

# 4 Intermediate Rowing Methodology

## 4.1 Introduction

The FISA CDP Level I course provided information on the basic principles of training, the concept of periodisation and the development of a training programme. With this information, you, the coach, would have been able to assist your athletes in the achievement of their training objectives.

This course will provide more information on these topics while emphasising the establishment of a well-organised, systematic and multi-year plan. This plan is necessary to ensure the proper development of both existing and future top athletes. Since this course will not review the material presented in Level I, the reader is encouraged to review that material.

## 4.2 Training stages

The establishment of a multi-year plan should acknowledge that, although long-term training is a continuous process, the athletes would have various training stages during their athletic careers. These stages may be termed:

- 1 basic training stage
- 2 advanced training stage
- 3 high-performance training stage

This division of a multi-year plan assists in the proper systemisation of long-term training (see Diagram 1) and the better development of plans for each training year.

Training Stage	Basic	Advanced	High- Performance
Purpose	All-round development.	Improvement of preparatory base and introduction of specific performance factors.	Development and maintenance of specific performance factors.
Training	All-round physical development with emphasis on mobility exercises, aerobic endurance and general strength to promote health and development of various systems and organs.	Improvement of the physical qualities by individualisation and specialisation in training. Development of sport-specific motor abilities.	Highly individualised, specific and competition-oriented. There is a maintenance of general motor abilities while specific motor abilities are enhanced.
	Introduction of the basic techniques of the sport as well as elementary tactics and information on rules and regulations.	Improvement of the technical and tactical skills under various conditions including competitions.	Technical and tactical skills are mastered under various conditions.

<b>Method</b>	A variety of exercises during four to five sessions per week and not regimented by a periodised plan.	Exercises are more specialised during the six to eight training sessions per week. The use of a more controlled periodised plan particularly for important competitions.	Training loads are increased during the eight to twelve or more training sessions per week in a periodised plan designed for a competition, either single or multiple events.
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Diagram 1: Training stages. Adapted from an article titled Long-Term Training Process by Hardayal Singh.

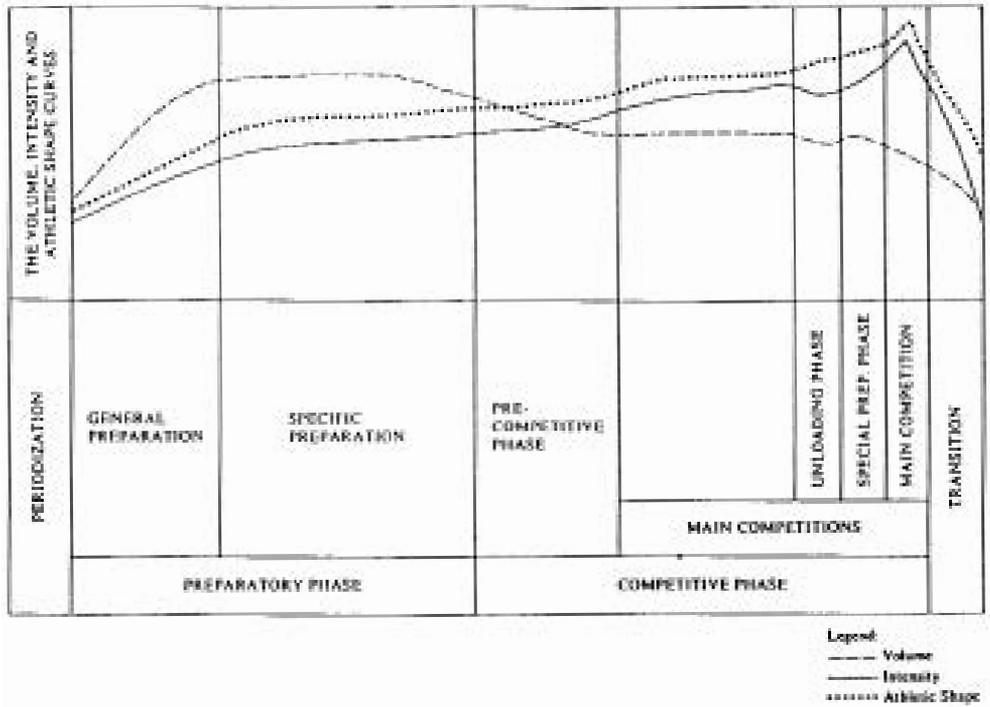


Diagram 2: A mono-cycle annual plan adapted from "Theory and Methodology of Training" by Tudor Bompa.

### 4.3 Training years

The plan for each training year is designed to optimise performance at a designated event that is usually a major competition during the advanced and high performance training stages of athletic development.

An annual training plan is an important tool for the coach to direct and guide athletic training during the training year. It is based on the concept of periodisation and the principles of training. Annual plans are classified according to the number of competition periods (which culminate in a major competition) included in the plan. Annual plans may include multiple competition periods, but the most common is a mono-cycle plan. This plan is designed to accommodate a major competition, either a local, regional, national or international event (see Diagram 2).

From year to year, the performance at the designated event is evaluated to determine if the training objective has been obtained. During each subsequent year, the training will follow the same basic plan but subject to alterations made as a result of the year-end review. These alterations may also include variations in the basic plan, including the training periods, cycles or sessions, based on either other information about the athlete or advancements in the knowledge of the scientific principles of training.

A systematic annual plan is developed by working backwards chronologically from the date of the main training objective and dividing the training season into the appropriate number of training periods (see BASIC TRAINING METHODOLOGY).

### 4.4 Training periods

This procedure of dividing the training season is called periodisation. The periodisation of the training season may be represented as follows:

- 1 preparation period / general and specific
- 2 competition period
- 3 transition period

While the preparation period usually includes general and specific preparation, the competition period may be subdivided to accommodate a number of competitive events, including perhaps a major selection event or trial, designed to assist in achieving top performance at the designated training objective. A brief description of these periods including an emphasis on the training components (physical, technical and psychological) is provided in Diagram 3.

In order to manage each period, the period is often divided into training cycles.

## 4.5 Training cycles

Each training period is generally divided into one or more training cycles of four to eight weeks in length. The plan for each cycle gives the athlete an outline of the particular activities on land and in the boat. It takes into consideration the different degrees of training loads and rest intervals while complying with the wave principle of training.

The best results in improvement of performance can be achieved if the training load (the quantity and quality of the work) is gradually increased during three successive training sessions up to the athlete's maximum load capability and then followed by a very light training session or a complete rest (see BASIC TRAINING METHODOLOGY).

This model is also applicable to training cycles by following a procedure of three weeks of progressively increasing training loads followed by one week of recovery that often culminates in a high performance test.

It should be noted that the same basic weekly plan may be followed for the three to four week cycle to allow optimum development but then the exercises should be varied to achieve additional gains in the next cycle. This is particularly important to top athletes.

The management of training periods through training cycles is usually conducted by providing a six to seven day weekly training plan. This plan outlines the kinds of exercise, the quantity and quality of the work and a detailed programme for each training session.

Training Components	Physical Activities	Technical Skills	Physiological Factors And Tactical Skills
Preparation Period: General Preparation	Longest period of the year with a high quantity of work and a gradual increase in the quality of work. Emphasis on general aerobic endurance and improvements in mobility and strength. Specific exercises are introduced.	Improvement of the fundamental rowing skills with a conscious effort by the athlete to become aware of the movement pattern to be maintained and improved.	Establishment of communication between the athlete and coach for a clear understanding of specific training objectives.
Specific Preparation	General preparation maintained and rowing-specific training, particularly in the boat, is increased. A period of a high quantity and quality of work.	Continual development of a good rowing stroke during increased training loads and at times, near racing velocity.	It is important for the athlete to maintain concentration as the training load increases. Confidence will increase due to improvements in the physical and technical components.

Competition	General preparation decreases while rowing-specific training increases. The development and stabilisation of competitive performance usually through preliminary competitions and perhaps, trials or qualifying events. At the end, there is an active unloading period and final preparation for the main competition event.	The smoother and more fluid rowing stroke demonstrates a consistent pattern after being subjected to various conditions including competitions.	Development of strategies for competition through simulation and actual competitions. The development of confidence is continued due to the growing awareness of a strong base of fitness and technical skills.
Transition Period	A period of active rest through leisure activities to provide physical and mental relaxation from the prior season and to prepare for the next season.	An opportunity to evaluate the rowing stroke, as demonstrated at the conclusion of the prior season, and to review equipment needs and adjustments required.	An opportunity for the athlete to enjoy the feeling of being fit, to evaluate achievements and to establish specific training objectives for the next season.

Diagram 3: Training periods adapted from an article titled "Coaching Notes" by Jimmy Joy

## 4.6 Training session

The number of weekly training sessions will vary from four to five for beginners to six to eight for experienced athletes to ten to twelve or more for the top athletes. Each session will have various objectives and training loads that will follow the wave principle of training including a provision for sufficient rest between sessions or a complete rest from training.

As the training loads will vary from day to day, they often form a double wave pattern when charted during a weekly training cycle (see BASIC TRAINING METHODOLOGY, Appendix A). Thus, the training load increases during the first three days and then decreases on the fourth day. This fourth day may be a day of active rest of light activity or, possibly, another sport. The training load then increases for another two days followed by a day of active rest or a complete day of rest.

It should be noted that in the development from young athletes to top-level athletes the number and variations of training objectives during each training session and weekly training cycles is reduced as training becomes more and more specialised. Although each session should be well planned, the coach should consider daily the state of the athlete, technique status, or the results from recent competitions or testing to alter the objectives or training loads of the session.

Therefore, each training session must be well planned taking into consideration the training cycle, the training period and stage of the athlete's development. The plan is ultimately individually prescribed and adjusted according to each athlete's physical preparation and level of training. Further, the plan is constantly evaluated and updated to achieve the maximum development of the athlete.

## **4.7 Training load**

The concept of training load was described in The FISA CDP Level I course as the quantity and quality of work. The distance of work, time of work, or number of repetitions represents the quantity of work. The quality of work is the effort exerted in the training session and is represented by the speed of running, amount of weight lifted, heart rate maintained or, in the boat, a combination of pressure applied on the blade and the stroke rating.

The variations in the training load may be obtained by changing either or both the quantity and quality of work to achieve the wave principle of training. The athlete's internal response to these changes will vary according to the athlete's training stage and fitness level.

The athlete's adaptation to the training load is a result of a correct alteration of training load and recovery. A training load causes the athlete to become fatigued which decreases the body's physical capabilities while the rest period allows the body to recover and restore the body's physical capabilities.

In fact, research has demonstrated that the body will recover to a level beyond the initial recovery level with the result that it will commence the next pattern of loading at a higher level. This is termed over-compensation.

## **4.8 Training control**

It is important to develop an organised, systematic and consistent evaluation procedure to control training. This procedure would enable the coach and athlete to evaluate training objectives, including competitions, and review the training programme, particularly at the end of training cycles, training periods, and training years.

This evaluation procedure becomes more important as the athlete progresses to the advanced and high-performance stages of development.

### Daily

A common method of controlling training sessions, particularly aerobic endurance training, is the taking of the heart rate. This may be accomplished either manually or using a commercially available heart rate monitor. Although this procedure may be utilised at high training loads, the taking of blood samples for lactic acid determination is preferred but probably impractical for most programmes.

Either or both of these procedures should be used in conjunction with the athlete's and coach's observations, such as body weight, sleep patterns, infections, cold sores, irritability, perceived fatigue, morning heart rate, etc. to control daily training sessions.

### Weekly

A video recording session should be conducted in order to allow the athlete and coach an opportunity to view and analyze technique. This analysis could form the basis of a regular and formal technical evaluation by the coach. Further, the editing and storage of the recording on to a master tape would enable the establishment of a video library for the purpose of a long-term assessment of the athlete's technical development.

### Monthly

A training chart, a summary of daily records, should be completed by the athlete to ensure adherence to training objectives. Tests may also be administered in order to compare with either group standards or prior results achieved by the athlete. These tests may be, either or both, in the boat or on land, for example a rowing race, determination of running speed or amount of weight lifted during barbell exercises. They may be performed in conjunction with normal training or through more formal sessions designed for this purpose.

### Quarterly

The training season should allow an opportunity to evaluate the physiological status of the athlete. This is necessary to ensure that the athlete has acquired the targeted objectives through the periodisation of the training season.

The most common evaluation test in our sport is the maximum rowing ergometer test. It is preferred but not necessary that this test be performed in conjunction with oxygen consumption analysis. Another useful test is a sub-maximal test to determine anaerobic threshold. A simple non-invasive test for this determination is described in the booklet titled INTERMEDIATE ROWING PHYSIOLOGY.

These determinations will assist the athlete in controlling the adherence to the prescribed training load.

### **Half-yearly or yearly**

An opportunity should be taken to develop a medical profile of the athlete to assist in the maintenance of the athlete's well-being. Further, a complete evaluation procedure should be formalised in order to be in a position to properly advise the athlete in regard to present status and methods of improvement.

This profile and evaluation would form a record of the athlete's development during his career.

## **4.9 Summary**

It is very important that the coach possesses the ability to properly plan the long-term development of the athlete. The coach must use all the knowledge acquired from experience, learning and research to successfully complete this task. This material should assist the coach to achieve this objective.