



**National  
Coaching  
Certification  
Program**

*And*



Canadian Yachting Association  
Association Canadienne de Yachting

*Present the*

# **Level 4/5 Coach Program Handbook**

Updated June 2007

The National Coaching Certification Program is a collaborative program of the Government of Canada, provincial/territorial governments, national/provincial/territorial sport federations, and the Coaching Association of Canada.

### Partners in Coach Education

 <p>ALBERTA SPORT, RECREATION PARKS &amp; WILDLIFE FOUNDATION <i>Enhancing Alberta's Communities</i></p>	 <p>BRITISH COLUMBIA Ministry of Community, Aboriginal and Women's Services Sport and Physical Activity Branch</p>		
	 <p>GOVERNMENT OF NEWFOUNDLAND AND LABRADOR Department of Tourism, Culture &amp; Recreation</p>		
 <p>Northwest Territories Municipal and Community Affairs</p>	 <p>NOVA SCOTIA Sport and Recreation Commission</p>		
		 <p>Community and Cultural Affairs Culture, Heritage, Recreation and Sport</p>	
<p>Secrétariat au loisir et au sport Québec</p> 	 <p>Saskatchewan Culture, Youth and Recreation</p>	 <p>Community Services Sport and Recreation Unit</p>	

The programs of this organization are funded in part by Sport Canada.



Printed in Canada

This program was developed from the document entitled "A Guide to Program Design, Delivery and Evaluation" written by Alain Marion M.Sc. for the National Coaching Certification Program. The Sport Specific modules; Tasks #3, #6, #9, #11, #14, #15, #20, #21 & #22, were written by David Telles-Langdon M.Ed., Ch.P.C. (Past CYA Level 4/5 Coach Program Chair). David Thomas M.P.E. (Past CYA High Performance Director) wrote Task 10.

**© This document is copyrighted by the Canadian Yachting Association (2007). All rights reserved.**

# Table of Contents

Goals and Objectives of the NCCP Level 4/5 Program	iv
Task System Overview	iv
Certification Requirements at Level 4/5	v
Evaluation	vii
Steps in Processing Level 4/5 Post-course Assignments	ix
Evaluation of Technical/Practical Tasks	x
Master Coach and Coach Candidate Responsibilities:	xi

<u>Task</u>	<u>Course</u>	<u>Hrs.</u>	<u>Pg.</u>
<i>Task #1.</i>	<i>Metabolic Energy System Training</i>	24	1
<i>Task #2.</i>	<i>Strength Training for Elite Athletes</i>	24	7
Task #3.	Wind Prediction - Wave, Current & Tide Analysis	18+	12
<i>Task #4.</i>	<i>Nutrition for Optimal Performance</i>	18	18
Task #5.	Environmental Factors Effect on Performance	18	22
Task #6.	Recovery & Restoration: Principles & Methods	24	26
<i>Task #7.</i>	<i>Mental Skills for Coaches</i>	18	30
<i>Task #8.</i>	<i>Psychological Preparation of Elite Athletes</i>	24	33
<u><i>Task #9.</i></u>	<u><i>Practical Coaching: Advanced Skills Training</i></u>	18+	36
Task #10.	Biomechanical Analysis of Advanced Skills	24	39
<u><i>Task #11.</i></u>	<u><i>Practical Coaching: Advanced Tactics &amp; Strategy</i></u>	18+	42
<u><i>Task #12.</i></u>	<u><i>Planning &amp; Periodization: Optimal Sequencing of - Sport Science, Training and Competitive Activities</i></u>	32	46
Task #13.	Motor Performance Analysis: (Athletes)	36+	51
<u><i>Task #14.</i></u>	<u><i>Practical Coaching: Running Training Camps</i></u>	18+	53
<u><i>Task #15.</i></u>	<u><i>Practical Coaching: Managing a Competitive Tour</i></u>	18+	57
<i>Task #16.</i>	<i>Athlete Long-Term Development</i>	18	60
<u><i>Task #17.</i></u>	<u><i>Leadership &amp; Ethics</i></u>	40	63
Task #18.	Enhancing Coaching Performance	30	66
Task #19.	The Canadian Sport System	18	69
Task #20.	Planning the National Team Program	18	71
<u><i>Task #21.</i></u>	<u><i>Rules, Protest Hearing Preparation &amp; Appeals</i></u>	18+	76
<u><i>Task #22.</i></u>	<u><i>Equipment Performance Analysis: (Testing &amp; Measurement)</i></u>	18+	78

Tasks in italics will be completed through the National Coaching Institute Diploma program in High Performance coaching.

Solid underlined tasks are required for Level 4 Certification by CAC.

Dot dash underlined tasks are required for Level 4 Certification by CYA.

+ Indicates that “Practical Coaching Hours” are required in addition to classroom time.

## **Goals and Objectives of the NCCP Level 4/5 Program**

Levels 4 and 5 of the National Coaching Certification Program (NCCP) represent the highest components of coach education available in Canada. The goal of the NCCP at these levels is to provide coaches with advanced applied training opportunities that meet the highest education and evaluation standards.

As a result of their certification at Levels 4 and 5, coaches will demonstrate a thorough understanding of their sport and its demands, from developmental up to the elite or international level. They will also be able to plan, implement, and evaluate a variety of programs and activities aimed at providing an environment, which is optimal for the overall development of the athlete, including those who aspire to and have the potential for international levels of performance.

The Level 4/5 program will enhance the quality of the coach's interventions in the areas of technical, tactical, physiological, and psychological athlete preparation, as well as his or her managerial competence. The coach's pedagogical, analytical, critical and conceptual skills will also be refined, and he or she will provide leadership at all levels of the sport system. This, in turn, will translate into a better sport experience for athletes, including more consistent and superior performances.

Level 4/5 certified coaches will also understand and promote the concept that every athlete is entitled to a fair opportunity to develop his or her potential to its fullest through a balanced practice of sport.

Finally, certification at either Level 4 or Level 5 of the NCCP represents a key component of the professionalization of coaching. As such, it serves to establish the theoretical, technical, practical, and ethical standards upon which the competency of professional coaches can be judged.

### **Task System Overview**

To be certified at Level 4 or Level 5 of the NCCP coaches must complete a series of "Tasks" or "modules." Twenty-two (22) Tasks form the Level 4/5 curriculum.

Each Task features a series of themes and need-to-know areas that are considered important for high performance coaches. Such need-to-know areas constitute the key teaching points of the curriculum established for the Task.

Note: The word "Task" has traditionally been used to describe a specific theme or subject matter of the Level 4/5 program and, as such, has become part of the NCCP terminology. However, the use of this term may have a potentially negative connotation, e.g. a "chore" or "something that one has to do and be done with." The word "Task" is clearly not intended to have this meaning at Level 4/5. Rather, each Task should be viewed as a part of a broad training and professional development continuum.

## **Certification Requirements at Level 4/5**

The CYA's Level 4 program consists of twelve (12) of the twenty (22) Level 4/5 Tasks; Tasks #9, #11, #12, #14, #15, #17, #21 and #22 are mandatory, and the coach is required to complete an additional four (4) tasks in order to meet NCCP minimum requirements for Level 4 certification. Completion of the remaining ten (10) Tasks are required for a coach to be certified at Level 5.

All Level 4/5 Tasks feature evaluation requirements. A Task credit is granted only upon successful completion of all the evaluation components established by CAC and the CYA. Upon completion of the required number of Tasks for certification at Level 4, the CYA requires the coach to make a presentation to a panel of technical and sport science experts. This exercise takes the form of an "oral defence" or a "comprehensive review," and is aimed at verifying the degree with which the candidate has integrated the specific knowledge of each module and is actually applying it in his/her coaching activities.

### **Prerequisites**

Coaches enrolling in the Level 4/5 program must meet the following criteria:

- Must be a current registered CYA coach
- Must be certified at Level 3 (i.e. Theory, Technical, and Practical).
- Must have a minimum of one year of experience as a provincial sailing team coach or head coach of a Youth or High Performance Team including competitive tours.
- Must be actively coaching.
- Must have the recommendation of a Provincial Sailing Association (PSA).

### **Program Options**

- National Coaching Institute: 8-month Full-time Residential Program
- National Coaching Institute: 24 Month Part-time Program
- Individual Task Registration: Generic &/or Sport specific

There are 7 National Coaching Institutes in Canada and 4 Satellite Programs. Currently the Victoria Institute has a full time sailing Coach placement each year. Opportunities at other institutes will be developed and negotiated as required and as possible.

Institutes: Victoria, Calgary, Saskatoon, Winnipeg, Toronto, Montreal, and Halifax.

Satellite Programs: Vancouver, Brandon, London and Kingston.

### **Philosophy of the Level 4/5 Program Delivery**

The Level 4/5 program must focus on the application of the knowledge and need-to-know areas of each Task or module. Tasks must be delivered by qualified individuals, and learning opportunities must be designed in such a way as to meet the basic objectives set for the Task while at the same time addressing the specific needs of the target group.

## **Procedure to be followed by Coaches**

### ***Program registration***

- Make application to the CYA indicating interest in pursuing Level 4/5 certification;
- An outline of how the candidate views his or her future involvement with sport, including career aspirations both short term and long term.
- Submission of a brief, 2 page maximum, paper which states a direction (problem/position/inquiry) which the coach would like to pursue throughout her/his Level 4 program;
- A brief profile of their coaching experiences to date (candidates will have been working with top club athletes: those provincial athletes competing in the National Youth Championships; candidates will have had experience as a club head coach, or equivalent);
- Request, from the CYA, the schedule of preparation opportunities and the overview of evaluation requirements in place for the various Tasks.

### ***Course registration and attendance***

#### **Modular or generic delivery of a Task**

- Confirm with the CYA that the delivery option considered is acceptable, and that Level 4/5 credit will be recognized.
- Register for the course before the deadline, and pay the course registration fee to the host agency.
- Complete all the pre-course preparation exercises, including readings and workbook exercises as required.

#### **Sport-specific delivery**

- Register for the course before the deadline, and pay the course registration fee to the CYA or its mandated representative.
- Complete all the pre-course preparation exercises, including readings and workbook exercises as required.

### ***Post-course procedure***

- Complete the Task evaluation requirements before the prescribed deadline.
- Once completed, make a copy of the assignment for personal record.
- Return the original assignment for marking, as instructed by the course presenter.

## Evaluation

### ***Evaluation and Professionalization of Coaching***

The need for rigorous evaluation procedures and standards to be in place at Level 4/5 stems from the ever-increasing role that this program will be playing in the area of professionalization of coaching.

More specifically, Level 4 certification has been established as one of the key requirements for candidates who aspire to the status of “professional coach,” as defined and determined by the Canadian Professional Coaches Association (CPCA). This stresses the importance of verifying the candidate’s coaching knowledge, skills and expertise through a variety of mechanisms and procedures to ensure that the standards set for advanced coaching certification are being met.

### **Components of Task Evaluation**

Up to three evaluation components per Task may have to be successfully completed by the coach for a Level 4/5 credit to be recognized. These include an objective evaluation, a post-course homework assignment, and a comprehensive review.

#### ***Objective evaluation***

The objective evaluation will assess the candidate’s knowledge of the key concepts that must be mastered in a given Task. Objective evaluation will be used for Tasks #1, #2, #4, #5, and #16.

Objective evaluations must be completed after the course, under a “closed book” format and in a controlled environment. Options for managing the objective testing may include

- Special testing sessions organized on a regular basis at NCI’s
- Special testing sessions organized in conjunction with events such as NCS, the International Coaching School (ICS), PCS’s, etc.

#### ***Post-course homework assignment***

The post-course homework assignment will assess the ability of the coach to analyze the demands of his/her sport and plan/design/sequence specific activities relevant to the Task’s main theme.

The assignment will feature extensive sport-specific applications of the knowledge, and can take the form of case studies, program design, development of specific action plans, etc. depending on the nature of the Task.

Every Level 4/5 Task must include a post-course homework assignment.

### ***Comprehensive review***

Level 4/5 coaches are expected to (i) apply the knowledge they have acquired in each Task, (ii) implement the programs and plans developed, and (iii) monitor and analyze the success of such programs on an ongoing basis.

The comprehensive review will take place upon completion of the candidate's Level 4 program, and will cover topics related to most Level 4/5 Tasks. The process will require the coach to make a presentation to a Review Committee composed of sport scientists and technical experts from the sport. The purpose of this presentation will be to review the candidate's physical, mental, technical, and tactical training programs, and verify how these have been integrated and implemented in an actual coaching environment. On the occasion of this comprehensive review, the coach will:

- (i) Present an overview of his/her integrated yearly training and competitive program to the panel,
- (ii) Provide an analysis of these programs based on actual athlete training response and results and;
- (iii) Discuss specific elements pertaining to the various components of athlete's preparation (e.g. physical, mental, technical, and tactical). The coach's detailed training diary must also be submitted to the Review Committee as supporting documentation.

### ***Level 4/5 Task Evaluation Scale***

The following scale will be used to evaluate the candidate's post-course homework assignment:

- **Honours**—indicates that the work submitted by the coach is of very high quality, and demonstrates a thorough understanding and command of the topic.
- **Pass**—indicates that the work is acceptable, and shows that the minimum standards set for the Task were met.
- **Incomplete**—indicates the work does not meet the minimum standards set for the Task, and must be resubmitted, taking into account the evaluator's feedback.

To obtain credit for a Task, a coach must obtain a minimum grade of pass in the post-course assignment, and a minimum of 65% in the objective exam (if applicable).

A candidate failing to meet these minimum standards will be required to re-do or re-submit the assignment. Level 4/5 credit will not be recognized until all the minimum requirements set for the Task have been met.

Successful completion of the comprehensive review is also required for a candidate to obtain certification at Level 4.

## Steps in Processing Level 4/5 Post-course Assignments

The following steps describe the responsibilities of the coach, the host agency, the CYA, and the CAC in processing Level 4/5 post-course assignments:

- The coach completes the assignment.
- The coach makes a copy of the assignment for his/her own records.
- The coach returns the assignment to the host agency by the agreed-to deadline.
- The host agency records the date of receipt of the coach's assignment on the standard Level 4/5 Task Register Form (Appendix 1).
- The host agency sends the assignments to the marker. This information is recorded on the host agency's copy of the Level 4/5 Task Register Form.
- The marker marks the assignments.

Upon successful completion of assignments:

- The marker records successful completion of the Task by the coach in his/her copy of the Level 4/5 Task Register Form.
- Copy of the marker's Task Register Form and marked assignments are returned to the host agency.
- The host agency records the successful completion of the Task on its copy of the Level 4/5 Task Register Form.
- The host agency sends marked assignments with marker's feedback and recommendations to the CYA and records this information on the Level 4/5 Task Register Form.
- The CYA verifies that the coach meets all eligibility criteria, and that the work meets all the requirements and standards set for the Task.
- If all requirements have been met, the CYA makes a recommendation to CAC to register the coach's Level 4/5 credit on the NCCP Database. The CYA then returns the marked copy to the coach. If the CYA's program includes additional content or evaluation requirements, the appropriate material is sent to the coach with instructions. In this case, any evaluation or control is dealt with internally by the CYA.

In the case of incomplete assignments:

- The marker records that the coach's assignment was incomplete in his/her copy of the Level 4/5 Task Register Form.
- Incomplete assignments are returned to the host agency by the marker, with instructions to follow-up with the coach.
- The marker contacts the host agency to discuss the fee for second marking.
- The host agency returns the incomplete copy with the marker's feedback and instructions to the coach. This information is recorded in the appropriate section of the host agency's Level 4/5 Task Register Form.
- The coach is responsible for making the appropriate changes/additions by the pre-determined deadline.
- The revised copy of the assignment is submitted to the host agency by the coach, with payment of the pre-set fee for second marking.

## Evaluation of Technical/Practical Tasks

Due to their sport-specific nature, Tasks #3, #9, #11, #14, #15, #20, #21, and #22 represent critical parts of the Level 4/5 program. The purpose of these Tasks is to provide candidates with up-to-date information on the latest sport-specific technical aspects, along with the methodologies and intervention skills required for effective coaching at the elite level. Upon successful completion of these Tasks, coaches will be expected to demonstrate a high degree of expertise, competency, and leadership during their actual “hands-on” technical involvement with elite athletes in a variety of training and competitive situations.

Competency in these six Tasks bear significant weight on the granting of Level 4 or Level 5 certification to a coach, and it is the CYA’s responsibility to ensure quality control at this level.

## Certification Requirements

In order to be eligible for salary support from Sport Canada, coaches must have NCCP Level 4 certification as a minimum. This requirement applies to head national coaches, full-time assistant national coaches, junior national coaches, development team coaches, event/discipline coaches, full-time centre coaches (including shared support positions). This includes part time national-level coaches who receive a contribution equal to at least 50% of the amount outlined on the Sport Canada salary grid. It should be noted that certification at Level 4 is not a requirement for assistant national coaches, junior national coaches, development team coaches, or event/discipline coaches who receive honoraria only, or to coaches contracted on a project basis.

Effective in 1996, all Canadian Olympic coaches were required to have Level 4 certification.

Effective in 1999, Canadian Pan American Games Head coaches were required to have Level 4 certification. Pan American Games assistant coaches must be certified at Level 3.

Level 4/5 coaches and the Level 4 candidates are to be the staffing priority for all CYA & Canadian Sailing Team (CST) sanctioned camps and events (competitive tours).

Certification at Level 4 is a requirement for the designation Chartered Professional Coach, as established by the Canadian Professional Coaches Association (CPCA).

## Master Coach and Coach Candidate Responsibilities:

### ***Master Coach Responsibilities.***

- A Master Coach will be nominated for each candidate. The Master Coach will be most active in the sailing specific tasks. Their responsibilities will be to:
- Assist the candidate to define and achieve their objectives;
- Assist the candidate to develop their contracts;
- Supervise the candidates coaching activities and monitor their progress through the 20 tasks;
- Liaise with the appropriate sport scientists regarding the coach level 4 candidates sport science tutorials or course work;
- Teach aspects of coaching theory as it relates to preparation for training and competition;
- Provide input to the candidate on each of the objectives identified in the learning program;
- Evaluate each of the candidate's reports, discuss them with the candidate and forward them to the Canadian Yachting Association.
- Report to the Coaching Development Committee annually. This report should outline the major activities which were completed, and evaluation of the candidates work;
- Assist the candidate to evaluate how they wish to improve their coaching style;
- To report intermittently on how the candidate is progressing in expanding their coaching skills;
- To provide feedback so that the candidate may plan and then implement changes in personal coaching style;
- To be responsible for reviewing and commenting on the candidates:
  - Yearly Training Plan
  - Training Diary
  - Development Plan
  - Competitive Tour Organizational Plan
  - Fitness Training Program
  - Mental Training Program
  - Video and Photo Work
- To review the candidate's performance as a coach.

***Coach Candidate responsibilities.***

- Review and understand the CYA Coach Level 4/5 program and self direct learning information package;
- Complete the learning contract form for each of the objectives of his/her program;
- For each objective the learning contract form should include:
  - The learning resources and strategies
  - The evidence of accomplishment (ex. Report, university course, etc..)
  - The evaluation criteria (ex. Rating by peers, 70%...)
  - Deadline or schedule
  - Budget
- Review the learning contract with Master Coach.
- Make modifications on the contract as suggested by the Master Coach (if necessary);
- Send final learning contract to CYA;
- Meet regularly with his/her Master Coach;
- Report to the Master Coach. These written reports should outline the major activities that were completed in the previous quarter and a self-evaluation of progress;
- Successfully complete the evaluation criteria for each objective of the candidate program;
- Successfully complete the final interview of the CYA CDC;
- To define the coaching situation that he/she will work in during the 4/5 program

# Task #1: Metabolic Energy System Training

## Goal:

Based on the actual demands of the sport, the coach will design, implement, and evaluate specific training programs and activities to improve the athlete's energy systems.

## Learning objectives:

Upon completion of this Task, the coach will:

- Demonstrate a thorough understanding of the characteristics of the three energy systems of the human body (anaerobic alactic, anaerobic lactic, and aerobic) and of their trainability.
- Understand the factors that limit the performance of each energy system.
- Demonstrate a thorough understanding of the energy demands of his/her sport or event, by producing a time-motion analysis of his/her sport or event. In this process, the coach will take into consideration the following factors: the characteristics of the sport/event, the intensity at which the athlete must compete, the duration of the effort, the duration and frequency of recovery periods, and the chosen tactics/strategy.
- Be familiar with various types of training methods/protocols, as well as their respective effects on the development or maintenance of the three energy systems.
- Know specific methods to estimate the intensity of training, as well as the limitations of these methods.
- Design general and specific training programs aimed at developing the energy systems, and sequence the same optimally within micro-cycles and meso-cycles of the yearly training plan.
- Be familiar with laboratory and field tests aimed at assessing the athlete's level of fitness in each of the three energy systems, as well as with normative data pertaining to such tests.
- Monitor the progress made by the athletes in the area of energy systems training, and adjust training programs when appropriate based on the actual athlete's progression.
- Know how to access and/or retrieve sport-science information pertaining to the energy systems.

## Generic need-to-know areas

- ***The three energy systems of the human body: brief review***
  - Role of ATP in muscle contraction
  - The various substrates and pathways by which they are used/broken down within the muscle cell to produce ATP:
    - Phosphagens (ATP/CP)
    - Lactic Acid system (anaerobic glycolysis from glucose/glycogen)
    - Aerobic system (oxidation of glucose, glycogen, free fatty acids, and amino acids)
  - Characteristics of the systems that produce ATP in terms of their respective
    - Peak Power (i.e. the amount of energy that can be produced per unit of time)
    - Capacity (i.e. the amount of energy that can be produced by the system)
    - Inertia (i.e. the delay before the mechanism reaches its Peak Power)
    - Critical duration (i.e. the time for which Peak Power can be maintained)
  
- ***Key physical qualities: definitions and norms***
  - Definition of the term “Maximal Aerobic Power”, with reference to the physical concepts of work/power
  - $\text{VO}_2$  max.
    - Definition; common units used to express  $\text{VO}_2$  max.
    - Norms for athletes/non-athletes; sport-specific norms
    - General differences between sexes, and reasons
    - Physiological factors that determine  $\text{VO}_2$  max.
    - The role of heredity
    - Expected fluctuations during the year/season
    - Trainability of  $\text{VO}_2$  max.
  - Mechanical/Technical efficiency
    - Definition/concept of efficiency
    - Effects of good/poor technical efficiency on energy expenditure and on overall performance in endurance events
  - Endurance of the aerobic system
    - Definition of endurance
      - Distinction between “endurance” and “power”
      - Methods to estimate the level of endurance of an athlete;
    - Inter-individual variations in the level of aerobic endurance
      - In general
      - Between men and women
    - Norms on the endurance at various sub-maximal intensities, as expressed as a percentage of  $\text{VO}_2$  max.

- Physiological factors which can affect aerobic endurance
    - Fibre type
    - Glycogen of muscle and liver: evolution of status of such reserves as a function of intensity and duration of effort; status of such reserves at the onset of “fatigue”
    - Lactate production and “anaerobic threshold”
    - Ability of the body to dissipate heat
    - Effect of intake of glucose and water during effort
  - Trainability of aerobic endurance
  - Power/capacity of the anaerobic systems
    - Distinction between “power” and “capacity” for the anaerobic systems
    - Depletion of substrates
      - Rate and level of depletion in relation to intensity/duration of effort, and impact on performance
      - Effect of the intensity/duration of effort and of the duration/type of recovery on the level of the ATP/CP reserves, and on the energy system(s) predominantly stressed
      - Variables which can affect the level of power/capacity of the anaerobic systems:
        - Strength
        - Fibre type
        - Neuromuscular factors/speed of movement
        - Technique
        - Aerobic power
        - Motivation
        - General differences between sexes, and age groups
        - Role of heredity
        - Fluctuations during the year/season
        - Trainability of the anaerobic systems
- ***Time-motion analysis: the relative importance (i) of each energy system to performance in the sport (ii) of specific qualities such as power and endurance***  
 Based on the characteristics of the sport or the event, the intensity at which the athlete must compete, the duration of the effort, the duration and frequency of recovery periods and the chosen tactics:
- Estimation of the energy produced by the ATP/CP system, the Lactic Acid system and the Aerobic system relative to overall energy demands
  - The importance of each system to performance at the elite level
  - How variables such as competitive calibre, tactical and strategic considerations, etc. can affect the energy demands of the activity
  - Step-by-step approach on how to make the above time-motion analyses.

▪ ***Training regimens/protocols and their respective effects of on the development or maintenance of the physical qualities***

Effects of various training protocols on aerobic power/endurance; anaerobic power/endurance given

- Duration of effort/recovery period
- Number of repetitions
- Intensity

Required overload in terms of volume, intensity, and frequency of training

- To develop the various qualities
- To maintain the various qualities
- For elite athletes
- For non-elite athletes
- Gender differences
- Age group differences

Concept, principles, relevance to the sport, training benefits, and optimal use within the yearly training program of

- Continuous/steady state training
- Interval training
- Competitions as a training method
- Fartlek training
- Ergometer training
- Other sport-specific methods

▪ ***Methods to control the intensity of training***

Importance of controlling the training intensity

- Development of the desired physical quality
- To avoid over-training.

Heart rate (H.R.) methods:

- Cardiac response to exercise
  - Cardiac response to sub-maximal exercise (continuous/ intermittent)
  - Relationship between Max H.R. and  $VO_2$  max.
  - Inter-individual differences in the cardiac response to exercise
  - Cardiac response to exercise according to age and sex
  - Effects of psychological stress, fatigue, digestion on cardiac response at exercise
  - Effects of environmental factors such as heat and altitude on cardiac response at exercise
  - Delay for Max H.R. to be reached at exercise
  - Effect of training on Max H.R., sub-maximal H.R. at same absolute intensity and at same relative intensity
  - Limitations of the method for anaerobic-type training

- Specifics, level of precision, and pros and cons of the following heart rate methods:
  - 220-age;
  - Relationship between % VO<sub>2</sub> max. and % Max H.R.
  - Karvonen formula
  - Limitations of such methods
- Heart rate monitors:
  - How to use them
  - Level of precision/limitations of the method
  - Characteristics/options of some models
  - Interfaces/computers/recording and analysis of athletes' H.R. as a means to control intensity of exercise

#### Breathing sensation

- The three breathing “zones”
- Specifics, level of precision and pros and cons of the method

#### Anaerobic/lactate/ventilation threshold

- Concept
- Effects of training at specific lactate levels
- Relationship between H.R. and anaerobic threshold
- Type and frequency of testing required
- Limitations of the method
- Debate over the validity of the concept within the scientific community

#### Training at specific competition speeds/pace

- Concept
- Training benefits (physiological, technical)
- When to begin/include within yearly plan
- Relationship between this and interval/continuous training

#### Sport-specific training methods

- ***Monitoring of the progress accomplished by the athlete in the area of physical training, and adjustment of the training programs when appropriate***
  - Importance of tests and necessary characteristics in terms of
    - Validity
    - Repeatability
    - Specificity
  - Evaluation of VO<sub>2</sub> max. /MAP using laboratory and field tests
    - Advantages/disadvantages of lab vs. field tests
    - Examples of lab/field protocols
    - Interpretation of results
    - Common units used to express results of tests
    - Norms for athletes/non-athletes
    - Sport-specific norms

- Evaluation of anaerobic power/capacity using laboratory and field tests
  - Advantages/disadvantages of lab versus field tests
  - Examples of lab/field protocols
  - Interpretation of results
  - Common units used to express results of tests
  - Norms for athletes/non-athletes
  - Sport-specific norms
  
- *Design and optimal sequencing of training programs aimed at developing the energy systems*
  - Within the YTP
  - Within meso-cycles
  - Within micro-cycles

### **Preparation/Delivery Options**

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted. The course must be in Physiology or Exercise Physiology and meet the content requirements as set out above.

Independent studies at a University or with a Physiologist may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable.

### **Evaluation**

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

Practical application of this task will be evaluated within Task #12

## **Task #2: Strength Training for Elite Athletes**

### Goal:

Based on the actual demands of the sport, the coach will design, implement, and evaluate specific training programs and activities to improve the athlete's strength qualities.

### Learning objectives:

Upon completion of this Task, the coach will:

- Understand the key physiological and neurological factors determining strength.
- Understand the difference between the various types of strength. (Maximal strength: absolute and relative; speed strength: explosive and starting; strength endurance).
- Understand and apply to his/her sport the concept of optimal strength development.
- Thoroughly understand the strength demands of his/her sport or event, and identify the type(s) of strength that need to be developed.
- Be familiar with various types of loading protocols for the development or maintenance of strength qualities, and their neurological and physiological effects.
- Be familiar with normative data on absolute and relative strength in high performance athletes in a variety of sports and in his/her own sport.
- Design sport-specific training programs aimed at developing /maintaining strength qualities, and sequence the same optimally within micro-cycles and meso-cycles of the yearly training plan, taking into consideration the impact strength training may have on the development/maintenance of other performance factors (skills, other physical qualities, etc.).
- Select equipment and exercises appropriate for the development or the maintenance of strength in his/her sport, and teach athletes how to properly execute specific strength training exercises.
- Teach appropriate weightlifting techniques for selected exercises, and correct improperly executed movements
- Implement a strength-training program, monitor the progress made by the athletes, and, if appropriate, adjust the program.
- Know how to access and/or retrieve sport-science information pertaining to the development of strength.

## Generic need-to-know areas

- ***Brief theoretical considerations***
  - Definitions of strength (maximal strength: absolute and relative; speed strength: explosive and starting; strength endurance).
  - Skeletal muscle structure
    - Connective tissues (epimysium; perimysium; endomysium)
    - Tendons
    - Structure of the muscle cell (fiber, myofibril, myofilaments)
  - Summary of the sliding filament theory of muscular contraction
  - Neural aspects of muscle contraction
    - Motor units: structure
    - Factors of strength gradation: number of contracting motor units and frequency of contraction
  - Structural and functional characteristics of muscle fibers
    - Fiber types (slow twitch; fast twitch A; fast twitch B)
    - Fiber type differences in the following aspects: neural, structural, energy substrates, functional
  - Types of muscular contraction and definitions
    - Isotonic (dynamic/concentric)
    - Isometric (static)
    - Eccentric
    - Isokinetic
  - Relationship between Force-time, Force-velocity, Power-velocity, Length-tension, and Angle-tension
  - Influence of fiber distribution within muscle
- ***Sport-specific strength demands***
  - Importance of strength for the activity/sport in question; type(s) of strength required
  - Muscle group(s) that contribute directly to the movement/key technical actions
  - Muscle groups that contribute indirectly to the activity (i.e. to support/stabilize the body)
  - Sequence and type of muscular contractions in the most relevant technical actions according to the position or discipline
  - Identification of appropriate type of strength for the sport/event
  - Normative data on absolute and relative strength in elite athletes (males/females) in the sport/event

- ***Loading parameters for strength development***
  - How to determine maximal strength for a particular exercise/movement
    - RM continuum according to several authors
    - RM continuum for several exercises
    - Evolution of RM continuum with training age
  - Review of various loading parameters (protocols and methods) for developing and maintaining strength in elite athletes:
    - Classification of the various strength methods
    - Intensity of each repetition in % of maximal strength (or 1 RM)
    - Speed of execution of the movement
    - Angle of execution of the movement
    - Type of contraction
    - Number of repetitions per set
    - Duration of pause between repetitions
    - Number of sets
    - Recovery period between sets
    - Sequencing of exercises within sets
    - Resulting training effects of each specific protocol:
      - Hypertrophy of muscle cells
      - Biochemical adaptations
      - Muscle fiber compositional changes
      - Neural adaptations/cross transfer
      - Hormonal response
  - Plyometric training
    - Principle
    - Benefits
    - Progression
    - Precautions to take to avoid injury
    - Example of program
  - Electric muscle stimulation
    - Principle
    - Protocols
    - Pros and cons of the method
  - Circuit training
    - Principle
    - Protocols
    - Pros and cons of the method
  - Strength training and other qualities
    - Effects of strength training on speed of movement
    - Effects of training strength on endurance, and vice versa
    - Long-term effects of strength and weight training

- ***Strength training exercises: practical session***
  - Types of equipment available: advantages/disadvantages of
    - Cybex and isokinetic-type machines
    - Universal/Gladiator-type machines
    - Nautilus-type machines and Cams
    - Free weights
    - Athlete's own body weight; chin-up bars
    - Medicine balls
    - Springs; rubber cables
    - Sport-specific devices
    - Others
  - Review of specific exercises/movements for developing strength in various muscle groups. Correct execution and safety measures.
  - Sport-specific devices for optimal strength/power development
    - Advantages of such equipment for high performance athletes
    - Variables to consider in designing such devices
  
- ***Tests for monitoring strength and power***
  - Measurement of strength, power, and endurance
  - Transferability of test results
  - Cybex and spring dynamometers
  - Specificity of testing mode
  - Interpreting strength and power tests
  - Program prescription/adjustments based on test results and athlete progression
  
- ***Design of sport-specific strength training programs***
  - Periodization of strength training within the YTP
    - Identification of appropriate strength training objectives according to the phase of the YTP (GPP; SPP; PCP; CP)
    - Frequency and duration of strength training phases
    - Loading distribution within meso/micro-cycles
    - Law of diminishing returns
    - Principles of variation and overload: how they apply to program design
    - Strength maintenance during various phases of the competitive season
    - Sequencing of strength training versus other elements of training in the yearly plan: strength training and the interference principle
  - Selection of the appropriate exercises and training protocols

- ***Special topics***
  - Nutrition and strength training
    - Dietary requirements during heavy strength training phase
    - Protein supplements: myths and reality
  - Strength training and the child athlete
  - Strength training and the female athlete
  - Injuries and strength training: muscle soreness/DOMS
  - Flexibility training as a complement to strength development

## Preparation/Delivery Options

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted. The course must be in Physiology or Exercise Physiology and meet the content requirements as set out above.

Independent studies at a University or with a Physiologist may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

## Evaluation

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

Practical application of this task will be evaluated within task #12

## **Task #3: Meteorological & Hydrological Analysis**

This Task has been developed by, and must be delivered and evaluated, by the CYA.

### **Goal:**

Based on the actual demands of the sport, the coach will be able to assist sailors in analyzing the weather systems, wave pattern, current and tide prior to competition. The purpose of this Task is to present knowledge and application of performance factors critical to success in sailing competition that cannot be covered in any other Level 4/5 Task, due to their high degree of specificity and/or specialization.

### **Learning Objectives:**

Upon completion of this Task, the coach will:

- Understand the impact of wind, waves, current and tide on the outcomes of a sailing competition
- Demonstrate a thorough understanding of the strategic implications of weather, current, tide and waves
- Know how to access and/or retrieve information pertaining to weather, wind and tidal predictions
- Know how to take accurate measurements of the local conditions
  - Wind strength & direction
  - Current
- Be familiar with the use of computer generated tide prediction
- Be able to use fixed and hand-bearing compass' to assist with wind and current direction determination and wind-shift pattern prediction
- Be able to use an anemometer to assist with wind direction and speed determination
- Be able to use a current stick to assist with current direction determination
- Be able to use a hand-held GPS to assist with current prediction and to determine strategic advantage
- Understand the respective roles and responsibilities of coaches and athletes in the planning and implementation of a race strategy

Specific need-to-know areas:

- ***Synoptic Meteorology***
  - How to read a weather map
    - Weather systems
      - Tropical/Polar Tropopause
      - Warm front/Cold front
      - Occlusion
      - Isobars
        - Secondary
        - Straight
      - Isotherm
      - Highs
      - Anti-cyclone
      - Lows
        - Depression
        - Col
    - Barometric indications
      - Rising/falling pressure
    - Development of wind in the northern and southern hemispheres
      - Coriolis' effect/Circulation
      - Adiabatic lapse rate
      - Advection inversion
      - Axial flow
    - Sky colour
    - Clouds
      - The significance of clouds
      - Frontal clouds – Ana-front/Kata front/dry front
      - Roll clouds
        - How to read clouds
        - Classification
          - Altocumulus
          - Altostratus
          - Cirrocumulus
          - Cirrostratus
          - Cirrus
          - Cumulonimbus
          - Cumulus
          - Fracto-cumulus
          - Fracto-nimbus
          - Nimbostratus
          - Stratocumulus
          - Stratus

- **Wind**
  - Wind appraisal and the stability index
  - Gradient wind
  - Thermal wind
    - Origins – Convergent/divergent pattern
    - Temperature effects
    - Diurnal variation
  - Surface Wind
    - Light airs – Thermal excitation – Cellular mechanism
    - Breezes
    - Median wind
    - Oscillating shifts
      - Velocity back/veer
    - Persistent shifts
  - Inversion
    - Breakthrough
    - Transient reduction in surface wind velocity, typically present at the base of an updraft
    - Subsidence
  - Sea breeze
  - Land breeze
  - Shoreline winds
    - The quadrant effect – Counter flow/subsistence
    - Surface friction
    - Reversion and Refraction
  - Mountain and valley winds
    - Orographics
    - Anabatic wind
    - Katabatic wind
  - Effects of obstacles on wind direction & strength
    - Eddies
    - Gust mechanism - Fanning
    - Changes in wind direction
    - Effect on the apparent wind
  - Combination of various effects
    - Boundary layer – effect of depth
    - Laminar flow - waves
    - Vortices
    - Turbulent flow

- ***Waves***
  - Causes of waves
  - Waves in current
    - Weather-going current
    - Lee-going current
  - Diffraction/Refraction
  - Wave motion
  - Regular waves/chaotic waves
  - Swell
  - Measuring
    - Length
    - Speed
    - Surface water movement in waves
    - Orbital movement of water in waves
  - Effect of water depth
  
- ***Current***
  - How to read charts
    - Current effect on the strategy of each leg of the Olympic courses
    - Currents' local effects at major regatta sites (MOCR, Heyere, SPA, Kiel, CORK, WAVES, etc.)
    - Effect on the apparent wind
    - Current sheer
    - Lee-bow current
    - Corolis' effect
    - Bathymetry
      - Straight flow
      - Curved flow
      - Obstructed flow
      - Deflected flow
      - Secondary flow
      - Fan currents
      - Wind induced
    - Upwelling
    - Eddies

- ***Tide***
  - How to read tide tables
    - How to use the tide tables to predict the current
      - Diurnal
      - Semi-diurnal
      - Mixed
      - Flood/Ebb/Slack
      - Spring/Neap
      - Momentum effects
    - Tides' local effects at major regatta sites (MOCR, Heyere, SPA, Kiel, CORK, WAVES, etc.)
    - Gyral
  - Effects and impact of slack tide
  - Tidal tactics
  - How to measure tide strength
  - Tide effect on the strategy of each leg of the Olympic courses
    - Effect on wave chop
  - What affects the strength of tide
    - Causes
    - Newton's law application to the sea around the earth
    - Moon and Sun effects
    - Land masses effect
    - Coriolis' effect
  
- ***Pre-race predictions***
  - Record keeping
  - Data collection
    - Anemometer use
    - Compass use
    - Hand-held GPS use
    - Current stick use

## Preparation/Delivery

This task must be taken as a sport-specific course/module at a CYA Sailing Coach seminar on Wind, Waves, Current & Tide and through ongoing consultation/liaison with the Master Coach.

Post-graduate university courses taken in the Faculty of Science may be accepted in part. The courses must be in Meteorology and Oceanography and meet the content requirements as set out above.

Independent studies at a University or with a Meteorologist and/or Oceanographer may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

## **Evaluation**

Evaluation for this task is done through an individual research project on a pre-approved topic.

## **Individual research project**

The CYA requires coaches to complete a project (e.g. self-or directed studies; research on sport-specific performance factors, etc.), the applicant must submit a detailed proposal outlining the purpose of the project and the methodology to be followed. The practical applications of the topic and how it is related to high performance coaching or athlete preparation must also be demonstrated.

**NOTE:** Work already completed by a coach in another Level 4/5 Task may not be submitted again for credit in Task #3.

## **Task #4: Nutrition for Optimal Performance**

### Goal:

The coach will design, implement, and evaluate nutritional strategies aimed at optimizing the athlete's performance in training and competition.

### Learning objectives:

Upon completion of this Task, the coach will

- Be familiar with the need-to-know areas identified for each major theme:
  - The training diet
  - The competitive diet
  - Hydration
  - Nutritional assessment
  - Supplements
  - Nutrition during travel and in foreign countries
  - Weight control and special problems.
- Be capable of performing a basic nutritional analysis. In this process, the coach will assess the nutritional status of an athlete based on food intake and energy expenditure, and make appropriate recommendations.
- Develop a nutritional plan as part of his/her yearly-planning instrument.
- Develop a nutritional plan in preparation for a major competition.
- Evaluate the effectiveness of his/her nutritional plan.

Generic need-to-know areas:

- ***The athlete's training and competitive diet***
  - Pre-exercise
    - Foods to choose, foods to avoid and those to eat according to tolerance
    - Effect of concentrated sugar-rich foods in glycemia
  - During exercise
    - The use of special drinks
    - Nutrition for continuous or intermittent events
  - Post-exercise
    - Quick recovery
    - The importance of hydration
  - The importance of carbohydrates for energy
  - The connection between glycogen reserves and performance
  
- ***Hydration***
  - The importance of hydration for performance
  - Hydration pre-, during, and post-exercise
  - Symptoms and treatments of dehydration
  - The need for electrolytes
  - The use of special drinks
    - Types of drinks
    - Recommended composition
    - Factors affecting absorption
  - Calculating post-exercise fluid needs
  
- ***Nutritional assessment***
  - Nutritional assessment: how, when, what, by whom?
  - Various assessment tools to evaluate dietary practices: pros and cons
  - Assessment of the energy needs
  - Assessment of the energy expenditure
  - Assessment of the nutritional quality
  - Assessment of the iron, calcium, zinc, and magnesium in the diet
  - Special needs: during convalescence, anemia, osteoporosis, vegetarianism

- ***Supplements and ergogenic aids***
  - Protein supplements and amino acids
    - The two types of supplements
    - Their usefulness
    - The consequences of overuse
  - Vitamin and mineral supplements
    - The toxicity of a megadose
  - Specific cases when the use of supplements is necessary
  - How to choose a good supplement
  - Ergogenic aids: effects on performance and negative secondary effects of caffeine
  
- ***Weight control***
  - Caloric balance
  - How to lose weight without affecting performance
  - How to gain muscle bulk
  - The physiological effects of fasting
  - Nutritional disorders: anorexia nervosa and bulimia
    - How to identify inappropriate weight control behaviors
    - Medical complications associated with nutritional disorders
    - Preventive measures
    - Steps to take when a problem is detected
    - Appropriate coach attitudes towards these kinds of problems
  
- ***Travel***
  - Adapting meals and snacks overseas
  - The biological effects of traveling across several time zones
    - The various symptoms
    - The relative importance of the symptoms when traveling north-south, east-west, west-east
    - How to reduce these symptoms
  - Dehydration during air travel
    - What to do before departure
    - What to do during the flight
  - Recommended nutrition at altitude

## Preparation/Delivery Options

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted. The course must be in Nutrition or Public Health and must meet the content requirements as set out above.

Independent studies at a University or with a Registered Dietitian (RD) may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

## Evaluation

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation can be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

Practical application of this task will be evaluated within task #12

# Task #5: Environmental Effects on Performance

Goal:

To understand how environmental conditions can influence performance, and design, implement, and evaluate specific strategies, programs, and activities aimed at optimizing the athlete's performance in a variety of environmental conditions.

Generic need-to-know areas

- ***Altitude***
  - How performance is affected by various altitudes in the following categories of sports:
    - Endurance events
    - Sprint/power events
    - Technical/artistic events
    - Combat/duel events
    - Precision events
  - The physiological effects of acute changes in altitude and hypoxia on
    - Pulmonary ventilation
    - Number of red blood cells
    - Blood volume
    - Elimination of bicarbonate and effect on blood pH
    - Variables such as maximal aerobic power, endurance, strength, etc.
    - The quality and quantity of training that can be accomplished, and on overall physical performance.
  - The effect of acclimatization to altitude on performance at altitude and at sea level.
  - The effect of sea level training on training and performance at altitude.
  - Recommendations for training, acclimatizing, and performing at different altitudes.
- ***The effect of thermal stress on performance***
- ♦ **Hot environment**
  - General considerations on the effects a hot environment may have on performance for various types of activities
    - Endurance activities
    - Sprint/power activities
  - The body's internal temperature regulatory mechanisms
    - Normal body temperature of the human body
    - Range of temperature variations the human body can tolerate during exercise
    - The four mechanisms by which heat exchanges can occur between man and the environment (conduction, radiation, convection, evaporation)
    - The major regulatory mechanisms which contribute to dissipate heat: sweating and redistribution of blood flow;

- The effect of humidity on the ability to dissipate heat and thus perform in a hot environment
  - The physiological adaptations which follow acclimatization and/or training
    - Circulatory adjustments
    - Sweating mechanism
    - Subjective symptoms and discomfort
    - The effect of training on the ability to perform in the heat
  - Recommendations for training, acclimatizing, and performing in the heat.
    - Appropriate clothing
    - Period of time necessary for acclimatization to a hot environment
    - Importance of hydration during the effort and during the acclimation period:
      - Type and content of fluid
      - Rate at which the body can absorb water
      - Electrolytes supplements (i.e. Salt): myths and reality
      - Pre and post competition hydration
      - Monitoring water losses using the body weight chart
    - Adaptation of competitive strategy to the environmental conditions
  - Heat stroke
    - Dangers/gravity of the heat stroke
    - Conditions leading to the heat stroke
    - Symptoms of heat stroke
    - Emergency treatment of heat stroke
- ◆ **Cold environment**
- Factors which affect tolerance to cold
    - Body surface area
    - Percentage of body fat
    - Age
    - Level of fitness
    - Clothing
    - Sex/gender differences
  - The physiological adaptations which follow acclimatization and/or training
    - Circulatory adjustments
    - Sweating mechanism
    - Subjective symptoms and discomfort
    - The effect of training on the ability to tolerate and perform in the cold
  - Myths and reality about exercising in the cold:
    - Do lungs freeze?
    - Heat losses from the head
  - Recommendations for training, acclimatizing, and performing in the cold.
    - Appropriate clothing
    - Period of time necessary for acclimatization to a cold environment
    - Importance of hydration during the effort: type and content of fluid, rate at which the body can absorb water, electrolytes supplements (i.e. salt): myths and reality

- Pre- and post-competition hydration
- Training recommendations to reduce risks of injuries due to the cold
- Hypothermia/frostbite
  - Symptoms
  - Treatment
- ***The effect of travel of differing patterns, distances and time zones on physiological function and performance***
  - Circadian rhythm
  - General physical and psychological effects observed when changing time zones
  - Inter-individual variations in responses
  - Strategies for offsetting the detrimental effects of travel over different time zones or in foreign countries
    - Sleep considerations
    - Eating and drinking considerations
    - Training considerations
    - Eating and drinking in the plane
- ***Air pollution***
  - General and specific effects on training and performance of
    - Carbon monoxide
    - Ozone
    - Sulphur dioxide
  - Strategies to offset the negative effects of training and competing in a polluted environment
- ***Facility/environmental factors specific to each sport***
  - How performance can be affected by
    - Rain/wind
    - Lighting/ventilation systems
    - Various types of surfaces

## Preparation/Delivery Options

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted.

Independent studies at a University or with an approved University Exercise Physiologist are accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

## Evaluation

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation can be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

# Task #6: Recovery & Regeneration: Principles & Methods

## Goal:

The coach will design, implement, and evaluate specific strategies, programs, and activities aimed at optimizing the athlete's recovery and regeneration for specific training loads/stimuli.

## Learning Objectives:

Upon completion of this Task, the coach will

- Know the factors that may cause fatigue.
- Understand that recovery is an integral component of a well-planned training program.
- Understand that recovery is a holistic process, e.g. physical, neurological, and mental, and be familiar with basic principles in each of these areas for the planning and implementation of a recovery program.
- Understand the time delays necessary for the recovery process to occur.
- Know the general characteristics of fatigue and non-adaptive responses to training: over-training (for the metabolic-physiological component of training); overuse (from a mechanical/structural point of view); and burnout (psychological and mental attitude towards training and competition).
- Be familiar with the concept and specific symptoms of over-training.
- Be familiar with simple tools that can help monitor the athlete's recovery process, and detect signs of over-training.
- Understand the importance of proper and timely nutrition and hydration in the recovery process, and why.
- Incorporate recovery modalities within his/her regular training programs and activities.
- Recognize non-adaptive responses to training, and over-training symptoms.
- Know the effect of Central Nervous System fatigue on the ability to train speed, strength and skills.
- Be familiar with the regenerative effect of recovery modalities such as stretching, massage, hydrotherapy, rest, and alternative activities.
- Understand the respective roles and responsibilities of coaches and athletes in the planning and implementation of a recovery program, and develop a plan of action to ensure athletes actually follow the recovery program that is planned.
- Complete an inventory of the various recovery modalities that can be accessed by his/her athletes (self-administered---no equipment; self-administered---with equipment; assisted---no equipment; assisted---with equipment), evaluate the cost factor involved, and determine when such modalities should be best used by the athletes.

- Select recovery modalities that are appropriate to the training stimulus (e.g. Endurance, strength/power, speed, skill, flexibility), and sequence the same optimally on a daily and weekly basis.
- Understand the responsibilities of both the coach and the athlete in planning for and implementing a recovery program.
- Understand the following aspects of athletic injuries:
  - Psychological implications for the athlete
  - Type of activities that can be performed to facilitate recovery and/or maintain fitness during the healing process
  - Implications of returning to training/competition following incomplete recovery from an injury
  - Factors the coach must consider when an athlete resumes training following an injury.
- Design a program for an injured athlete aimed at maintaining fitness during the recovery phase.
- Design a training program for an athlete coming back from an injury and aimed at preparing him/her for regular training and competition activities.
- Identify possible alternative or corrective activities for his/her sport.

#### Generic need-to-know areas:

- Possible causes of fatigue:
  - Accumulation of metabolites;
  - Substrate depletion;
  - Neuromuscular fatigue: central and peripheral
- The importance of recovery in the training process
- Regeneration menu (i.e. Environment, nutrition, planned regeneration, sauna, showers, pools, hydrotherapy, massage)
- How to select the most appropriate recovery modality for specific training methods.
- How to periodize regeneration versus training stimulus
- How to monitor fatigue/recovery, i.e. Heart rates, blood pressure, sleep, etc.
- The signs of over-training
- Responsibilities of the coach and the athlete in designing and implementing a regeneration program
- What personnel/facility support is required for managing and implementing recovery programs during regular training, at training camps, and during competitions.
- How to recognize overuse injuries.
- How to supervise an athlete's return to training and competition after injury.

The remainder of this Task has been developed by, and will be delivered and assessed, by the CYA.

### Specific need-to-know areas

- ***Back injuries***
  - Lower back
    - Hiking position causes of lower back stress
      - High quadriceps strength
      - Shortening of the ilio-psoas muscle group
      - Pelvic tilt
      - Lower back pain
      - Eventual loss of function
    - Strategies for rehabilitation
      - See physician, physiotherapist or chiropractor
      - Maintain high abdominal strength
      - Especially lateral abdominals
      - Sit-ups with feet free
      - Maintain flexibility
  - Upper back
    - Hiking or trapezing causes of upper back stress
      - Strain on thoracic-cervical joint
      - Rhomboid muscle (neck) spasm or fatigue
      - Loss of range of motion
      - Loss of function and weakness in shoulders
    - Strategies for rehabilitation;
      - See physician, physiotherapist or chiropractor
      - Exercise to maintain symmetry and strength
- ***Over-training***
  - Symptoms
    - Poor mental preparation for training or competition
    - General fatigue
    - Poor motivation to train or compete
    - Desire for regatta to end and not focusing on next race
    - Poor boat maintenance and attendance at team meetings
    - Poor performance
    - Some physical problems especially with strong winds
      - Elevated heart rate
      - Sleeping too much
      - Localized fatigue and/or problems with hands (blow-outs)
      - General fatigue

## Preparation/Delivery Options

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physiotherapy or Athletic Therapy may be accepted. The course must meet the content requirements as set out above.

Independent studies at a University or with an Athletic-therapist or Physiotherapist may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

## Evaluation

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

## **Task #7: Mental Skills for Coaches**

Goal:

Through the design, implementation, and assessment of specific tools and strategies, to help coaches prepare mentally to provide athletes with optimal support both in training and competition.

### **Theme 1: Analysis of coaching interventions**

Have coaches realize the importance of knowing precisely the expectations and feelings of high performance athletes vis-à-vis the programs they are involved in, and how those may differ from other levels of performance.

Provide coaches with a list of variables to include in a self-analysis of their coaching interventions.

Have coaches perform a self-analysis of their coaching interventions through:

- (i) The implementation of a questionnaire that will provide an overview of the athletes' perception of the coach's effectiveness
- (ii) Comparison of the coach's perception with that of the athletes and
- (iii) Identification of specific areas that may need to be improved or refined in order to increase the efficiency and quality of the coaching intervention.

Have coaches discuss and identify specific ways by which they can improve the efficiency and quality of their coaching intervention.

Based on the feedback received from athletes, have coaches develop individualized plans of action to improve their coaching efficiency.

### **Theme 2: Development of a mental plan for training and competition**

Have coaches identify the actions, steps, circumstances, etc. of a very successful coaching intervention they have had.

Have coaches identify the actions, steps, circumstances, etc. of an unsuccessful coaching intervention they have had.

Have coaches discuss the characteristics of successful and less successful coaching interventions, and identify ways to provide more consistent and/or optimal support to high performance athletes.

Have coaches identify possible distracting factors in training and in competition:

- (i) For the athletes and
- (ii) For themselves as coaches.

Have coaches develop and refine specific plans to deal efficiently with distractions in training and in competitions.

### **Theme 3: The problem of role accumulation and conflict in national team athletes.**

Make coaches aware of the various pressure factors that can be experienced by national team athletes according to their level of experience and status within the team, and of the general group dynamics that may result.

Make coaches aware of their responsibilities in helping athletes address specific problems and issues associated with the status of national team member or elite performer.

Have coaches share experiences on the above, and identify practical ways to address and resolve issues related to role accumulation and conflict in national team or high performance athletes.

### **Theme 4: Effective communication**

Familiarize coaches with the principles of effective communication.

Have coaches go through some specific effective communication exercises.

Have coaches develop a specific plan of action re communication.

Theme 5: Psychological implications of injuries in elite athletes and strategies of intervention by the coach

Familiarize coaches with the psychological responses of high performance athletes to injuries.

Familiarize coaches with the factors affecting the degree of such psychological responses. Familiarize coaches with behavioral responses indicative of athletes' attitudes toward treatment and rehabilitation.

Have the coach develop a plan of action aimed at providing support to an elite athlete during the recovery phase as well as in the early stage of post-injury training.

### **Preparation/Delivery Options**

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted. The course must be in Psychology or Mental Preparation and meet the content requirements as set out above.

Independent studies at a University or with a Psychologist may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

## Evaluation:

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

## **Task #8: Psychological Preparation of Elite Athletes**

### **Goal:**

To provide coaches with the opportunity to refine their working knowledge of applied sport psychology to provide optimal support to athletes in the area of mental preparation.

More specifically, the coach will enhance his or her ability to

- Plan, design, implement, and evaluate mental training programs that meet the needs of elite athletes
- Effectively assist his/her elite athlete(s) prepare mentally for optimal performance, both in training and competition.

### **Learning objectives:**

- To achieve these goals, coaches will accomplish the following:
- Examine and clarify their role in the process of providing support to elite athletes in the area of mental preparation.
- Identify the mental skills necessary for elite athletes to perform optimally in their sport or event.
- Assess the key mental training needs of their athlete(s).
- Develop specific strategies and provide pre-competition support that will enhance the level of performance readiness of their athlete(s).
- Develop and implement practical mental training programs aimed at refining the ability of the athlete(s) to adjust to a variety of situations during training or competition.
- Integrate and sequence mental training programs within the yearly plan.

Generic need-to-know areas:

- ***Mental characteristics of elite athletes***
- ***High performance athlete goal-setting process***
  - Building blocks for life and sport
  - Dream list for sport
  - Planning personal sport performance goals
- ***The ideal performance state***
  - Overview of the ideal performance state
  - The aspects of the IPS (Loehr 1986)
  - An IPS inventory
- ***Pre-competition planning***
  - Athlete personal needs assessment
    - Pre-competition reflections
  - Preparing the plan
    - The written commitment
    - Integrate schedule of events with feeling states
    - Integrate refocusing strategies with potential distractions
  - Using and working with the plan
  - Evaluating the plan
    - Tools and process for evaluating the plan
    - Refining and improving the plan
- ***Competition planning***
  - Athlete's personal needs assessment
    - IPS Inventory
  - Preparing the plan
    - The sport-specific plan
    - The written commitment
    - Integrate feeling states with stages of game play
    - Integrate refocusing strategies with potential event distractions
  - Using and working with the plan
  - Evaluating the plan
    - Tools and process for evaluating the plan
    - Refining and improving the plan
- ***Practical psychological skills: the "how to" of providing optimal support to elite athletes in the area of mental preparation:***
  - The coach's role in psychological skills training and program development
  - Positive self-talk training
  - Focusing strategies
  - Refocusing strategies

- Imagery
  - The three types of imagery:
    - Visual (seeing)
    - Auditory (hearing)
    - Kinesthetic (feeling)
  - General imagery
  - Sport-specific imagery
- Activation control training
  - Relaxation strategies and methods
  - Energizing strategies and methods
- ***Putting it all together: Integrating the development of psychological skills within the yearly training program***
  - Training phases for the year
  - A training diary for developing mental skills in elite athletes

#### Preparation/Delivery Options:

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted. The course must be in Psychology or Mental Preparation and meet the content requirements as set out above.

Independent studies at a University or with Psychologist may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

#### Evaluation:

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation can be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

Practical application of this task will be evaluated within task #12

# Task #9: Practical Coaching: Advanced Skills Training

This Task is a CAC mandatory Task at Level 4 and has been developed by, and will be delivered and assessed, by the CYA.

## Goal:

To provide the coach with the knowledge and the methodology necessary for the effective teaching or correcting of advanced technical elements in high performance athletes and to assist an athlete in preparing for a protest hearing at an international competition.

## Generic need-to-know areas:

The candidate in consultation with their Master Coach must develop the following athlete/crew-specific information:

- An inventory of specific skills and their expected level of execution by elite athletes.
- The methodology appropriate for advanced skill training, with particular emphasis on:
  - Session/lesson planning and their context in the overall training plan;
  - Organization and progression of skill training or development sessions, taking into account factors such as physical preparation (e.g. Potential interference between the training of specific physical qualities and the acquisition/refinement of motor patterns), relationship with individual or team tactics, etc.;
  - The concept of volume and intensity in the area of skill training;
  - Observation of key performance factors, detection of incorrect components and prescription of specific corrective measures aimed at improving the level of execution of the skill by the athlete;
  - Demonstration methods appropriate for high performance athletes.
- Comparative analysis of the level of skill execution between national and international performers: what differences are there, and how can they be bridged?
- The best performers in the world: future/international trends in the areas of technique and skills, and how to ensure that up-and-coming Canadian athletes can be adequately prepared for performance.
- How to use A-V or computerized equipment for skill analysis.

**NOTE:** As a complement to the actual on-site training of the candidate, some aspects of the technical knowledge or observation skills could be learned or evaluated through a video bank. Footage of correctly and incorrectly executed skills would be reviewed, analyzed, and discussed with a master coach. The candidate could then be asked to:

- Identify the technical faults
- Describe the correct/appropriate movement/skill or technique
- Make specific recommendations on how the skills/techniques could be improved through appropriate drills or exercises.

The remainder of this Task has been developed by, and will be delivered and assessed, by the CYA.

### Specific need-to-know areas:

- Plan and implement sound training sessions indexed appropriately into the current Annual Plan
- Demonstrate highly perceptive and relevant observation techniques
  - Hiking, Minihiking & Trapezing
  - Steering technique
  - Kinetic techniques
  - Maneuvers
    - Tacks & Gybes
    - Spinnaker conventional/asymmetrical hoists & douses
    - Mark rounding
      - Alone
      - Overlapped
        - Inside, Outside, Both
- Meet the goals of the training session by controlling drill intensities, duration, variation, and rest intervals.
  - Starting drills
  - Tacking drills
  - Gybing drills
  - Mark rounding drills
  - Speed testing
    - 2 Boat / Regatta
- Conduct sound on-the-water tuning sessions, which include evaluation of sail trim, boat trim and crew position, on all relevant points of sail.
  - Sailing upwind
  - Reaching
  - Sailing downwind
    - Light, medium and heavy air
    - Crew position for each
  - Sail control adjustment
    - Sheets
    - Halyards
    - Cunningham
    - Boomvang
    - Inhaul / Outhaul
    - Traveler / Bridle
    - Leech lines
  - Rig control adjustments
    - Running rigging
    - Shrouds

- Backstay
- Spreaders
- Mast gate controls
  - Rams, struts, cables, screws, chocks etc.
- Provide constructive, relevant feedback appropriate to the needs of elite athletes.
  - On water and off
- Be able to apply the preceding skills to a diverse group of Olympic Pan-Am and Development classes.

#### Preparation/Delivery:

This task is presented, in part as a CYA Sailing Coach seminar and through ongoing consultation/liaison with the Master Coach; a minimum of five observations is required. Video analysis is encouraged.

#### Evaluation:

An evaluation is done on all aspects of an elite level training session. Evaluation is carried out by the Master Coach through an on-site evaluation. The Task 9 is evaluated using the Coaching Behavior Patterns Inventory (CBPI), developed by David Langdon Ch.P.C.. Accreditation for the task is subject to satisfactory evaluation and assessment of the “Training Diary” or session plans filed with their written reports to their Master Coach.

## **Task #10: Biomechanical Analysis of Advanced Skills**

This Task has been developed, in part, by the CYA.

### **Goal:**

To have the coach develop specific strategies or approaches that will contribute to the enhancement of the technical performance of his or her athletes through the applied knowledge of biomechanical principles.

To analyze and describe, in detail, the context specific techniques for one (1) of the Olympic, Pan-Am or development Classes. The analysis must be based on biomechanical principles and should reflect the current 'state of the art' for the class examined. As technique varies with wind and wave characteristics it is important that the analysis 'narrow' its scope to provide a high quality analysis with good depth rather than a superficial analysis that is general in nature.

### **Learning Objectives:**

To enable the coach to conduct a biomechanical analysis of advanced sport-specific skills and techniques.

To enable the coach to use this information to better understand the factors that limit technical performance in high performance competition.

Based on the above, to enable the coach to select or design specific drills or activities that will contribute to correct technical faults, and to justify such decisions on the basis of biomechanical principles.

To enable the coach to use biomechanical principles to identify potential risks of sport injury, and design specific activities that will contribute to preventing them.

**NOTE:** Given the goals of this Task, the general approach described at the end of the section on Task #9 could also be used here. For instance, the coach could be asked to detect errors/flaws in the technique (e.g. through video analysis), identify which biomechanical principles are being violated, describe the correct technique in light of the specific biomechanical principles involved and, finally, explain how the errors should be corrected.

## Generic need-to-know areas:

The biomechanical principles involved in the specific skills being analyzed should represent most of this Task's need-to-know areas. Where appropriate, reference could be made to the following principles and concepts:

- Continuity of joint moments of force
- Sequence of segment recruitment
- Moving segments through their full range of motion
- Combined influence of force and time of force application: impulse
- Direction of force application
- Summation of body segments' velocities
- Static and dynamic stability of equilibrium
- Production of linear movements and rotational motion due to a torque
- Force production through the eccentric and concentric cycle
- Movement phase analysis
- Factors chart analysis
- Methods of analysis – advantages and disadvantages
- Angular momentum: Conservation and manipulation
- Nutation
- Static positioning

The remainder of this Task has been developed by, and will be delivered and assessed, by the CYA.

## Specific need-to-know areas:

- **Technique in Sailing**  
There is a base technique for human motion in sailing. This base technique can be described in biomechanical terms for: hiking, trapezeing and windsurfing. It is important to note that biomechanical analyses are incomplete if they focus only on the athlete. The boat or board is an integral part of the performance and success is predicated on combining the athlete's technique and the boat's characteristics and set-up. The inter-relationship between athlete, rig dynamics, hull design, wind speed, and wave conditions determine what techniques are appropriate. Biomechanical analyses must focus on implementation of technique for specific competitive situations.
- **Underlying Principle**  
When racing, human motion assists with propulsion. The boat/board is a 'Means of Conveyance' in that the athlete rides on the boat/board and promotes forward movement through body motion, steering and trim.

- Basic Concepts
  - Action/Reaction --- Body action creates a reaction in the boat/board.
  - Force transfer --- Force transfer is dynamic, between; athlete, boat, waves, rig.
  - Balance --- Body motion produces optimum trim in the boat/board.
  - Bilaterality --- Sailing is a bilateral sport and effective technique is not 'handed'.
  - Timing --- The summation of forces is extremely timing dependent.

- Specificity

Each class of boat has its own hull lines and buoyancy characteristics. Technique and biomechanical analysis of technique is dependent on the weight/weight and strength/weight ratio between the sailor(s) and the boat/board. This varies with wind speed and wave conditions as they dictate the forces in the rig. Level 4/5 analyses must be class specific and each analysis must be qualified for specific weather conditions.

### Preparation/Delivery Options:

This task may be initiated at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course and is presented, in part as a CYA Sailing Coach seminar and is comprised of 2 to 3 days of course work and lab work.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted for partial completion of this task. The course must be in Biomechanics and meet the content requirements as set out above.

Independent studies at a University or with a Biomechanist may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

### Evaluation

All requirements for session completion at NCS, NCI, or other CAC course must be met including the CYA portion. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

# **Task #11: Practical Coaching: Advanced Tactics & Strategy**

This Task is a CYA mandatory Task at Level 4 and has been developed by, and will be delivered and assessed, by the CYA.

Goal:

To provide the coach with the principles, knowledge, and methodology necessary for the effective teaching of strategies and tactical elements appropriate for high performance athletes.

Learning objectives:

Upon completion of this Task the coach will be able to:

- Understand the tactics and strategies used by elite athletes.
- Understand the principles involved in such tactics and strategies, and demonstrate a thorough understanding and comprehension of the variables that influence/ determine the same.
- Select or design methodologies for the teaching of tactics and strategies that are appropriate for elite athlete performance.
- Make the appropriate linkage between technique/skills and individual and team tactics.
- Select the appropriate period of the year for the teaching of specific tactics and strategies.
- Make the appropriate selection of tactics/strategies before and during competitions.
- Adapt and modify tactics/strategy as needed during competition.

Generic need-to-know areas:

Where appropriate, reference should be made to the following principles and concepts:

- Principles involved in the application of tactics and strategy
- Prerequisites required for the successful implementation of specific tactics, strategies in terms of skills, physical preparation, etc.
- Selection of appropriate tactics strategies: variables to consider.
- Scouting and analysis of opponents: key factors to consider.
- Teaching methodology, with particular emphasis on
  - Session/lesson planning and its context in the overall training plan
  - Quality of organization and progression of the sessions
  - Ability to observe key factors, diagnose and prescribe improvements
  - Quality of communication and demonstration skills.

## Specific need-to-know areas:

- Wind strategy
  - Backing and veering
  - Favoured side
  - Favoured tack
  - Clear air
  - Disturbed air
  - Holes
  - Apparent wind
    - Direction
    - Speed
  - Persistent shifts
    - Completed persistent shift
  - Oscillating shifts
    - Oscillating median
- Tide and current strategy
  - Advantageous/adverse current
  - Cross-current tack
  - Down/up current tack
- ***Overall strategic plan***
  - First round principles
    - Second round adaptations
  - Starting strategy
    - Large vs. small fleet
    - Mid-line sag
    - Upwind/downwind (favoured) end
    - Advantaged end
    - Timing
  - Upwind strategy
    - Lifted/headed tack
    - Going to the corners
    - Lower triangle (move out)
    - Upper triangle (dig in)
    - Lay lines
      - Lateral zones
    - Footing to
      - Lifts
      - Increase speed
    - Pinch to
      - Headers
      - Reduce speed
    - Lanes

- VMG.
  - Reaching strategy
    - Rhumb line
  - Downwind strategy
    - Lifted/headed gybe
    - Optimal sailing angle
  - Mark rounding
    - Wide then close strategy
  - Finishing strategy
    - Favoured end
  - Overall regatta plan
    - Mid-regatta modifications (shrinking field)
- ***Tactical principles***
- Sail adjustments for specific tactics
    - Backwinding
    - Blanketing
  - Starting tactics
    - Building a hole
    - Barging
    - Base leg
    - Interference
    - Circling (Match racing)
  - Upwind tactics
    - Two boats/multiple boats
      - Converging courses (in open water)
        - Tack or duck
        - Slam dunk
    - Converging courses (one boat on the lay line)
      - Penultimate tack
    - Parallel courses (in open water)
    - Parallel courses (one boat on the lay line)
      - Penultimate tack
  - Covering (loose/tight)
  - Tacking duels
  - Interference
    - Ahead and to leeward position
    - Lee bow position
  - Reaching tactics
    - Attack/defense
    - Covering (loose/tight)
  - Downwind tactics
    - Attack/defense
    - Covering (loose/tight)

- Interference
- Mark rounding
  - Outer/inner boat
    - From a windward course
    - From a downwind course
  - Inside overlap
    - Multiple boats
  - Overstanding
- Finishing tactics
  - Upwind/downwind
  - Starboard tack advantage
  - Weather-quarter position

#### Preparation/Delivery:

This task is presented, in part as a CYA Sailing Coach seminar on Strategy and Tactics and through ongoing consultation/liaison with the Master Coach; a minimum of five observations is required. Video analysis is encouraged.

#### Evaluation:

An evaluation is done on all aspects of several elite level on-water-training sessions. The Master Coach carries out evaluation through an on-site evaluation. The Task 11 Evaluation Form/Competition Behavior (CB), originally developed by Leo Deschenes, must be used to complete the evaluation. Accreditation for the task is subject to satisfactory evaluation (50 out of 60) on the form and assessment of the “Training Diary” or session plans filed with their written reports to their Master Coach.

# Task #12: Planning and Periodization: Optimal Sequencing of Sport Science, Training & Competitive Activities

This Task is a CAC mandatory Task at Level 4.

Goal:

The systematic integration and sequencing of sport science, metabolic and sport-specific training and competitive activities to achieve optimal athletic performance within an annual and/or pluri-annual (quadrennial) perspective.

Learning objectives:

Upon completion of this Task, the coach will

- Conduct a thorough analysis of the demands of his/her sport
  - The physical requirements of his/her sport
    - The predominant energy systems of the sport and the system(s) that provide(s) energy at the critical moment(s) of the competition.
    - Role played by explosive power, strength or strength endurance in the performance. Requirements in terms of special strength training
  - The technical requirements of his/her sport
    - Skills level required at the national/international level to perform optimally
  - The tactical requirements of his/her sport
    - Tactical schemes required at the national/international level, or to perform optimally in a particular context.
  - The psychological requirements of his/her sport
    - Psychological skills/traits required at the national/international level, or to perform optimally in a particular context
    - Psychological characteristics of his/her athlete(s).
- Assess the training status/athletic profile of his/her athletes and how it compares to international norms.
- Have a comprehensive understanding of the following training principles:
  - Systematization
  - Repetition/frequency
  - Individualization
  - Specificity and progressive overload
  - Maintenance of training effect
  - Progression/Regression
  - Non-linear increases in training effect
  - Super-compensation
  - Pendulum meso-cycle loading
  - Principle of alternation

- Interference of the recovery processes: importance of proper sequencing of the training stimulus within the session and for a series of sessions
- Concepts of volume and intensity of training as they apply to the sport in question
- The 5 S's of athletic performance: strength, stamina, skill, suppleness, speed
  
- Apply the training principles to his/her planning
- Be familiar with various planning and periodization models and concepts: Matveiev, Tschiene, Bompa, Bondarchuck, Vershoschansky, Balyi, Kurz & Ozolin.
  - Characteristics
  - Pros and cons
  - Relevance of particular models based on the characteristics of the sport (high physiological demands; team/ball sports; artistic sports; hand-eye coordination sports and/or individual sports with limited physiological demands) and the level of the athletes.
  - Tendencies observed at the international level in terms of yearly or multi-year planning, according to the nature of the sport.
  
- Integrate the appropriate components of the above models within the coach's own program where appropriate
  
- Be thoroughly familiar with the variables or components to consider when elaborating a yearly and a multi-year plan.
  - The what's, when's, how's, and why's of
    - Preparatory period
      - General preparatory phase --- Specific preparatory phase
    - Competitive period
      - Pre-competitive phase --- Competitive phase
    - Transition period/phase
      - Mezo-cycles and micro-cycles of training
  - The key fixtures of the competitive season and their impact on the plan
  - Number of competitive cycles and phases of the sport during an annual cycle
  - Number of major peaks that are required by the sport during an annual phase
  - Minor peaks in relation to major peaks: when and why?
  - The number and length of tournaments during an annual cycle
  - Method of selection of the competitions/tournaments
  - Timing of athlete selection relative to the main performance objective. Time available between the selection date and the date of the main competition.
  - Constraints imposed on coaches by the sport system or the competitive schedule, and impact on the planning of the yearly training program of the following:
    - Dates of major competitions
    - Availability of preparatory competitions
    - Dates and procedures of athletes' selection
    - Duration of the final preparation period
    - Sponsor expectations.
  
- Plan and implement a yearly training program for elite athletes, outlining general and

specific objectives, as well as training emphasis for each phase in terms of physical, technical, tactical, and mental preparation.

- Volume and intensity components in relation to the training year, given the nature of the sport
- Variations with different age groups and categories of athletes (elite/non-elite; junior/senior; male/female)
- Importance of recovery; recovery program between training cycles
- Training sequence and training emphasis of key performance parameters (technical, tactical, physiological, psychological) during the year, according to the sport
- Monitoring of the training load; methods to quantify the training load of the athlete
- Training emphasis according to each phase of the yearly plan
- Prophylactic or restorative breaks
- Medical and physiological testing sessions
- Types and appropriate sequencing of mental training programs
  
- Design detailed micro-cycles for key phases of the season
  - General preparation
  - Specific preparation
  - Pre-competitive phase
  - Middle of the competitive phase
  - Transition period
  - Micro-cycle sequencing;
    - technical (learning or perfecting technique at medium intensity),
    - technical (perfecting technique at sub-maximal and maximal intensity),
    - speed of short duration (up to the limit)
    - anaerobic endurance
    - strength with sub-maximal and maximal loads,
    - muscular endurance with medium and low loads,
    - a muscular endurance with high and maximal intensity,
    - aerobic endurance with maximum intensity,
    - aerobic endurance with moderate intensity.
  - Progressive/Regressive loading
  - Maintenance & Shock micro-cycles
- *Plan to include*
  - Physical training to be performed
  - Mental training to be performed
  - Technical training to be performed
  - Tactical training to be performed
  - Relaxation/recovery methods used
  - Scheduled competitions (if appropriate).

- Plan and implement a peaking process appropriate for his/her sport;
  - Physical training to be performed + intensities
  - Mental training to be performed
  - Technical training to be performed + characteristics
  - Tactical training to be performed
  - Relaxation/recovery methods used; sequence of activities
  - Scheduled competitions (if appropriate)
  - Duration of the actual peaking process
- Monitor the training plan and evolution of an athlete's performance, and make modification/adjustments according to his/her status and progression
  - Laboratory and field test(s) which are appropriate to assess the level of physical fitness/preparation
  - Test(s) that are appropriate to assess the level of psychological fitness/preparation
  - Test(s) that are appropriate to assess the level of technical/tactical readiness
  - Medical test(s)
  - Sequencing of such tests within the YTP.

#### Preparation/Delivery:

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course. Ongoing consultation/liaison with the Master Coach is also required. This is the integrating task for the level 4 program. Information learned and practical experiences gained will be considered, and if appropriate, built into the athletes training program. The training plan provides the overall context for the five practical sessions required by task #9. It also provides the framework for coach interpretation and innovation regarding athlete goal achievement and progress.

#### Evaluation:

Evaluation for this task is done in two parts. It includes an evaluation, by the Master Coach, of the plan that was developed at the outset of the year and through a "Comprehensive Review" of the plan, including all revisions, that was followed.

**NOTE:** The coach will be required to implement and evaluate the effectiveness of his or her YTP, and to make a presentation to a group of experts upon completion of his or her Level 4 program.

## Comprehensive Review:

Level 4/5 coaches are expected to (i) apply the knowledge they have acquired in each Task, (ii) implement the programs and plans developed, and (iii) monitor and analyze the success of such programs on an ongoing basis.

The comprehensive review will take place upon completion of the candidate's Level 4 program, and will cover topics related to most Level 4/5 Tasks. The process will require the coach to make a presentation to a Review Committee composed of sport scientists and technical experts from the sport. The purpose of this presentation will be to review the candidate's physical, mental, technical, and tactical training programs, and verify how these have been integrated and implemented in an actual coaching environment. On the occasion of this comprehensive review, the coach will:

- (i) Present an overview of his/her integrated yearly training and competitive program to the panel,
- (ii) Provide an analysis of these programs based on actual athlete training response and results and
- (iii) Discuss specific elements pertaining to the various components of athlete's preparation (e.g. physical, mental, technical, and tactical). The coach's detailed training diary must also be submitted to the Review Committee as supporting documentation.

The CYA will implement this evaluation component at the end of a candidate's level 4 program.

## **Task #13: Performance Analysis: (Athletes motor skills)**

This Task is a CYA mandatory Task at Level 4 and has been developed by, and will be delivered and assessed, by the CYA.

### **Goal:**

To provide the coach with the knowledge and the methodologies necessary for conducting systematic analyses of technique and determining how it impacts performance at the elite level, and to use such analyses as a means of enhancing the effectiveness of the coach's decision-making process and improving athletes' technique.

### **Generic need-to-know areas:**

- The importance of technique analysis in the coaching process
- Sport-specific model of performance analysis
- Class specific model of performance analysis
- The applied research that is being undertaken in the various areas of analysis:
- The process of observation in sailing – training and racing
- Tools available for a sailing coach – software tools, cameras
- Computer-assisted sports technique analysis
- Real time analysis (crews and individual athletes)
- The fundamentals of computer technology that will enable the coach to operate computer analysis programs and manipulate data gained from such analyses.
- How to use the information obtained through analyses to enhance the quality of athlete technique and decision-making efficiency.
- The remainder of this Task has been developed by, and will be delivered and assessed, by the CYA.

### **Preparation/Delivery:**

This task may be initiated at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course and may be presented, in part at a CYA Sailing Coach seminar. In addition, completion of the task requires:

Master Coach feedback during training (Task 14) and competition (Task 15);

### **Knowledgebase Development:**

Retaining expert material and technical analysis has always been an issue. Recent developments in Internet posting capability provide an opportunity to create a Knowledge Base for each class that resides on the Internet. Videos, photographs and documents can easily be uploaded and catalogued on password protected websites such as Google Groups or Youtube.

Each site can then have a proprietary section for athletes and coaches and a public section that is linked from the CYA website.

Coaches pursuing this task must create a suitable Knowledge Base to complete this task.

**Evaluation:**

The evaluation of the task will be based on review of the material posted in the Knowledge Base.

This task must be taken prior to Tasks #14 and #15 but will not receive certification until after the receipt of successful reports from the Master Coach on tasks #14 and #15.

Practical application of this task will be evaluated within task #12

# **Task #14: Practical Coaching: Running Training Camps**

This Task is a CYA mandatory Task at Level 4 and has been developed by, and will be delivered and assessed, by the CYA.

## **Goal:**

To provide the coach with the knowledge, methodologies, leadership, and technical skills necessary for him/her to successfully plan, conduct, and evaluate a high performance training camp.

## **Learning objectives:**

Upon completion of this Task, the coach will be able to

- Successfully plan all the logistical aspects of a high performance camp.
- Develop general and specific objectives for the camp, in light of the level of performance of the athletes and the overall perspective of the YTP.
- Design specific activities for the achievements of the general and specific objectives of the camp.
- Communicate clearly the general and specific objectives of the camp to athletes.
- Demonstrate the ability to run individual and team meetings with athletes and support staff in an efficient manner, and as required.
- Demonstrate the ability to intervene in the teaching/monitoring of all technical matters related to athletes' preparation.
- Adjust camp activities as required in light of the progress and performance level by athletes, and communicate the same to athletes and support staff.
- Manage the financial aspects of the camp.
- Supervise support staff.
- Produce a report detailing the camp's activities, including an evaluation of the achievements of the objectives.

Specific need-to-know areas:

The planning phase of this Task should take into account the following generic variables:

- ***Athletes:***
  - Calibre and experience
  - Number by each position (skipper/crew)
  - Team identification and selection
  
- ***Objectives of the camp***
  - In light of the period within the YTP during which it is scheduled.
  - Venue, facilities and equipment
  - Facilities available (e.g. open water, clubhouse, gymnasium, weight room, etc.)
  - Practice time restrictions/availability
  - Availability of individual and team equipment (i.e. storage, transportation, etc.)
  - Availability of ancillary equipment (e.g. coach boats, marks, etc.)
  
- ***Duration and dates***
  - Travel considerations (i.e. to camp, in camp, from camp)
  
- ***Program of activities***
  - Practices
    - Total number of practices during camp
    - Types of practices (e.g. On water, energy system training, weight-training, information sessions, etc.)
    - Practice time and schedule
    - Practice venues
    - Progression and monitoring for yearly training program integration
    - Recovery activities and modalities
  - Competitions featured within camp
    - Interteam
    - Midwinters
    - National Qualifying Regattas (NQR)
    - Regatta venues
  - Meetings
    - Information
    - Individual and team
    - Technical/tactical
    - Mental preparation
    - Scheduling of testing

- ***Recreational activities***
  - Objectives
  - Relaxation sessions
  - Team functions
  - Social (public) functions
  
- ***Staffing (primary and supportive):***  
Where appropriate, job descriptions and methods of evaluation determined for
  - Coaching staff
  - Guest coaches
  - Team leader/Chef de mission
  - Manager
  - Publicist
  - Trainer
  - Medical staff
  - Sport psychologist
  - Statistician
  - Transportation managers
  - Local contact---community organizer
  - Strength and conditioning coach
  
- ***Evaluation Methods/instruments***
  - Physical conditioning
  - Physiological testing: variables to consider for athlete evaluation
  - Medical (education, control, doping info, etc.)
  - Skill status/development
  - Psychological status of athletes
  - Race/regatta results
  - Staff feedback
  
- ***Budget---influence on design***
  - Airfare
  - Ground transportation
  - Accommodations
  - Meals
  - Facilities
  - Equipment (charters, required; optional)
  - Staffing/honoraria

- ***Public relations/media relations***
  - Local organizations
  - Local media
  - Radio/TV coverage
  - Press releases
  - Interviews
  - Protocol
  - Community service opportunities
  - Dealing with media (sailors, coaches, etc.)

#### Preparation/Delivery:

Individual practical experience arranged with the Master Coach. Acting as a manager may be the best experience at a development or national team training camp.

#### Evaluation:

The evaluation will be conducted by the Master Coach using the task #14 Evaluation form/Training Camp to pass this task, the candidate needs to obtain a minimum of 50 points. Evaluation must be for all aspects of a training camp.

A camp report must be submitted by the coach and must provide the information needed to make decisions on individual crews.

The “Coach’s Diary” and a full discussion between the two coaches will also be used to evaluate the candidate’s involvement in the camp.

## **Task #15: Practical Coaching: Managing a Competitive Tour**

This Task is a CYA mandatory Task at Level 4 and has been developed by, and will be delivered and assessed, by the CYA.

### **Goal:**

To provide the coach with the knowledge, methodologies, leadership and technical skills necessary to successfully plan, conduct, and evaluate a high performance competitive tour.

### **Learning objectives:**

Upon completion of this Task, the coach will be able to:

- Successfully plan all the logistical aspects of a high performance competitive tour.
- Develop general and specific objectives for the competitive tour, in light of the level of performance of the athletes and the overall perspective of the YTP.
- Design specific activities around the competitive schedule to optimize athlete preparation and leading to the achievements of the general and specific objectives of the competitive tour.
- Communicate clearly the general and specific objectives of the competitive tour to athletes.
- Demonstrate the ability to run individual and team meetings with athletes and support staff in an efficient manner, and as required.
- Demonstrate the ability to intervene in the teaching/monitoring of all technical/tactical matters related to athlete preparation.
- Adjust activities as required, and communicate the same to athletes and support staff.
- Manage the financial aspects of the competitive tour and supervise support staff.
- Produce a report detailing the competitive tour activities, including an evaluation of the achievements of the objectives.

Generic Need-to-know areas:

The planning phase of this Task should take into account the following generic variables:

- ***Objectives of the tour***
  - Goals for present and future development
  - Type of competition and level
  - Schedule
  - Adaptation or preparatory training camp(s) for tour
  - Coaching staff and support staff
- ***Team selection***
  - Elaboration of selection criteria, if required
  - Recruitment to meet objectives
  - Number of athletes
  - Forming team chemistry (i.e. knowing characteristics of each individual to fit team mold, technical skills to suit team needs, etc.)
- ***Competition***
  - Prep time/official schedule
  - Off days/practice facilities
  - Team/player peak days for optimal performance in competitions
  - Scouting opposition---practices, games, etc.
  - Create database for future reference
  - Rationale for choosing a particular competition
- ***Travel itinerary***
  - Facilities---training, medical, accommodations, meals, meetings, social activities
  - Environment---climate, food access
  - *Training opportunities---practice schedule, practice facilities, travel distance*
  - Frequency of travel---time zone changes and jet lag---acclimatization required
  - Means of travel---air/land---Coordination of travel on-site
- ***Coaching staff***
  - Selection
  - Delegation of duties---practice sessions, technical, tactical and administrative roles
  - Team discipline procedures and hierarchy
- ***Support staff***
  - Medical/paramedical trainer---duties and responsibilities, local or on-site back-up
  - Team leader---duties and responsibilities, finance and administrative duties, travel itineraries
  - Equipment manager/technician
  - Statistician/public relations

- ***Budget/administration***
  - Project costs and budget available
  - Sponsor contributions
  - Income sources
  - CYA versus host responsibility
  - Tour requirements
  - Honoraria to coaching and support staff
- ***Protocol***
  - Cultural differences---briefing meeting, brochures for information
  - Compulsory activities with host
  - Gift exchanges
- ***Public/media relations***
  - Press releases
  - Team media information
  - Player rehearsals re: tournament, culture, dealing with media
  - Interviews and scheduling to accommodate team competition

Specific need-to-know areas:

- ***Overseas regatta requirements***
  - Preparation for container loading and unloading
  - Communication with customs and customs brokers.

Preparation/Delivery:

The tour must be for more than one event if within North America and include a World Championship if off continent.

Evaluation:

The evaluation will be conducted by the Master Coach using the task #15 Evaluation form/Competitive tour to pass this task, the candidate needs to obtain a minimum of 50 points.

A tour report must be submitted by the coach and must provide the information needed to make decisions on individual crews.

The “Coach’s Diary” and a full discussion between the two coaches will also be used to evaluate the candidate’s involvement in the tour.

# Task #16: Athlete Long-Term Development

## Goal:

To design sport programs and activities that are appropriate for the optimal long-term development of the athlete, given age, gender, stage of development, and performance potential.

## Learning objectives:

Upon completion of this Task the coach will:

- Be familiar with the basic principles of talent identification, and design a talent identification program appropriate for his or her sport.
- Understand the various stages of growth and maturation in children and adolescents, and the differences that exist between genders.
- Be familiar with the activities, training methods, and training intensities that are appropriate at various ages, and of differences that may exist according to gender or degree of maturation.
- Be familiar with the risks associated with the use of inappropriate training loads or activities in children and adolescents.
- Understand the specific content of each stage of a systematic long-term athlete development program, and design a long-term athlete development program appropriate for his or her sport.

## Generic need-to-know areas:

- ***Talent identification***
  - The meaning of “athletic talent”
  - The analysis of the performance demands of the discipline
  - The factors that determine performance
  - Assessment of the young talent’s stage of development
  - Evaluation of the performance capacities of the young talent (biological, psychological) in comparison with normative data for the same age group
  - Prediction of future performances of talented young athletes
- ***Growth and maturation***
  - The stages of growth
    - The various stages of growth of the child and the adolescent and their main characteristics
  - The major areas of development at various stages of growth
    - Before puberty: early, middle and late childhood
    - First stage of puberty
    - Second stage of puberty
  - Morphological growth
    - The speed of growth

- Appropriate training loads during the period of bone, tendon, and ligament growth
- Prevention of injuries in young athletes
- The skeletal system's capacity for recovery
- Biological development
  - Biological and chronological age
    - Accelerated, delayed and normal development in relation to performance capacity
    - Means of assessing chronological and biological age (physiological or skeletal)
  - Development of the neuro-muscular system
    - Favorable periods for the development of coordination and sports skills
    - Optimal age for the development of the various components of motor functions
  - Growth of muscle mass
    - Proportion of FT and ST in muscles during growth
  - Growth of the cardio-respiratory system
    - Heart rate at different ages (at rest, during exercise)
    - Changes in heart volume with age
    - *Changes in respiratory rate and volume*
  - Growth and metabolism
    - Evolution of (lactic and alactic) anaerobic power and capacity
    - Concentrations of lactate in the young athlete in comparison with the adult
    - Why the anaerobic capacity of a child is less than that of an adult
    - Development of the aerobic capacity of a child in comparison with that of an adult
    - The child's  $\text{VO}_2$  in comparison with that of the adult
    - Anaerobic threshold of the child
- ***Capacity for training during childhood and adolescence***
  - The effect of the stage of maturity on the capacity for training
  - Favorable stages for the development of physical abilities
  - Training programs most appropriate at various stages of development
  - Endurance training (anaerobic alactic and lactic, aerobic)
    - The various types of endurance and the relevance of training them during childhood and adolescence
    - Methods for the development of endurance
    - Map values throughout childhood and adolescence
  - Strength training during childhood and adolescence
    - Development of muscle strength during growth
    - Risks associated with improper training loads
    - Training muscle strength in the young athlete, before, during, and after puberty
    - The methods and content of strength training during childhood and adolescence

- The frequency of strength training sessions
- Speed training during childhood and adolescence
  - The prerequisites for improving speed
  - Cyclic and acyclic speed
  - Speed training methodology
- Competitions during childhood and adolescence
- ***Planning the athlete's long-term development***
  - The planning of athletic development from childhood to adulthood
  - Planning for long-term performance
  - The training load during childhood and adolescence
    - Basic training
    - Constructive training
    - Competition training
    - High performance training

#### Preparation/Delivery Options:

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted. The course must be in Growth and Development and meet the content requirements as set out above.

Independent study at a University or with a Physiologist may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of a Sport Scientist is not acceptable

#### Evaluation:

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

## Task #17: Leadership & Ethics

**NOTE:** This Task is a CAC mandatory task at Level 4 and may only be delivered by CAC-recognized course conductors. No equivalency is possible in this Task.

### Goals:

To make participants realize their potential and responsibilities as leaders in the Canadian sport system.

To understand and apply the concept of values-based leadership practices.

To enhance participants' leadership practices through critical reflection, participant-observer position, increased tolerance of ambiguity, and improved intervention skills.

To discuss and reflect on ethical issues affecting high performance coaches.

### Learning objectives:

Upon completion of this course, participants will:

- Learn about leadership theory in the context of values, communication skills, conflict management and team building.
- Reflect on perspectives and evaluate their ability to tolerate ambiguity.
- Improve their ability to listen actively and practice intervention skills.
- Become familiar with the concept of “participant-observer,” and practice dealing with issues from a participant-observer standpoint.
- Become familiar with and use the concept of “critical reflection” in their leadership interventions.
- Assess themselves as leaders using an influence style inventory.
- Complete the leadership practices inventory to assess themselves in critical leadership areas.
- Have a group of selected observers complete the leadership practices inventory and receive feedback on how others perceive them in critical leadership areas.
- Compare their own and the observers' perception of leadership skills and practices, and use this information to develop a personal plan of action.
- Develop a vision of what they want to accomplish as leaders in the mid- to long-term
- Implement the information about leadership for positive change in their coaching and work environments.
- Understand and value the development of leadership skills in the management of change
- Discuss and reflect on ethical issues that affect coaches in today's world, using as a point of reference the Canadian Professional Coaches Association coaching code of ethics.

Theme:

▪ **Values**

*Definition and example of values held at the level of*

- Principle
- Consequence
- Consensus
- Preference

▪ **Leadership terminology**

*Characteristics of and difference between*

- An Administrator
- A Manager
- A Leader

▪ **Influence style inventory**

- *Nature of the instrument*
- How to use the instrument
- Self-interpretation of the information

▪ **Communication/interpersonal skills**

- *Reflection on personal experience with conflict*
- Participant/observer standpoint
- Reflection on perspectives
- Tolerance of ambiguity
- The skill of active listening
- Conflict management techniques

▪ **Group development and team building**

- Group process: Forming, Storming, Norming, Performing
- Factors affecting group dynamics
- The importance for groups to be at the performing stage for optimum performance

▪ **Intervention skills**

- The characteristics of an appropriate leadership intervention
- Who is targeted
- Purpose of the intervention
- Intensity

- ***Leadership practices and review of LPI results***
  - Review and analysis of LPI scores
  - Development of a personal plan of action to improve leadership skills
  - Visioning and personal goal setting
  - Notion of vision
  - Importance of having a vision
  - The “perfect day” as a leader
  - What are their leadership priorities?
  
- ***Ethics in coaching:***
  - CPCA Coaching Code of Ethics
  - Relationship between ethics and leadership
  - Issues affecting high performance coaches today.

**Preparation/Delivery Options:**

This task may only be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

**Evaluation:**

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

# Task #18: Coaching as a Career

## Goals:

To create an awareness of specific issues and situations that may represent roadblocks in the personal or professional life of high performance coaches, and how these can eventually have an impact on their coaching performance.

To develop or refine strategies or action plans to deal with these roadblocks as effectively as possible.

## Learning objectives:

Upon completion of this Task, the coach will

- Assess his/her current personal and professional skills and lifestyles.
- Become aware of his/her projected personal and professional image.
- Develop a vision for his/her personal and professional life.
- Assess his/her predisposition to stress and burnout, and develop strategies (short- and long-term) for stress management.
- Assess his/her time management skills, and develop strategies for stress management.
- Understand the importance of clarifying roles and responsibilities through contracts and job descriptions, and list the various areas and programs she/he is currently responsible for as a high performance coach.
- Understand the principles and procedures for a fair and thorough performance appraisal.

## Theme 1: Self-awareness and Personal Management

- Assessment of the coach's lifestyle, coping skills, and predisposition to stress
- Coaching burnout: causes, symptoms, and remedies; stress management
- Time management: self-assessment of time management skills; avenues and tips for improving time management skills
- Life goals---professional, personal, social, etc.
  - Résumé/Curriculum Vitae development
  - Interview techniques
- Performance blocks in the competitive environment
  - Perfectionism
  - Conflicting demands and interpersonal problems
- Performance appraisals:
  - Clarifying roles, responsibilities and relationships with the employer
  - Sample job description for elite coaches
  - Sample performance appraisal process for elite coaches

## Theme 2: Business and Financial Management

- To develop an understanding of the business side of sport and sport programs.
- To identify and evaluate opportunities for effective programs.
- To develop a basic concept of the relationship between: coaching, financially sustainable sport, corporate sponsorship and strategic partnerships.
- To use creativity and sport specific knowledge to solve problems in an unstructured environment and create an integrated, holistic plan.
- To understand how to implement a plan.
- Business plans
  - Identifying opportunities
  - Converting an idea into a viable business
  - Target audience for the plan
    - Employee vs. Contractor
    - Business entity basics
    - Marketing
      - Competition – The ‘Porter’ model
      - First mover advantage vs. market follower
      - Stakeholder analysis
      - Scenario modeling
      - Value chain analyses
    - Infrastructure
    - *Financial resources*
      - Sponsorships versus donations
      - Strategic partners, alliances and groups
      - Computer software
    - Human resources
      - Codependency - Who will assist you?
      - Benefits
    - Professional Development
    - Contracts
    - Evaluation
      - Milestone events
      - *Dealing with issues and problems*
- Business Entities
  - Sole Proprietorship --- Partnership / Limited Partnership --- Incorporation
    - Tax Implications/Appearance to Clients
    - Professional services – Lawyer/Accountant/Business Consultant/CPCA
    - International Opportunities
    - Insurance
      - Errors And Omissions
      - Liability

## Preparation/Delivery Options:

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

Post-graduate university courses taken in the Departments of Physical Education or Kinesiology may be accepted. The course must be taught by an expert in this field and meet the content requirements as set out above.

Independent studies at a University or with an expert may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Candidates must also have taken an approved Time Management course.

Self-study, independent of a Sport Scientist is not acceptable

## Evaluation:

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

In the case of a University course, evaluation will be the grade received in the course. The University standard will apply for a passing or failing grade.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for the University course outlined above.

Plus full participation in the Time Management course.

# Task #19: The Canadian Sport System

## Goal:

To enhance the understanding of the various components of the Canadian sport system by high performance coaches to learn how to access specific programs or services that will improve the support provided to athletes.

## Learning objectives:

- To make coaches aware of the evolving nature of the Canadian sport system, and of issues and trends affecting sport in Canada.
- To determine the degree to which systems are designed to support the athletes' needs.
- To examine the “systems within a system” concept in which the coach and athletes are one important local system within a general national group of systems.
- To enable coaches to identify and use specific components, programs, etc. of the current sport system as part of a strategy to enhance the quality of services and support provided to athletes.
- To have coaches reflect on how they can introduce positive change in the Canadian sport system, to increase the quality of services and support provided to athletes.

## Themes:

- ***Athlete-centered, coach-driven programs***
  - The concept and implications of athlete-centered and coach-driven programs in the context of a system for sport in Canada.
  - What does athlete-centered programming mean?
  - Examples of programs that are athlete centered (ex.: Multi-sport development centers).
  - What needs to change for Canadian sport to be more athlete-centered?
  - What can coaches do to ensure sports programs become and remain athlete-centered?
  - Implications of athlete-centered programs on the traditional athlete/coach relationship
  - Athletes' rights
- ***The Canadian sport system***
  - The players in the current system. Mandate of the “partners”: Federal government, provincial/territorial governments, National Sport Organizations (Olympic sports and others). Provincial Sport Organizations, multi-sport organizations (Coaching Association of Canada, CCDS, Canadian Professional Coaches Association, CAAWS, etc.), major games organizations, education institutions, clubs, associations, etc.
  - How does the system currently work? What are the strengths and weaknesses of the current system, and what does it need to become more efficient?

- National priorities for sport and in coaching: what are they, what are likely trends for the future, and what are the implications on issues such as:
  - Coaching development (education, certification, professional development, legislation)
  - Employment opportunities for coaches
  - Funding to sport
  - CYA operations and relationship with government agencies
  - Values and ethics in Canadian amateur sport
  - Equity in sport: gender, racial, language
  - High performance versus participation sport programs
- Coaching as a profession:
  - Characteristics of a profession
  - Evolution of coaching and trends towards professionalization
  - CPCA: its mandate, structure, and membership criteria
  - *The code of ethics: content and implications*
- Individuals involved in the business of providing “services” to high performance athletes: trends and impact on the traditional coach-athlete relationship
  - The “coaching partners” involved in the athletes’ preparation: personal, provincial, and national coaches; the challenges
  - Athletes’ agents and managers
  - Sponsor representatives/marketing agents
  - Sport-science personnel (psychologists, physiologists, nutritionists)
  - Medical/paramedical support and services (physiotherapists, masseurs)
  - Equipment designers/manufacturers
- How can the coach operate within the system, and access what it has to offer in order to provide athletes with optimum support?
  - Resources and programs available from various national and provincial agencies (AAP, COA trust funds, etc.) and eligibility criteria
  - Setting priorities from a program perspective: what do athletes need most?
  - Resources (human, material, and financial) needed by the coach to implement programs.

### Preparation/Delivery Options:

This task may be taken at a National Coaches Seminar (NCS) session, at a National Coaching Institute (NCI) or other CAC course.

### Evaluation:

All requirements for session completion at NCS, NCI, or other CAC course must be met. Otherwise, this task will be regarded as incomplete.

## **Task #20: Planning the National Team Program**

### Goals:

To understand the role of the National Team Program in the development of elite athletes.

To familiarize the high performance coach with the various human, administrative, technical, political, logistical, and economic factors that determine the nature of the CYA's National Team Program.

### Learning objectives:

Upon completion of this Task, the coach will

- Be familiar with the vision, objectives, and long-term plans of the CYA in the area of high performance programs.
- Understand the process by which high performance/national team programs are developed and approved on an annual and pluriannual basis.
- Be familiar with the philosophy and the specifics of selection criteria to the national team.
- Be familiar with the process through which the CYA can qualify athletes or teams to major competitions or games.
- Be familiar with the philosophy and the specifics of the eligibility criteria to the Athlete Assistance Program.
- Understand the role and responsibilities of the individuals responsible for administering the National Team Program, as well as the policies and procedures in place to manage the program.
- Be familiar with factors or constraints that may affect the nature and/or the overall quality of the National Team Program.
- Critically reflect on the current high performance structure and programs of his/her CYA, and make specific recommendations to optimize success in this area.

Generic need-to-know areas:

▪ ***National team program planning process***

- CYA's long-term plans and objectives for high performance programs; philosophy of the CYA's high performance programs
- Vision
- Values
- Performance objectives
- Program emphasis (i.e. Male/female/junior/senior levels)
- Overview of QPP/strategic planning

Long-term QPP athlete development model and programs needed to attain desired standards of development and performance (club, provincial, national organizations: roles and responsibilities at each level, desired training standards/facilities at each level, coaching support at each level)

The process by which high performance/national team programs are developed and approved on an annual and pluriannual basis:

- CYA's decision-making structure
- Mandate/responsibilities of the Olympic Development Committee
- Composition of the Olympic Development Committee
- Nomination/election procedures to Olympic Development Committee
- Individuals currently involved in committee structure
- Frequency of meetings
- Typical agenda of Olympic Development Committee

Constraints affecting the design of the national team program (human and financial resources available, international calendars, geographical constraints etc.)

Potential conflicts between national team program and club/provincial programs; strategies in place to manage the same.

▪ ***Technical aspects of the National Team program***

Athlete selection procedures and methods

- Philosophy and principles underlying athlete selection
- Selection procedures
- Selection criteria/performance standards
- Olympic selection criteria
- Role and responsibilities of coaches
- Appeal procedures
- Number of athletes in HP programs
- Athlete and CYA responsibilities

### Athlete Assistance Program (AAP)

- Philosophy and principles
- Types of Sport Canada cards
- Criteria/performance standards for each carding level
- Role and responsibilities of coaches vis-à-vis nomination
- Appeal procedures
- Number of athletes who can be supported through the AAP
- Athlete, Sport Canada, and CYA responsibilities

National/International competitions which are attended by the best teams/athletes, role of preparatory events and variables influencing the choice of competitions or training activities within the national team program, conditions offered to participating teams/athletes by promoters of international events

#### *International competition structure and qualifying opportunities*

- Number of entries per event
- *Qualifying procedures and format*
- Qualifying events: dates and location

Standard of national competitions to provide influx to national team program.

Role of training centers within the high performance system and national team program:

- High performance/training centers and their role
- Role/responsibilities of club, provincial, national organizations
- Training standards
- Training facilities, equipment needed at each level

Centralized versus decentralized national team program: nature of the CYA's program and rationale

Long-term planning for high performance athlete development:

- Link between domestic and HP programs
- Talent identification events or series
- National team feeder system
- Role/responsibilities of club, provincial, national organizations
- Training standards
- Training facilities, equipment needed at each level
- Coaching expertise, certification needed at each level

#### *National team medical and scientific support programs*

National team suppliers, process to review equipment and other technical needs

### ▪ **Coaching**

High performance coaching structure

Relationship between national, provincial, and personal coaches

High performance coach education programs available

Legislation re: NCCP certification for elite coaches

▪ ***Administration/management***

Relationship between sport administrators and national team coaching staff: roles and responsibilities in program management, implementation, and evaluation.

Logistics/administration of the national team program

- Responsibilities of the national office
- Procedure for airline reservation
- Procedure for project reimbursement
- Procedure for advancement of funds in project
- Selection of project staff
- Project reporting: format and content
- Financial constraints on programs, if applicable
- Process in place to set priorities/make decisions re: finances
- National team budget and priorities
- Control mechanisms in place
- Insurance for athletes and coaches in project

Responsibilities of coaches in the area of program planning and evaluation

Communication channels within the organization

Appeals mechanisms in place within the CYA for technical and/or administrative matters

Athlete's agreements, and responsibilities of coaches re: enforcement of specific aspects such as use of equipment, visibility, etc.

National team sponsors

- Products/services provided
- Athletes, coaches, sponsor and CYA's respective responsibilities
- Athletes' contract/agreement
- CYA policies

National coach responsibilities vis-à-vis the hiring/supervision/ evaluation of support staff

Budget management: CYA's guidelines for expenditures during projects

Reporting procedures and format following projects

Non-sport career planning:

- Impact of sport retirement on the athlete
- Preparing for transition to a non-sport career
- Programs/services available through the CYA

***Considerations for evaluation:***

Critical review of the national team program or system, followed by a series of recommendations.

Involvement with the National Team Program Committee.

### Preparation/Delivery Options:

This task must be taken at a CYA Sailing Coach Seminar.

### Evaluation:

Participation in the design, implementation and evaluation of the Quadrennial Plan for the Canadian Sailing Team or Provincial Sailing Team are acceptable for certification.

Evaluation is based on Sport Canada or a Provincial Sport Authority accepting and supporting the Quadrennial Plan.

# Task #21: ISAF Racing Rules: Protest & Appeals Procedure

This Task is a CYA mandatory Task at Level 4 and has been developed by, and will be delivered and assessed by the CYA.

Goal:

To provide the coach with the knowledge and the methodology necessary for the effective teaching or correcting of advanced rule applications by high performance athletes and to assist an athlete in preparing for a protest hearing and/or appeal at an international competition.

**NOTE:** As a complement to the actual on-site training of the candidate, some aspects of the technical knowledge or observation skills could be learned or evaluated through a video bank. Footage of correctly and incorrectly applied rules would be reviewed, analyzed, and discussed with a master coach. The candidate could then be asked to:

- Identify the tactical errors with respect to the rules
- Describe the correct/appropriate tactic and/or rule application
- Make specific recommendations on how the understanding of the rules could be improved through appropriate drills or exercises.

Specific need-to-know areas:

- ***International Racing Rules***
  - Know and understand the 2001-2004 International Sailing Federation (ISAF) racing rules
    - Know and understand the CYA Prescriptions
    - Application of the ISAF racing rules to:
      - Notice of Race
      - Sailing Instructions
      - Scoring system
- ***Tactical Implications of the Racing Rules***
  - Understands the implications of the ISAF racing rules on the tactics and strategy as applied in Task 11 Practical Coaching: Advanced Tactics & Strategy.
- ***Protest Hearings***
  - Know and understand the implications of ISAF and CYA appeals & decisions
    - Be able to train athletes in protest presentation techniques
- ***Appeals***
  - Understand and be able to follow a proper Appeal procedure

### Preparation/Delivery:

This task is presented as a CYA Sailing Coach seminar on Rule Application: Protest and Appeals procedure, and through ongoing consultation/liaison with the Master Coach; a minimum of five observations is required. Video analysis is encouraged.

Independent studies with an International Judge may be accepted provided it meets the content requirements as set out above. This may include activities in or out of the University setting.

Self-study, independent of an International Judge is not acceptable

### Evaluation:

All requirements for session completion at the CYA course must be met. Otherwise, this task will be regarded as incomplete.

Independent study: Evaluation will be done through a written examination and paper submitted for grading. The standard required is comparable to that for a University Graduate course.

## **Task #22: Performance Analysis & Measurement (Equipment)**

This Task has been developed by, and will be delivered and assessed, by the CYA.

### **Goal:**

To provide the coach with the knowledge and the methodology necessary for the effective teaching or correcting of advanced tuning and measurement of high performance sailboats and windsurfers for international competition.

### **Specific need-to-know areas:**

The candidate in consultation with their Master Coach must develop the following boat/board specific information:

- An inventory of specific assessments/measurements and their expected level of execution by elite athletes.
- The methodology appropriate for advanced tuning and measurement, with particular emphasis on:
  - Tuning/testing session and their context in the overall training plan;
  - Organization and progression of skill training or development sessions, taking into account factors such as physical preparation (e.g. Potential interference between the training of specific physical qualities and the acquisition/refinement of motor patterns), relationship with individual or team tactics, etc.;
  - The concept of hull, rig and sails as they relate to tuning and boats speed;
  - Observation of key equipment performance factors, detection of incorrect components and prescription of specific corrective measures aimed at improving boat speed;
- Demonstration of assessment/measurement methods appropriate for high performance athletes.
- Comparative analysis of the level of technical knowledge between national and international performers: what differences are there, and how can they be bridged?
- The best in the world: future/international trends in the areas of construction and tuning, and how to ensure that up-and-coming Canadian athletes can be adequately prepared for performance.
- How to use A-V or computerized equipment for equipment analysis.

**NOTE:** As a complement to the actual on-site training of the candidate, some aspects of the technical knowledge or observation skills could be learned or evaluated through a video bank. Footage of correctly and incorrectly executed skills would be reviewed, analyzed, and discussed with a master coach. The candidate could then be asked to:

- Identify the technical faults
- Describe the correct/appropriate equipment selection process
- Make specific recommendations on how the equipment could be improved through appropriate adjustment, modification or replacement.

The remainder of this Task has been developed by, and will be delivered and assessed, by the CYA.

Specific need-to-know areas:

- **Measurement**
  - Hull
    - Hull measurement with (free) templates
    - Hull measurement with jigs
    - Weight
    - Lamboley Swing Test as a measurement requirement
  - Mast
    - Measurement techniques for stayed vs. una rigs
    - Projection measurement
  - Sails
    - Mains
    - Jibs
    - Spinnakers
    - Materials

Preparation/Delivery:

This task is presented as a CYA Sailing Coach seminar. It is comprised of 2 to 3 days of course work and apprenticeship in a recognized high performance sail loft and 2 to 3 days of course work and apprenticeship in a recognized racing sailboat/board shop. In addition, completion of the task requires: Master Coach feedback during training (Task 14) and competition (Task 15); assisting an international measurer at an international regatta; and a video course from a recognized authority.

Evaluation:

To complete this task the coach must have accumulated experience in: Sail loft (minimum 2 days), Sailboat/board repair shop (minimum 2 days) and complete a video analysis of a sailor or crew, that can be used to improve a technical aspect of their sailing related specifically to their equipment.

The evaluation of performance factors is closely related to the evaluation of the annual plan. After completion of the above requirements the Master Coach will do an overall evaluation based on discussions of results and training progress.

This task must be taken prior to Tasks #14 and #15 but will not receive certification until after the receipt of successful reports from the Master Coach on tasks #14 and #15.

Practical application of this task will be evaluated within task #12.