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## CHAPTER 4

### PERFORMANCE OBJECTIVE 405

#### PHYSICAL FITNESS

##### GENERAL

1. The promotion of physical fitness is one of the primary aims of the cadet movement.
2. Physical fitness is a basic part of existence and should be an enjoyable use of your time. Many people enjoy team sports on a competitive level while some people do not enjoy this type of activity. For those who do not wish to take part in team/competitive sports there are many other activities that may be of interest. Some of these activities include skiing, skating, walking, canoeing and bicycling.
3. The Air Cadet Fitness Programme (ACFP) is based on six fitness-performance tests that give an overall picture of your general physical fitness condition. The six tests, each of which have a specific purpose, include the following:
  - a. push-ups, for arm and shoulder girdle strength;
  - b. shuttle run, for speed, power and agility;
  - c. partial curl-ups, for abdominal muscles;
  - d. standing long jump, for power and agility;
  - e. 50 m run, for speed, power and agility; and
  - f. endurance run, for stamina.

## CRESTS

4. Crests are awarded on the basis of level of achievement. The following are applicable:

- a. **Award of Excellence.** Excellence level in all six test items.
- b. **Gold.** Gold level or higher in five test items including endurance run.
- c. **Silver.** Silver level or higher on four test items, including endurance run.
- d. **Bronze.** Bronze level or higher in four test items, including endurance run.

5. The crest has its origin in the **TRISCELE**, which is an ancient symbol of the sun. The triscele represents the revival of life and of prosperity. The symbol of the triscele is on monuments that date back as far as 1300 BC. It is interesting that the earliest instances of the classical triscele's use have a clear connection with fitness. A shield bearing this symbol appears on a vase designed as a prize in Athenian competitions during the sixth century. (Figure 2-9 illustrates the badges that may be awarded to you. They are to be worn on your uniform.)

## PREPARATION

6. A basic conditioning or training programme of about three to four weeks may be conducted by your instructors. A similar programme could follow the testing to improve the results.

7. The six ACFP activities are described in Figures 4-1 to 4-6. The standards charts from which your score is calculated are shown as Figures 4-8 to 4-13. Your instructor will explain the use of these charts. A sample personal progress chart is illustrated in Figure 4-7. You should receive one of these from your instructor.

8. The ACFP is based on the Canada Fitness Award, a programme of Fitness Canada Government of Canada. The figures are reproduced with permission.

9. If you have achieved a Canada Fitness Award level from school or from another organization, you can get credit for this at Cadets. You will probably have to bring in proof of this level. Check with your instructor or training officer to determine the procedure.

# 1 Push-Ups

**Equipment:** Ensolite or hard surface gymnastic mat.

**Starting Position:** The participant assumes a front lying position on the mat with hands placed approximately under shoulder, legs straight and together, and toes tucked under so that they are in contact with the mat.

**Action:** The participant then pushes with the arms until they are fully extended, keeping legs and back straight. The body is then lowered, using the arms and keeping the back in a straight line from head to toes, until the elbows reach 90 degrees and the upper arms are parallel to the floor. This movement is repeated as many times as possible.

There is no time limit to this test, but push-ups must be performed rhythmically and continuously.

The test is terminated for the following reasons:

- a. participant appears to be experiencing severe discomfort and/or pain;
- b. participant is unable to maintain a rhythmic movement and must rest (stop test after participant falls behind more than three repetitions); and/or
- c. participant consistently displays poor techniques\*, despite repeated corrections by the examiner (a maximum of three corrections may be tolerated).

The examiner should demonstrate the correct movement and most common faults and allow participants to practise the exercise several times prior to testing day.

**\*Examples of poor technique:**

- knees touching floor;
- upper or lower back swaying;
- failure to reach a complete arm extension;
- failure to attain an approximate 90 degree bend at elbow.

**Administrative Hint:** 1) Have participants work in partners. Test what a 90 degree bend at elbows feels like. Partner checks for 90 degree accuracy and places a hand under shoulder or chest at a height where 90 degrees is attained. During the execution of each push-up, the participant only has to touch the partner's hand with chest or shoulder to know that the accurate height has been reached, as well as how many push-ups have been completed. 2) Too many practice trials of this test item on testing day can fatigue the participant unnecessarily. Use your own discretion.

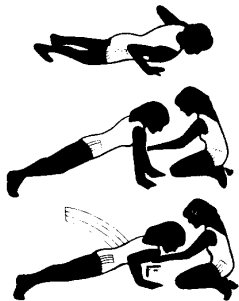


Figure 4-2 Shuttle Run

## 2 Shuttle Run

**Equipment:** Stop-watch, three wooden blocks (or beanbags, etc), two parallel lines 10 m apart.

**Instructions:** Place one block beside subject just behind starting line, two blocks just behind far line.

**Starting Position:** Begin face down, forehead on starting line, hands at side of chest.

**Action:** On signal ("ready") GO! participant runs to far line and picks up a block; returns to the starting line; drops the block and picks up the other block (ie, **exchange**); runs to the far line; **exchanges** blocks again; and **carries block** across the finish line.

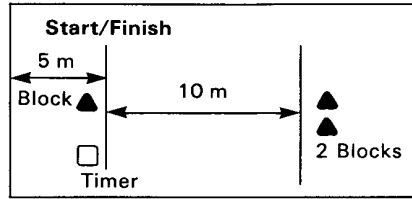
**Administrative Hint:** Participant should be in gym shoes (or barefeet) but not in stocking feet.

Ensure that there are no obstructions beyond the start-finish line.

Ensure an appropriate rest interval between trials.

**Scoring:** Start watch on 'GO'; stop when participant crosses start-finish line.

At the time of the test, record best of two trials to nearest 1/10th of a second on test record card.



# 3 Partial Curl-Ups

**Equipment:** Gymnastic mat, metronome (set to 40 beats per minute).

**Starting Position:** The participant lies on back, with the knees slightly bent at an angle of 140 degrees (approximately 6 to 10 cm off the floor), heels on the ground, arms extended along thighs with fingers pointing towards the knees. **Stabilization, hooking or anchoring of the feet is NOT permitted.**

**Action:** The initial phase of the curl-up must involve a "flattening out" of the lower back region (ie, pelvic tilting), followed by a **slow** "curling-up" of the upper spine with the hands sliding along thighs until finger tips touch knees. At this point, the trunk should be raised at an angle of no greater than 30 degrees to the floor. Heels must remain in contact with the floor at all times. Return to starting position, touching the partner's hand with back of head.

The movement is slow, and well controlled. The time to perform the lifting and lowering stages is the same. The cadence is 20 curl-ups per minute or 3 seconds per movement. Verify metronome accuracy with a stop-watch.

The participant is to perform without pausing between curl-ups to a maximum number without a time limit. Allow the participant to practise the exercise several times prior to test day.

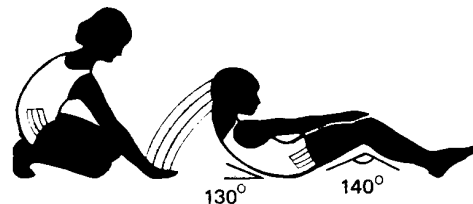
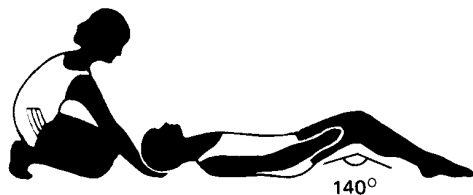
The test is terminated if the participant:

- appears to be experiencing severe discomfort and/or pain;
- is unable to maintain correct rhythm and must rest (stop test after participant falls

- behind more than three repetitions); and/or
- consistently displays poor technique\*, despite repeated corrections by the examiner (a maximum of three corrections may be tolerated).

**\*Examples of poor technique:**

- lifting the heels off the floor;
- failure to slide hands along thighs (ie, throwing forward is not allowed);
- failure to touch knees;
- head not touching the partner's hand; and
- failure to maintain desired angles at knees or trunk.



# 4 Standing Long Jump

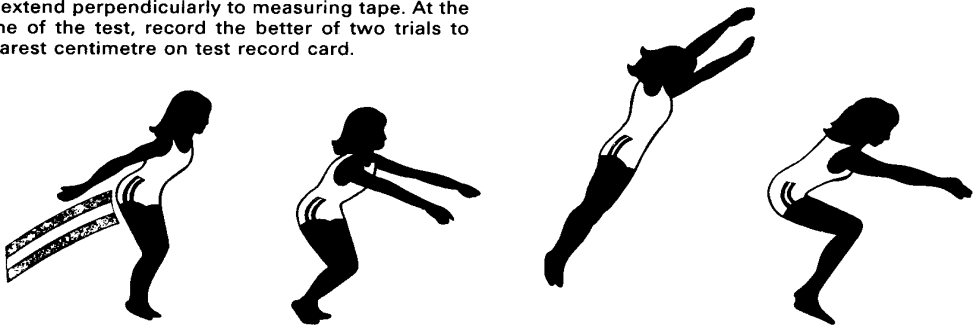
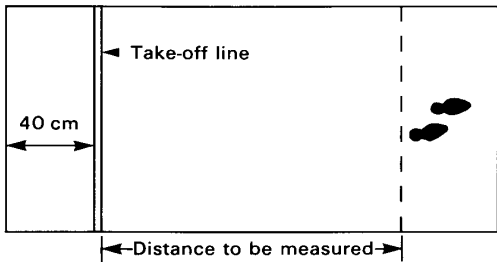
**Equipment:** Three-metre ensilite or hard surface gymnastic mat, tape measure, stick.

**Instructions:** On the mat, mark a starting line with masking tape approximately 40 cm from one end of the mat. Secure the tape measure from the starting line along the mat, close to one edge.

**Starting Position:** As many practice trials as time permits are allowed. Begin with feet slightly apart, toes behind starting line.

**Action:** Bend hips, knees and ankles, push vigorously with legs while swinging arms forward.

**Scoring:** Use stick behind heel nearest take-off line to extend perpendicularly to measuring tape. At the time of the test, record the better of two trials to nearest centimetre on test record card.





# 5 50 m Run

**Equipment:** Stop-watch for each timer, 50 m straight-away with run-off, four pylons or flags, starting flag.

**Instructions:** Mark off 50 m course. Ensure that all participants are wearing running shoes.

**Starting Position:** Line participants in four lanes behind starting line, timers at finish line.

**Action:** On signal ("ready") GO! starter drops flag and each participant runs as fast as possible past the finish line.

**Scoring:** From drop of flag until participant crosses finish line. Score to nearest 1/10th of a second on test record card. Ensure an appropriate rest interval between trials.

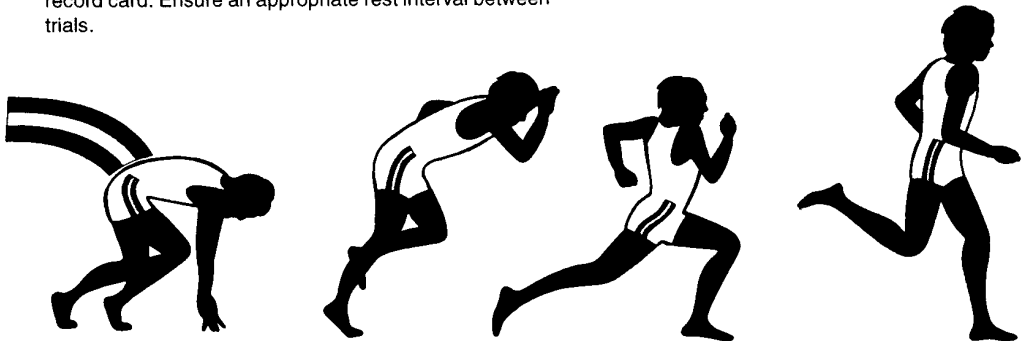
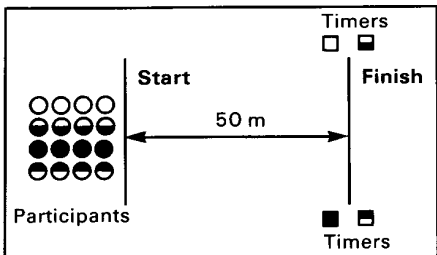


Figure 4-5 50 m Run

# 6 Endurance Run

**Equipment:** Stop-watch for each timer, four pylons or flags, starting flag.

**Instructions:** Mark off 50 m square (alternatives 60 m by 40 m or 70 m by 30 m). Ensure that all participants have running shoes.

**Starting Position:** Place one group of participants, with timer, at each corner. Timers tally laps for each runner on back of the test record card.

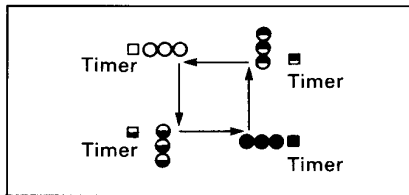
Inform participants how many laps they will run (four laps, ages 6 to 9; eight laps, ages 10 to 12; 12 laps, ages 13 to 17).

Instruct participants to maintain a steady, pace to complete the distance as quickly as possible, but to stop or **preferably** walk if they are unable to continue running.

**Action:** On signal ("ready") GO! flag drops and all participants begin.

**Scoring:** At completion of required number of laps, register elapsed time in minutes and seconds on test record card.

**Note** — It is important that participants be allowed a light "warming-up" before and a "cooling down" period following this event. Stretching leg muscles before and after releases strain and tightness in muscles. Encourage participants to continue walking and "deep breathing" for three to five minutes.



<b>Your Personal Progress Chart</b>						
<b>TESTS</b>	<b>Push-ups</b>	<b>Shuttle Run</b>	<b>Partial Curl-ups</b>	<b>Standing Long Jump</b>	<b>50 m Run</b>	<b>Endurance Run</b>
<b>GOAL</b>						
<b>September</b>						
<b>October</b>						
<b>November</b>						
<b>December</b>						
<b>January</b>						
<b>February</b>						
<b>March</b>						
<b>April</b>						
<b>May</b>						
<b>June</b>						
<b>July</b>						
<b>August</b>						

Figure 4-7 Personal Progress Chart

**1 PUSH-UPS**

(Total Number)

Standard by Age	Female						
	12	13	14	15	16	17	18
Excellence	20	21	20	20	24	25	25
Gold	17	17	16	20	20	20	20
Silver	10	11	16	15	12	16	16
Bronze	2	4	3	7	4	7	7

(Total Number)

Standard by Age	Male						
	12	13	14	15	16	17	18
Excellence	31	39	40	42	44	53	53
Gold	28	35	32	37	40	46	46
Silver	18	24	24	30	30	37	37
Bronze	9	11	13	20	22	23	23

Figure 4-8 Push-up Standards

## 2 SHUTTLE RUN

(To nearest 1/10<sup>th</sup> of a second)

Standard by Age	Female						
	12	13	14	15	16	17	18
Excellence	12.2	11.9	11.6	11.8	11.7	11.6	11.6
Gold	12.5	12.3	12.0	12.2	12.0	11.9	11.9
Silver	13.1	19.0	12.7	12.9	12.6	12.6	12.6
Bronze	14.3	14.1	14.8	14.0	13.8	13.7	13.7

(To nearest 1/10th of a second)

Standard by Age	Male						
	12	13	14	15	16	17	18
Excellence	11.7	11.4	10.9	10.8	10.5	10.4	10.4
Gold	12.0	11.6	11.2	11.0	10.7	10.6	10.6
Silver	12.5	12.1	11.7	11.4	11.1	11.1	11.1
Bronze	13.7	13.5	12.7	12.4	12.1	11.9	11.9

Figure 4-9 Shuttle Run Standards

**3 PARTIAL CURL-UPS**

(Total Number)

Standard by Age	Female						
	12	13	14	15	16	17	18
Excellence	50	59	48	38	49	58	58
Gold	43	50	41	35	35	49	49
Silver	38	40	30	26	26	40	40
Bronze	19	22	20	15	16	26	26

(Total Number)

Standard by Age	Male						
	12	13	14	15	16	17	18
Excellence	64	59	62	75	73	66	66
Gold	54	51	54	87	50	58	58
Silver	32	39	40	45	37	42	42
Bronze	22	28	24	26	24	25	25

Figure 4-10 Partial Curl-up Standards

#### 4 STANDING LONG JUMP

(Centimetres)

Standard by Age	Female						
	12	13	14	15	16	17	18
Excellence	179	184	189	188	196	198	198
Gold	171	170	181	181	187	190	190
Silver	158	163	162	185	173	174	174
Bronze	133	141	145	144	147	152	152

(Centimetres)

Standard by Age	Male						
	12	13	14	15	16	17	18
Excellence	183	200	213	223	232	238	238
Gold	176	193	206	215	224	231	231
Silver	184	177	199	202	211	220	220
Bronze	143	151	166	171	191	195	195

Figure 4-11 Standing Long Jump Standards

**5 50 m RUN**

(To the nearest 1/10th of a second)

Standard by Age	Female						
	12	13	14	15	16	17	18
Excellence	8.4	8.0	7.9	8.0	7.9	7.9	7.9
Gold	8.6	6.2	8.1	8.2	8.1	8.0	8.0
Silver	9.2	9.7	8.6	8.7	8.6	8.5	8.5
Bronze	10.2	9.5	9.4	9.4	9.3	9.2	9.2

(To the nearest 1/10th of a second)

Standard by Age	Male						
	12	13	14	15	16	17	18
Excellence	8.1	7.7	7.4	7.2	7.0	6.9	6.9
Gold	8.4	7.9	7.6	7.4	7.1	7.0	7.0
Silver	8.8	8.4	8.0	7.7	7.4	7.3	7.3
Bronze	9.7	9.2	8.8	8.4	8.0	8.0	8.0

Figure 4-12 50 m Run Standards



## 6 ENDURANCE RUN

(Minutes and Seconds)

Standard by Age	Female						
	1600 m		2400 m				
	12	13	14	15	16	17	18
Excellence	8:41	13:54	13:28	13:31	12:38	12:45	12:45
Gold	9:18	14:33	14:18	14:01	13:22	13:31	13:31
Silver	10:26	16:12	15:51	16:02	16:44	15:19	15:19
Bronze	12:46	18:59	18:51	18:58	18:37	18:53	18:53

(Minutes and Seconds)

Standard by Age	Male						
	1600 m		2400 m				
	12	13	14	15	16	17	18
Excellence	7:41	11:31	10:43	10:23	10:08	10:08	10:08
Gold	8:04	11:49	11:09	10:50	10:42	10:32	10:32
Silver	8:46	12:51	12:16	11:51	11:22	11:10	11:10
Bronze	10:31	15:35	14:40	14:46	14:08	13:33	13:33

Figure 4-13 Endurance Run Standards