



**AAC
CADET INSTRUCTOR'S
HANDBOOK**

PHYSICAL TRAINING

2008

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PREFACE

Aim

The aim of this publication is to provide Cadets with the information to conduct a lesson on PT under the guidance of a suitably qualified ADF NCO. This handbook has been reissued by Training Cell, HQ NT AAC BN.

Level

This publication is not the source document however it is to be used as the reference for Cadet PT training.

AMENDMENTS

1. The following promulgated amendments have been made to this publication.

CONTENTS

Preface
Amendment Certificate
Contents

Paragraph

CHAPTER ONE – THE WARM UP

Introduction	1.01
Definition	1.02
Format	1.03
Specificity	1.04
Guidelines	1.05
General phase	1.06
Range of movement phase	1.07
Specific phase	1.08
Introductory game	1.09
Timing	1.10
Examples of warm ups	1.11
Endurance run	1.12
Sport specific	1.13
Pool	1.14
Running, Circuits, Medicine Balls, Logs,	1.15
Push and Pull, Strength Games, Ropes Sticks etc	

CHAPTER TWO – THE COOL DOWN

Introduction	2.01
Format	2.02
Specificity	2.03
Guidelines	2.04
Timing	2.06

CHAPTER THREE – POTTED SPORTS

CHAPTER FOUR – ENDURANCE WALKING

Introduction	4.01
--------------	------

CHAPTER FIVE – LIFTING AND CARRYING

Introduction	5.01
Lifting and carrying techniques	
The fundamental lifting position	5.05
Examples of lifting dead weights	5.11

CHAPTER SIX – THE BEEP TEST

Introduction	6.01
Conduct	6.02
The Multi-Stage Fitness (Beep) Test	6.06
Pass standards	6.07
Personal incentive levels	6.08

Annex A: Pre-entry Fitness Assessment

CHAPTER ONE

THE WARM-UP

Introduction

1.01 The following warm-up procedure has been developed and adopted by the DFPTS, under guidance from the Australian Institute of Sport.

Definition

1.02 A warm-up is an activity that precedes an exercise session and prepares the body both physiologically and psychologically for the activity to follow.

Format

1.03 The exact format for a warm-up is dependent on the size of the group and area available. The type of activity that is to follow should determine the selection of warm-up exercises.

Specificity

1.04 A warm-up should be directed specifically towards:

- a. the muscles and joints that will be placed under stress;
- b. energy systems that will be utilised; and
- c. timing / co-ordination of movements to follow.

Guidelines

1.05 Warm-ups should consist of three basic phases, the general phase, the range of movement phase and the specific phase. An explanation of each is as follows:

1.06 **General Phase:** The general phase:

- a. Begins with low intensity level exercises;
- b. As the body becomes warmer the intensity can be gradually increased until the presence of mild sweating is achieved; and
- c. The heart rate is elevated to approximately 120 BPM but not exceeding 150 BPM. This takes approximately 3 – 5 minutes depending on the fitness level of participants and climatic influences.

1.07 **Range of Movement (ROM) Phase:** Range of Movement involves moving a muscle through its full range of motion, holding for 2-3 seconds then releasing. During this phase, introduce a series of well controlled ROM exercises specific to the main group; this should take approximately 3-4 minutes.

1.08 **Specific Phase:** On completion of ROM phase, introduce exercises at intensity appropriate to the level required for the main group activity to follow, eg. $\frac{3}{4}$ pace run-through when sprinting or, additional upper body ROM if rope climbing, this should take approximately 3-4 minutes. The specific phase of a warm-up maybe much the same as the general phase, eg. if the activity was circuit training, volleyball, basketball, tennis etc. (a more general activity), you may decide to conduct your specific phase similar to your general phase.

Introductory Game

1.09 An Introductory Game should generally follow the warm-up. It's designed to motivate participants and to set the tone for the main group activity to follow, it should be specific to the main body and should take approximately 1-2 minutes.

Timing

1.10 The total time for a total warm-up should be approximately 7-12 minutes, this will vary with climatic conditions, group's fitness level etc.

EXAMPLES OF WARM-UPS

Introduction

1.11 Some examples of warm ups are given below.

Endurance (March, Run)

1.12 800 m to 1 km of easy marching / slow jogging.

- a. A series of controlled (ROM) exercises specific to the muscles, which will be used in the main group activity, for approximately 3-4 minutes,
- b. Resume marching / jogging, gradually increasing the intensity for the next 3-4 minutes.

Sport Specific (eg. – Touch Rugby)

1.13 Walk, then jog around playing area for approximately 3-4 minutes.

- a. A series of run throughs, both forwards and backwards, gradually increasing the intensity for 3-4 minutes, (distance of runs throughs specific to sport),
- b. Finish warm-up with an introductory game.

Pool (Endurance, Interval Training, Circuit)

1.14 Series of laps of the pool which will depend on fitness level of group, using survival strokes at low intensity for 3-5 minutes.

- a. A series of specific (ROM) exercises, performed either in or out of the pool for approximately 3-4 minutes,
- b. Swimming laps of the pool at a low intensity, gradually increasing the pace; total amount of laps will depend on fitness level of group / individual, timing should be approximately 3-4 minutes),
- c. Finish warm-up with an introductory game.

Running, Circuits, Medicine Balls, Logs, Push and Pull, Strength Games, Ropes Sticks etc

1.15 Low intensity running, skipping and or, a combination of aerobic moves for approximately 3-5 minutes.

- a. A series of (ROM) exercises specific to the muscles which will be used in the activity to follow, approximately 3-4 minutes,
- b. Re-introduce the running, skipping and or combination aerobic moves, gradually increasing the intensity to the level required for the main group activity, approximately 3-4 minutes,
- c. Finish warm-up with an introductory game.

Note:

The above are examples only, so long as the guide-line for a warm-up are followed, then the duration for each component can be adjusted slightly to meet the respective ages, fitness level, gender, and any other specific needs of your group.

CHAPTER TWO

THE COOL DOWN

Introduction

2.01 A cool-down is an activity that follows an exercise session and which gradually returns the body to the resting state both physiologically and psychologically.

Format

2.02 Again the exact format for a cool-down is dependent on the size of the group and area available. The selection of cool-down exercises should be determined by the type of activity that has been undertaken.

Specificity

2.03 A cool-down should be directed specifically towards the muscles and joints that were placed under stress.

Guidelines

2.04 The cool-downs should involve exercises that are specific to the main group activity. For example, aerobic activities such as running or endurance marching should be followed by slow jogging or marching, which should then be followed by slow jogging and or walking for at least 2 minutes.

2.05 Cool-downs should then conclude with specific flexibility exercises holding the stretch for at least 10 seconds.

Timing:

2.06 The total length of time for the cool-down should be approximately 3-5 minutes.

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CHAPTER THREE

POTTED SPORTS

Introduction

3.01 Some suggestions for potted sports are described below.

BALLOON TOSS

Objective: To toss a water filled balloon to a partner ensuring that you are covered off the markers at all times.

Rules

1. Players must remain covered off between markers.
2. Balloons must not touch the ground.
3. Players can only move forward to the next marker when their partner has caught the balloon.
4. Must catch balloons with hands only.
5. If balloon is dropped, players are to return to start and wait for another go if time permits.

Score

First Marker Passed = 1 point

Second Marker Passed = 2 points Third Marker Passed = 3 points

ISLAND RACE

Description. To have the team have a combination of three gym mats and to travel on these mats to a designated point and then to see how many times they can reach these points, this will constitute as one point. If they touch the ground they will incur a time penalty.

Equipment reqd:

4 witches hats,
6 gym mats.

SHOOTER

Description. There will be 2 basketballs going at the same time, each person with the basketball will try to shoot for a goal and gain points for his team, while they dodge in between cones and then shoot from either the 3 pt, 2 pt or 1 pt line. Once they have shot for the basket they then must pass the ball onto there next team mate. This will go on until time runs out.

Equipment reqd:

Qty basketballs

DIZZY BALL

Aim. To score the most amount of points within the time limit by spinning around in a circle five times and hitting the ball, with base ball bat, within the scoring point areas.

Equipment Reqd:

Baseball bat x 1,
Indoor Soccer ball x 1,
Swedish benches x 8, and
Masking tape.

GOLF

Objective. To chip a golf ball into a large circle fifty metres away.

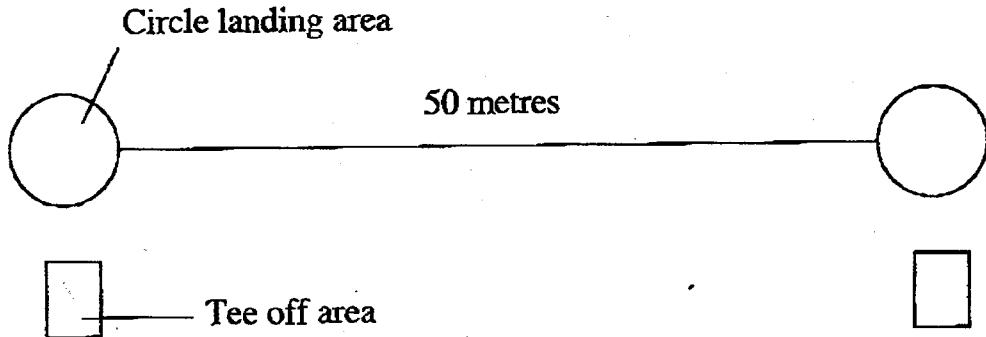
Rules:

1. Team members must only hit one ball at a time.
2. Ball must end up stationary inside the circle.

Equipment Reqd:

2 x pitching wedge golf stick,
40 x golf balls, and
2 x 20m rope.

Layout:



GOAL KICK

Objective. To kick as many goals through the goal posts in time provided.

Rules

1. Player will stand on mark and attempt to kick goal.
2. 5 marks will be placed at different positions in front of goal.
3. Player moves on to next mark regardless of whether the player kicks the goal or not.

IRISH FOOTBALL

Objective. To catch as many balls as possible.

Rules

1. Ball must be kicked from behind the line and must be marked behind the other line.
2. The ball is not to go outside the side boundaries.

Score:

1. 1 point = 1 caught ball.

HANDBALL

Objective To handball the football through the hole or on the board.

Rules

1. Players must remain covered off between markers.
2. Footballs must not touch the ground.
3. Players can only move forward to the next marker when their team has gone through six times

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CHAPTER FOUR

ENDURANCE WALKING

Introduction

4.01 There is a correct technique for walking just as there is a correct technique for running and jumping. Without correct training, the posture of the body may be stooped or stiff and, in consequence, the legs execute a series of short, bent knee steps instead of firm strides from the hips. The methods of acquiring correct endurance walking techniques are based on economy of effort and conservation of energy. The soldier will derive the maximum benefit from the time allotted to walking training, if correctly, instructed under the supervision of PTIs.

4.02 The essentials of correct endurance walking whether in PT dress or in battle order are as follows:

- a. *Action.* Arm actions are performed as follows:
 - (1) The arms act as speed and balance controllers. They should be bent so that the hands are level with or just above the hips. Pushing from each shoulder in turn they should move close to and across the body from side to side at an angle of approximately 800 mils to the line of march. These movements must be smooth, rhythmical and purposeful; the shoulders move with the arms. This will facilitate a smooth flowing action and give constant forward impetus to the body, with each forward movement of the arms carrying forward the centre of gravity of the body.
 - (2) For speed walking over short distances, the arms should be raised slightly, and more vigorous arm punches towards the opposite shoulder should be employed. This small radius of arm action will result in a quickening of the pace.
 - (3) For long distance walking, the arms must be lowered and the trunk allowed to rest or ride easily on the hips. The hands must be held loosely closed but not clenched, with the arms slightly bent. The evenness of the pace is important.
 - (4) During long distance walking there is a tendency for a slackening of the pace to occur. This will be overcome by increasing the arm and shoulder action.
 - (5) *Leg Action.* Leg actions are performed as follows:
 - i. The power of the stride in walking is derived from the drive of the rear leg together with the relaxed swing-through from the hip.
 - (6) To obtain the maximum drive, the feet must always point directly forwards. Any tendency to turn the toes outwards must be corrected as this positioning of the feet not only impedes progress, but also throws the full weight of the body onto the ankle joint at an awkward angle, and eventually leads to injury.
 - (7) The drive from the rear leg must be followed by the swing-through from the hip with the kneecap leading and the foot raised just sufficiently to clear the ground.
 - (8) On all surfaces the feet must be kept as near to the ground as possible to conserve energy.
- b. *Body Posture.* The characteristics of good posture are as follows:
 - (1) The trunk and head should be held erect with the trunk balanced easily on the hips. The hips act as shock absorbers and help to make walking over rough ground less fatiguing.
 - (2) The chin should be held in a natural position and the eyes should look straight ahead.

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CHAPTER FIVE

LIFTING AND CARRYING

Introduction

5.01 Lifting and carrying exercises may be used by instructors for a 15 minute main group activity when new lifting and carrying techniques are being taught, or for a 10 minute main group activity for a skills practice group. The aims of lifting and carrying exercises are:

- a. to teach the correct technique of lifting and carrying, so that the risk of injury may be minimised, and the movements may be performed with minimum effort; and
- b. to strengthen and develop muscles used in lifting and carrying.

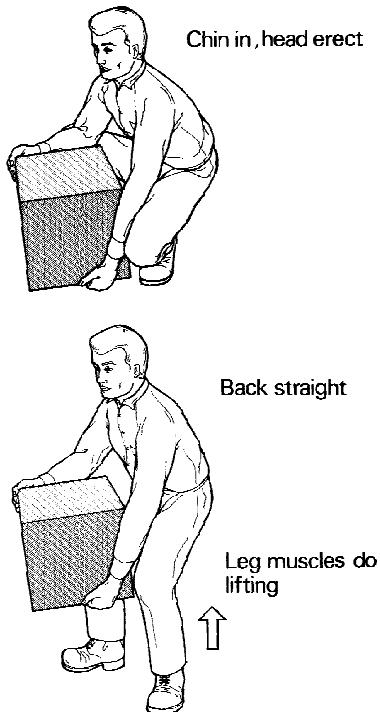
5.02 Exercises that should be taught to cadets are the lifting and carrying of: a. 'dead weights', for example, heavy drums; and b. 'live weights', for example, an injured soldier.

5.03 Both types of exercises have important military applications. The exercises for lifting and carrying dead weights teach skilful handling of heavy objects, especially unit stores and equipment. In the later stages of training, full use should be made of a wide variety of articles of the type that would normally have to be manhandled on operations. The exercises for lifting and carrying live weights teach a variety of methods for assisting wounded or injured soldiers. Trained soldiers should practise all types of lifting and carrying while wearing a gradually increased amount of clothing and equipment. To add realism to training, lifting and carrying dead and live weights over obstacles should be practised.

Lifting and Carrying Techniques

5.04 The technique of lifting and carrying differs according to the size, shape and weight of the object being moved, but the underlying considerations are always the same.

5.05 **The Fundamental Lifting Position.** When lifting compact objects from the ground, the feet should be placed comfortably astride, parallel, and not more than 30 cm apart. The knees should be bent forward in a direct line over the feet, with the arms outside the knees. The back MUST be kept as straight as the nature of the load permits, and should be well balanced over the feet. The head should be well poised on the shoulders and the breathing should be even and regular. Straightening the legs, using the large and strong muscles of the buttocks and legs should make the lift. The figure below demonstrates the correct and incorrect fundamental lifting positions.



The Fundamental Lifting Position

5.06 *Rhythm.* A well-timed action in which full use is made of rhythm and momentum, and in which the various movements are accurately coordinated, results in a considerable saving of energy. A series of irregular heaves and jerks is physically dangerous and is also very wasteful of energy. Rhythm is the result of the harmonious cooperation of the different groups of muscles used, and is developed by constant practice of the continuous movement of an object from one position to another.

5.07 *Relaxation.* The more complete the unconscious relaxation of muscles not required for the particular lifting movement is, the greater is the saving of nervous and muscular energy.

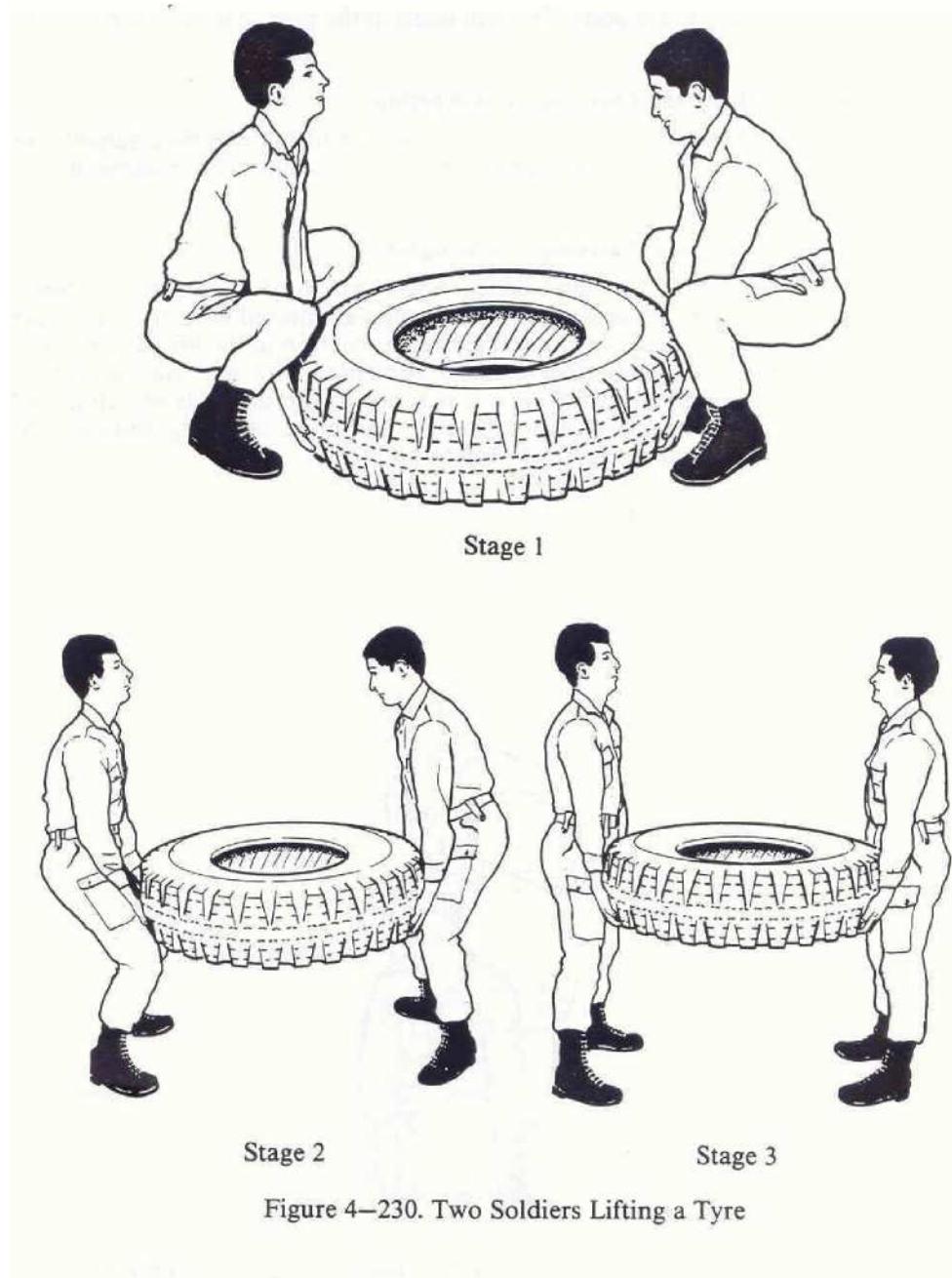
5.08 *Direction of Lift.* The body should be so positioned in relation to the load that the lift would be made directly upwards. In lifting, the force is most effective if applied in line with the centre of gravity of the object to be moved. The body should therefore be brought close to and over the object. Using the trunk and the arms often lifts heavy objects. This incorrect positioning of the body causes the lift to be made either diagonally forwards or backwards, with consequent risk of injury or strain to the lumbar region as well as unnecessary expenditure of energy. Another incorrect method is to lift objects by bending forward from the waist. These techniques must be avoided.

5.09 *Leverage.* It is often possible to supplement strength by using levers and pulleys. These methods are outside the scope of PT sessions.

5.10 Carrying is a form of lifting and to make the work as easy as possible, the load should be held in such a way that the legs are supporting the weight. The load should also be maintained as near to the centre of gravity of the body as possible. The higher the load above the centre of gravity, the greater the energy expended in carrying it. However, it is most important that the load is well balanced and close to the body. This will assist in the principle of energy conservation.

Examples of Lifting and Carrying Dead Weights

5.11 The individual and combined dead weight lifting exercises suitable for inclusion in a 10-minute main group activity are shown below.



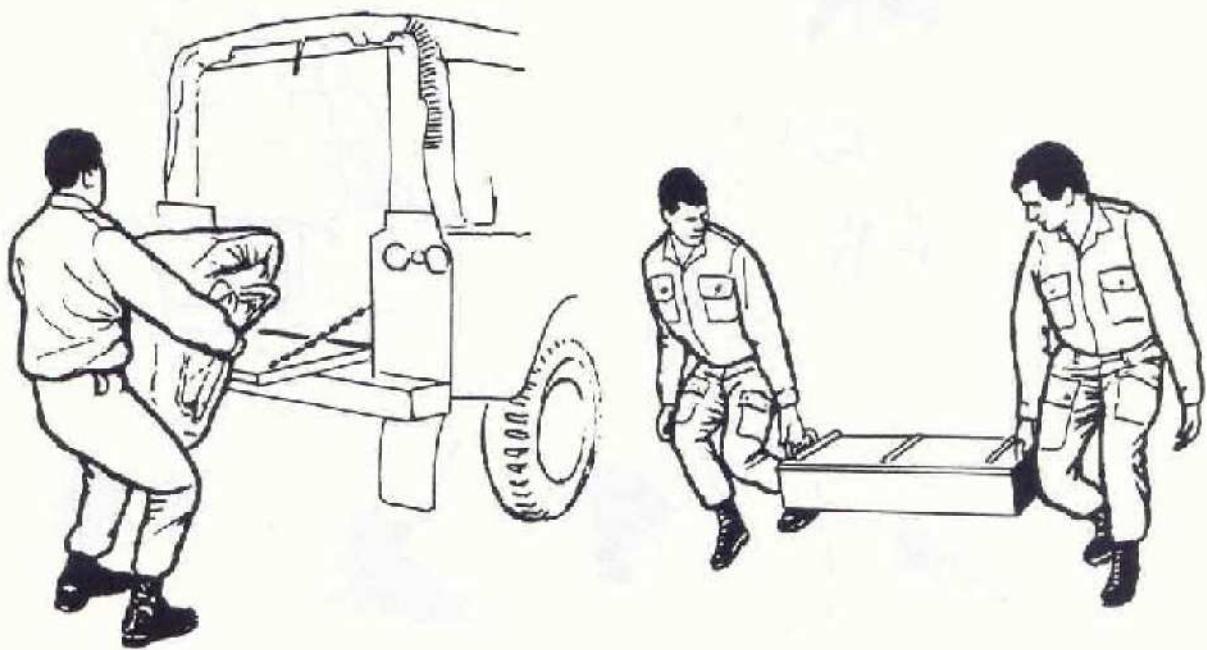


Figure 4-233. Lifting and Carrying
a Heavy Weight on the Thighs

Figure 4-234. Lifting and Carrying
Ammunition Boxes

CHAPTER SIX

BEEP TEST

Introduction

6.01 The Beep test is designed to assess the general physical fitness of an individual as part of the ATA Selection Barrier Test and also entry into the ADF.

Conduct

6.02 Time will be allocated for a warm up after which the Beep Test will be conducted.

6.03 Cadets are to wear sporting attire as desired which, as a minimum, is to consist of shorts, singlet and running shoes.

6.04 The Beep Test supervisor must be qualified to conduct the Test.

6.05 Annex A describes the beep test, sit-ups and push ups.

The Multi-Stage Fitness (Beep) Test

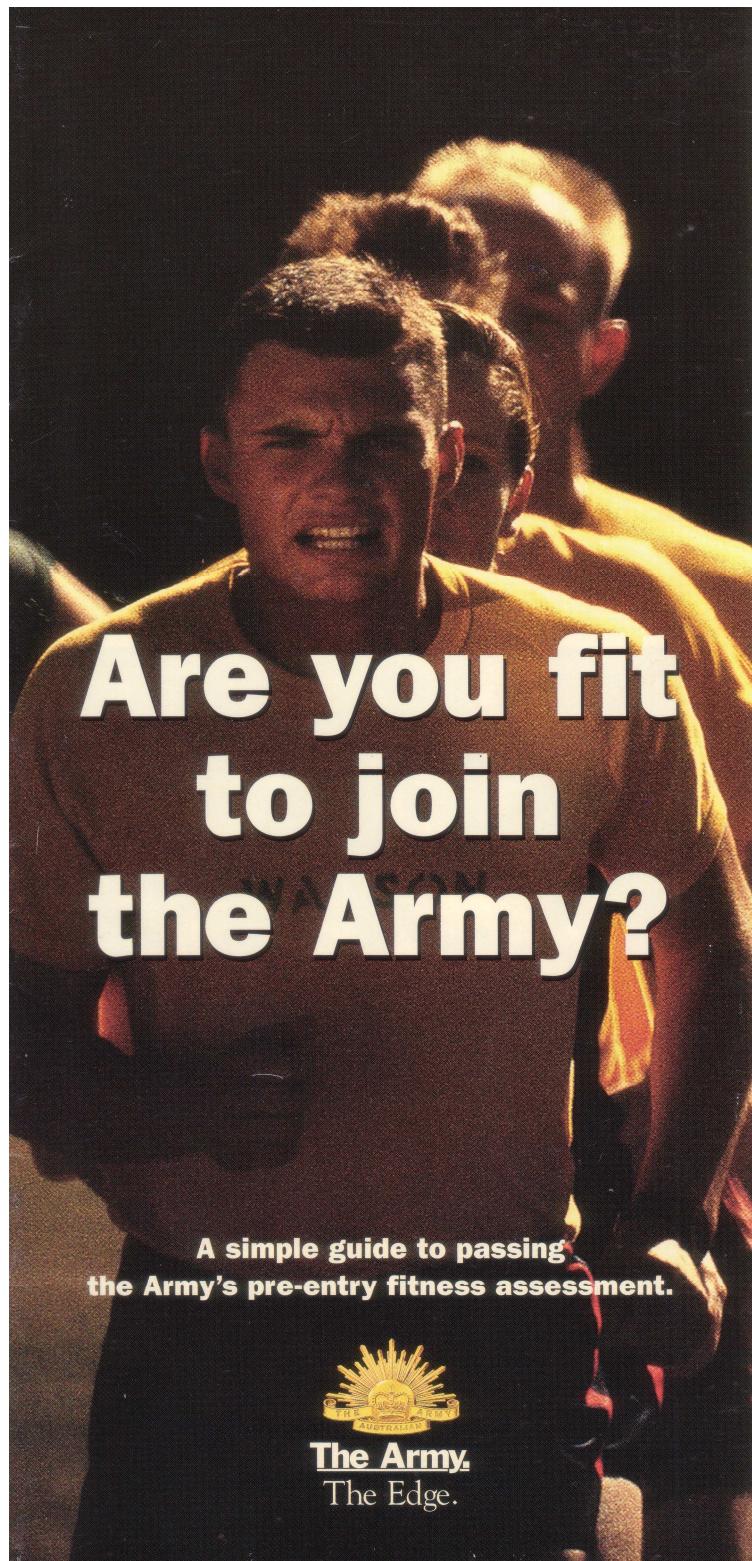
6.06 The Beep test requires that a participant runs to and fro along a 20 metre track, keeping up with a series of beeps on a cassette. The timing of the beeps gradually increases until the participant can no longer keep up.

Pass Standards

6.07 The **Pass requirement** for entry into the Army, both **males** and **females** is **Level 7.5** or 56 shuttles for a total of 1,120 metres in 6 minutes 30 seconds. Cadets may modify this level.

Personal Incentive Levels

6.08 Cadets should try to achieve the highest level of fitness possible without injury. Cadets are not to be compelled to achieve performance standards exceeding a Beep Test Pass.



Are you fit to join the Army?

A simple guide to passing
the Army's pre-entry fitness assessment.

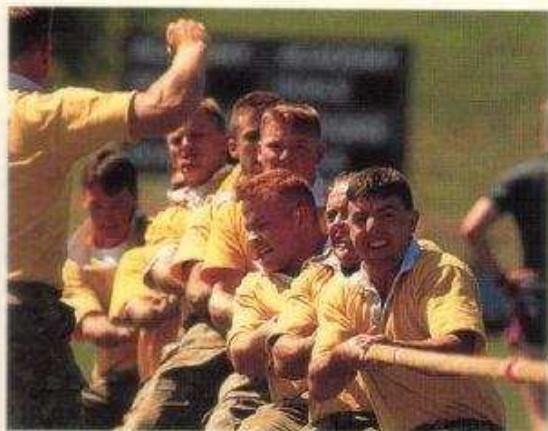


The Army.
The Edge.

Not surprisingly, physical fitness plays a vital role in both the full-time and part-time Army, especially during basic training.

In fact, on the day of your enlistment, you must pass a fitness assessment or you won't be accepted. So you can see just how important it is to be fit. But don't think you have to be a world-class athlete.

The fitness assessment is not an incredibly difficult one and most people have little trouble passing it. If you're an active person who walks, runs, swims or plays competitive sport, you should pass without a worry.



This pamphlet explains what you'll need to do to pass the Army's pre-entry fitness assessment and shows you how to perform the exercises properly. There's also a detailed programme designed to help you reach the level of fitness needed in only four weeks.

The Army's pre-entry fitness assessment has three parts and you must pass each one to join the Army.

The Multistage Fitness Test.

The "Multistage Fitness Test" is a simple test produced by the Australian Coaching Council to measure your maximum aerobic capacity.

In other words, it measures how effectively your heart and lungs are working.

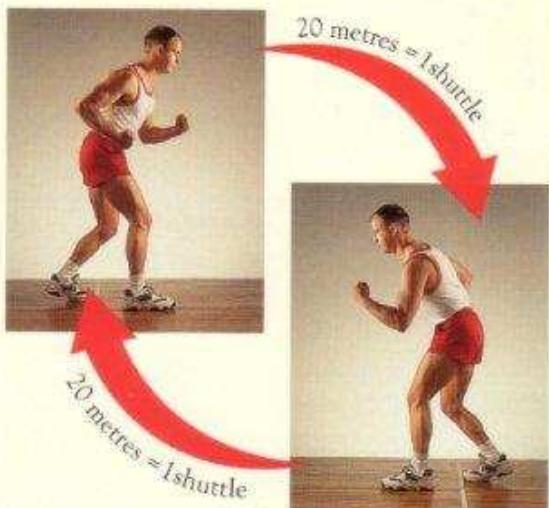
Here is how it works:

You run to and fro - a shuttle test - along a 20 metre track, keeping up with a series of beeps on a cassette.

The timing of the beeps starts off slowly and gradually gets faster, so it gets harder and harder to keep up the required speed.

When you can no longer keep up the required speed you stop, and this provides a good indication of your current aerobic fitness level.

The minimum requirement for both male and female is Level 7.5. This is 56 shuttles or a total of 1120 metres in 6 minutes 30 seconds.

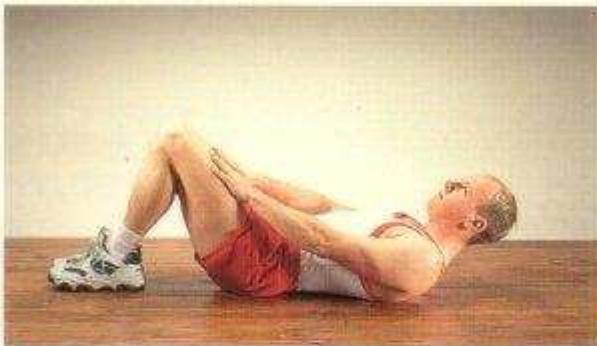


Sit-ups.

Both males and females must be able to do 45 sit-ups.

The correct sit-up technique is as follows:

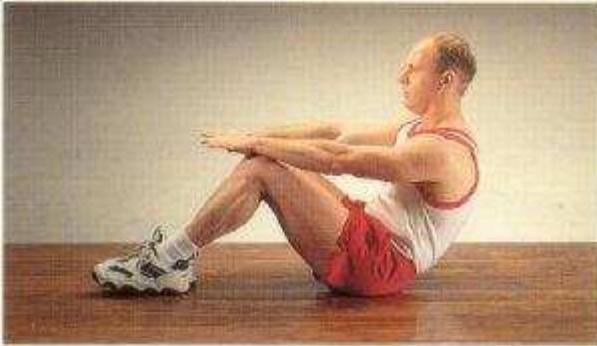
1. To start legs are bent at 90 degrees and your feet are either flat or with heels on the ground. Feet can be either held or anchored.



2. Keep your arms straight with the palms of your hands on top of your legs.

Your chin should be as close to your chest bone as comfortable.

3. To sit-up, keep your hands in contact with your legs until your wrists come to the top of your knee caps. Once this has occurred, lower to the start position. This should take 3 seconds and is counted as one sit-up.

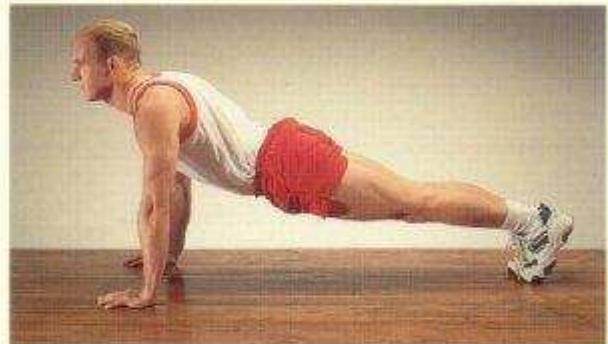


Push-ups.

Males must be able to complete 15 push-ups, females must be able to complete 8.

The correct push-up technique is as follows:

1. To start your toes should be on the ground, feet together or shoulder width apart and palms flat. Your back should be straight and you can either look forward or down. Your arms should be in the lock position.



2. To reach the down position, keep your body straight then bend your arms to a 90 degree angle from shoulder to elbow. After this has been achieved, push your body back to the full arm lock position. This is one push-up.



3. You can rest in either the full arm lock position or in the 90 degree position.