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SOUTH AFRICA

COACHING

THE COACH AS A LEADER

We meet three kinds of people in life: those who make things happen; those who watch things happen, and those who don't know anything is happening. Likewise throughout our lives we encounter three types of manufacturers: those who make good; those who make trouble, and those who make excuses.

Behaviour patterns can usually be categorised in a triangle of three extremes, as illustrated above, and throughout this article. Recognising this can help leaders identify people's motivations and understand their points of view. People don't always mean what they say or say what they mean. Assessing people's true motivations will help you draw accurate conclusions, make good decisions and be an effective leader.

The Key to Success

'Psychology is a very important part of preparing athletes for competition'

As sports become more and more competitive, better technique, more training and improved equipment contributes to higher levels of performance. Losing may result from not having the right boat, the right technique, or the right training program. We can control those things and reduce the possibility of error. We have less control of the athlete's psyche, which plays a decisive role in determining success or failure. Psychology is a very important part of preparing athletes for competition.

The improved performance of the men's eight the past two years (USA 94/95) was not due to better technique or equipment, an improved training program or superior athletes. It was because of the athlete's confidence in themselves, developed through their training program. Having faith in a program is vital for success, but ultimately athletes must enter their race with confidence that will withstand the highest pressures. It takes years to develop this type of confidence, and there is fine line between over confidence and insufficient confidence.

Confidence is the foundation of keeping athletes focused. It's the ability to perform well when it matters most. It's the ability to overcome self-imposed physical or technical limitations. How does the coach teach high performance athletes to become more confident?

Instilling Confidence

'Confidence grows from the belief coaches and athletes have in each other'

Confidence grows over a long association between coach and athlete. The best coaches have years of experience and a wealth of knowledge to pass on to their athletes. They have made mistakes and witnessed the mistakes of others. From their experiences they have learned the best way to the mountaintop. Athletes are not explorers. They do not want to waste time looking for

alternate routes. They know what their goals are and want the best help to achieve them. They need the security of a knowledgeable coach, someone they can follow with confidence.

Confidence grows from the belief athletes and coaches have in each other. It's not an instantly acquired relationship, nor is it one sided. It's the product of mutual respect and a bond between coach and athletes, developed from the beginning of a training program, to the last stroke in a race. Coaches need motivation just as much as the athletes, and although the coach takes the lead, success comes from interaction between the coach and his athletes. Just as the coach will monitor his athletes and assess them daily, so they will assess him.

Athletes will respect a coach who has been successful, but a reputation will survive only the short time it takes them to form their own opinions. They will constantly observe him and score his behaviour. When he shows compassion and understanding he will gain points. The athletes will test his knowledge of the sport and his ability to lead them. They will watch closely how he selects crews. He must always be fair and treat everyone alike. They will judge his integrity. Point by point, each good deed will enhance trust. If the coach disregards the athlete's questions or shows no interest in their problems, they will feel insecure. When the coach is unkind, unfair, untruthful, uncompassionate or unsympathetic to their needs, he loses points. One bad deed can destroy confidence created by many good deeds.

Motivating Athletes

'The best form of motivation is encouragement'

To be confident, athletes must be motivated. Bribery, incitement and encouragement are the most common motivational methods. Financial inducement for winning or withdrawal of support for failing, are forms of bribery. Some coaches incite their athletes to hate the opposition. The worst leaders incite athletes against their own team members.

The best form of motivation is encouragement-exploiting the athletes desire to be successful. Athletes want to be good as they can be and are inspired by doing well. Motivated athletes strive for perfection. Good leaders do not expect perfection, but they do require excellence. Excellence is the ability to focus on the things that matter most. It's the foundation of good coaching. Coaches who have good focus and remain on track are more effective leaders and less vulnerable in times of stress. Remaining in control under pressure is seeing things clearly and making the right decisions. Decisions made with confidence inspire confidence and provide the basis for persevering in the face of adversity.

Good focus is developed through practising skills over and over again. A wise coach prepares himself and the team for the unexpected-and just about anything! He never procrastinates. He has a sense of urgency about getting things done. There are many competent people who have intentions of doing things 'as soon as possible' but seldom get around to it. Their accomplishments

seldom match those of less talented people who get things done at the right time.

Accepting Responsibility

'Athletes respect coaches who have the integrity to admit their mistakes'

Accountability is another quality of successful coaches. It's directing energy toward clear goals and assessing progress towards achieving them. It's accepting a share of the responsibility when goals are not achieved. Good coaches do not look for excuses or scapegoats when they fail. They look to themselves, learn from their mistakes and take steps to make things better for the future.

Athletes respect coaches who have the integrity to admit their mistakes. Of course, the athletes will lose faith if the coach makes too many mistakes or repeats them, but if he denies them, he destroys the athletes trust. Coaches are not infallible. Making an occasional mistake reinforces the fact that they are only human. When the coach accepts his share of the blame when things go wrong, he strengthens the athlete/coach bond.

Teaching Technique

'A knowledgeable coach can help the athletes gain confidence in themselves while gaining points for himself'

The ability to teach good rowing technique is also an asset. Nothing is more thrilling than rowing in a fast boat, but rowing skills are not easily mastered, and reproduction of that magical feeling is elusive. A knowledgeable coach can help the athletes gain confidence in themselves while gaining points for himself. Rowers generally pass through three psychological stages:

They know nothing
They think they know everything
They know they don't know it all

It is pleasant coaching people in stage 1. They are eager to learn, and it's easier to teach good technical movements. A wise coach knows what 'grooves in' in the first few weeks, may take years to change afterwards and he recognises the importance of teaching good technique. After a few years in the sport and a few races won, athletes reach stage 2, when they think they know it all. Coaches also pass through this stage. When they are in this state of non-acceptance, it's difficult for them to learn. A clenched fist cannot accept a gift, and a clenched psyche cannot receive a lesson.

Leaders have to be forever testing new opinions and strengthen their resolve. The coach who says, 'I've heard it all before' or the athlete who says, 'I've gained nothing from this experience' is setting his own limitations. There is always something to learn, no matter how many times you have had the same experience. Coaches who know only one path are vulnerable when they find themselves in strange territory. The worst situation is the athlete who challenges the coach. He is a real threat to the team's confidence. When criticism becomes negative, it should

not be allowed to manifest.

In stage 3, athletes are mature. They are receptive to instruction, but experience has warned them not every path leads to the mountain top. In a world of petulance and differing opinions, athletes seeking guidance find much to confuse them. Races are won in a variety of ways, and athletes are entitled to ask questions without fear of retribution.

Communicating Effectively

'Younger coaches are inclined to give too much information at once'

Ninety percent of athletic success can be credited to the athlete, and only 10% to the coach. In order for the coach to maximise his influence, he must possess three qualities:

Experience
Knowledge
Communication skills

Experience and knowledge are acquired with time, while communication is as an art. Communication includes motivational as well as technical input. People respond to instruction differently, and the coach must forever search for the right words. His methods vary from friendly persuasion to verbal force. Harsh words will work with some athletes, but use them on the wrong person, and they will turn on you. Use them too often and they will lose their affect. Coaches have different ways of communicating:

Some say only what is necessary
Some never stop talking
Some have little to say

Younger coaches are inclined to give too much information at once. Eager to impress, they switch from one technical emphasis to another. The athletes get too familiar with the sound of the coach's voice, and after a while, what is said goes over the tops of their heads. Athletes can respond better if fewer technical points are given.

At the other end of the scale is the crew that rows for hours with barely a word from the coaching launch. When the voice finally breaks the silence, it can have a positive affect on the crew, but the coach relies on his rower's physical condition to win rather than their technique. If the athletes receive sparse technical instruction, they may believe technique is of little value or think they are rowing technically well enough.

The experienced coach is always trying to improve his communication skills by searching for the right words. He expects to see a change in the athlete, but if there is no difference, he will blame himself and look for a different approach.

Beginners need explicit instruction, but experienced rowers respond better to being coached as a crew. Avoid criticising the same rower continually. He will lose confidence, and other team members will see him as a

weak link. Consider how hard it is to change yourself and you'll understand what chance you have of changing others. Once habits are grooved in, they're hard to break and sometimes better left alone. You may not like a habit, but time spent trying to change one person may be at the expense of something that would produce a better result for the crew. This is not to say you shouldn't coach athletes individually but that you should decide the important factors and put them ahead of less important ones.

Gaining by Explaining

'People who understand what they're doing are less likely to get it wrong'

Your instructions are more likely to succeed if you take the trouble to explain 'why'. Giving a good reason prevents athletes from thinking you're 'bossy' and from feeling they're being ordered around. Explanation also reduces the chance of error. People who understand what they're doing are less likely to get it wrong. Likewise it ensures that you understand exactly what you want the athletes to do. Explaining the reason for your request also enables the athletes to make suggestions that can be helpful. People are not robots. The more you treat them like human beings, the better they will respond to you.

Explain precisely what you want, show good and bad movements to everyone equally, encourage athletes to watch video alone and work things out for themselves-it's the most effective way of learning. Learn about your athletes as individuals and vary your approach until you find what works for them.

Managing the Stress of Physical Training

'Physical duress will cause changes in temperament and personality'

While the coach can easily gain points with good technical instruction, he can readily lose points through the pressure of physical training. Physical duress will cause changes in temperament and personality. Some athletes will gain strength from the challenge, some will retreat, and others will become aggressive. The coach must remain calm in these challenging situations and handle every incident rationally despite what he is feeling. The coach is there to support the athletes, propping them up when they need it most. Outbursts caused by physical stress normally last only a short period. Retaliation won't help the crew win.

When an athlete criticises, analyse the reason for the complaint rather than accepting it at face value. Complaints usually come from those who are not doing well. They tend to complain about things that affect themselves personally rather than things that affect others. Complaints arise when athletes are:

Tired from training
Not performing up to standard
Jealous of, or feel threatened by another athlete

When an athlete looks for somewhere to lay blame for

not performing up to the standard, the coach is first in the line of fire. The athlete may complain that he is 'overtrained', or he may accuse the coach of not helping him as much as he is of helping those who are performing better than he is. The coach must appreciate what is happening and show understanding. It will not help if you tell an athlete he has a poor attitude. He will merely reply, 'You are a rotten coach' and that's as far as it gets. You will both end up harbouring hostility and animosity.

The most difficult case is an athlete who has good physique, trains hard and is technically good but performs below the standard of others. The coach must not avoid the issue by classifying him as one who will not make it, but look for solutions that will help him.

Emotions have to be controlled but not stifled. Athletes should be free to let off steam once in a while. It will help athletes if they are advised of the character changes that occur during intense training. This will help them understand each other and control their emotions. It has quite a sobering effect on a 'hot-head' when a team-mate says 'Coach says that when we train some of us would lose our tempers' or 'Coach said that the slowest athletes would be the first to complain'. It also helps to remind them sometimes of the old adage, 'When the going gets tough, the tough gets going'

Maintaining Motivation

'Goal setting is fundamental to motivation'

The coach must help athletes through times of intense training by good program structure and by setting goals. Athletes want to know how they're doing, and setting regular tests helps keep motivational levels high. Goal setting is fundamental to motivation. Most of us aspire to achieve certain things in life but do not make goals realistic and achievable; they become little more than dreams.

Regular goal setting helps maintain day-to-day momentum and motivation toward long term goals. Effective goal setting encourages persistence. Regular tests are an important part of the preparation process. Not only are athletes motivated by their progress, but they also learn how to prepare themselves physically and mentally for competition.

Take the trouble to explain the overall program, the purpose of each type of workout and the physical effects of training. Every session has a purpose, a clearly defined focus. There is always something to gain, even though sometimes the training is not as good as we would like it. Not every outing will be brilliant, but when a crew is having a bad row, encourage them to focus on physical training. When they are unable to work because of sickness or injury, encourage them to focus on technique.

When the program intensity increases, break each session into small segments and set different goals for each segment. This will help the athlete's concentrate

when they get tired or when motivation gets low. Set daily targets, weekly tests and monthly performance reviews. This ensures that your athletes can take a step back and see the progress they're making towards their goals. These improvements, no matter how small they may seem, are contributing significantly towards the overall performance. The goals can be technical or physical, as small as 20 strokes, or as large as an important regatta. Every session will contribute towards achieving the athlete's biggest goal.

If you don't reach your goals, you haven't failed. Success comes from learning from your experience and striving to do better next time.

Understanding Athletes

'The most successful coaches can adapt their motivational methods to meet their needs'

Top athletes with a very clear view of their capabilities have confidence. Extremes of the triangle are:

Confident
Unassuming
Insatiably opinionated

Some athletes are modestly unaware of their own capabilities. They may not have the best coach, or be part of a good program. They have limited opportunity to develop. Confidence will grow in other athletes from rehearsal of every possible eventuality, having faith in what they're doing and practising it over and over again. The opinionated athlete is the toughest to handle. Nothing quite hurts like the truth, and this type is the first to lay blame elsewhere when things don't go his way.

Athletes are also different in the way they approach their training:

Some you have to push
Some push themselves
Some you have to restrain

The first is the athlete who does as little as necessary. The second type works conscientiously and will complete the program as written. The third type does more than the program. He will row 21 strokes instead of 20, or nine sets when the program requires eight.

Less motivated athletes will avoid the kind of work they do not like. An illness or an injury is a common excuse for missing a workout. A slow runner will have a bad knee when running is on the program, or a rower will have back problems when he wants a few days rest. Some athletes won't disclose an injury for fear of losing a place in the squad while others will press on regardless of injury or illness, to keep up their training level. Athletes sometimes exaggerate the seriousness of an injury to excuse bad performance. The injury list usually increases just before an ergometer test. Hard training will reveal the weaker characters.

As the coach becomes familiar with his athletes by fitting them into the behavioural triangle, it will help him

understand how to influence them and keep them on the straight and narrow path. The most successful coaches can adapt their motivational methods to meet their needs. The best ways to influence athletes is to give them confidence in all they do and look at their weaknesses with compassion, not accusation. Encouragement only works if the athletes have confidence and respect for the leader's direction. Coaches, who lack confidence, control by intimidation and domination.

What Kind of Coach Are You?

'Confident coaches are experienced, knowledgeable and charismatic'

Athletes quickly recognise insecure coaches and lose confidence in their leadership. Insecure coaches don't like the challenge of athletes who defy them, and they are quick to lose their tempers. They're influenced by personalities, and they have their favourites in the team. They are emotionally unstable and will tell lies when in trouble, which leads to more lies and more trouble. Three types of coaches are:

Confident
Megalomaniac
Unaffected

Confident coaches are experienced, knowledgeable and charismatic. Egotistical coaches usually suffer from lack of confidence and become obsessed with the fear of losing

power to the point of bordering on insanity. The fear of losing control influences the way they lead. Some coaches think to be successful you have to enforce strict rules with threats. A wise coach doesn't use threats unless he is prepared to carry them out. Backing down could lead to anarchy and more rules, ending with the possibility of having to exclude a top athlete from the team.

Athletes should be allowed to decide for themselves which path they will take up the mountain. They may wish to compete in a boat against the coaches' advice, but the coach who tries to dissuade an athlete from his aspirations will break the trust between them. Even if the athlete performs as the coach predicts. He does not want to hear 'I told you so' from his coach. He will remain insecure with the coach who has only looked out for himself. Sport is about participants, and the coach's job is to help them, not stand in their way. Even if a coach disagrees with the athlete's ambition, he must remain firmly by his side and help in every which way he can in whatever direction the athlete pursues. In fact, he helps himself best by helping the athlete, not by trying to dissuade him from his ambition.

Leadership is an art based on philosophy, with clearly defined principles that provide positive direction. It is an on-going process of keeping vision and values aligned with a direction accordant with the things that are most important. The coach's destination is the top of the mountainous medal podium. If the path we choose doesn't lead us to the peak, every step gets us to the

wrong place faster. The integrity, personality and knowledge displayed by the coach will foster the athlete's trust until they follow the mountain path blindly, confident their coach has chosen the right route.

You don't have to be superhuman to be a good leader, but you do have to understand other people, how they feel and what influences them.



PLANNING

PRIMER ON PERIODIZATION

Tudor Bompa is THE person who stimulated Western interest in Periodization. Tudor Bompa competed as a rower in the 1956 Olympic Games in Melbourne, Australia and won a silver medal at the 1958 European Championships, which were held in Poland.

As a very important training concept, Periodization is not, as many people may believe, a new discovery. As exemplified by Flavius Philostratus (AD 170-245), a Greek philosopher and sporting enthusiast, a simple form of Periodization has been used since the ancient Olympic Games. In his six manuals on training, Philostratus wrote extensively about the methods used by the Greek Olympians.

The roots of periodization can be found in the term "period" as in a period of time. In fact, the term Periodization has been borrowed from history, where it refers to the specific periods of time of human development. In sports training, this term, periodization, refers to dividing the yearly training plan into smaller and, therefore, easier to manage training phases. Basically, the periodization of an annual plan has three major phases: preparatory or pre-season, competitive or season, and transition or off-season. This is what Philostratus mentioned about the way the ancient Olympians organized their own periodization, except that they used slightly different terms: preparation, Olympic Games, and relaxation. Is this training organization method so drastically different than what the US track and field athletes, the winners of most medals in the first modern Olympic games (Athens, 1896), have used? Not at all! This first group of American Olympians has used exactly the same Periodization plan: preparatory, competitive, culminating with the Olympic Games, and off-season (transition).

WHY IS IT NECESSARY TO USE PERIODIZATION?

The use of periodization is dictated by several training elements, such as:

Physiological adaptation to training. The scope of training, especially during the preparatory phase, is to create a training program that will result in the highest adaptation, or athlete's best adjustments of the

neuromuscular and cardio-respiratory systems to your training program. Higher adaptation, increased athlete's physical potential, is the determinant factor in reaching peak performance during the competitive phase. The program you organize during the preparatory phase, the development of the motor abilities necessary in your sport (strength, speed and endurance) to the highest level possible, is a fundamental requirement to improvement of the athlete's working potential, their physical abilities, and as a result, their improvement of performance from year to year.

Peak performance. Normally, a peak performance is planned to be reached during the competitive phase and cannot be maintained forever. This is why during the preparatory phase; the scope of training is to improve the athlete's working capabilities, to accumulate the highest physical potential possible, to cope with the fatigue of training and competitions, but not necessarily to reach highest performances of the year. This is normally achieved during the competitive phase by progressively planning more specific training programs— specific speed, power, and endurance. However, your athlete's highest adaptation to training, continuous improvements of physical potential, represent the foundation on which peak performance depends on. Without a continuous increase of your athlete's physical potential from year to year, you cannot expect to improve performance on yearly basis.

Skill development. The rate of improving and perfecting your athlete's technical and tactical skills, are directly dependent on how you periodize your training program. During the preparatory phase, where the stress of competitions is almost nonexistent, skill acquisition is maximal. Now is the time to teach your athletes new skills and to perfect the ones acquired in the past year. Your athlete's skill improvement during the preparatory phase will be most beneficial during the league games and/or official competitions. The longer the preparatory phase, the better your athlete's chances to improve skills' effectiveness. In team sports, martial arts / contact sports and racquet sports, any technical improvements will directly assist your athlete's tactical proficiency. In other words, the better the technique, the easier the athlete will apply the skills into your tactical plan.

Psychological qualities. Athlete's psychological behavior, his/her degree of motivation and focusing capabilities are directly dependent of their physical potential acquired during the preparatory phase. High level of physical potential usually translates into better abilities to cope with fatigue. The athlete's psychological well-being is directly dependent on the level of fatigue. When an athlete is physically exhausted it directly affects his/her visualization, concentration capabilities, focusing, and motivation. An exhausted athlete is not a highly motivated athlete. But athlete's psychological behavior is also negatively affected by the volume (quantity) and intensity used in training (high loads in weight training, the abuse of maximum speed, the daily employment of just high intensity drills in team sports/ racquet sports/martial arts, etc.). The higher the intensity of

training the higher the stress, and the more it taxes the central nervous system (CNS). The consequence of constant high intensity training is a high psychological fatigue. The best cure for a negative psychological fatigue that affects the level of psychological qualities and reactions is a well-planned periodized training. Organize longer preparatory phases, if you can, with the lowest psychological stress. Accumulate best physical adaptation to training so that your athletes are well equipped to cope with fatigue, and as such, decrease the level of psychological fatigue.

Climatic conditions. The duration of the seasons in a given geographical region, also dictates the way you'll organize your periodization plans. Often the duration of a given training phase, such as the duration of outdoors season, clearly dictates how long the league games for outdoors team sports can be. Climatic conditions, therefore, directly dictates the periodization of all the outdoors sporting activities, seasonal sports such as skiing, rowing, kayaking/canoeing, running, cycling of any type, triathlon, sailing, golfing, etc.

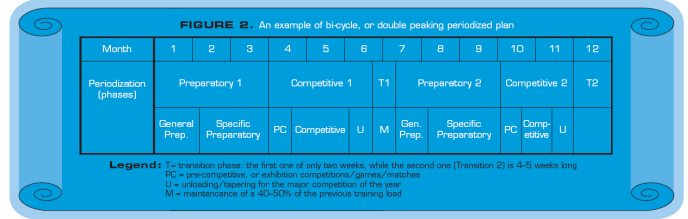
VARIATIONS OF PERIODIZATION/ ANNUAL PLANS

The time since the ancient Olympic Games has long passed, and along with many other improvements in the human society, periodization of training has evolved as well. In addition to the basic periodization plan of three main phases (see figure 1), typical plan for most team sports, there are other variations of periodizations as well. The needs of certain sports had made us to depart from the ancient periodization plan with one peak only, known as mono-cycle in the technical nomenclature, or peaking only for one major competition (i.e. National Championships). Consequently, different sports with specific domestic and international calendar of competitions employ other types of periodization plans. As such, track and field has two major competitions per year: indoors and outdoors competitions, or short and long course championships in swimming.

This type of plan is called a bi-cycle, or double peaking. Other sports, such as wrestling, boxing, or martial arts, use either triple peaking, also called tri-cycle, or multi-peaking plans, where the athletes have to peak several times per year. As illustrated by Figure 1, each training phase is subdivided into smaller phases, such as macro-cycle (macro = bigger, and cycle = a phase which repeats itself several times throughout the annual plan). A macro-cycle is usually 3–5(6) weeks, or micro-cycles (micro = small). The only smaller training phase than the micro-cycle is the training session, or workout. Therefore, looking from the top of Figure 1 to the bottom, you realize that a periodized annual plan progressively becomes shorter. The shorter the phase, the easier is to manage a training program. However, an overall guideline of training is necessary: a periodized annual plan.

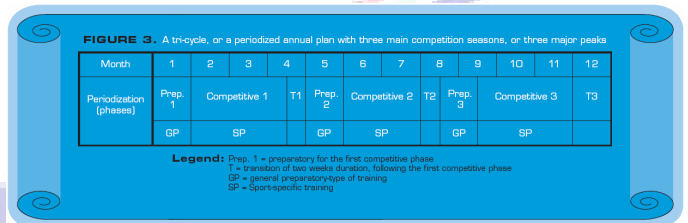
As already mentioned in several sports, coaches have to use a bi-cycle (double periodization), a triple-cycle, and very few sports employ a multi-peaking plan. Figure 2 shows a bi-cycle annual plan with its training phases, and the specific objectives for each training phase. Not mentioned at all are the macro-, and micro-cycles, now relatively clear in readers' mind that they subdivide each

training phase into smaller units of training. Please also observe that each preparatory phase has two training objectives:



In the first one third of the phase, the scope of the plan is to train the athletes with non-specific, but also with some specific type of training.

The rest of the preparatory phase is dedicated to sport-specific types of training, from specific flexibility to specific speed, strength and endurance.



SOME CHALLENGES OF PERIODIZATION

Number of Peaks per Season

The more peaks you are planning for a year or a competitive phase, as often is the case with individual sports/ martial arts/contact sports/racquet sports, the more difficult is to peak for each important competition. Usually, a competition means a very stressful environment. Therefore, the more competitions and the more you push your athletes to peak for each one of them, the more stress the athletes are exposed to. The higher the stress without rest and regeneration prior to a new competition, the closer your athlete is to a state of staleness, or even overtraining. To avoid such an unpleasant conditions, you have to prioritize competitions, meaning to treat some of them as very important and others the second, or even third priority competitions. Obviously, the intent should be a full peak only for the first priority competition; which usually should be the championships competition of that cycle.

Avoid Overtraining

As you plan for competitions, you should you plan to avoid their strain, staleness, and the undesirable state of overtraining. There are certain methods to accomplish that, such as:

1. Never plan a challenging workout immediately following a stressful competition! Give your athletes time to remove the fatigue, relax mentally, rest and recover before your athletes will train hard again.
2. Throughout a week of training constantly alternate high with medium and low intensity workouts. This is a build-in strategy to avoid critical levels of fatigue.
3. After each competitive phase, make sure the athletes have at least two weeks of transition, so that they can replenish the energy stores, remove fatigue, relax

mentally, and regenerate from exhaustion.

4. Use the step loading method (Figure 4), as the best progression training adaptation: one week of low intensity, followed by a medium, and then by a high intensity week. Every time you'll start again with low intensity week, this will be an opportunity for your athletes to replenish energy stores, recover and regenerate physically and mentally before they'll be exposed to more difficult weeks.

Short-Duration Preparatory Phases

Influenced by professional sports, some coaches attempt to imitate their heavy competitive schedule, and as such accept the notion; the more games/competitions, the better my athletes will improve. In reality the opposite is true: the more you compete the less time you have for training. As demonstrated by sports science, well designed training programs and not high number of competitions led to higher adaptation, and as a result, to higher performance improvement. To play/compete more means in reality to have a longer competitive phase, a situation which is possible only by reducing the duration of the preparatory phase, with all its negative repercussions: less time to acquire/perfect skills, reduced time to improve general conditioning (such as during the general preparatory phase), and shorter time to work on improving the sport specific speed, power and endurance. Reduced time to train but increased time to compete means in reality to train and over train just the same exercises, same specific parts of the body, joints and muscles, and as a result, increase the incidents of injuries. On a long-term basis, shorter duration preparatory phases will reduce training time, lower the rate of adaptation, and ultimately result in a stagnation of performance improvement.



NUTRITION

SPORTS NUTRITION PRIMER

Depending on the duration, intensity, and type of exercise you are performing, there are three stages where nutrition plays a role in performance —before, during, and after activity. One of the primary goals of sport nutrition is to optimize the availability of muscle glycogen, thereby insuring optimal performance.

Pre-Exercise Nutrition

Properly nourishing yourself before exercise should:

- Prevent low blood sugar during exercise.
- Provide fuel by topping off your muscle glycogen stores.
- Settle your stomach, absorb gastric juices, and prevent hunger.
- Instill confidence in your abilities.

Remember, fasting is detrimental to performance, and is strongly discouraged before exercise or performance. The pre-exercise meal should consist primarily of high carbohydrate, low fat foods for easy and fast digestion.

Since everyone's preferences for, and responses to, different foods are unique, it is recommended that you learn through trial and error what does and does not work for you. For example, some people respond negatively to sugar intake within an hour before exercise. The temporary "boost" that some people experience after eating foods with a high sugar (sucrose) concentration such as candy, syrups, or soft drinks actually causes an increase in insulin production which will be followed by a rapid lowering of blood sugar, and can lead to decreased performance. In addition, fructose (the sugar present in fruit juices) ingested before exercise may also lower your blood sugar and cause gastrointestinal distress in some people, but not others.

How much time should you allow before exercise after eating?

Allow adequate time for digestion and normalization of blood glucose:

4 hours for a large meal.

2 – 3 hours for a smaller meal.

1 hour for a blended meal, a high carbohydrate beverage (10 – 30%), or a small snack.

During Exercise

When an individual has been consuming a diet sufficient in carbohydrates, 60% or greater, there is enough energy present in the muscles to fuel workouts and other activities completed within 60 – 90 minutes. On the other hand, during prolonged, strenuous exercise lasting over 90 minutes, carbohydrate ingestion at regular intervals during the exercise is beneficial^{2, 3}. For example, consuming 8 ounces (1 cup) of a sports drink containing a 6 – 10 % carbohydrate concentration every 15 – 20 minutes can delay the onset of fatigue. This is equivalent to a rate of 0.8 – 1.0 grams of carbohydrate per minute or approximately 24 – 30 grams every half hour.

Post-Exercise Nutrition

When and what you eat after a work-out can have a serious effect on your recovery. Adequate recovery means that your muscles are rested, re-fueled, and ready to perform again, which is extremely important for people who exercise every day. Inadequate recovery can lead to chronic fatigue and a gradual decline in your performance. Be selective in what you eat after exercise; wise choices will help you recover quickly and enable your muscles to work better the next time around. For the fitness enthusiast whose workouts generally last less than 90 minutes, your main concern is to re-fuel with a well-balanced, high carbohydrate diet. However, if your workouts typically last longer than 90 minutes and are "exhaustive," the timing of your meals is additionally important. Your body needs about 20 hours to replenish its fuel stores. Furthermore, this will only occur if adequate carbohydrate (approx. 500 – 600 grams depending on your body size) is consumed during this time^{2, 3}. The first 2 – 3 hours after exercise are critical for you—don't wait to eat.

For optimal glycogen re-synthesis, follow these target intakes during the 20 hours following a workout:

Immediately after exercise (15 – 30 minutes): 75 – 100 grams carbohydrate.

• Within the next 2 – 3 hours after exercise: 100 grams carbohydrate.

Every 4 hours thereafter: 100 grams carbohydrate.

For example, since 1 gram carbohydrate = 4 calories, 75 – 100 grams = 300 – 400 calories. In practical terms, you could take in 75 – 100 grams of carbohydrate by eating: • A banana and a bagel.
1/2 cup raisins and a slice of bread.
2 cups of orange juice and a cup of yogurt.

Current research also suggests that protein, when consumed along with the post carbohydrate fuel, can increase the rate of glycogen resynthesis and improve recovery¹. A high carbohydrate beverage (10 – 30% carbohydrate concentration) can also be used as an immediate source of carbohydrate replenishment. These beverages can be especially useful after a workout in the heat when you may be more inclined to drink than to eat. However, high carbohydrate beverages are not complete foods; they do not contain all the nutrients your body needs for good health and top performance. If you use these beverages in your training regimen, make sure you follow soon after with a well-balanced, high carbohydrate meal, and plenty of fluids.

References

1. Koopman R, Wagenmakers AJ, Manders RJ, Zorenc AH, Senden JM, Gorselink M, Keizer HA, van Loon LJ. (2004). The combined ingestion of protein and free leucine with carbohydrate increases post exercise muscle protein synthesis in vivo in male subjects, *American Journal of Physiology – Endocrinology and Metabolism*, Nov 23.
2. Position of the ADA, Dietitians of Canada, and the American College of Sports Medicine. (2000). Nutrition and athletic performance. *Journal of the American Dietetic Association*, 100:1543 – 1556.
3. Rosenbloom C. (2000). *Sports nutrition, A guide for the professional working with active people, Third Edition*. Chicago; The American Dietetic Association.

About the Author

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basics.

Use the rowers fitness to enhance the speed of the boat (effective driving force)

Minimise the force and movements that counter the effective driving force

All top teams display the following 5 principles

Long oar stroke

First part of the stroke is vitally important, the angle in front of the gate is twice the angle behind. Catching and lock on occur very quickly.

All top rowers produce as little vertical movement as possible

Effort is made to move the body, hands, oars and seat with uniform speeds

Good team coordination.

Developing Rowing Technique

The coach must have a clear idea of the principles of the sequence of movements during each stroke
Developing proficient movements (rowing technique) must be task related not an end in itself.

Tips

Take into consideration age, levels of knowledge and motivation

Apart from descriptions and explanations of movements, kinaesthetic perception (feeling movement) should also be taken into consideration

The coach should always graphically (visually & aurally) illustrate movement sequences to those at practice

The tasks should take into account age, height, weight, etc. The coach should not demand the impossible

Coaching as well as correcting errors should initially concentrate on the essentials. Do not get bogged down in petty details

Besides coaching in technique, physical fitness must be developed. Both factors are mutually dependent.

Corrective Measures

Compare your own understanding of the movement with those of the rower and allow feedback from the athlete on their own movement. Ensure that your understanding of the problem is not the problem!

Bear in mind the physical conditions – wind waves etc.

Carry out the movements and movements sequences in slow motion, with breaks, and as isolated parts of a whole movements

Create conditions or give exercises that make errors impossible.

Exaggerate the corrections to mistakes.

Encourage general physical development (strengthening) as well as technical training.

Vary the speed and intensity of the movements so that the learners do not adapt only to basic slow movements

Vary boat types, situations & partners

Identifying Errors

When identifying errors the coach should look to see if the error has originated in the current phase of the stroke cycle or a previous phase of the stroke.

Is the problem caused by problems with rigging



TECHNIQUE

IDENTIFICATION & CORRECTION OF ERRORS

What is the right technique?

Not all fast crews row the same, but all have the same

TECHNIQUE

DRILLS FOR THE DRIVE PHASE

Building the pressure applied during the drive

Row 20 strokes with very light catches building to light finishes, then 20 with light catches building to $\frac{1}{2}$ pressure finishes, then 20 building to $\frac{3}{4}$ pressure finishes, then 20 with light catches building to full pressure finishes.

Purpose: To correct taking the catch too hard and to demonstrate the rhythm in the leg drive. It is also especially good for getting the leg drives together in a crew boat.

Resistance rowing

This can be done with a resistance strap of some kind around the boat or rowing in a crew boat with some of the crew not rowing to provide resistance. It can also be done on an ergo with the resistance turned right up.

Purpose: Is useful to demonstrate effective application of force, e.g. if arms are being bent too early the stroke will not be strong and it will be more apparent when the resistance is much higher than normal. This will encourage correct use of the legs to initiate the stroke, and hanging the body weight through the draw because the arms alone will not be strong enough to do much effective work.

Taking as few strokes as possible in a set distance

Try to take as few strokes as possible to complete a set distance or conversely take a set number of strokes (say 20 or 30) and see how far you can get in comparison with another crew. This can be done at any level from beginner to elite level and is similar to set rating pieces but is more easily managed. (It is very hard to ensure that a set rating is being adhered to if you are coaching a number of crews at once).

Purpose: These exercises reinforce that an effective stroke has a very powerful drive phase which comes mainly from the legs, and a very relaxed recovery.



Association of Rowing Coaches

Membership Application Form

First Name: _____

Surname: _____

Gender: _____

Nationality: _____

ID Number (RSA): _____

DoB: _____

Postal Address: _____

Cell Phone: _____

Email: _____

Club/Institution: _____

Volunteer/Half paid/Full Paid: _____

Coaching Qualification Level: _____

Representation: International/National/Provincial: _____

This form must be completed and returned by fax to Jamie Croly (National Secretary) at 011 781 2987 or by Email at jcroly@stithian.com. You will be notified by email of the receipt and acceptance of the membership application.

Membership fee of R100.00 per year will be invoiced after membership has been accepted and processed.