QUARTERLY TRAINING PROGRAMME

FOCUSED ON SWIMMING – LASER RUN – FENCING

(FOR ATHLETES AGED 14-16)

UIPM
UNION INTERNATIONALE
DE PENTATHLON MODERNE

FOREWORD

The UIPM is delighted to publish a training programme elaborated by Ivan Lo Giudice, national coach of Italy. The document targets athletes aged 14-16 already introduced to the basics of Swimming and Laser Run.

The three-month programme consists of a straight approach of how sessions are planned by the author focusing on athletes returning after their annual holidays or, in the case of 2020, after the training restrictions caused by the COVID-19 Coronavirus pandemic.

At the end of the document, a comprehensive periodization grid is presented containing details about training workload, balance volume/intensity, and distribution of sessions over the microcycles and mesocycles. The grid is a valuable tool to help the training control evaluation and can be directly adapted for athletes competing in Biathle, Triathle and Tetrathlon.

We hope this will make good reading and inspired training!

The UIPM

The author

Ivan Lo Giudice is currently the men's national head coach of the Italian Modern Pentathlon Team. A former athlete, Ivan started Pentathlon at the age of 11 and competed over almost two decades from grassroots to international level including several UIPM Pentathlon World Cups and World Championships.

As a coach, Ivan first specialized in coaching kids and youth athletes from 2006. After a debut in his hometown Montelibretti, his expertise and cumulative experience brought him to upper levels: head coach of national youth team (2013) junior team (2014) and senior male team (2018). His athletes have won medals in all major UIPM events including Youth, Junior and Senior World Championships.

Since 2018 Ivan is a Level 3 certified (Senior Coach) in the UIPM Coaches Certification Programme. He is also a Level 4 European Coach certified by the Scuola dello Sport (Italian Olympic Committee).

INTRODUCTION

What you are going to see in this document is a classic programmatic proposal that provides a preparation cycle of three months for athletes returning to their training routines after a long break (e.g. summer holidays).

The main concept of youth training is that children and adolescents are not small adults and consequently their training cannot be a "reduced or adapted adult training". Unlike adults, young people are still growing, with physical and psychological changes that must be kept in mind when building their training programmes. The training process in these phases must support and accompany the psychological and physical growth of the young person through exercises that improve physical efficiency, motor skills, conditional and coordinative capacities.

When presenting this example of a training programme, we start from the assumption that athletes have previously had proper training under a programme that respected all the principles of the physical growth of individuals. Also, it is expected that the athletes' background is based on correct technical, coordinative and physiological proposals.

The work in this age group focuses on the technical/physiological basis that will help athletes in future years to develop their full potential. Therefore, this work proposal brings to your attention aspects of endurance (with hints to aerobic power); strength (naturally charged and expressions of fast/rapid strength); speed/sprint; and the continuous improvement of the technical aspects.

Athletes in this group will train in all five disciplines with a weekly commitment of five or six days a week, including:

- Five swimming sessions
- Four/five running sessions (including laser run) + three pure shooting sessions
- Three fencing sessions (one technical/drill + two bouts)
- Where possible, one riding session a week

It should be noted that although the age group covers the range 14-16 years, coaches must pay close attention to the workloads during the week/microcycle, trying to balance them with the technical and physiological needs of the athlete, which could differ considerably between a 14-year-old and 16-year-old athlete.

SWIMMING

The training period will be split into microcycles, giving space to the conditions that will enable the athlete to build an excellent performance over time.

The mesocycles can be divided into microcycles of three or four weeks of loading and one week of recovery, making it possible to compensate the internal load and face the new cycle in an optimal rest situation.

WEEKS 1-5

- Weeks 1-2: General introduction – start of the new season after a break. Technical and sensitivity exercises.
- Weeks 3-4: Aerobic load (always gradual) with attention to technical aspects.
- Week 5: Active recovery.

Examples of main works:
Examples of main works (please see abbreviations on page 11):

- A2: 18x100m
- B1: 3x [4x150m]
- B2: 15x100m (sequence 3B2/2A2).

WEEKS 6-9

- Expansion of the total weekly volume focusing on technical goals. Consider using equipment (e.g. snorkel, pull buoy, paddle) during a good part of the session to support technical improvements.
- The progression of aerobic volumes must be based on a multi-year programme that will take place over the time.
- Coordination drills paying attention to the technical gesture (amplitude, frequency, coordination of arms and legs, drag reduction).

Examples of main works:
Examples of main works (please see abbreviations on page 11):

- A2: 20x100m
- B1: 4x [4x150m]
- B2: 18x100m (sequence 3B2/2A2 concluding with 3B2).

WEEKS **10-13**

- Gradual increase of the aerobic/technical aspect within the workload.
- Speed work introduction aiming at improving coordination in higher intensity works (technical conditions must be maintained in parallel to the stroke's amplitude and frequency ratios).
- This work block is a keystone for all aerobic power and lactate capacity jobs that will be introduced in the second part of the season.

Examples of main works:
Examples of main works (please see abbreviations on page 11):

- A2: 24x100m
- B1: 2x [8x150m]
- B2: 20x100m (sequence 3B2/2A2)
- C3: 16x25m 1 fast/1 slow
- C1: 18x50m 4 fast/2 slow.

LASER RUN

Even if Laser Run is considered a single discipline, when working on planning we consider it a combined event. Therefore, for didactic reasons, the approach in this document will split between running and shooting. However, the attractiveness of the training sessions depends on the creativity of the coach in merging the concepts of both disciplines.

Obviously, there will be training sessions of "pure shooting" or "pure running" but the Laser Run sessions will be the ones that forge the athletes not only on the physiological or biomechanical aspects, but also to strengthen the unique psychological skills required when shooting after running.

As previously mentioned, Laser Run is a very attractive disciplines for teenagers. Therefore, it is extremely important to include ludic practices (learning through play) during training, including the use of mobile phone apps and mini-competitions/ challenges between training groups. Using handicap starts with a calculated proportional advantage for girls when training together with boys can be a good tool to develop a group spirit and raise the performance level.

Running

The principles and reasoning used for building the swimming sessions are also followed in running.

WEEKS **1-5**

- Weeks 1 and 2: General muscle reconditioning after the summer holidays and preparation for the next job. The loads are of low intensity and volume – the work is totally aimed at general physical preparation.
- Weeks 3 and 4: The intensity remains low and the volume of work increases compared to the previous weeks. Two weekly physical preparation sessions + two specific running sessions can take place. The work is directed towards endurance (circuit training and fartlek), general strength exercises (gym + muscle strengthening sessions) and coordination skills (coordination drills).
- Week 5: Active recovery.

WEEKS 1-5

Examples of main works:
Examples of main works (please see abbreviations on page 12):

- Week 1: 20' to 30' + stretching and joint mobility drills.
- Week 2: 30' to 40' (introduction of short accelerations) + stretching, joint mobility drills and exercises for general physical preparation.
- Weeks 3: 20' progressive warm-up + 30' fartlek ratio 1-2 (e.g. 10 x [1' hard/2' easy]; general strength circuit training consisting of seven exercises (1' each), to be repeated twice with 5mins recovery (e.g. abdominals, skips, rope jumping, etc). Between each of the exercises, athletes do 100m of slow running with maximum technical control.
- Week 4: For running, the same work as in the previous week increasing time by 5'/10'. For circuit work, increase the duration to 1'30".
- Week 5: Consider the same plan executed in weeks 1 and 2.

WEEKS 6-9

- In this mesocycle athletes keep one general strength circuit training/ week, and workouts aiming at accelerations and sprint will be introduced.
- In weeks 6 and 7, one fartlek per week is important. Also, interval training sessions can start during this period.
- **Information about interval training:** The work for this age group focuses on teaching the athletes how to manage their energy in a given distance, but without strictly following the stopwatch. This kind of work must never be done at full speed, and they must not finish the session repeatedly with the feeling of having given everything.

Examples of main works:
Examples of main works (please see abbreviations on page 12):

- Fartlek: 10 minutes of warm-up and 2 or 3 x 18mins of work (hard/easy): 1'/2'; 45"/75"; 30"/90"; 15"/105", all to be repeated 2/3 times.
- Accelerations: 15' warm-up + 3 x (30-40-50m) with complete recovery (e.g. low skip / butt kick / high knees).
- Sprint: 15' warm-up + 10x60m rec 2'; or 8x80m rec 2'; or 4x80m + 4x60m rec 2'/1'30".
- Interval training: To be used especially with the older athletes in the group once a week, with the younger ones modulating lengths, intensities and recoveries. For that group, maximum volume 4-5km preferably using distances up to 1200m with recoveries from 2' to 4'.
- For the youngest, maximum volume 3-4km using distances preferably up to 800m-1000m with long but incomplete recoveries and maximum intensity 80%.

WEEKS
10-13

- At the end of this phase athletes can take part in controlled competitions or tests to evaluate their evolution.
- The acceleration and sprint workouts remain the same as in the previous mesocycle.
- For the circuits and drills related to strength and technique, the preference must be given to more specific drills with faster execution without losing the quality of the sports gesture.
- With regards to interval training, the volume slightly decreases while the intensity should be driven to the pace athletes will face during competitions.

Examples of main works:
Examples of main works (please see abbreviations on page 12):

- Fartlek: 40' running, comprising: 15' warm-up, then 2'30" easy/30" hard until reaching 35' and the last 5' easy recovery.
- Continuous running: 40' (youngest) / 50' (oldest), controlled pace, making sure that athletes remain focused on a correct running posture.
- General circuit: Same circuit as Weeks 1-5 but with 3-4 repetitions and 4' recovery.
- Accelerations: Extensive variety of drills with accelerations such as low skip / power skip / butt kick / high knees / carioca / strides / bounding.
- Interval training: For the oldest athletes, distances not longer than 1000m and total volume 4/5km with long recovery (3'/4') and intensity close to competition pace. For the youngest athletes, distances not longer than 800m and total volume 3/3.5km, recovery 3'/4' and intensity not higher than 85%.

Shooting

Before 2009, the competitions were held with static shooting, but with the creation of the Combined Event and the evolution of Laser Run, our performance model has been completely modified. The new shooting discipline is completely different to the previous one and therefore our training proposal must also be different.

As Laser Run is much more dynamic and more fun seen through the eyes of a child/teenager, it allows us to adopt, unlike the old performance model, an approach aimed at the game rather than a real training. Kids (10-13) in an initial phase can acquire the basic requirements of fluency and gestures following a work based on entertaining games and drills. By doing that, from 14yo they may be required

to work more focused on technical details. This is the optimal age group to teach these aspects, managing to obtain from athletes the concentration that previously they would certainly struggle to have.

Permanently revising the shooting fundamentals is extremely important throughout this entire journey and 'Laser Run Made Simple', a series of videos produced by UIPM, is designed to be used with the athletes. To access the videos on UIPM YouTube please click here.

That said, while on one hand we have a much more instinctive shooting, which allows each athlete to customize their position, technical gesture and breathing, on the other hand there are still some standard technical bases of the old static shooting: grip, target approach, aims alignments, trigger activation and follow-through.

Below you can find the suggestions for the three-month programme. It is important to have in mind that creativity and flexibility are essential when planning the sessions, carefully mixing static shooting and Laser Run sessions.

WEEKS **1-6**

Shooting training based on shooting fundamentals, gradually introducing drills to improve the coordination of shooting with the running approaches.

- Two static shooting sessions per week, focusing on drills related to the fundamentals of shooting. At the end of the second weekly session add exercises that involve short running distances followed by shooting.
- At least once a week a proper running/shooting session. Several shooting series should be included during long-distance running sessions (slow/moderate pace), with accelerations close to the shooting range to help athletes to reproduce similar technical/coordination aspects of the competition.

WEEKS **7-13**

The planning for Weeks 7-13 can be kept throughout the whole season, gradually shifting the focus of the work from static to dynamic shooting. When there are no competitions in the short term, the focus should be diverted to technical work.

- Two static shooting sessions per week, one completely focused on the technical shooting fundamentals and the other based on a dynamic workout.
- Two Laser Run sessions, one focused on long-distance running and the other linked to interval training or fartlek, trying to closely reproduce the competition challenges.

FENCING

Athletes can start with collective works/lessons from Week 2 and after that try to gradually fit to the routine of one individual lesson and two plays per week. From the second mesocycle weekend competitions are important to improve their endurance and understanding of the sport.

The main goal for that age group is to matrix the technical aspects but also progress on the tactical side (with practical and theoretical sessions). It highlights the importance of training and competing with a wide variety of athletes which allows the athletes develop and consolidate a good fencing level.

Also, you can see on page 12 a proposal to estimate the fencing training volume based on the number of touches/session executed. The training intensity can have a wide variation, depending on the purpose that the coach is seeking.

WEEKLY **PROGRAMME**

Session 1

- 30' footwork + preparatory drills
- 1h free play
- 20'/30' individual lesson

Session 2

- 40' drills (work in pairs)
- 1h free play

Session 3

- 2h free play, including an individual lesson

Examples of preparatory exercises

These types of exercises are extremely valuable and can be done not only in the fencing club/hall, but also individually at home.

There are several websites with explanations and videos about these exercises. It is highly recommended to use a ludic (learning through play) approach to encourage athletes to perform better. Therefore, using tennis balls, medicine balls and tera bands among other equipment is important not only to develop motor coordination but also to improve speed, strength and flexibility of the athletes.

PERIODIZATION GRIDS

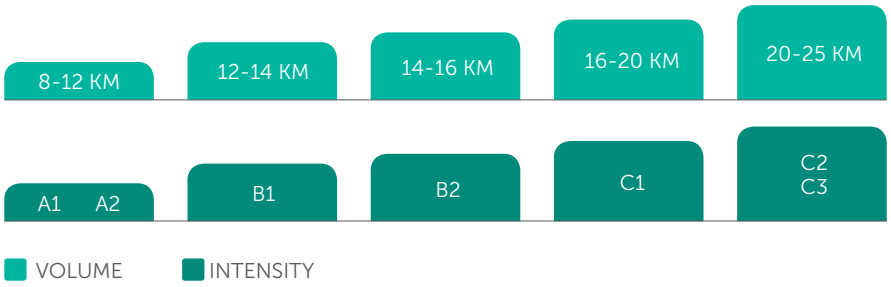
The main goal of presenting the grids on the next pages is to provide a template that can guide coaches on reading and analysing aspects not very often discussed when it comes to our sport.

An intuitive colour code per each discipline (Swimming – Laser Run – Fencing) assigns empirical load planning preview values for both general weekly volume and daily intensity using a scale from 1 (low) to 5 (high). It is interesting to highlight the use of numbers of touches/session in fencing to estimate the training volume.

Other than that, you can see also the estimation of the general week workload (scale 1 to 3) that can be helpful when building up other mesocycles in the same season.

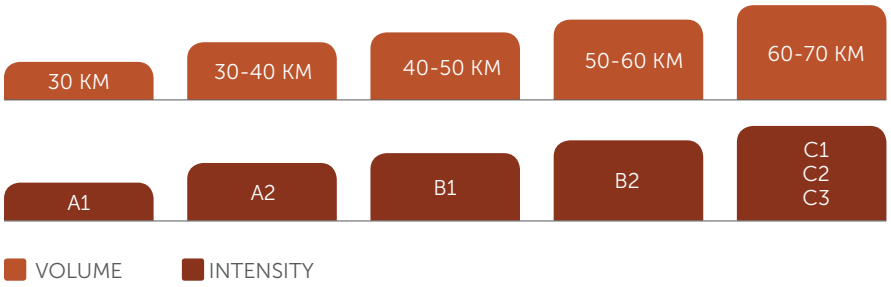
The terminology used to describe the sessions is widely discussed in the literature. To prepare the LR sessions the remarks previously presented on this document should be merged with the running sessions.

SWIMMING



TRAINING SESSIONS	
Aerobic easy	A1
Aerobic <160bpm	A1 / A2
Aerobic =170bpm	A2
Aerobic + competition pace workout	A2 + B3
Aerobic + alactic sprints workput	A2 + C3
Aerobic focused on the threshold	A2>B1
Anaerobic Threshold	B1
Vo2max	B2
Mix workout Threshold and Vo2max	B1>B2
Mix workout Vo2max and lactate tolerance	B2>C1
Lactate tolerance	C1
Lactate peak	C2
Alactic sprints	C3
Strenght drills	FH20
Broken or similar to performance model	D
Drills	EX

RUNNING



TRAINING SESSIONS

Low Intensity (<2 mMol)	A1
Aerobic Threshold (2 mMol)	A2
Anaerobic Threshold (3-5 mMol)	B1
Maximum Aerobic Speed (6-12 mMol)	B2
Lactate Resistance	C1
Lactate Power	C2
Alactate Capacity	C3
Drills	Ex
Power	F
Specific Power	FS
Circuit Traiing	CT
Fartlek	FAR
Accelerations	ALL
Speed Training	RA
Progressive pace	PG

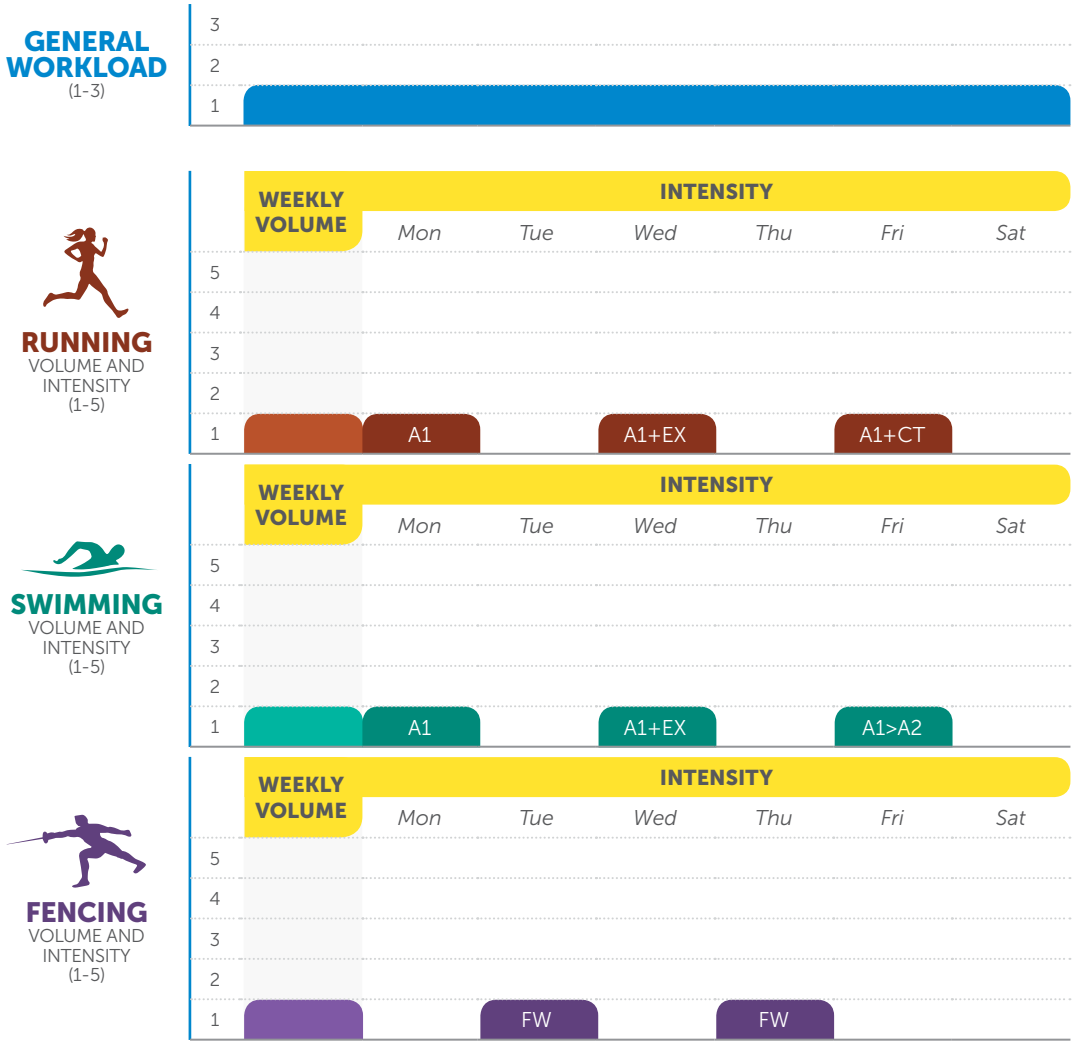
FENCING

TRAINING SESSIONS

Free Fencing	FF
Individual Lesson	IL
Thematic Sessions	TS
1 minute-1 Hit Matches	1M
Competition or Training Tournament	C
Footwork	FW
Technique Drills	TD

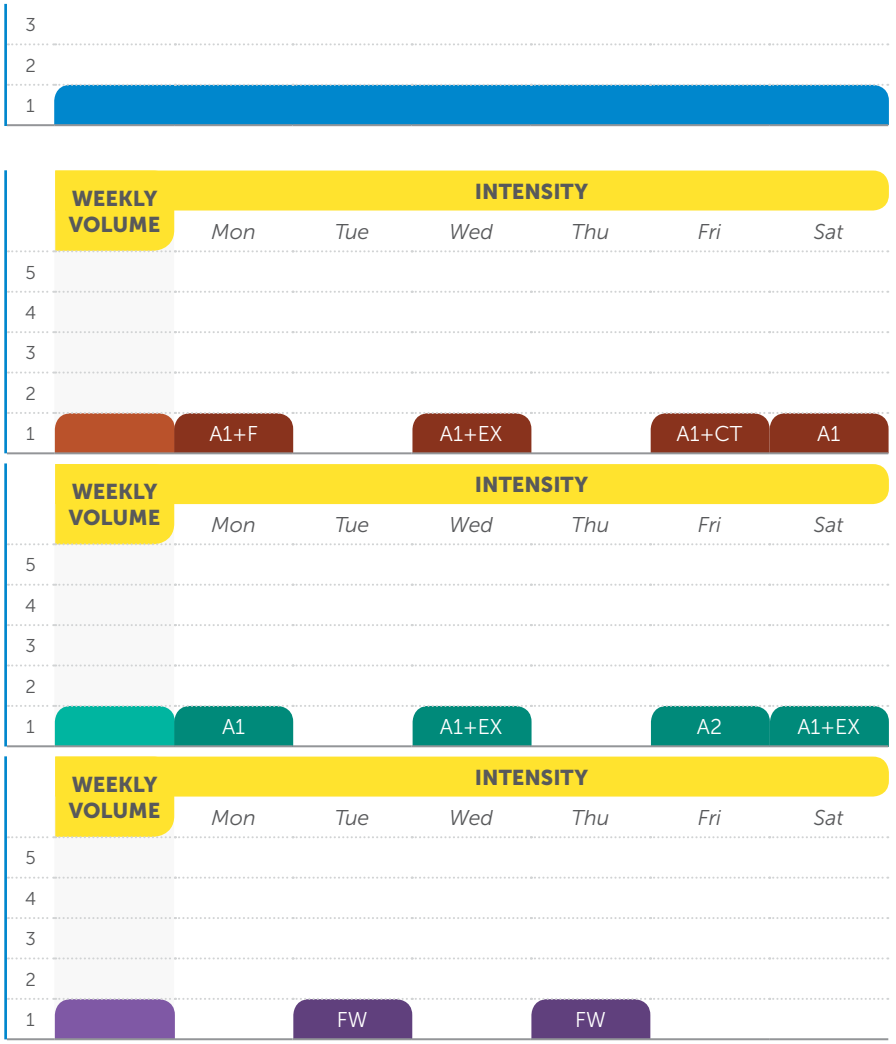
WEEK 1

GENERAL CONDITIONING 1



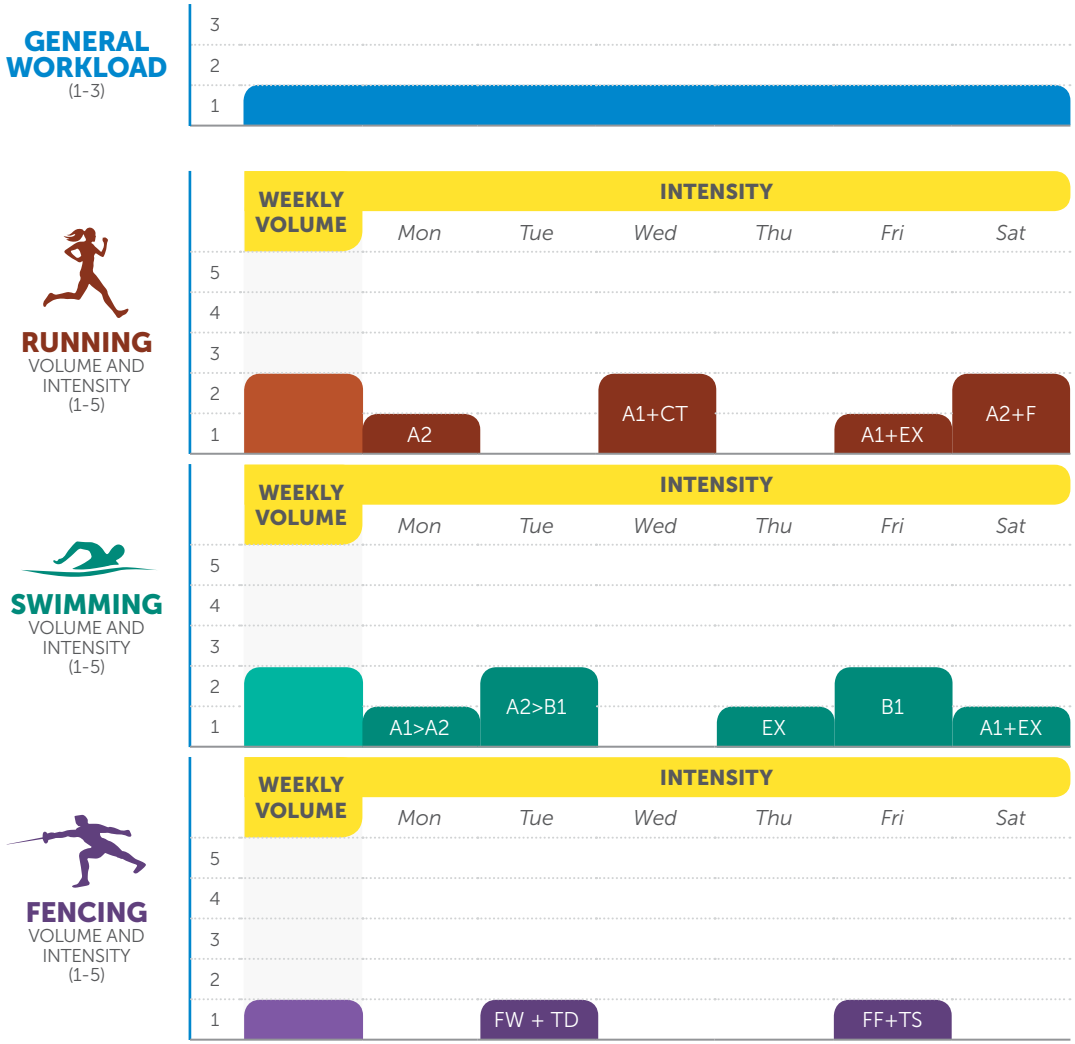
WEEK 2

GENERAL CONDITIONING 2



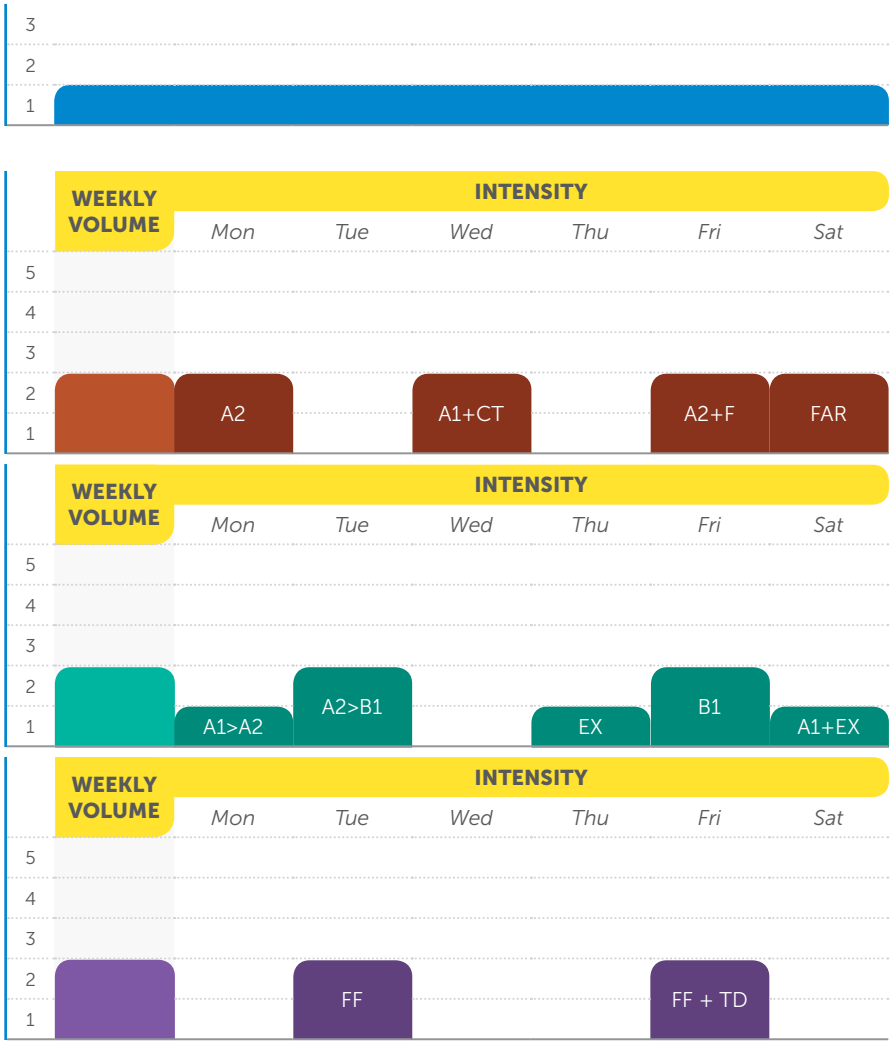
WEEK 3

GENERAL CONDITIONING 3



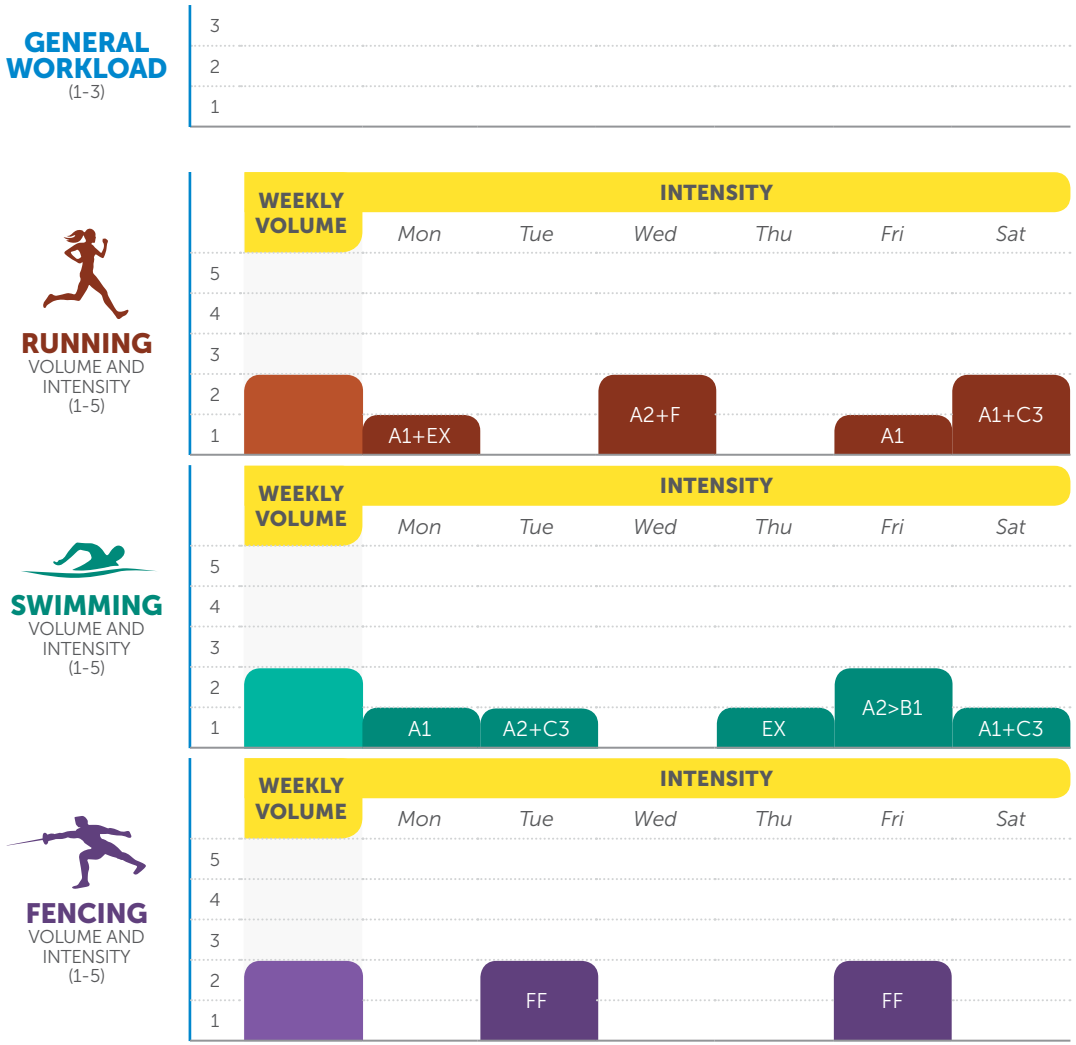
WEEK 4

GENERAL CONDITIONING 4



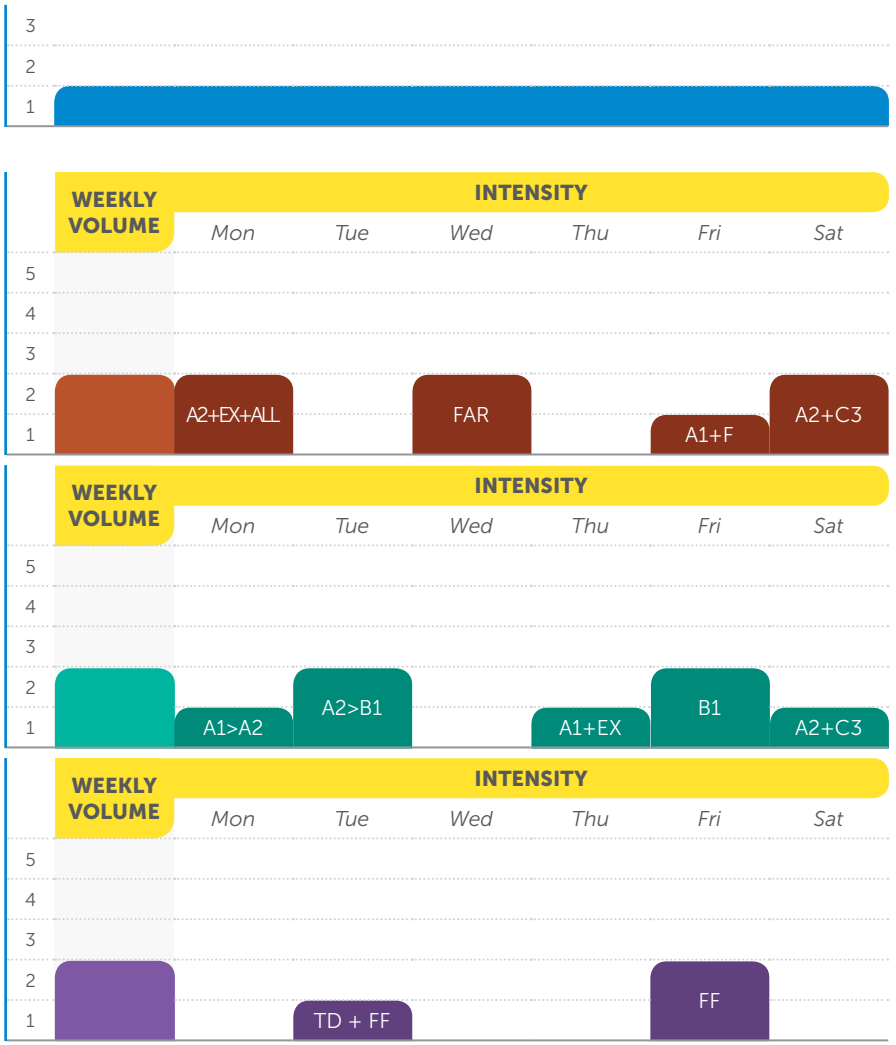
WEEK 5

RECOVERY



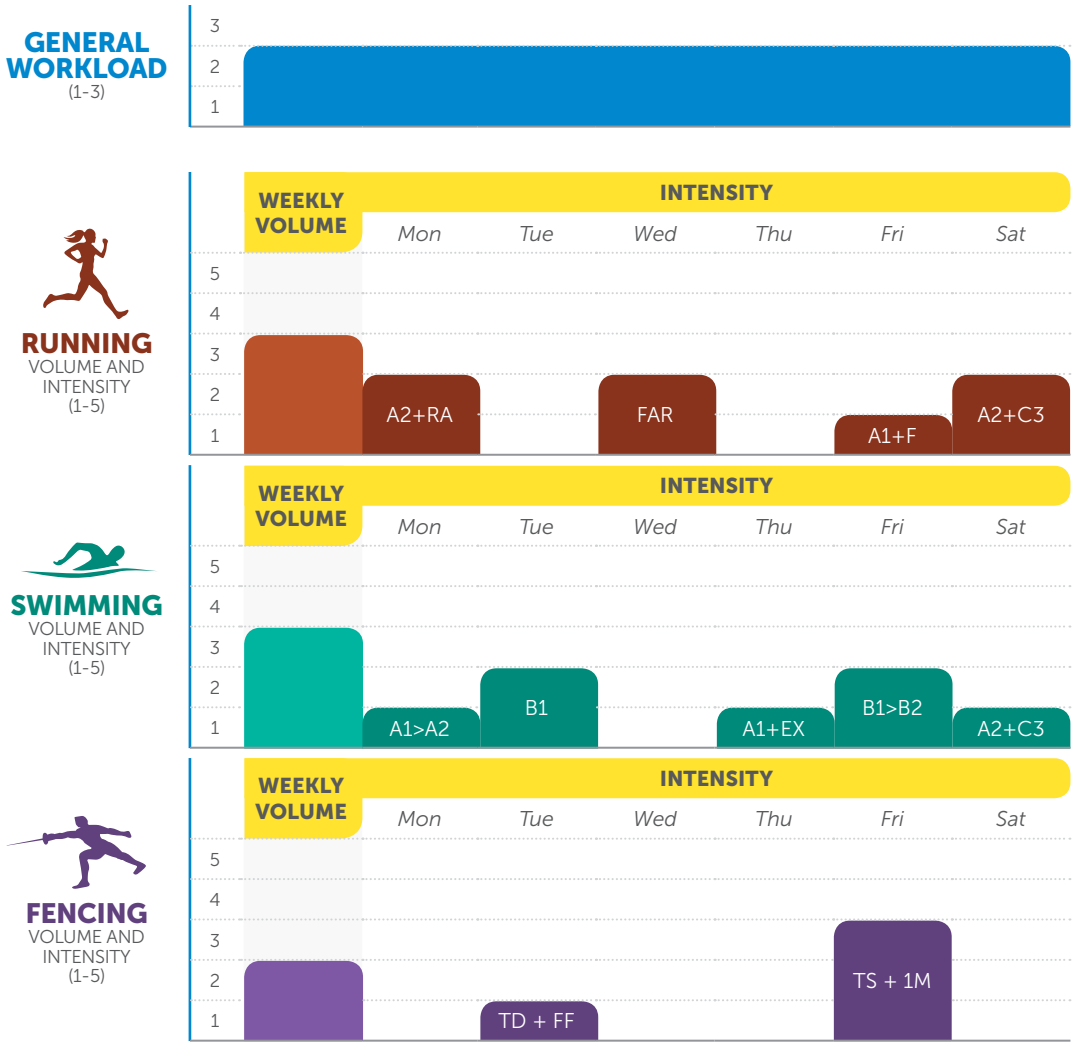
WEEK 6

GENERAL AEROBIC 1



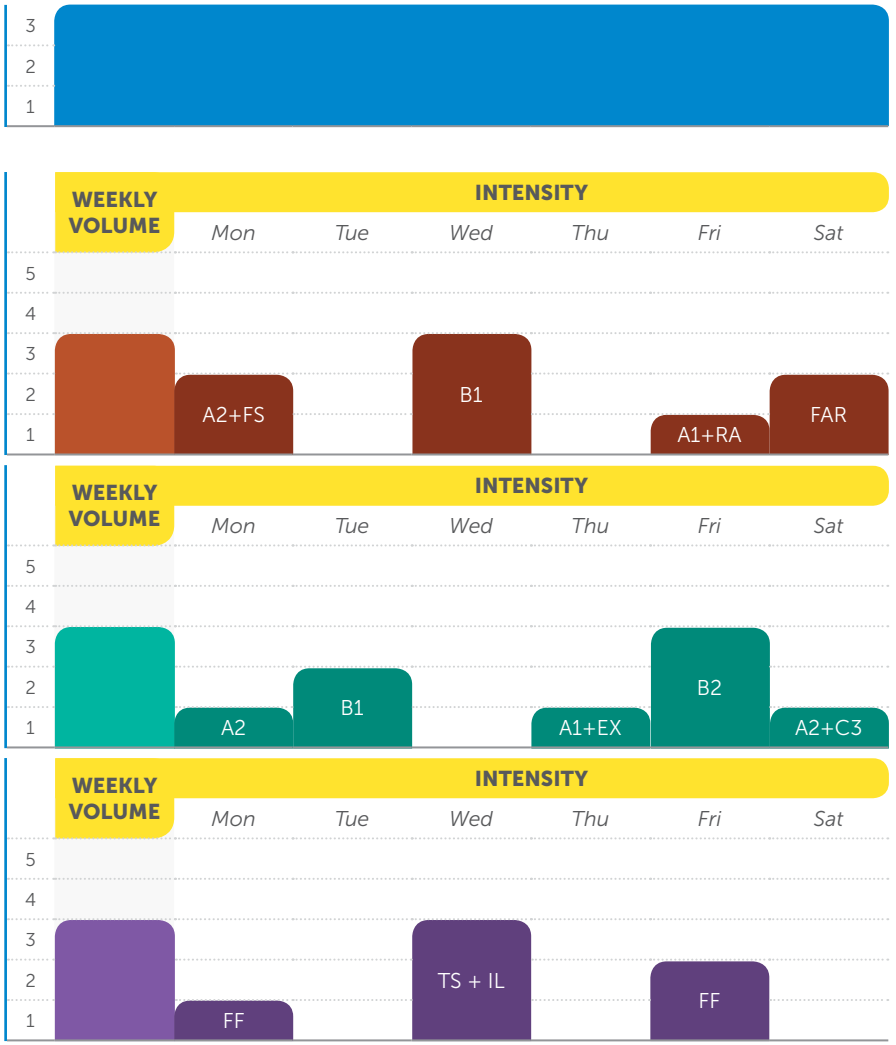
WEEK 7

GENERAL AEROBIC 2



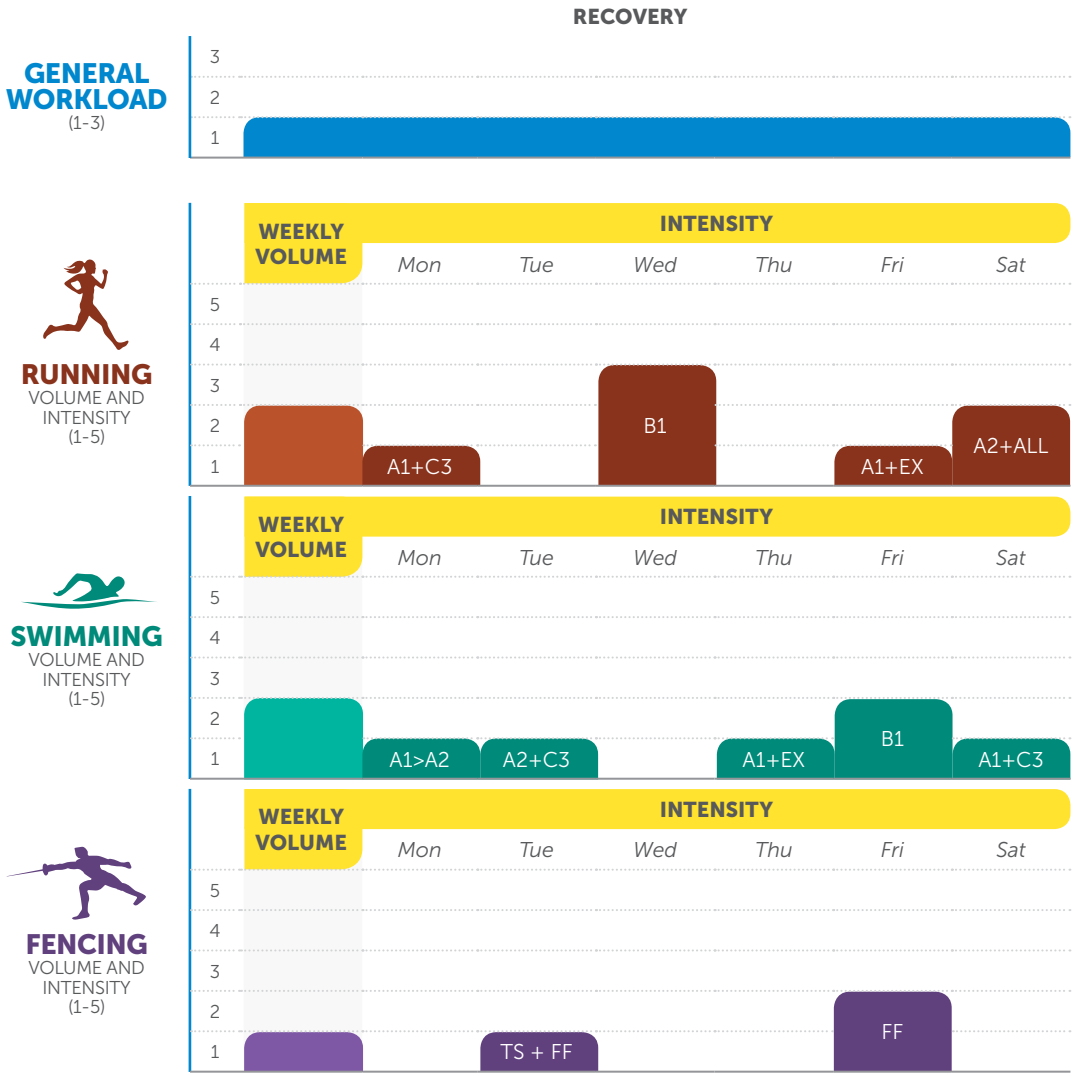
WEEK 8

GENERAL AEROBIC 3



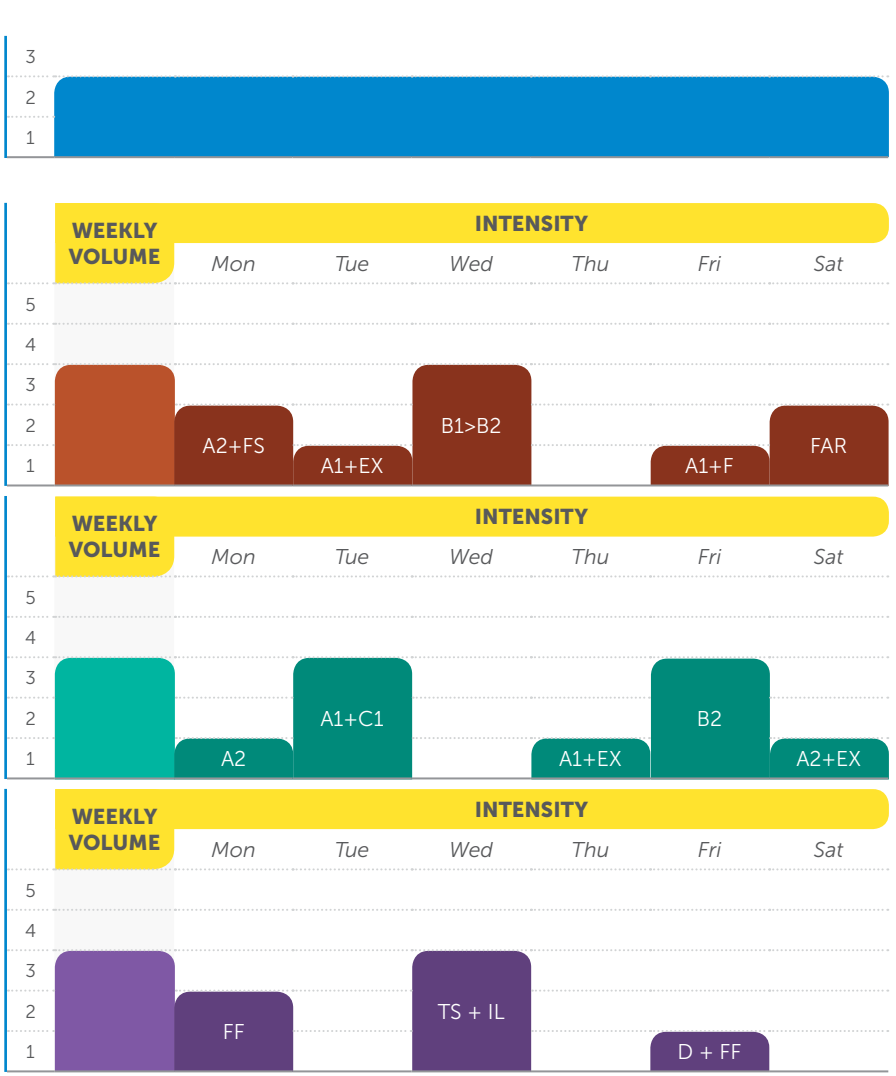
WEEK 9

RECOVERY



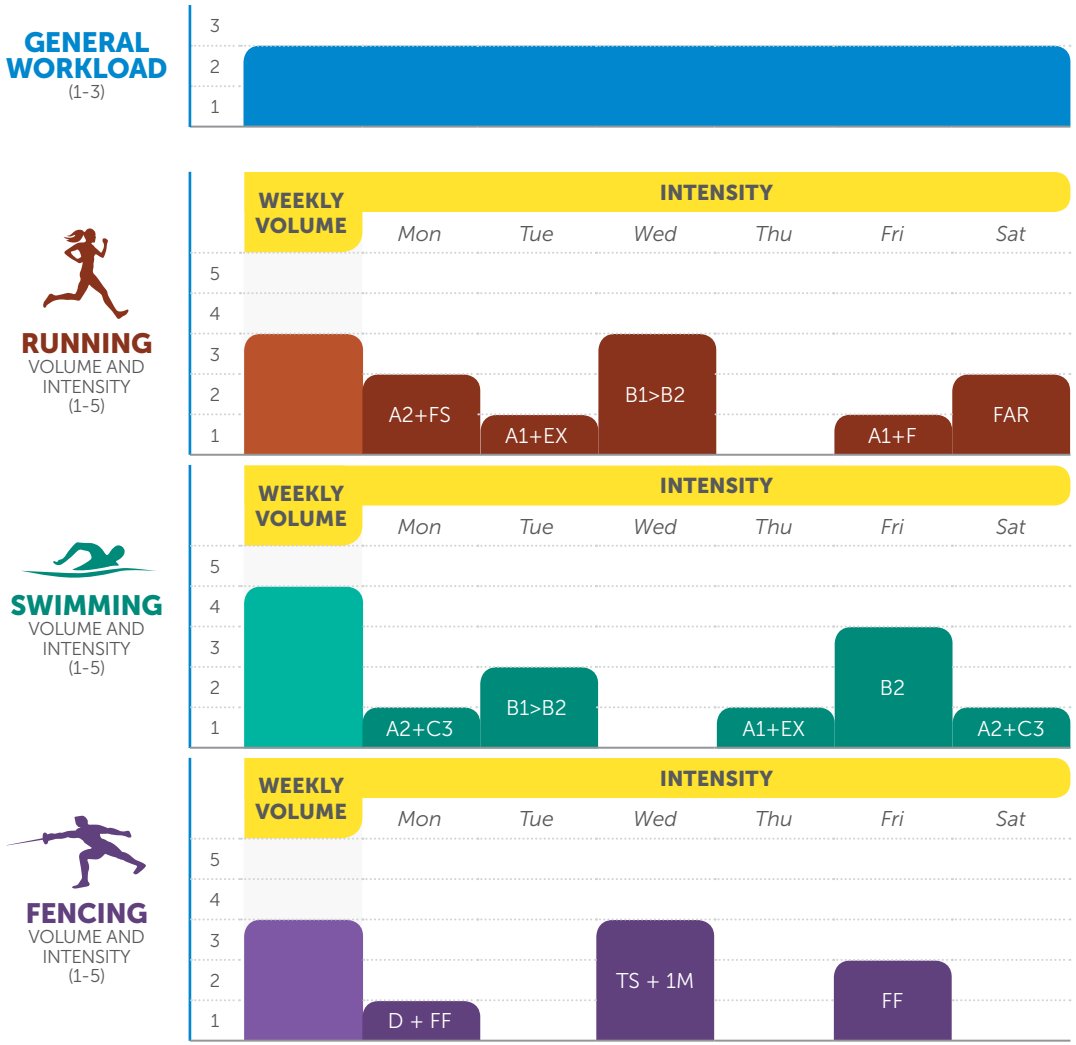
WEEK 10

INTENSIVE AEROBIC 1



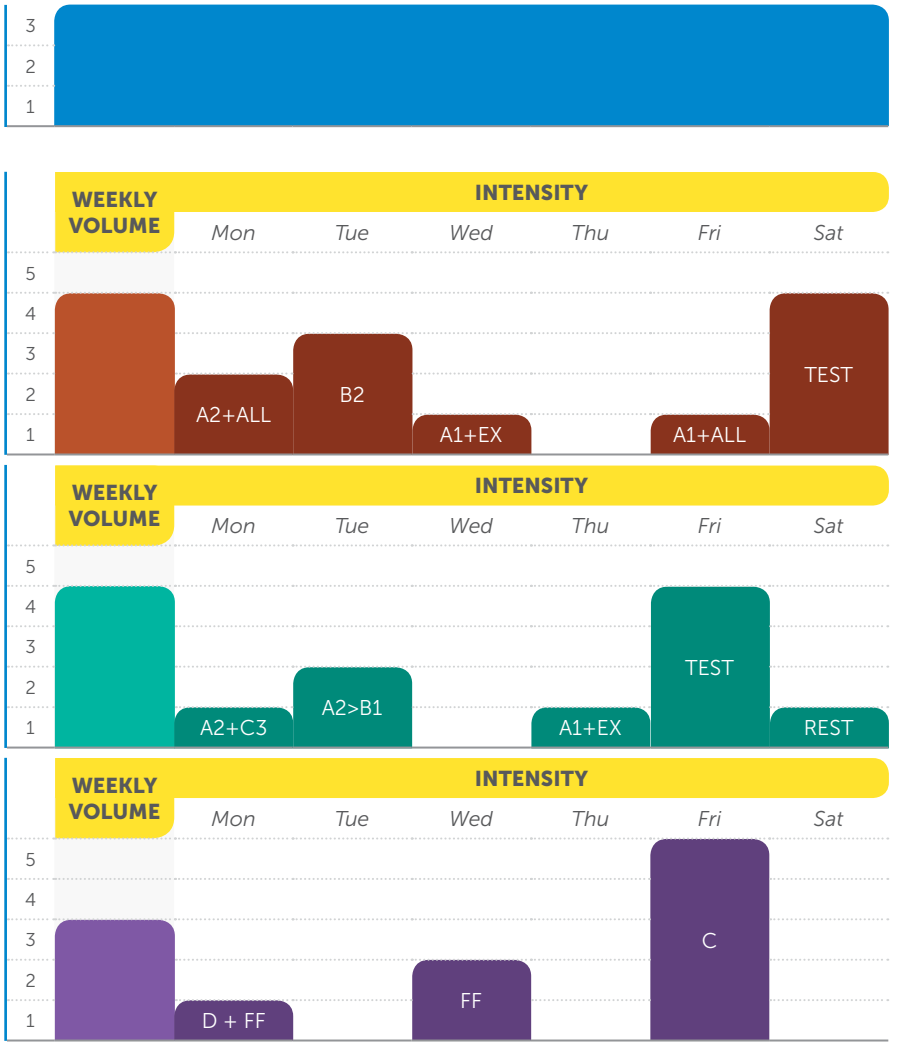
WEEK 11

INTENSIVE AEROBIC 2



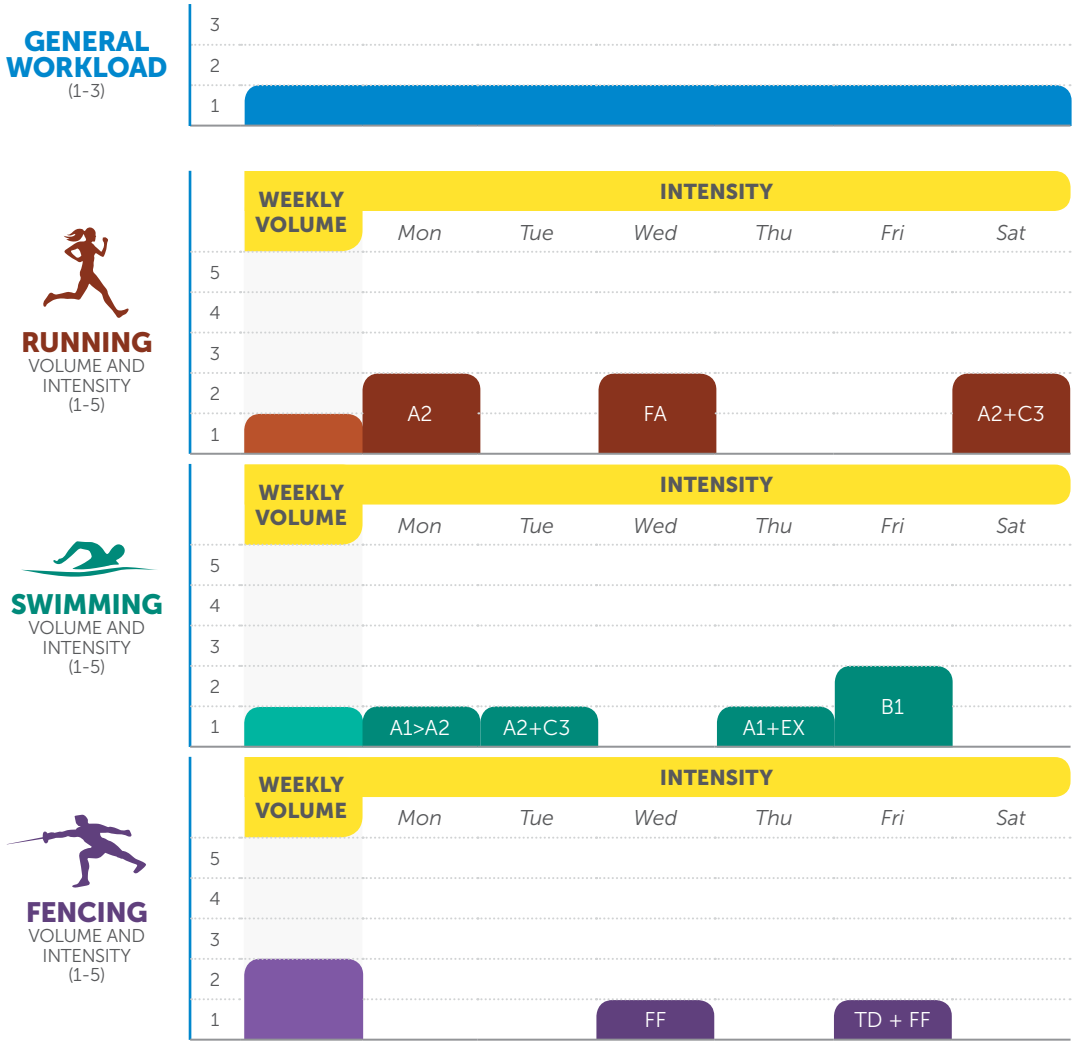
WEEK 12

INTENSIVE AEROBIC 3



WEEK 13

RECOVERY



UNION INTERNATIONALE DE PENTATHLON MODERNE
STADE LOUIS II – ENTRÉE E
13 AVENUE DES CASTELANS
MC – 98000 MONACO

Web: pentathlon.org

Facebook: /theUIPM

Twitter: @theUIPM

YouTube: UIPMTV.org

Instagram: /theUIPM

Weibo: 国际现代五项联盟

VKontakte: /worldpentathlon

UIPM Central App: iOS/Android