



APB COACHES MANUAL

Supplement to AIBA COACHES MANUAL
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FOREWORD

AIBA Professional Boxing Coaches Manual is designed as an addition to AIBA Coaches Manual helping the coach understand the fundamentals of AIBA Professional Boxing.

The AIBA Professional Boxing Coaches Manual assists coaches' development and enhances the qualities in coaching providing the coach with the knowledge and personal skills to manage a successful career in AIBA Professional Boxing.

AIBA Coaches Commission

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Part 1. About coaching in APB

The coach has to have the ability and understand the individual capabilities of the boxer in relationships to his strengths and weaknesses. It is important to identify his weak areas and strengths and consistently work on them. The coach has the ability to develop the training plans as related to each individual boxer. In relationship to this he must to understand what is good for one may not be good for another.

1.1. Definition of Boxer in APB

- APB is boxer's occupation and career
- APB Boxer is someone who trains full time
- APB Boxer is looking for perfection
- The main goal of the APB Boxer is to get to the top and to win a Title so he can be successful
- APB Boxer is the boxer who represents his country in the world of Professional Boxing
- Components of boxer's performance:
 - Coordination – ability to shift from one kind of movement to a different one, which depends on athlete's body agility
 - Endurance – ability to withstand fatigue
 - Flexibility – range of motion that a joint can be moved
 - Power – application of strength over a period of time
 - Strength – amount of force a muscle can exert
 - Speed – combination of coordination, endurance, flexibility, power
 - Technical skills
 - Tactical skills
 - Mental preparation

1.2. Difference between AOB and APB , coaching aspects

AOB	ASPECT	APB
Training in a group and team atmosphere -	Training	- Individual focus
Short 3-round bouts -	Bout	- Longer bouts
Multiple bouts in a year -	Intensity of the competitions	- Maximum 6 bouts a year
The aim of the boxer is to score the points and to win the round by delivering clear punches to opponent's target areas -	Goal	- Professional boxer aims to be precise with his punches and damage the opponent as well as winning the round
Readiness to fight multiple times during a competition/tournament against different opponents -	The way of preparation	- Looks to anticipate his opponent more over the longer period
Low risk of severe injuries -	Security	- More dangerous
Knowledge of an opponent and a sound game plan gives boxer the required confidence -	Mental preparation	- Boxer is more concerned before the bout due to the duration of the bout
Training for 4-5 opponents in one week -	Strategy	- Training for one opponent
Because of the shorter timeframe the tactics are not always clear -	Tactic	- Tactics and strategy have been clear as the bout goes on a longer period
Coach selects a boxer -	Coach	- Boxer selects a coach
Headguards, gloves, bandages and vests -	Equipment	- Professional Bandages (see Appendix 1), different kind and size of gloves than AOB gloves
Computerised scoring system recording punches only	Scoring	Judges scores on manual score cards and evaluate most of bout components (not only the punches)

1.3. What is fundamental in APB

- Structured and clear plan of competition
- The boxer stays within National Federation, therefore receives full support from his National Federation, including team (coach, trainer, Cutman, nutritionist, medical adviser, physiotherapist, psychologist), funding, training facilities, pension plan and health insurance.
- Boxer has the opportunity to train effectively to avoid injury and be successful in his career
- More motivation for the boxer; financial rewards opportunities for success in the boxer's career
- Boxer is comfortable in the structure
- More fans and spectators, more TV exposure
- The boxer keeps Olympic Eligibility

Part 2. Coach in APB

2.1. The role of the coach in APB

To provide adequate training and opportunities to improve to his boxer. The goal should be to take the boxer to the highest level.

Qualities of a coach:

- Leadership
- Technical Knowledge
- Teaching Ability
- Communicator
- Motivator
- Disciplinarian
- Physiologist
- Adaptability to stress
- Organizer
- Flexible

2.2. Responsibility before, during and after the competition

2.2.1. Role of the coach in APB

- Health and safety of the boxer must be the coach's first concern always.
- The coach must seek to form the relationships with the boxer in order to gain his confidence and trust.
- The coach must act in the boxers best interest at all times and advise him correctly.
- The coach must shield the boxer from any negative influences.
- To develop a training program for the boxer which will provide him with the proper elements technically, physically, tactically and mentally that will make him successful.

2.2.2. Role of the Second

- **Before the bout**

- To get the boxer to the competition venue on time with the correct equipment.
- To make sure that the boxer is fit and ready to compete.
- To make sure that the changing room is a restricted comfortable area for the boxer.
- To make sure he is aware of the time left before the bout by doing frequent checks in order to prepare the boxer for the bout and avoid additional stress.
- To bandage the boxer's hand make sure his hands are protected.
- Must send the representative to the opponent's room and watch them doing the bandages and sign the bandages if he is happy with them.
- To warm up and prepare the boxer tactically to be successful.
- To prepare boxer mentally and make sure the boxer is calm and focused (coach should keep his own emotions under control).
- To have the boxer fully prepared to go to the ring on the right time.
- To make sure all equipment needed is brought to the ringside (towel, water bottles, ice bag).

- **During the bout**

- Safety of the boxer should be a priority at all the stage of the competition. If the boxer is in danger the coach should feel confident to stop the bout.
- Should guide the boxer through the bout as to what is happening and give him the right advice and remind tactics and techniques at all the times.
- To observe the opponent and make decisions accordingly. To advise the boxer regarding the physical, technical and tactical weaknesses of the opponent during the bout.
- Must provide adequate amount of water for boxer's hydration.
- Must keep the boxers as cool as possible.
- Must be aware of the boxer's attitude and encourage him at all times with sensible advice.

- **After the bout**

- To make sure the boxer is safe and healthy
- To congratulate boxer after the bout
- To remove the gloves and bandages in the ring

- To accompany the boxer to see the doctor
- If the boxer is asked to be tested to accompany the boxer for the doping control
- To guide the boxer to the changing room
- Hydrate the boxer
 - Give the time to the boxer to adjust mentally whether he has won or lost
 - If your boxer has been knocked-out or has received severe punches after he has seen the doctor at the venue either you or a member of your team or boxer's family member must look after the boxer for at least next 24 hours.

2.2.3. Role of the Cutman

In order to have a perfect harmony in the team, each team member should be aware of its role, before and during the bout. The Cutman is usually an intermediary between the coach and the boxer. Sometimes, the Cutman is responsible for the bandages before the bout. Each Cutman has his own favorite technique to ensure the boxer has maximum protection from injuries during the bout.

- **Before the bout**
 - To make sure he has all the necessary equipment and product required for the treatment of injuries during the contest.
 - To be prepared to bandage the boxers hands for the contest when required by the second.
 - To put the needed amount of vaseline on the boxers face.
 - To make sure there is enough ice and water for the bout.
 - Put on Medical gloves on for hygiene reasons and keep them on during the bout.
- **During the bout**
 - to act quickly in the adequate manner.
 - Cutman is very important in the boxers' corner as he brings calm, confidence, and security in case of accident: he is treating cuts, stop bleedings and reduce hematomas.
 - To do his best to avoid any premature stop from the referee or ringside doctor.
 - To be able in a very short time (less than 1 minute) to stop a nose bleed or a cut to the face.
 - To treat a hematoma that may harm the boxers' vision.

- To keep in mind that the boxers' physical integrity should be a priority and should therefore be preserved.
- Should not and can't be a spectator of the fight, nor take the coaches' place, but he should constantly look for potential injuries.
- In fact, anticipation and reaction time will be one of the main strength of the Cutman. His position in the corner is strategic based on the extent of the injury, for example, the Cutman will take the position of the coach inside the ring if necessary.
- Should not consider himself as a doctor. Only the ring side doctor, due to his medical qualification may advise the Referee to stop the bout.

- **The Cutman's material**

The Cutman uses products that will help him stop and reduce cuts and swellings.

- Adrenaline (coagulant);
- Vaseline
- All additional products the Cutman chose to use should be within the authorized list of products

In addition, the Cutman uses swabs, compress, enswell and ice.

It is always at the Second's responsibility to evaluate the importance of the Injury and either stop the bout or to allow it to continue. It is the responsibility of the Cutman to advise the Second to stop the bout if he believes that the health of the boxer is in danger.

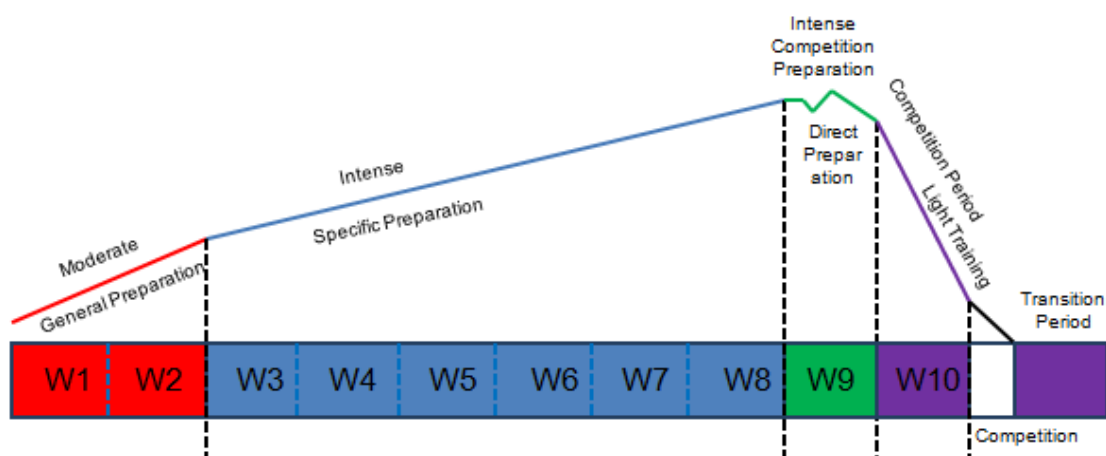
Part 3. Structure of Training Process in APB

3.1. Training Planning

Pre-Competition Training cycle 10 weeks

Preliminary training and Individual plan for boxer. The training plan listed below is for a 12 rounds bout.

Preparation for 12-round bout – total 10 weeks (2 – 6 – 1- 1)



Phase 1: 2 weeks (General Preparation)

Each training day should consist of the following sessions:

- Morning Session (ex: 07:00 – 08:00) – Running – 1 hour (Example of the planning of running exercise Appendix 2)
- Session 2 (ex: 10:30 – 11:30) – Strength and Conditioning and Boxing Techniques (shadow boxing) – 1 hour
- Session 3 (ex: 16:00 – 18:00) – Boxing session – 2 hours

In between the sessions the boxer must take required rest

Conditioning (Basic Physical Preparation):

- Strength and conditioning (to include weight training)
- Aerobic work (Running, Rapid Fire work)
- Nutrition
- Gym Work utilizing proper boxing equipment
 - Circuit/speed circuit training
 - Sparring (Strategy developed for the competition)
 - Bag and Equipment Work
 - Basic Fundamentals and Technique
 - Speed Training
 - Hand speed
 - Ring movement
- Boxers + Coaches Mental Attitude

Phase 2: 6 weeks - Intensification

Each training day should consist of the following sessions:

- Morning Session (ex: 07:00 – 08:00) – Running – 1 hour
- Session 2 (ex: 10:30 – 11:30) – Strength and Conditioning and Boxing Techniques (shadow boxing) – 1 hour
- Session 3 (ex: 16:00 – 18:00) – Boxing session – 2 hours

In between the sessions the boxer must take required rest

- Endurance Running – to improve cardiovascular system

First week should be distance running just to adjust to the training block. Don't introduce the speed during the first week.

Second week introduce interval training which includes the following:

- Bag work and Shadow boxing, pads, boxer to boxer, coach and boxer pad work
 - The drills and the themes can be carried out during shadow boxing and bag work and the sparring
 - Themed to practice the combination of punches, footwork, movements and defensive hand position

- Boxing Equipment
- Strength work
- Technique sparring and practice with sparring partner (not open or free sparring)
- Basic tactics (performance analysis, film study, position of opponents, video analysis)
- Technique drills

Phase 3: 2 weeks - final intense period of training

During the week 9 each training day should consist of the following sessions:

- Morning Session (ex: 07:00 – 08:00) – Running – 1 hour
- Session 2 (ex: 10:30 – 11:30) – Strength and Conditioning and Boxing Techniques (shadow boxing) – 1 hour
- Session 3 (ex: 16:00 – 18:00) – Boxing session – 2 hours

In between the sessions the boxer must take required rest

Phase 4: Competition Period

Week 10 – light training final week to include shadow boxing, equipment work and pad work. No strength and conditioning and no sparring. Shorter distance speed running.

Phase 5: Transition period

The boxer needs to have a week rest.

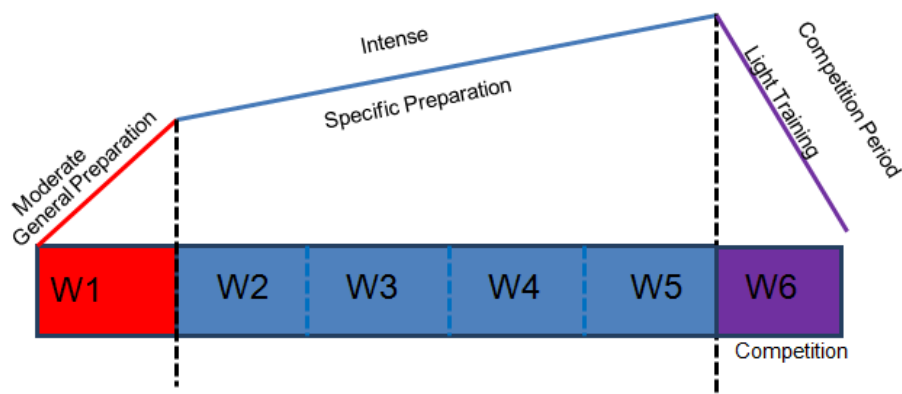
Three days rest period after the bout. Boxer needs to maintain him/herself. Boxer needs to do long light walking, see the physiotherapist, light jogging by the end of the week.

Monday after the week rest the boxer needs to come back to the training.

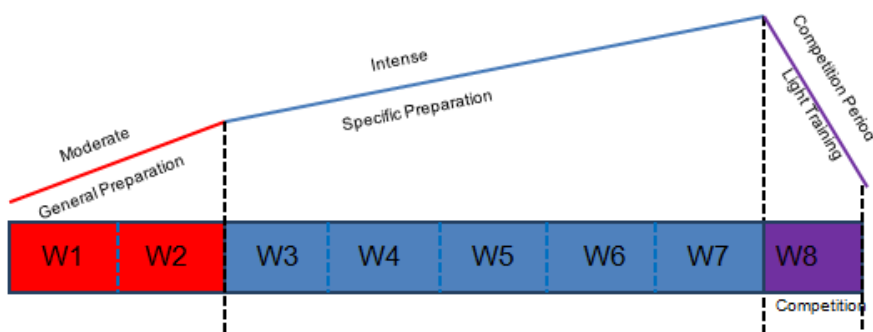
In between the two training cycles during the maintenance period boxer should concentrate on general wellbeing (lifestyle).

The training plan and transitional period should be adapted by the Coach depending on duration of the contest. As an example see below the preparation plans for 6-rounds bout and 8-rounds bouts.

Preparation for 6-rounds bout – total 6 week (1 – 4 – 1)



Preparation for 8-rounds bout – total 8 weeks (2 – 5 – 1)



(for 12 three min round match)

[illegible]

[illegible]

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sun
07 :30	<ul style="list-style-type: none"> • Warm up 10' • Run 3 miles – high pace 	<ul style="list-style-type: none"> • Warm up – 1 mile • Sprint_Jack back • 3x30m • 3x40m • 3x60m • 1x80m • cool-down 	<ul style="list-style-type: none"> • Warm up 10' • Run 2 miles – Interval good pace • cool-down 	REST DAY	<ul style="list-style-type: none"> • Light 30' walking • Weigh-in Day 	<ul style="list-style-type: none"> • Breakfast: • Cereal / Porridge / milk / Fruit / Toasts • WALK 30' 	REST DAY
10 :30	<ul style="list-style-type: none"> • Warm up 10' • Stretching • Shadow Tactic • 3x3'w+1'r 	<ul style="list-style-type: none"> • Warm up 10' • Light Strength & Conditioning – 30' • Stretching 	REST DAY	Light 30' walking		<ul style="list-style-type: none"> • Lunch: • Rice / Braun rice / Chicken / Fish / Salad • No Spicy food • No Skin 	
16 :00	<ul style="list-style-type: none"> • Warm up 10' • Rope Skip 10' • Pad 6x3'w+1'r • Bag 2x3'w+1'r • Cool-down • Ground work 	<ul style="list-style-type: none"> • Warm up 10' • Pad work 4x3'w+1'r • Bag 4x3'w+1'r • Shadow 4x3'w+1'r • Rope skip 6' • Light Ground work • Stretching 	<ul style="list-style-type: none"> • Warm up 10' • Pad work 6x3'w+1'r • Shadow 2x3'w+1'r • Rope skip 6' • Stretching 	Light 30' walking	16h: Official Weigh-in Hydration <u>Dinner:</u> Rice / Braun rice / Chicken / Fish / Salad No Spicy food No Chicken Skin	21h: COMPETITION 12x(3'w+1'r)	
Remarks :	All Sparring Session : NOT Hard only SPEED work						

3.5. Just before the Competition

- **70' before:** Change clothes
- **1h before:** Bandages / hands (25' to 30')
- **30' before:** Warm up slowly – stretching (pick up place, repetition of shadow boxing 30'', etc...)
- **15' before Contest :** GLOVES, Light Pad work (5' = 4/5 times x 30'' work)
- **10' before Contest:** 5' Pad by 30'' fast
- **5' before Contest:** Shadow (2x(30'' w + 1'r))
- **2' before Contest:** Full Rest & concentration
- **Contest**

Part 4. Training methodology

4.1. 10 principles of training

- Individual response – Athletes respond differently to the same training, heredity, diet, sleep and other personal and environmental factors influence the athlete's ability and attitudes toward training
- Adaptation – subtle changes take place in the body as it adapts to the added demands imposed by training. Cardiovascular improvements, gains in muscular strength and endurance, etc.
- Overload – training must place a demand or overload on the body's system for improvements to occur. As the body adapts to increased load, more load must be added
- Progression – to experience the adaptations simulated by the overload principle, training must be progressive. If training load is increased too quickly the body cannot adapt and will break down. Careful control of the training loads will ensure a steady rate of success and will avoid the dangers of overtraining
- Specificity – anaerobic sport (boxing) must concentrate on anaerobic fitness. Focus on short duration training. Time spent on long distance runs are unlikely to enhance performance
- Variation – programs must include variety to keep athletes interested and to avoid boredom. The concept of work/rest, hard/easy are the basis of the variation principle.
- Warm up/cool down – every workout must include time to warm up and cool-down. The warm-up will reduce injury risk. The cool-down helps the body remove waste products generated during training and returns the body to the normal condition.
- Long-term training – athletes experience long-term effects by regularly and progressively overloading their body systems. Coaches must be patient and must monitor the progress of their athletes. Avoid pushing too hard, too fast, too soon. Research proves champion athletes train eight to ten years before peaking.
- Reversibility – adaptation stimulated by training is reversible. When the athletes stop training, they gradually lose their physiological qualities that sustain their sports performance. Coaches must design training programs that maintain fitness gained throughout the year, especially in the off-season.

- Moderation – Long-term success is gained through moderation in all things, including training. Keep training in perspective. Give the athletes the chance to meet family commitments, to fulfil school assignments and to make time for social relationships. Nothing will turn an athlete away from a sport more quickly than the overemphasis on physical conditioning.

4.2. General preparation

Coach has to prepare the boxer for the longer period bouts. The boxer should achieve the fitness level which will enable him to box over the longer distance competition and to carry out his techniques and tactics throughout the 12-round bout.

The coach should concentrate on higher intensity of training to include endurance, strength training and mental training. That means more interval training and more repetitions.

The coach should have a good knowledge and understanding of training workload for boxer and adjust the training schedule and load accordingly.

4.2.1. Interval training

It is advisable that the boxer does three intense interval runs per week to be mixed with hill or mileage runs on alternate days (see Appendix 3).

Although most interval training is done on the track, it is suggested that grass running and hill work be included. In some of the workouts a stopwatch is required, but in many segments a watch is not necessary.

Intervals are a series of runs in which the distances and speed rates are predetermined at a pace generally faster than the athletes normal distance work. Each of the speed runs are alternated with measured periods of easy jogging or walking. The proper use of interval work will unquestionably increase the athlete's cardiovascular development and stamina.

The intervals or stop-start technique will allow the athlete to go further and faster than on a steady road work session. The athlete's running session should be developed to include

distance runs, pace work and speed work, which varies from 50 yards (≈45 meters) up to 5 miles (8 km). Each session will be planned as to the distance (number of total miles the athlete must complete); recovery time and type (jogging or walking); recovery distance and regulation of pulse levels; the number of intervals performed and the rate of the intensity. (The running efforts in the sprint segments, for example, should increase the athlete's heart rate up to at least 180 beats per minute. The heart is then allowed 90 seconds to return to the minimal level of 120-125 beats per minute.) If the athlete is fit and the recovery time required is more than 90 seconds, that means the effort of the individual was too great or the distance too long. Sometimes fit athletes do not require the full 90 seconds recovery. In these cases, the athlete should start running as soon as his pulse rate has reached the minimal 120-125 rate.

These workouts will increase the athlete's ability to compete with oxygen debt, push his body in a state of fatigue and increases the ability to set a fast ring pace because of his knowledge of his measured endurance.

The general interval distances are 50, 100, 200 and 400 meters. It is important that all intervals be done at the same pace. This means the athlete must control the early intervals so that even though the last few intervals will be difficult, the maintenance of an even pace will allow for completion of every workout.

Understanding interval training

1. After using a preparation period of aerobic long distance training runs to condition the athlete to a point where his physical strength had reached a level which will allow him to handle interval work, a coach can begin use a well planned anaerobic running program, which will develop the athlete's strength to a competitive level.
2. The general premise is to place the body under substantial amounts of physical stress by using a series of shorter runs with the distances and times (rate of speed) predetermined by the coach.
3. As the athlete's stamina and strength levels increase, the program is adjusted to keep this stress in tune to the athlete's physical gains. This training continues until the body fitness rises well above the competitive level.
4. These types of stress workouts can be programmed into gym training by using such equipment as heavybags, skipping ropes, medicine balls, etc. The same theory applies

as used in the running program. Periods of rapid fire stress in short regiments will build cardiovascular and muscles strength.

Advantages of interval training

1. More work can be achieved in a shorter period of time.
2. Programs can be designed to fit each athlete's individual needs and stress levels.
3. The Program develops both the cardiovascular system and muscle strength
4. The coach has full visual and physical control of every workout and can make adjustments as required

Interval training involves:

1. The distance covered or the training segment
2. The speed or time of each
3. The number of repetitions
4. The duration of the recovery

Things to remember

1. Each athlete is physically different. What is good for one may not be good for another.
2. Each athlete's schedule should be developed around his individual abilities
3. Try to keep the workout smooth and comfortable. Remember, the athlete is training, not racing
4. The goal is to increase the athlete's fitness without losing interest in the workout. Keep the fun in this program
5. Keep the level of the workout at the pace or slightly quicker than the endurance level required to complete the competition time.
6. During the workout, the athlete should:
 - a. Keep energy level high
 - b. Maintain high interest level
 - c. Avoided overdoing the workout, getting injured or becoming nauseous
 - d. Set reachable goals and maintain those levels when they have been reached
7. The result of proper interval training will not only be physical, but with fitness will come a good competitive attitude and confidence.
8. The mental toughness developed cannot be equalled. The combination of the toughness, combined with the athlete's skills, will produce champions.

4.2.2. Strength and conditioning

Full body strength and conditioning work is vital for the modern boxer - this includes training all aspects and areas such as; lower body strength and power important for improving punch power and supporting stronger legs for running; upper body to add robustness to the boxer to absorb shots, improve inside work. In terms of putting muscle on, it is a very hard process and therefore the historical thinking that you 'get big' by doing weights is flawed; keeping the reps low (below 6 reps) on heavy strength work will help to reinforce this. For core strength it's not just about crunches - the core muscles need added weight to become stronger...just as any muscles do.

Conditioning and work rate are huge in the new style boxing especially WSB and APB; improve this by doing different circuits that involve the boxer having to repeat high intensity efforts, not just with bodyweight but with decent weighted movements.

Finding ways to try and prevent injuries is key - a boxer can only use his talent if he is fit and healthy.

Overall strength and conditioning is aimed at creating an all round more complete athlete that the coaches can develop into a better boxer.

(Example of the training plan see in Appendix 4)

4.3. Specific preparation

4.3.1. Technical

In principle the techniques are the same as in AOB.

In APB the coach should put more stress on the following:

- Gloves are smaller therefore the punches can have more impact. The Coach should stress on defence with the movement and hand positioning.

- The boxer needs to move in to punch and move out to defend. The boxer should not be standing in the same position for too long or he will receive too many punches
- The boxer must look to return punches (counterpunch) to the opponent. The boxer must look to slip punches for example boxer can slip a jab with a small head movement and throw an uppercut. The boxer can also block punches and return punches by being in the correct position and the boxer can also parry punches.
- Feinting is an important part in boxing as you can mislead your opponent by pretending to punch while throwing other strong punches. Feinting is needed to draw the opponent into vulnerable position. It gives the advantage to the boxer.
- The coach should stress on the strength of the punch. The Boxer should finish the combination with a solid punch. Not all the punches have to be powerful
- The boxer needs to have his gloves up when he comes into the contact with the opponent's head and he needs to move to the side and be evasive to protect himself from the opponent's head and punches.

4.3.2. Tactical

The Coach needs to provide a plan for the boxer and training program to prepare the boxer to combat the opponent's strengths and take advantage of his weaknesses.

It is important to watch together with the boxer the footage of the opponent's bouts and formulate a plan based on the tactics to beat the opponent. The recent study shows that boxers who were aware of the opponent's style had better results.

The Coach should then find the right sparring partner or partners to match up to the opponent's style to be tactically successful. A similar in style sparring partner will help the Boxer to prepare adequately for his opponent. The coach should work together with the boxer developing the tactics / strategy.

4.4. Mental & Psychological Preparation

- The coach should give the boxer confidence. The boxer cannot be 100% committed if he doesn't have confidence in himself or his coach and his training programme.
- The coach should always stress on the boxers strengths and on opponent's weaknesses.
- The coach should never have a negative attitude towards the boxer and should focus on the boxer's potential.
- The coach should develop boxer's mental abilities all the times during all the trainings.
- The coach must also show the boxer examples of why he will win the bout during the training.
- It is helpful to do the video review together and praise the boxer for his performances (training and competition)

Sparring in APB

The sparring schedule should be adjusted by the Coach to suit the training for the duration of the contest. For shorter bouts less sparring is required.

The following example is a plan for a 12-round contest.

Week 1:	No sparring
Week 2:	<p>Technique sparring (no more than 6 rounds) during the afternoon sessions</p> <p>During the technique sparring boxer will need to practice the themes:</p> <ul style="list-style-type: none"> • Boxing combination and defences • Counter punching • Phases to include: <ul style="list-style-type: none"> ○ Offence (combinations, hand position, anticipation of punches, movements) ○ Defence (counter punching, blocking, slipping and parrying punches, defensive movements) ○ Body work and inside offence
Week 3: Week 4:	Intense sparring of 6 rounds (3 times during the week: Monday, Wednesday, Friday)
Week 5:	Two intense sparring of 8-rounds (for example Monday and Friday) and one sparring of 6-round (for example: Wednesday)
Week 6:	No sparring
Week 7:	Three sparring sessions of 8-rounds
Week 8: Week 9:	Contest imitation. One sparring of 10-round at the beginning of the week and one sparring of 12-rounds at the end of the week
Week 10:	No sparring. Competition

Part 5. Medical Aspects

5.1. Nutrition

5.1.1. Nutritional facts

- The type, quantity and timing of foods and drinks consumed by athletes will play a key role in performance and adaptation to the training stress.
- As a rule, there are no good or bad foods, only bad diets.
- What are nutrients? – Proteins, fats, carbohydrates, vitamins and minerals
- Nutrients provide the athlete with energy to and the building blocks required by the body for growth, repair of damaged tissue and regulate metabolism.
- Athletes must find the correct balance within their diet to provide the nutrients required for fuelling and recovery of training and competition, to maintain a strong immune system and ultimately prevent overtraining and fatigue.
- Diet is further critical to boxers performance with the added component of weight making.
- Vitamins and minerals do not provide energy, but are required to aid in the body's use of energy and metabolism. Generally athletes get enough vitamins and minerals from a balanced diet, however, may require supplementation during periods of weight making.

5.1.2. Functions of nutrients

- Proteins – large amounts are not required to maintain muscle mass (1.2-1.6g / kg of body mass per day). More intake may be required during periods of weight gain (hypertrophy), or to reduce muscle breakdown (atrophy) during weight making or is required when body is infected, injured, or other stress.
- Carbohydrates – these are essential for high intensity performance and if consumed in the correct amounts at the right time to support training should not cause unwanted

weight gain. They normally make up 50% of athletes energy intake and Boxers should aim to achieve between 4-10g / kg of body mass per day depending upon training load.

- Fats – are important to provide a number of essential fatty acids and fat soluble vitamins. Athletes should focus on getting sufficient sources of the omega 3 rich food sources in the diet each week.
- Fibre – important for regulation of bowel movements and promoting satiety (whole grains, bread, beans, grapes, popcorn, dried beans, brans, carrots)
- Vitamins – contain neither calories or energy, but are necessary for a large number of body functions. They assist in conversion of carbohydrates, fats and proteins into energy, resisting infections, and aid in the absorption of calcium and iron
- Minerals – function as builders, activators, regulate transmitters and controllers

Examples:

- Iron – essential component of blood
- Calcium/phosphorus – major component of teeth and bones
- Sulfur – important component of protein

Minerals are components of enzymes and hormones which assist in clotting of blood, muscle contraction and body fluid balance

5.1.3. Energy nutrients

NUTRIENTS	SOURCE	FUNCTION
Proteins	Meat, fish, poultry, milk, eggs, dried peas and beans, peanuts, other nuts	Building blocks for growth, repair of damaged body tissue, aids in the production of hormones, enzymes and antibodies
Fats	Butter, margarine, whole milk, eggs, meat and cheeses	Cushions and protects organs, aids in regulating body temperature, provides fatty acids
Carbohydrates	Sugar, honey, bread, pasta, noodles, rice, dried beans/peas	Main source of energy for high intensity work. Maintenance of normal body functions and metabolism

5.1.4. Balanced diet

- 10% - 15% Fats
- 65% - 75% Carbohydrates
- 15% - 20% Proteins
-

5.1.5. Intake breakdown

- 2 servings – meat, poultry, fish
- 2 servings – fruits, vegetables
- 5-10 glasses of water
- 2 servings - milk, cheese
- 2 servings –cereals, grains
- Include potassium

5.1.6. Dehydration

Dehydration facts:

- Water composes more than 50% of body weight
- A loss of as little as 2% body weight will restrict athletic performance
- It provides the medium in which chemical reactions occur
- Serves as a component of the body's cooling system
- Dehydration puts stresses on the heart and blood vessels
- It takes several hours to replace and achieve water balance
- Do not use salt tablets:
 - They may irritate the stomach
 - They cause diarrhoea
 - They increase dehydration
- Dehydration can cause heat strokes. Signs of a heat stroke are as follows:
 - Increased temperatures, cramps, headaches
 - Increased pulse rate, weakness, fainting
- Do not work out in rubber or plastic suits
- Stay out of steam rooms and saunas

Decrease dehydration

- Wear loose fitting clothes during workouts
- Schedule rest and water breaks
- Replace wet clothing with dry clothes to promote cooling by evaporation

5.1.7. Weight Making Tips

- Limit weight gain in-between fights to approximately 5% of your weight limit.
- Plan your weight targets in advance and stick to them over a 5-6 week period.
- Limit your weight loss to no more than 0.5kg per week. The smaller the better. Any more than 0.5kg per week will limit your ability to recover from training, reduce your immune function and risk breaking down muscle mass.

- The goal during this phase is to burn body fat and to maintain muscle mass. Reducing your carbohydrate intake by 500kCal per day should achieve this without difficulty. Maintaining a good protein intake of 1.5-2g per kg of body weight per day will help to preserve muscle mass and support muscle recovery from training. Increasing fruit and vegetable intake during this phase can help reduce appetite, increase fibre, vitamin and antioxidant intake
- Limit the dangerous de-hydration to no more than 2-3% of your weight limit. Avoid the use of sauna, plastics and exercising in a hot environment!
- Only consider dehydration in the last 12 to 24 hours! Being de-hydrated before this time (e.g. 1 week before competition) is only going to limit your ability to train properly and burn fat. Leaving you fatigued, run down at risk of illness and injury!

5.1.8. After the weigh in

- After the weigh in, re-hydration is the first priority. Consume 500ml of fluid immediately containing some high GI carbohydrates & electrolytes.
- Sip a further 500ml slowly over the next hour. If boxers have dehydrated significantly you should allow 1 hour to rehydrate the gut before consuming solid foods.
- Don't binge or overeat after the weigh in, this will only leave you bloated, feeling slow and heavy. Your body can only absorb so much food and drink! The rest is "dead weight"!!
- Eat small and frequent meals every 3 hours. High in carbohydrates, with moderate protein and low in fat.
- Keep sipping on fluids throughout the day to meet your thirst. Continue to add electrolytes if dehydrated significantly.
- Get up early on fight day and get out and for a walk either before or after breakfast to get some sun, adjust the body clock if necessary and stimulate appetite.
- Continue with your normal routine throughout bout days. Consuming regular small feeds and sipping on fluids to meet thirst and maintain hydration.
- By this point you are only eating to top up blood sugar and liver carbohydrate stores, satisfy your appetite and feel good.
- Boxers should avoid fatty foods throughout the day.

- The final pre bout meal should focus mainly on low to moderate GI carbohydrates 3-4 hours before the bell.
- In the final hours the focus should return to small amounts of fluids and high GI carbohydrate snacks or drinks.

5.2. Injuries

Most frequent causes of injury:

- Correct blow
- Incorrect or voluntary blow (head blow or elbow)
- Improper movements (sprained ankle, knee)
- Incorrect equipment (bad quality shoes, badly adapted gum shield)
- Poor fitness

5.2.1. Different injuries

Most frequent injuries:

- Cuts
 - eyebrow
 - Eyelid
 - Cheekbone
 - Scalp
 - Forehead
 - Inferior/superior lips
 - Nose
 - Torn eardrum
 - Detachment of the retina
- Hematomas (following are the most frequent hematomas found in boxing)
 - Frontal
 - External Ear
 - Cheekbone
 - Subdural and epidural:

- **Warning:** this hematoma is very severe and can be dangerous for the boxer's well-being. It is important to always identify this type of hematoma as soon as possible
 - Other hematomas
- Fractures
 - Nose
 - Jaw (pay attention to strained jaw as well)
 - Ribs (fracture, torn intercostal)
 - Hands

5.3. Injury prevention

In order to prevent injuries, the Cutman should do the following:

- Apply Vaseline to the face (eyelid, ears and cheekbones)
- Correct hand wrap helps decrease the risk of hand injuries.
- Massaging the boxer will help warming up and preparing the muscles for the effort and reduces further the muscular injuries risk. The massage should be done in parallel to the warm up of the boxer, and comes as an addition to a classic warm up.

5.4. Treatment of injuries

It is important to keep in mind that all injuries should be considered as important and should be treated as soon as they appear.

5.4.1. Cut

- Use different size of swabs and gauze according to the size of the width of the cut (deeper, larger cuts).
- Clean the area around the cut with a damp towel before treating the wound

- When a cut appears the product to be used is Adrenaline (1/1000).
 - On visible cuts: Adrenaline should be applied with constant pressure to the wound. Please repeat the same process for large cuts. Apply pressure as required. For a nose bleed, it is good to use Adrenaline as it will stop the bleeding.
 - 10 seconds before the start of the round, take the pressure off the cut and apply the Vaseline
 - Repeat the process during all 1 min breaks between rounds

It is necessary to take the boxer to a doctor for stitches maximum one hour after the end of the bout. It will also be necessary to put strips on the cuts before the hospital departure in order to decrease the risk of infections. Do not put water or liquids on the cut and do not allow the boxer to take a shower before stitching the cut as it will soften the skin and not be adequate for the stitches.

Please keep in mind that there are areas of the body that are more delicate (such as the eyelid). As soon as an injury can be spotted on the eyelid close to the eye ball and the cornea, the Cutman should inform the second about the severity of the injury. It is important to understand the difference between a cut on the eyebrow that can be repaired and an injury close to the eyelid that may be threatening to the boxer's wellbeing and vision. It will be the responsibility of the second to decide whether the cut can be treated or not and act accordingly.

5.4.2. Hematomas

- Hematomas can be controlled with the help of the Cutman's equipment such as the Enswell (bimetal). The Enswell should be fresh out of the ice in order to reduce the hematoma.
- It is good to apply a slight pressure to the hematoma in order to allow the cold to spread the hematoma and avoid it to disturb the boxer when boxing.
- Even though the hematoma is being worked on, it will not stop it from swelling. Please remember that the goal of the Cutman is to keep the fight going and avoid any injury stoppage.

5.4.3. Fractures

- **Jaw fracture** is not always visible. But the Cutman will be able to see it by several signs such as
 - blackened veins (not always)
 - the position of the jaw (open jaw)
 - Speech of the boxer

If the boxer complains of severe pain due to the jaw fracture it is up to the Second to inform the doctor of the problem immediately.

- **Nose fracture:** depending on the fracture (Open or internal fracture; total fracture or slight crack) the Cutman will spot it from the color of the blood coming from the nose. Following the fracture, it is necessary to use the adrenaline by pushing strongly on one or the other nostril during 10 to 15 seconds in order to reduce or stop the bleeding.
- **Fracture of the ribs:** this should be considered as a severe fracture. The fracture may be accompanied by a hematoma and severe pain.
- **Hand fracture:** the fracture is not visible as it is protected by the gloves. The information coming from the boxer will help his corner evaluate the situation and act accordingly.

In the fractures above, the only fracture that can be treated during the bout will be the nose fracture as bleeding can be reduced or stopped. The situation will have to be analyzed during the entire fight. The fight should be stopped if the Cutman believes that the wellbeing of the boxer is in danger. The final decision lies with the Doctor.

APPENDIX 1

BANDAGES

(according to the APB competition rules)

1. Use of Bandages (Crepe and Gauze)

Bandages shall be applied in the dressing room, in the presence of an authorized APB Inspectors. The APB Inspectors will sign off directly on the bandage verifying its compliance with APB Competition Rule 11.2.

2. Specifications

In all categories, the bandage shall be made of no more than twelve (12) meters by five (5) centimeters wide of Crepe and gauze, and no more than two and half (2.50) meters of surgeon's tape of two and half (2.50) centimeters wide for each hand.

In all categories, surgeon's tape, no more than five (5) millimeters wide, may be applied between fingers.

The binding of the surgeon's tape must not be applied less than two and half (2.50) centimeters from the knuckles of the contender's hands. A Boxer may use his bandage as he likes, provided that the knuckles of his hand are not covered by the surgeon's tape.

The use of any substance on the bandages is prohibited

3. Bandage equipment (for both hands):

- Gauze: three roles of gauze of 5 cm x 4m
- Gauze (top of the hand and metacarpal heads protection): 2 rolls of 10 cm x 4 m
- Tape: 3 rolls of 2.5 cm x 10 m

4. General bandage rules in APB:

The thickness of the gauze that will be placed on the metacarpal heads will be decided by the coach and his boxer. The tape passing between the fingers in order to maintain the gauze should not be larger than 5 mm. The tape should cover the gauze until 2.5 cm from the metacarpal heads but never closer. A good bandage comes with the guarantee of a maximum protection on the boxer's hand.

APPENDIX 2

SUGGESTED INITIAL 2 WEEK RUNNING PROGRAM AND RECORDING SYSTEM

Wk	1					2				
Day	1	2	3	4	5	1	2	3	4	5
Session	30 mins easy to med pace run	2 x 15 mins / 3 mins rest at med to steady pace run	4 x 8 mins / 2 mins rest at steady pace run	3 x 10 mins / 3 mins rest at med to steady pace run	30 mins easy to med pace run	60 mins easy to med pace run	3 x 15 mins / 3 mins rest at med to steady pace run	5 x 8 mins / 2 mins rest at steady pace run	4 x 10 mins / 3 mins rest at med to steady pace run	45 mins easy to med pace run

Example Recording Sheet			
Name:			Date:
Session Type:		Select appropriate run	
Distance Covered In Block:		'x' miles/km	

APPENDIX 3

SUGGESTED INTERVAL RUNNING PROGRAM AND RECORDING SYSTEM

Example Intense Running Week					
Day	Monday	Tuesday	Wednesday	Thursday	Friday
Session Content	Running Track Intervals – 100m run / 100m walk x 5. 3 mins rest. Repeat x 2.	Hill Run – 20 mins, ensure to complete steepest part of the hill 5 times.	Timed Intervals – 30 secs run / 15 secs walk x 6. 2 mins recovery. Repeat x 5.	Mileage Run - 3 miles at good pace	Boxing Rounds Run – 3 mins on / 1 min off x 6.

Example Recording Sheet			
Name:		Date:	
Session Type:	Select appropriate run		
Use Appropriate Recording Box Below			
Time to Complete:	'x' mins	Distance Covered:	'x' miles

APPENDIX 4

SUGGESTED 10 WEEK STRENGTH PLAN

Week	1	2	3	4	5	6	7	8	9	10	11
Key Goal	General Camp Preparation		General Preparation Phase						Specific Preparation Phase		Fight
Training Focus	Improve general conditioning level		Build strength, power and improve overall conditioning.						Speed and intent of movement.		
Key Points	General bodyweight based exercises; or with the addition of dumb bells and lighter bars.		Key block for physical development using main strength exercises – squat, deadlift, bench press, pull ups etc.; The aim is to increase the weight on each of the exercises across the 6 week block.						More specific speed based exercises – clap press ups, squat jumps, clap pull ups.		
	3-4 sets x 8 – 12 reps		3 sets x 8 reps	4 sets x 6 reps	5 sets x 5 reps	3 sets x 6 reps	4 sets x 4 reps	5 sets x 3 reps	3-4 sets x 3-5 reps		



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