

The Kayak Coaches Bible – A Synopsis

An Alternative Holistic, Technical, Structural and Pedagogical Approach to High Performance Kayaking

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Adapted from theories of Imre Kemecey
Ph.D.

For the past ten years or so, the author has contemplated writing a manual in consultation with Dr. Imre Kemecey (Master Kayak Coach and Olympic Silver Medallist), regarding coaching structure and technique for elite and emerging Flatwater and Surfski kayak athletes. Initially, the author thought about writing a book on the subject of kayaking in general, however, after much consideration, he remembered a quote he once heard: “A book about everything is a book about nothing”. He is not in total agreement with this statement, nevertheless, it was determined that it would be far more beneficial to write in a precise manner about a small number of focused topics, as opposed to writing vaguely about a multitude of topics. This book upon completion will do just that! For too many years now, very few articles and books have been published on the sport of competitive paddling. In terms of what has been published, it has for the most part been another person saying the same thing in a slightly different way (Nothing New!!!). We don’t need to hear about “rotation”, or “use your large muscles in your back” for the umpteenth time! There is so much more to this sport than superficial and quite obvious biomechanical tips. This type of critical analysis does not do this great sport justice, and will not assist our athletes to “step forward” to the next level!

It is no secret that kayaking has changed dramatically over the past 20-30 years or so, and so the way we go about coaching kayak structure and technique, **should** change as well. Even the tagline for this book, “**An Alternative Holistic, Technical, Structural and Pedagogical Approach to High Performance Kayaking**” was not decided upon hastily or arbitrarily. The holistic methodology refers to the simple fact that no one component of paddling works in isolation, meaning that: “The more one does correctly, the more will ultimately be correct”, and vice versa.

The words technical and structural are utilized in unison due to the fact that kayaking requires more than just good technique, but rather the excellent paddler must also develop a sound posture or foundation. The author is also of the opinion that an over-reliance on biomechanical principles has countless limitations and may even be counter-productive! We are fooling ourselves to believe that this alone is the “holy grail” to success in sport.

Upon completion, this book will sequentially progress through various factors and aspects related to holistic technical, structural and pedagogical coaching practices in the following order:

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It is natural to have an apprehension or fear with respect to what we do not fully understand. Although many coaches agree with these methods, it is unfortunate that others without a factual understanding refer to these philosophies as “Old School”. In all my years involved in this great sport, I have never come across anyone who takes such a progressive, dynamic, and forward-thinking approach as does Dr. Imre Kemecsey! He was, and is, a bona fide trailblazer years ahead of his time!

In précis, the bottom line is how can we assist our athletes to improve upon their times or speed? My answer to this question is to ask ourselves to truly adopt an athlete centered and open-minded philosophy whereby we empower our athletes, and let them decide for themselves whether these concepts have credence. Based upon my experiences, the results will dramatically speak for themselves.

Stay tuned within the next few months for a copy of “THE KAYAK COACHES BIBLE”!

The Kayak Coaches Bible

An Alternative Holistic, Technical, Structural and Pedagogical
Approach to High Performance Kayaking



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Preface – “Paddles Up, Take it Away!”

As an athlete, coach, personal trainer, and teacher, I have been involved at various levels in the extraordinary sports of Flatwater and Surfski kayaking for approximately 20 years. Kayaking is a sport that I have developed a great passion for, and I am extremely eager to share my thoughts and ideas in writing. It should be noted that the subsequent concepts that I intend to divulge are controversial theories which have been developed primarily by trial and error in consultation with Dr. Imre Kemecey*. Perhaps it will be possible at a future date to scientifically prove many of these theories. Nevertheless, at this point in time I challenge any potential detractors to disprove these theories!

Over the years, I have read many articles and sport science publications that biomechanically attempt to fully analyze and uncover the technical intricacies involved in enhancing performance for a specific sport. Although science obviously has, and continues to play a major role in going faster, flying higher and being stronger (The Olympic Motto - Citius, Altius, Fortius), I believe that an over-reliance on biomechanical principles has countless limitations and may even be counter-productive! I sincerely trust that I am not committing treason based on what I am about to declare, however, theoretical factors may play an equally important role in harmony with empirical factors! Critical analysis of levers, forces, angles, and percentages can be useful in a laboratory setting, and may even be useful for the athlete at times. Nevertheless, we are fooling ourselves to believe that this alone is the “holy grail” to success in sport. In terms of published literature, it has for the most part been person after person saying the same thing in a slightly different way (“Nothing New!!!”). We don’t need to hear about “rotation”, “sitting up” or “using the large muscles in the back” for the umpteenth time! There is so much more to kayaking than superficial and quite obvious biomechanical tips. This method of coaching alone does not do this great sport justice, and has the potential to inhibit an athlete’s ability to “step forward” to the next level!

It is a normal behaviour to refute what cannot be easily quantified in an objective manner. It is also natural to have an apprehension or fear with respect to what we do not fully understand. Furthermore, I should mention that I have conversed with many coaches that agree with these pedagogical methods, however, it is unfortunate that others without a factual understanding refer to these philosophies as “Old School”. In all my years involved in this great sport, I have never come across anyone who takes such a progressive, dynamic, and forward-thinking approach as does Dr. Imre Kemecey! He was, and is, a bona fide trailblazer years ahead of his time!

The following information will most probably seem extremely unorthodox and foreign to many who try to master these technical and structural aspects of kayaking. For some, various mental pictures will be quite easy to grasp, while for others this can be quite a challenge. Ultimately, however, if athletes and coaches embrace these concepts and persevere, I believe that in time substantial gains are inevitable, despite the potential for temporary setbacks.

In précis, the bottom line is how can we assist our athletes to improve upon their times or speed? My answer to this question is to ask ourselves to truly adopt an athlete centered and open-minded philosophy whereby we empower our athletes, and let them

decide for themselves whether these concepts have credence. Based upon my experiences, the results will dramatically speak for themselves. As the great Albert Einstein once said, “If at first, the idea is not absurd, then there is no hope for it”!

*Dr. Imre Kemecey – Master Coach, and Olympic Silver Medallist

Chapter 1

Development of a Kayaking Philosophy

For the past ten years or so, I have contemplated writing a manual with respect to coaching high performance kayaking to elite and emerging athletes. Up until very recently I lacked the discipline and drive to actually turn this desire into action. In hindsight, I must say I am pleased I waited. Over the past ten years in particular, I have had the opportunity to further reflect and conceptualize for myself how to go about completing this arduous task. Initially, I thought about writing a book on the subject of kayaking in general, however, after much contemplation, I remembered a quote I once heard: “A book about everything is a book about nothing“. I am not sure I totally agree with this statement, nevertheless, I would far rather write in a precise manner about a small number of focused topics, as opposed to writing vaguely about a multitude of topics. Even the tagline for this book, “***An Alternative Holistic, Technical, Structural and Pedagogical Approach to High Performance Kayaking***” was not decided upon hastily or arbitrarily. The holistic methodology refers to the simple fact that no one component of paddling works in isolation, meaning that: “The more one does correctly, the more will ultimately be correct”, and vice versa. The words technical and structural are utilized in unison due to the fact that kayaking requires more than just good technique, but rather the excellent paddler must also develop a “sound” posture as a musician would, no pun intended!

At this point in time, I am extremely excited about sharing my knowledge of this great sport, which is based on a combination of my experiences, education, expertise and employment choices over the past two decades.

Chapter 2

“The Ten Commandments”

At the outset of developing a framework for this book, I questioned whether I should include a chapter on Imre Kemecey’s “Ten Commandments of Kayaking”. The Ten Commandments have been around for quite some time, and they are definitely **not** new. Many people have become familiar with these over the past twenty years or so. Nevertheless, upon further consideration, I realized that they are still an important step in how newer paddling exercises and structures have evolved. It is interesting to note that the Ten Commandments were never meant to be an all-encompassing kayak technique, although they have been used as such by some coaches and athletes. Rather, they are simply exercises, and when practiced sufficiently, they can assist in contributing to a solid autonomous paddling structure.

The Ten Commandments of Kayaking are as follows:

1. Bent shaft
2. Sooner body rotation
3. Lock the blade at the catch
4. Put more body weight onto the paddle at the catch and during the stroke
5. Powerful support in the water before recovery
6. Push your shoulder forward from this support
7. Don’t sit down during the air work
8. Your body is suspended together with the boat
9. Try to walk on the surface with your paddle
10. There is no waterfall behind you

Chapter 3

Bouncing, Snaking, and Rocking Motions - Reasons and Remedies

In Chapter 1, we examined how the kayak is capable of motion upon three planes (this does not include displacement). For the sake of review, these planes are the **sagittal** (forwards and backwards), **transverse** (rotational), and **frontal** or **coronal** (sideways) planes. For simplicities sake, and as a reminder, we will refer to them as bouncing, snaking and rocking motions respectively. It is important to note that no matter how hard we try, it is virtually impossible to eliminate these motions entirely; however, it is definitely realistic to minimize these “unwanted” motions to a great extent through the practice of “productive motion remedies”. As coaches and athletes, it is extremely important to teach early on, that comprehension of Newton’s Third Law of Motion is critical to ensuring success (For every action there is an equal and opposite reaction). Just think about how a basketball or a football will push back against your hand if you press it into the water! As kayakers, however, we must be aware of the fact that we are paddling a kayak, not an aircraft carrier! A 12kg K1 for example, will respond very unfavourably if one just hacks away at the water like a lumberjack with no regard for the unintended consequences (no offense to lumberjacks)!

Chapter 4

The Tensegrity (Tensional Integrity) Concept

The concept of ***Tensegrity*** or tensional integrity introduces the kayaker to an inter-connection and inter-reliance of relevant anatomy through the usage of agonist (prime mover) and antagonist (stabilizer) muscle groups, in relation to how they pull on the skeleton. In order to create movement, the body needs to create ***tension*** (pull) through the muscles and tendons, as well as ***compression*** (push) through the bones. Neither can exist in isolation! Ultimately, if these tensions and compressions are in equilibrium, the tensions will meet at a compression point and “balance each other out”, thus generating momentum. Although this may seem like a very complicated abstract skill to master, it can be taught to athletes through the pedagogical concept of the five “***Power Circles***”, which will be discussed in much greater depth in Chapter 5.

The Tensegrity Concept can be useful for kayakers as a significant means for envisioning and comprehending the inter-relationship between the body, boat, paddle, and the water. By its very nature, flatwater kayaking necessitates the athlete to maintain stability on an unstable platform (the kayak), while alternating strokes on opposite sides. Furthermore, the athlete must also apply maximum force to the paddle at a maximum stroke rate. This is most definitely no easy feat, due to the fact that the athlete must deal with mental, technical, tactical, physiological, and environmental factors simultaneously.

Chapter 5

The Five Power Circles

Since learning about and practicing the Five Power Circles, I have always felt that these mental images are the holistic backbone of kayak structure and technique. This relatively new way of thinking is the “future of paddling”, and has the ability to create a solid foundation from which to improve upon. What I find so great and exciting about the power circles is that there is very little need to critically analyze athletes, and by its very nature, the vast majority of coaching feedback will be in the form of positive reinforcement. The Five Power Circles developed by Dr. Imre Kemecey actually start out very simply and compound upon one another in order of difficulty. Ultimately, if one is motivated to learn these beneficial circles, it will be possible eventually to perform all five power circles simultaneously. The final culmination and balance of all the power circles tensions and compressions working in unison is called the “**Wishbone Effect**”. At this point, whether the athlete knows it or not, he or she will be employing many of the principles of counterbalancing and tensegrity (tensional integrity)!

As coaches it is important to keep the following concepts in mind while teaching the power circles:

1. The goal is to create a well balanced structure where the tensions meeting at a compression point balance each other out.
2. Compression occurs when at least two tensions converge (Power Circle #5 is a great example of this).

3. Power Circles one, two, and three deal primarily with dynamic body positions, whereas power circles four and five incorporate a greater connection between the body and the boat.
4. All Power Circles have a power center that changes slightly throughout the stroke. Furthermore, all Power Circles have a common power center.

It is important to note that it is unnecessary to talk to the athlete about the “final form” of the kayak structure. Rather, try to focus on sensory learning methods, which will help all paddlers regardless of discipline (Flatwater or Surfski etc.).

- Power Circles can and should be viewed as a series of forces. There are short descriptions below that can help the athlete to focus on the crucial aspects of the Power Circles. Pictures are also given for each Power Circle to assist athletes with feeling the transmission of forces or “power lines”. More detailed descriptions have also been included.

Chapter 6

Complementary Structural & Technical Concepts

Assuming that the athlete is at a level where he or she has grasped many of the ideas that have been discussed in previous chapters, it will subsequently be valuable to further refine, build upon, and solidify these ideas through the usage of complementary structural and technical concepts. Many of the following paragraphs in this chapter pertain to truly “holistic” kayak structure and technique. At times I will compare and contrast various common mental pictures or metaphors with the water, boat, paddle, and/or body in order to create an all-encompassing vision guided by positive reinforcement/affirmations. Furthermore, I have made an effort to order the following interdependent concepts based on the premise that the kayak stroke is initiated from the “bottom up”.

Chapter 7

Skills & Drills

The following Skills & Drills chapter focuses on various significant practical concepts that are not necessarily directly related, but rather indirectly related to creating a holistic technical and structural kayaking framework. The Skills and Drills that I have outlined below will serve well to further supplement and build upon previous ideas. Please keep in mind that some drills may not be necessary for some paddlers, however, based on the needs of a particular athlete, the coach can make an informed decision as to which drill(s) should take precedence.

Over the many years I have trained in this sport with Dr. Imre Kemecey, he devised two simple but extremely effective pedagogical methods for teaching athletes to harmoniously combine different technical concepts. The **Blender** and **Scales Programs** work in the following manner. As an example, the Blender Program can be used to

combine two different power circles together (e.g. power circle #1 two strokes, power circle #2 two strokes, and then back to power circle #1 and so forth). Once the paddler can perform the Blender Program proficiently, he or she can begin to practice the Scales Program. The Scales Program is a limitless program of different combinations where one goes up the scales and possibly back down again; much like a musician would when he or she is practicing (e.g. two strokes #1, two strokes #3, two strokes #5, two strokes #3, two strokes #1). Each component of the blender and scales programs should be done for at least two strokes (left and right sides), before proceeding to the next concept, so as to avoid any miniscule potential bilateral deficit (a muscular imbalance). The blender and scales programs are not only a physical exercise, but they are also a mental exercise. They are also a fantastic way to bridge the gap between various power circles and complementary structural & technical concepts.

In speaking with several other athletes that have decided to supplement their training using these methods, we have debated with respect to what is the best distance to work on various combinations. It has been determined (with ample room for flexibility) that any less than 500 meters is too short, and one cannot get into a good “rhythm”, as well, above 1000 meters boredom may set in, and it will be difficult to maintain concentration. It is therefore important to vary the focus keeping these principles in mind.

Chapter 8

Paddling Team Boats (K-2 & K-4)

Kayaking is one of a limited number of sports that can be considered both an individual and team sport. Flexibility, the opportunity for variation, and parallel skill development within this great sport are aspects that have always created a tremendous amount of excitement and gratification for me!

Although paddling team boats is generally more similar than dissimilar compared to paddling singles or K-1s, there are still many differences that I would like to digress upon at this juncture. It should be noted that paddling a team boat requires a very different skill set. Furthermore, it is important not to assume or take for granted that technical and structural ideas that are desired or appropriate for singles and K-1s may not always be appropriate or applicable with respect to paddling team boats.

Perhaps the most significant and obvious factor regarding team boats is that one cannot just do what they want anymore, but rather all partners need to adapt and compromise with each other. I have seen on numerous occasions how team boats comprised of slower paddlers in singles and K-1's have been able to win against faster paddlers. Did these winning boats all of a sudden get faster in a matter of minutes? No, of course not! Did the faster **team** boat work better as a **team**? Perhaps... Nevertheless, this observation brings me to an obvious question: How is this possible?