# CANADIAN FENCING FEDERATION
# ANNUAL TRAINING AND COMPETITION PLAN

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## SPECIFIC OBJECTIVES

- The coach should be able to **understand the demands of the sport : establish the requirements in competition and determine the relative importance of key performance factors and training components.**

- The coach should be able to **design an annual training and competition plan** related to the following variables : the age, experience and actual training state of your athletes, their level of performance as well as the opposition's, the nature and structure of competition, whether it is a performance oriented year or a developmental year, the peak performance sought, our Canadian reality (constraints and limitations).

## CONTENT: ANNUAL PLAN

1. TASK ANALYSIS.
2. FOUNDATIONS TO ANNUAL PLANNING.
3. PLANNING STEPS.
4. TRAINING LOAD STRUCTURE/MACROCYCLE.

## 1. TASK ANALYSIS

The following step by step approach has been modified from a publication by Marion A., Balyi I., Cardinal C., "Designing an Annual Training and Competition Plan: a Step by Step Approach" (2000).

### 1.1 DETERMINE THE DEMANDS OF YOUR SPORT

Determine the demands of the sport, discipline or event by assigning a degree of importance to the variables listed below (e.g. key performance factor, important, moderately important, low importance, not applicable). In your assessment, consider the importance of each variable for both a typical competition and the athlete's ability to sustain the training load over several weeks or months.

| ENERGY SOURCES | KPF | IMP | MOD | LOW | N/A |
|---|---|---|---|---|---|
| Anaerobic alactic power | ( ) | ( ) | ( ) | ( ) | ( ) |
| Anaerobic alactic capacity | ( ) | ( ) | ( ) | ( ) | ( ) |
| Anaerobic lactic power | ( ) | ( ) | ( ) | ( ) | ( ) |
| Anaerobic lactic capacity | ( ) | ( ) | ( ) | ( ) | ( ) |
| Aerobic power | ( ) | ( ) | ( ) | ( ) | ( ) |

| | | | | | |
|---|---|---|---|---|---|
| Aerobic endurance | ( ) | ( ) | ( ) | ( ) | ( ) |
| OR | | | | | |
| Acceleration | ( ) | ( ) | ( ) | ( ) | ( ) |
| Optimal speed | ( ) | ( ) | ( ) | ( ) | ( ) |
| Speed/endurance | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **MUSCULAR QUALITIES** | **KPF** | **IMP** | **MOD** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Maximal strength | ( ) | ( ) | ( ) | ( ) | ( ) |
| Strength endurance | ( ) | ( ) | ( ) | ( ) | ( ) |
| Muscular power | ( ) | ( ) | ( ) | ( ) | ( ) |
| Flexibility | ( ) | ( ) | ( ) | ( ) | ( ) |
| Agility | ( ) | ( ) | ( ) | ( ) | ( ) |
| Balance | ( ) | ( ) | ( ) | ( ) | ( ) |
| Coordination | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **TECHNIQUES** | **KPF** | **IMP** | **MOD** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Skill acquisition | ( ) | ( ) | ( ) | ( ) | ( ) |
| Skill stabilization | ( ) | ( ) | ( ) | ( ) | ( ) |
| Maintain basic skills | ( ) | ( ) | ( ) | ( ) | ( ) |
| Proper skill execution | ( ) | ( ) | ( ) | ( ) | ( ) |
| Success rate | ( ) | ( ) | ( ) | ( ) | ( ) |
| Rhythm + coordination | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **INDIVIDUAL TACTICS** | **KPF** | **IMP** | **MOD** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Perception/motor response | ( ) | ( ) | ( ) | ( ) | ( ) |
| Motor response variation | ( ) | ( ) | ( ) | ( ) | ( ) |
| Specific instruction/opponent | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **STRATEGY** | **KPF** | **IMP** | **MOD** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Practical knowledge | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| | | | | | |
|---|---|---|---|---|---|
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **PSYCHOLOGICAL QUALITIES** | **KPF** | **IMP** | **MOD** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Identifying objectives | ( ) | ( ) | ( ) | ( ) | ( ) |
| Basic mental skills | ( ) | ( ) | ( ) | ( ) | ( ) |
| Optimal Psycho. Readiness (OPR) | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

## 1.2 ASSESS THE STATUS OF THE ATHLETE(S)/CLUB

Using normative data, competition or test results and/or your best judgment, assess the actual status of your athlete(s) or team in the following areas (e.g. superior; above average; average; below average):

| **ENERGY SOURCES** | **SUP** | **AVG+** | **AVG** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Anaerobic alactic power | ( ) | ( ) | ( ) | ( ) | ( ) |
| Anaerobic alactic capacity | ( ) | ( ) | ( ) | ( ) | ( ) |
| Anaerobic lactic power | ( ) | ( ) | ( ) | ( ) | ( ) |
| Anaerobic lactic capacity | ( ) | ( ) | ( ) | ( ) | ( ) |
| Aerobic power | ( ) | ( ) | ( ) | ( ) | ( ) |
| Aerobic endurance | ( ) | ( ) | ( ) | ( ) | ( ) |
| OR | | | | | |
| Acceleration | ( ) | ( ) | ( ) | ( ) | ( ) |
| Optimal speed | ( ) | ( ) | ( ) | ( ) | ( ) |
| Speed/endurance | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **MUSCULAR QUALITIES** | **SUP** | **AVG+** | **AVG** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Maximal strength | ( ) | ( ) | ( ) | ( ) | ( ) |
| Strength endurance | ( ) | ( ) | ( ) | ( ) | ( ) |
| Muscular power | ( ) | ( ) | ( ) | ( ) | ( ) |
| Flexibility | ( ) | ( ) | ( ) | ( ) | ( ) |
| Agility | ( ) | ( ) | ( ) | ( ) | ( ) |
| Balance | ( ) | ( ) | ( ) | ( ) | ( ) |
| Coordination | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **TECHNIQUES** | **SUP** | **AVG+** | **AVG** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Skill acquisition | ( ) | ( ) | ( ) | ( ) | ( ) |
| Skill stabilization | ( ) | ( ) | ( ) | ( ) | ( ) |
| Maintain basic skills | ( ) | ( ) | ( ) | ( ) | ( ) |
| Proper skill execution | ( ) | ( ) | ( ) | ( ) | ( ) |
| Success rate | ( ) | ( ) | ( ) | ( ) | ( ) |
| Rhythm + coordination | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **INDIVIDUAL TACTICS** | **SUP** | **AVG+** | **AVG** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Perception/motor response | ( ) | ( ) | ( ) | ( ) | ( ) |
| Motor response variation | ( ) | ( ) | ( ) | ( ) | ( ) |
| Specific instruction/opponent | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **STRATEGY** | **SUP** | **AVG+** | **AVG** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Practical knowledge | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

| **PSYCHOLOGICAL QUALITIES** | **SUP** | **AVG+** | **AVG** | **LOW** | **N/A** |
|---|---|---|---|---|---|
| Identifying objectives | ( ) | ( ) | ( ) | ( ) | ( ) |
| Basic mental skills | ( ) | ( ) | ( ) | ( ) | ( ) |
| Optimal Psycho. Readiness (OPR) | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |
| | ( ) | ( ) | ( ) | ( ) | ( ) |

## 1.3 PRONOSTIC: SET PERFORMANCE AND TRAINING OBJECTIVES

Based on the previous analyses, identify objectives for the program you are about to design. Be specific: list measurable items, and indicate by which date you are expecting those to be achieved.

| **Performance objectives** | **Expected to be achieved by (date)** |
|---|---|
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| **Training objectives** | **Expected to be achieved by (date)** |
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## 2. FOUNDATIONS RELATED TO YEARLY PLANNING

A yearly program can include one, two or multiple periodization cycles. The official competitions as well as the championships dates are known before the season begins. The annual plan should reveal information specifying the coach's emphasis. Following are the main components appearing on the chart.

- Sequence out specific training tasks/components throughout the year, also determine the priority as well as the time span allocated for their development.
- Indicate the % of training time allocated to key performance factors for each phase/year.
- Projection of the training load for each macrocycle (2 to 6 weeks).

What is the knowledge required to be able to design an annual training and competition plan? What are the foundations upon which it is built?

Athletic form development.
Training state of the athletes as a starting point for training direction.
Competition schedule.

### 2.1 Athletic form development

Athletic form can be defined as the optimal state of preparation reached by the athletes for a peak performance within a season/year. According to Matveyev (1983), the aggregate of research and practical data about athletic form amassed so far, testified to the fact that the process of its development undergoes a consecutive change characterized by the three following stages: acquisition (1), retention (relative stabilization) (2) and temporary loss of athletic form (3)". These three successive phases are translated into a preparatory period, a competition period and a transition period.

The preparatory period is generally broken down into two phases, general and specific. The length of each phase is directly linked with the level of development (training and competition experience) of the athlete, the nature of the sport and the contextual constraints and limitations. The load structure is influenced by the performance factors emphasized at the time and the actual training state of the athlete. The competition period is also be broken down into several phases: pre competition, main competition and decisive competition phase. The load variation will be influenced by the coach’s decision to make it a performance oriented year or a developmental year. The transition phase should be relatively brief. Long enough because complete recovery and regeneration are mandatory before starting on a new yearly cycle. But, on the other hand, not too lengthy because regression of adaptations will occur.

Matveyev is the pioneer who has introduced load variations within a training cycle. He has shown the interrelationship and mutual dependency of volume and intensity variations. There are several categories of load fluctuations in the overall training process:

- small size variations, characteristic of the microcycle training load (2 to 7 days).
- medium size variations, characteristic of the macrocycle training load (2 to 6 weeks).

- large size variations, characteristic of the general tendancy of the training load throughout the periods of a yearly plan.

It is the small size variations that are decisive in determining training direction. The medium and large size variations only indicate the general tendencies in loading. A well planned training structure means finding the right relationship between the different training objectives/tasks and the appropriate training load in the week without causing too much interference or conflict. Microcycle planning is made more difficult since volume and intensity have their own dynamics. All load fluctuation is reflected by volume as well as intensity variations. Furthermore these variations maintain a direct relationship Matveyev (1980).

## 2.2 Training state of the athletes as a starting point for training direction

When you greet the athletes at the start of a new season it seems logical to proceed to an accurate evaluation of their state of training after a transition period that often lasts several months in our Canadian reality. Most probably you will inherit a group of athletes who have been more or less active. Some will have taken up an individualized physical conditioning program, others not. The coach requires objective facts in order to establish clearly the athletes/club starting point. This evaluation is the corner stone for training direction. The basic concept of training direction rests upon constant analysis of the actual state of your athletes, and then, finding adequate training methods and means to reach the ideal state Martin (1980).

The difficulty in identifying precisely the actual state of training stems from the means used by the coach to evaluate. Subjective diagnosis of competition performance, health medical report, tests results on a particular physical quality (V02 max, maximal strength) or on motor skills efficiency, relinquishes only partial information on the complex performance capacity as a whole. There does not seem to exist a diagnosis model that allows us to reproduce exactly and precisely the complex and harmonious blend of the training factors involved in performance. On the other hand, competition performance cannot be the sole indicator of the state of training, especially when coaching young athletes. Training direction often suffers from the limitations of analytical methods and subjective assessment of the coach. The same problem exists when trying to determine the ideal state. The coach is responsible to gather information on the performance indicators to successfully compete at the national or international level. What skill level will be required? What tactical capacities? What psychological make-up? Only after the coach has determined exactly where to go, can direction and orientation to training be given. However, even if we do recognize the limitations of each tool used to gather information on the state of training of athletes, their combination allows us to draw up a pretty fair profile of the athletes. This rough sketch will serve as corner stone to give direction to training.

## 2.3 Competition schedule

Competition should be considered under two options. On the one hand competition is the culminating point of training (e.g. National Championships, Canada Games, Olympic Games), but on the other hand, competition is a means to foster athlete development, to improve a particular aspect of the confrontation/opponents. Indeed, training can only approximate competition-like conditions. It can only be the mirror image of the real thing. Only in a tournament when confronted to an opponent do we find the absolute stimuli inducing exact load adaptations, creative thinking requiring precise tactical adjustments to a particular situation, as well as emotional control and rigorous discipline while implementing a combat plan. These few reasons underline the importance of competitions in athlete development. The coach must expose the athletes to numerous competitions in order to improve their adaptation capacities related to all types of conditions, opponents with different tactical characteristics as well as unknown opponents.

The competition period may be defined as the main period where the most important competitions (performance oriented) of the year are scheduled. This does not mean that they are no competitions in the preparatory period. There must be, it is mandatory, but they must be preparatory or control in nature. Training and preparatory/control competitions are linked together to form a closely knit whole. Planning training and competitions has as a corner stone, knowledge of the dates and location of the decisive competitions of the year as well as the dates of key confrontations. They determine periodization and possible dates of preparatory/control competitions Harre (1982).

In the main competition period, the frequency of performance oriented competitions and the length of the schedule determine the relative importance as well as the amount of training time spent on the training factors. When there are too many performance oriented competitions in a short time span, there is a risk of not being able to develop the key performance factors methodically D.H.f.K. (1978). In such a situation, the attention of the coach and athletes is focused mainly on next week-end's competition. As a result, training is not sufficiently guided by the ultimate goal and the emphasis on critical components is not systematically developed. In these circumstances, the coach is forced to do a little of everything concurrently. Physical, technical and tactical factors are dealt with together, making great use of competitive situations coupled with specific competition loads. When training young athletes, if this approach is carried out over a long period of time the most probable result is stagnation of performance. It is even more so if the preparatory period was too short (2 months or less) Why? Because the foundation of high intensity training in the competition period rests on a high volume of training over a relatively long preparatory period.

Most domestic sports are characterized by a single periodization cycle/year culminated by a peak performance at the provincial or national championships. When training youth, it is advisable to subordinate all competitions to this peak and to proceed in a way that enables the key performance factors to be improved methodically and systematically over a certain extended period during the year. This leads to the main

competition period where the emphasis is on stabilizing competition performance over a slightly shorter period, What should the performance oriented competition frequency and the training/competition ratio in the main competition period be? The schedule between major competitions should allow the coach the opportunity to focus on furthering the improvement of key performance factors. Training would thus contribute to working towards the ultimate goal. When dealing with youth, I recommend at least three weeks between performance oriented competitions.

## 3. PLANNING STEPS

**3.1 Break down the year into smaller more workable training units** or blocks of time called **phases**. To keep the procedure simple, months of the year can be used (minimum one month, maximum three). Each phase has a specific goal from which derive certain training tasks and the corresponding load. As an indicator here are the most common phases encountered in the literature.

- General preparatory phase.
- Specific preparatory phase.
- Pre competition phase.
- Main competition phase.
- Decisive competition phase.
- Transition phase.

Identify horizontally (X axis) the phases/months comprising the annual plan

**3.2 Write in vertically (y-axis) key performance factors as well as training tasks/components**

As an indicator, here are the performance factors appearing under task analysis. They reflect the author's opinion.

- Energy sources.
- Muscular qualities.
- Techniques.
- Individual tactics.
- Strategy
- Psychological qualities.

For each performance factor you have identified several training tasks or components relevant to your sport, when filling out the « Task Analysis ». Please write in this information on the annual chart.

**3.3 Determine horizontally (x-axis) the training priority of each task or component throughout the Annual Plan**

It is impossible to develop all these tasks/components simultaneously. The coach must spread them out appropriately throughout the different phases. He must determine when a major task is to be trained, what should be it's training priority,establishing a given sequential order based on scientific principles and related literature. He also has to determine how long should we develop each task as well as what tasks require maintenance and when. When reading an

annual plan this is what the X-axis reveals. Here is a proposal to indicate the training priority of a task at a given time of the year.

- Top training priority: XXX
- Secondary training priority: XX
- Introduction or maintenance X

### 3.4 Determine vertically (y-axis) the % of training time allocated to every performance factor for each phase/year

Vertically (Y-AXIS) on the annual chart, you must assign to every performance factor a value in % for each phase of your program. Vertically, the total score should amount to a 100%. The value given to a performance factor is an indicator of the % of training time allocated for that phase of the year.

## 4. TRAINING LOAD STRUCTURE

With regards to macrocycle planning (2 to 6 weeks), literature reveals several load structure models. Alternating systematically microcycles (2 to 7 days) of high loads and moderate loads and still witness a gradual and progressive increase throughout the successive mesocycles. The staircase approach, volume is gradually and progressively increased from one microcycle to the next and towards the end of the macrocyle volume is slightly dropped coupled with a sharp increase of intensity. The macrocycle is culminated with a competition if possible. The volume raise from one week to the next is approximately 10%. Several days of complete rest or active rest is given at the end of the macrocycle, in order to eliminate fatigue and favor physiological adaptation processes. When training youth, if the major tournaments are three to four weeks apart, load dynamics is often characterized by a criss cross pattern. Volume starts out at a relatively high level to finish at the end of the macrocycle at a medium level. The intensity is the exact opposite, the macrocycle begins with a sub-maximal intensity which is gradually and progressively increased to reach an optimal level for the competition ending the macrocycle. The load dynamics in the main competition period is directly related to the systematic alternation of training and modeled competition microcycles. The load structure reflects wave like variations. When intensity is slightly reduced and volume increased we are in a training microcycle. On the other hand, when intensity is raised to meet competition requirements, coupled with a volume decrease, we are in a modeled competition microcycle preparing for a top performance. Shock or impact loading, is used with advance athletes. This model is comprised of back to back microcycles reflecting high loads (e.g. high volume coupled with high intensity) followed by a moderate or light load microcycle. Sometimes an average or medium load microcycle starts off the macrocycle before the two intensive microcycles are introduced. As for the international level athletes, Verkhoshansky (1981) recommends block loading also called concentration loading. This approach is characterized by a high volume of sport specific loads throughout the entire macrocycle. Once the macrocycle is completed, the athletes physical capacities are somewhat diminished. However in the weeks following block loading, the athletes rebound (supercompensation). This post long term effect is considered conducive to a performance capacity boost.

The following figures illustrate examples of types of macrocycle load structure.

- Macrocycle load structure : general preparatory phase.
- Macrocycle load structure : specific preparatory phase.
- Macrocycle load structure : competition period.

**CONCLUSION**

Planning is not an end in itself. It is a tool to reach our goal. Do not begin an activity without first clearly defining the objectives, the breakdown of tasks/time and the resources required to reach our goal. The annual plan should guide the coach like a lighthouse directs a ship. This yearly map is a guideline for projected actions. Planning is closely associated with monitoring and evaluation to form an inseperable unit. After each phase the plan should be filled out in greater detail and improved in order to insure that the team (players) is progressing at the anticipated rate towards the peak performance dates.

8/27/01