps<br>60:120 | 4 reps<br>60:120 | 6 reps<br>60:120 |
| **D** | 8 reps<br>30:60 | 4 reps<br>60:120 | 4 reps<br>60:120 | 6 reps<br>60:120 |

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# APPENDIX B

## Climbing Bars

**Figure B-1.**

## Climbing Bars Specifications

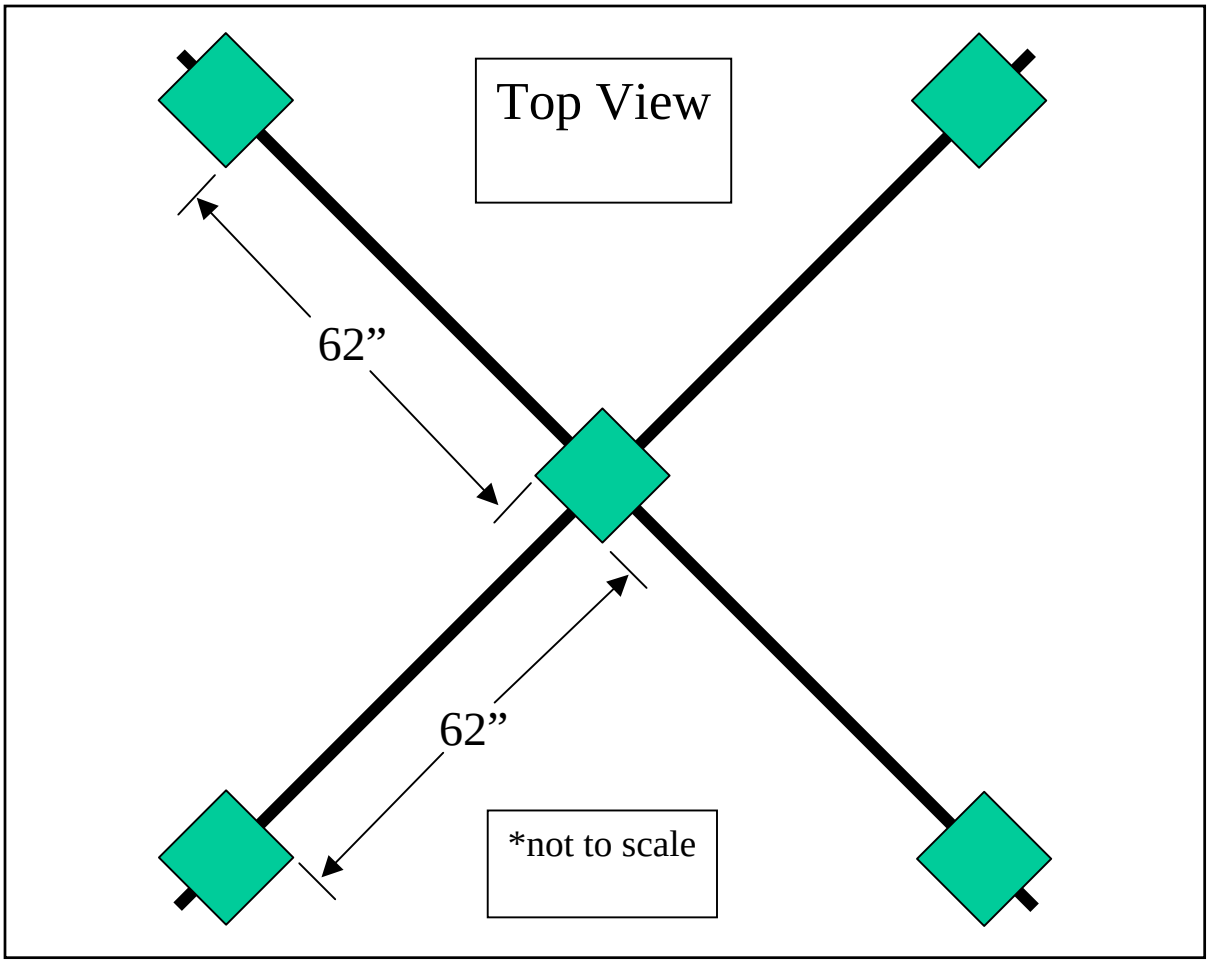


**Figure B-2.**

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, anchored with concrete.
- The bars (2) are threaded water pipe, 1.0 inch inside diameter, 12 feet long with 1-inch end caps (4).
- The bars are throught 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).

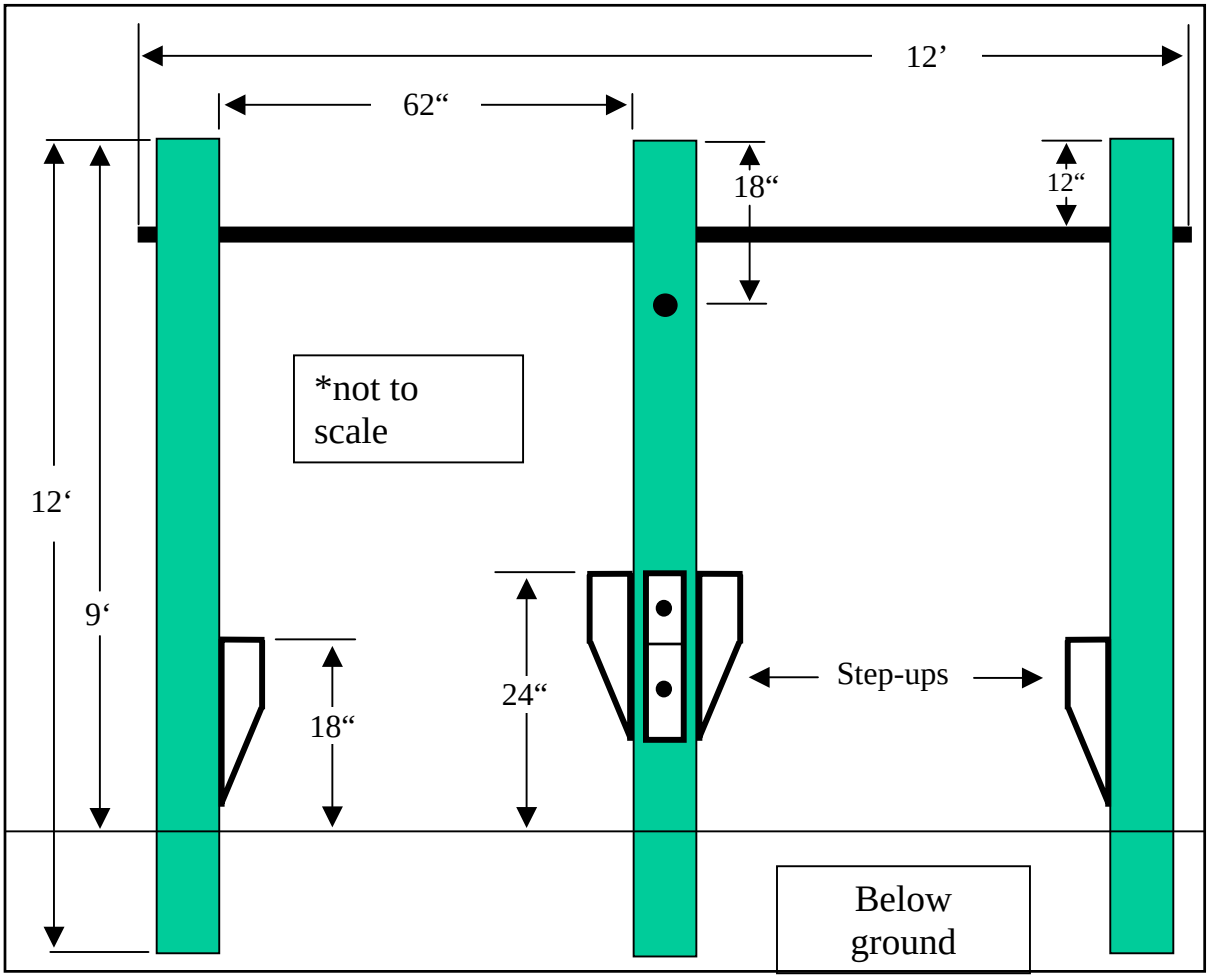


**Figure B-3.**

The following planning considerations apply:

- Climbing bars provide adequate space and facilitate better command and control than traditional pull-up bars. Traditional pull-up bars are too narrow to safely and efficiently conduct the climbing drills.
- Employment of multiple climbing bar “pods” as shown in Figure B-4 will allow for efficient mass training. The climbing drills require one bar for every three soldiers when performed as a single activity.
- The total ground surface area for four pods is only 625 square feet.
- Four pods will accommodate 16 stations x 3 soldiers per station for a total of 48 soldiers.
- Additional free-standing pods should be constructed to accommodate more soldiers.

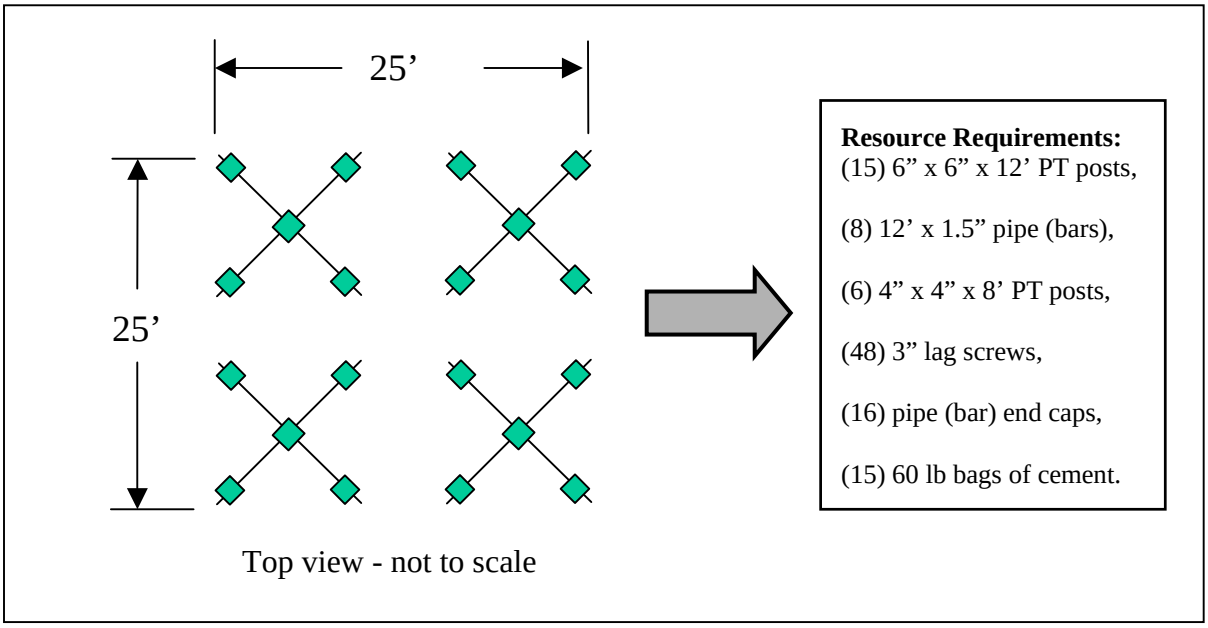
25’
25’
Top view - not to scale
Resource Requirements:
(15) 6” x 6” x 12’ PT posts,
(8) 12’ x 1.5” pipe (bars),
(6) 4” x 4” x 8’ PT posts,
(48) 3” lag screws,
(16) pipe (bar) end caps,
(15) 60 lb bags of cement.

**FIGURE B-4.**