

# CYA Fitness Field-test

Fitness testing attempts to measure individual components of performance, with the ultimate aim of studying and maximizing the athlete's ability in each fitness component.

The CYA Fitness field test is put up in order to help monitor our sailor's fitness level.

The best way to monitor your progression is to establish your current fitness level, and then every 8 to 12 weeks re-test yourself. It's not a competition against others, but against yourself!

Please send CYA your results, we are putting up a database with results from across Canada ([acethier@sailing.ca](mailto:acethier@sailing.ca)).

## Station #1: Aerobic Endurance

Aerobic means 'with oxygen'. During aerobic work the body is working at a level that the demands for oxygen and fuel can be met by the body's intake. The only waste products formed are carbon dioxide and water. These are removed as sweating and by breathing out.

The objective of endurance training is to develop the energy production system(s) so that it meets the demands of the event.

Fitness can be measured by the volume of oxygen you can consume while exercising at your maximum capacity. Vo2 max is the maximum amount of oxygen, in milliliters, that an athlete uses per one minute per kilogram of body weight. Those who are fit have higher Vo2 max values and can exercise more intensely than those who are not as well conditioned. Numerous studies show that you can increase your Vo2 max\* by working out at an intensity that raises your heart rate to between 65 and 85 per cent of its maximum for at least 20 minutes three to five times a week.

\* For your information: you can increase your Vo2max by 20% in average pending on different aspect like your genetic composition and your training program.

## Cooper test

The objective of an evaluation test is to monitor the development of an athlete. This aerobic endurance test, used on a regular basis, can be used in order to:

- ✓ Predict future performance
- ✓ Indicate weaknesses
- ✓ Measure improvement
- ✓ Enable the coach to assess the success of his training program
- ✓ Motivate the athlete

To undertake this test you will require:

- 400 meter track - marked every 100 m or a set up your yacht club environment to be able to measure your athletes running distance
- Stop watch
- An assistant

The test will show how far athletes can run/walk in 12 minutes. The assistant should record the total distance covered to the nearest 100 meters.

To analyze of the results (distance covered), compare them with the results of previous tests. It is expected that, with appropriate training between each test, the analysis will indicate an improvement in the athlete's general endurance. The following table rates performance for young athletes.

Age	Excellent	Above Average	Average	Below Average	Poor
Males 13-14	>2700m	2400-2700m	2200-2399m	2100-2199m	<2100m
Females 13-14	>2000m	1900-2000m	1600-1899m	1500-1599m	<1500m
Males 15-16	>2800m	2500-2800m	2300-2499m	2200-2299m	<2200m
Females 15-16	>2100m	2000-2100m	1700-1999m	1600-1699m	<1600m
Males 17-20	>3000m	2700-3000m	2500-2699m	2300-2499m	<2300m
Females 17-20	>2300m	2100-2300m	1800-2033m	1700-1799m	<1700m

\* For your information: an estimate of your Vo2 max can be calculated as follows:  
 $(\text{Distance covered in meters} - 504.9) / 44.73$

## Station #2: Strength

Strength activities build muscle power. This gives you the strength to carry, push or pull things. The stronger your muscles are, the more force you can exert. Muscular strength helps you to prevent injuries and reduce low back pain. It improves posture and overall ability in sports. You can also do physical work with less fatigue. Here are four different tests to assess different muscular groups that are important for competitive sailors.

### 1a. Wall Sit test

This is another simple test that works your thighs, quads and gluts: the big muscles you use while, biking, surfing, snowboarding and obviously, hiking a boat flat. All you need is a wall, which makes things nice and easy.

To undertake this test you will require

- A wall, but not any wall. Try to use the same wall every time you repeat the test.
- A stop watch

Method

- ✓ Stand about 12 - 18" away from a wall.
- ✓ Put back against wall firmly
- ✓ Slide body down wall until knees are at a 90 degree angle
- ✓ Maintain same flex in knees for as long as you can
- ✓ Monitor time or have a partner time you
- ✓ Feel the burn.

### Score

Record the time you hold the position. Do not exceed 15 min.

## 1b. Hiking test (optional)

This is a maximum incremental test of hiking endurance. The sailors sit on an elevated padded bench. The test uses a steel bucket with a padded hiking strap attached in place of the handle. The subject places his feet under the hiking strap and lifts the bucket off the floor.

The sailor is maintaining a knee angle of approximately 130°. The joint angle should be checked regularly.

Subjects can brace themselves by gripping the bench and are allowed to move around as though in a sailboat.

### To undertake this test you will require

- Steel bucket with hiking strap and 10 kg attached
- Bench (padded)
- 60 kg in disc weights (e.g. 10x 5 kg and 1x 10 kg)

### Method

The starting load is 10kg and 5 kg is added every minute until the subjects can no longer hold the bucket at the prescribed angle.

### Score

Record the subject final endurance time in min: sec.

## 2. Sit up test

This is a measure of the muscular endurance of the abdominal muscles. Strong abdominal muscles are not only important for performing on water, but also a critical area for maintaining good posture and minimizing lower back problems. The objective of the Sit-up test is to monitor the development endurance of the athlete's abdominal muscles.

### To undertake this test you will require:

- flat surface
- mat
- a stop watch

### Method

- ✓ Hands on placed on thighs raise high enough for your hands to touch the tops of your knees
- ✓ When returning to the starting position, shoulder blades must touch the floor each time.
- ✓ Cannot arch back and lift seat or feet off the floor.
- ✓ Sit-ups not performed properly will not count and will have to be re-done
- ✓ Feet are NOT held

### Score

The score is the number of bent leg sit-ups performed in one minute. Compare your results against your previous ones. Remember it's not a competition against others, but against yourself!

### 3. Chin up

Chin-ups measure upper body strength and endurance. The athlete hangs from a bar and pulls their own body weight up until the chin reaches the level of the bar. The athlete performs as many repetitions as possible.

To undertake this test you will require:

- Horizontal bar
- A partner

#### Method

Lower-Bar chin-ups are performed at your own speed. Grip-palms at shoulder width. The bar should be low enough that you can reach up and grasp it with lifting your shoulder blades. Keep your palms turned away from your body. Pull yourself up the rest of the way. Pull your body upward to chin above-bar position. Then lower again to a starting position.

#### Rules

1. No resting allowed between pull-ups.
2. Body must stay strait.
3. No swinging allowed.
4. No kicking allowed.
5. Stopping to gain a better grip is allowed. (only 1 or 2 sec...no more)
6. Fully extend the arms to starting point before the next rep
7. Stop upon reaching maximum.

#### Score:

The total number of correctly completed pull-ups is recorded.

### **Station # 3: Flexibility**

Flexibility is the capacity of a joint to move through its full range of motion. It's not something general but is specific to a particular joint or set of joints. In other words, it is a myth that some people are innately flexible throughout their entire body. Being flexible in one particular area or joint does not necessarily imply being flexible in another. Being "loose" in the upper body does not mean you will have a "loose" lower body. There is no single test that gives you a score for overall flexibility. Each test is specific to a particular movement or joints. Two important joints for sailors are the hips and knees. The forward flexion is going to give an idea of your hamstrings and lower back flexibility.

#### Why stretching

The aims of stretching are to gently lengthen muscles before and after any form of exercise, and to improve tissue elasticity / flexibility. If done correctly, stretching will help prevent injuries and can even improve athletic endurance, performance and recovery time.

## Forward flexion

To undertake this test you will require:

- a tape measure
- a partner

### Method

After a brief warm-up, the subject takes their shoes off and sits on the floor with legs extended. The back of the knees must touch the ground. Keeping your back strait and slowly reach forward with both hands. When you can't reach any further, hold the position for 3 sec. and measure in cm from the end of your fingers to your toes.

The result may be in the negatives (-2cm; I can't touch my toes) or positive (2cm; I can reach past my toes).

### Score

Repeat this three times with a rest between each attempt. Record the best result.

## Conclusion

Performance in any sporting event is the result of a multitude of factors, which include the amount of training performed, the body's adaptation to the training, motivation level, nutritional status and weather conditions to name a few. Through fitness testing, the factors involving physiological processes, can be measured and ultimately improved upon.

Of the many benefits of fitness testing, the major use is to establish ones strengths and the aspects to improve in each athlete which is done by comparing test results to previous results. In doing so, you can see the areas that need improvement, and the training program can be modified accordingly. This way valuable training time can be used more efficiently.

## Sources

Rob's home fitness testing: <http://topendsports.com/testing/main.htm>

Net Fit web site: <http://www.netfit.co.uk/menu.htm>

## Personal fitness results

NAME: \_\_\_\_\_  
AGE: \_\_\_\_\_ GENDER:   f   /   m    
HEIGHT: \_\_\_\_\_ m WEIGHT: \_\_\_\_\_ lbs.  
DATE OF TEST: \_\_\_\_\_ LOCATION: \_\_\_\_\_

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### Station #1 Aerobic Endurance

Aerobic fitness	Distance: _____	HR: _____
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### Station # 2 Strength

1.a) Wall sit	Time: _____
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Or

1.b) Hiking endurance test	Time: _____
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2. Sit-up test	# of reps: _____ in 60 sec
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3. Chin-up test	# of reps: _____
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### Station # 3 Flexibility

Flexibility	circle the best trial: 1 <sup>st</sup> : _____ cm 2 <sup>nd</sup> : _____ cm 3 <sup>rd</sup> : _____ cm
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