

Alpine Model for USSA Training Systems

(trainingsystems.ussa.org)

(Presenters of the Alpine Training Systems, please use this document as background information to further enhance your presentations to coaches, athletes and parents)

Introduction:

The purpose of this document is to provide USSA members with an alpine model for long term athlete development, what USSA calls the USSA Training Systems. For example, there will be an Alpine Training System, a Nordic Training System, etc. This model can be used as a guideline to achieve an integrated system for athlete development. The model will focus on age appropriate content and stages of development, including areas of emphasis within the relevant sport domains, as well as finally a competition system that optimizes training and competition windows. The ultimate goal is to maximize every USSA member's athletic potential and sport experience, ultimately producing winners at the highest level of international competition.

The concepts used to create the model for long term athlete development are listed below. The key materials that support these concepts are the Canadian Sport for Life model, the USSA Alpine M.A.P., the latest in sport science research from around the world, and other contemporary best practices. The material below is a summary of many of the concepts used to create the USSA Training Systems.

The 10-Year Rule

It takes years of organized practice to become an expert performer. The research shows this is true of developing an elite athlete in any sport that requires a high level of skill. This is sometimes referred to as the '10 year – 10,000-hour rule' relating to the need to practice for three hours a day for 10 years. In an evolved sport such as alpine skiing, the 10-year model provides a realistic guideline on the volume of training that is necessary to achieve the elite level. The role of deliberate play is crucial to long-term success, and this is different than just *playing* a sport for 10 years. Research confirms that it takes an enormous amount of training to reach the elite level and for this reason it must remain fun and one must have deep passion and commitment to sustain the work required. There are other studies which support the 10,000 hours model, but describe it as a total of 10,000 hours involving a broad variety of physical activities, as it's almost impossible to ski (alpine example) the number of hours required. Coaches are urged to explore the 10,000 hour concept in greater detail to fully understand the implications of the concept.

Stages of Development and Areas of Emphasis

There are athletes that have more capacity than others at certain stages of their development. This can lead to faster progress of development and often is referred to as talent. For example, Mozart composing music at age 12 or Lara Gut winning World Cup and World Championship medals at age 17. In order to address this phenomenal talent and ensure they are not slowed in the system, we must introduce the concept of mastering areas of emphasis at each stage of development. These areas will evolve as sport requirements, equipment, and training techniques evolve, therefore expertise and evaluation are a critical aspect for the use of areas of emphasis as development tools. Was Mozart born a genius, a talent beyond the norm, or did he practice for 10 years and 10,000 ours? History says he had certain genetic gifts, but practice made all the difference.

The Fundamentals

All sports begin with basic fundamental movements and core sports skills. The A,B,C's of movement skills include Agility, Balance, and Coordination, while core sports skills include running, jumping, skating and throwing. It has been shown that children who have a strong, broad-based foundation in the fundamental movements and sports skills from a variety of sports, increase their potential for future success in sports. Whether this is confidence to lead a healthy, active life in sport, or to become an elite athlete, this strong foundation in the Fundamentals will help children reach their full potential. Whether one is on the US Ski Team or a USA Hockey player, all were multi-sport athletes when they were young.

Best Practices

There are sports throughout the world that have undergone the same critical self-examination as USSA is doing, reviewing every aspect of their sport including their athlete development programs. What can we learn from their sport "overhauls"? Two American sports have recently made dramatic changes in their governing philosophies and developmental structures over the last two years; USA Hockey and US Soccer.

USA Hockey: (excerpts from a presentation to the Utah Athletic Foundation, SLC, 9/25/09)

"Where we are now...Same as most sports"

- "Young athletes under-train, over-compete.
- Adult competition superimposed on young adults
- Training in early years focuses on outcomes (winning) rather than processes (optimal training)
- Chronological age dominates training rather than biological age
- The critical or sensitive periods of accelerated adaptation to training are not utilized
- Under development between 6-16 yrs can't be fully overcome
- The best coaches are encouraged to work at the Elite level

- Limited coaching education provided to those working at the youngest age groups
- Parent's education is neglected with regards to LTAD
- Lack of integration of sport science, sport medicine and sport specific tech/tact activities"

"Youth Hockey Facts:

- Retention of critical youth players has been in decline since 2000
- 20%+ only play 1 season before dropping out (MA 40%)
- 43% of players drop out by age 9
- 60% of players drop out before 11-12
- In a game: (10 and under) 1.75min of puck time"

"**CHANGE** – AMERICAN DEVELOPMENT MODEL (ADM)

- Mission: Get more American kids to play, love and excel in hockey
- New approach / philosophy towards improvement
- Full sport system alignment and integration
- PLAY: introduce skills, athleticism, friendships begin, age appropriate training / practice, fun
- LOVE: develop skills, athleticism, friendships, age appropriate training, practice, fun
- EXCEL: focus, prioritize hockey among activities, friendships, competition becomes important, mastery of skills, maintain the fun!
- NEW PLAN: introduce a better structure, provide hands on assistance, incentivize participation, educate-educate-educate
- **Example:** 10 and under – Squirts: motor coordination, learning fundamental sport skills, play multiple sports: 25% hockey, 25% fitness through sport, 50% other sports. Off-Ice training: focus on athleticism & hockey skills, small area games = decision making skills & fun. Divide players into 2 halves: top half, bottom half, 70/30 training to games ratio, 6 month season, increase puck touches / participation / development
- **HIGH PERFORMANCE CLUBS:** 180+ clubs/teams playing Tier 1 at U16. Goal: like minded in youth hockey development, strong desire to help produce elite players, partner in growing the game, retention, age specific/appropriate dev & training"

US Soccer: (excerpts from a presentation to the Utah Athletic Foundation, SLC, 9/25/09)

"Where are we now – deficient in four key areas:

- Players trailed international counterparts
- Coaches trailed international counterparts
- Professional league was not as developed
- US did not possess as strong of a soccer culture"

Focus: Zone 1 (age 6-12)

- 1 of every 10 boys is playing (1,364,493)
- Participation – extremely limited 1X/every 2.5 weeks
- Introduced to the sport by: Parents (46%), Sibling (18%), Friend (16%)
- #/Times played soccer per yr: 21-50 times 30%
- #/Times played organized soccer per yr: 21-50 times 28%
- 10,000 hours/10 yrs would mean 20 hrs per week
- English academy players: Elite – age 12-3,000hrs, 14-5,000, 16-7,000
- Most Americans – soccer represents 3 hrs per week
- 9-12 yrs old: Elite European 3,250 hrs, Avid US 1,600 hrs
- Too many games, all about results, all about TEAM,
- Not enough unstructured play. Games are managed. Constant stoppages. Constant verbal instruction from sidelines (coach & parents), too many substitutes
- Too much emphasis on winning vs. developing a passion for the game/fundamentals"

"Solution – short term: focus on player and coach development: focus on improving in all four of the major components of a player:

- Technically
- Tactically
- Physically
- Mentally
- Free play/practice is a driver for success
- Quality of training environment is all about quality of coach
- US Soccer Best Practices outlines: # of games, periods of rest, amount of travel, participation in tournaments, participation in Reg/Nat'l competitions
- **EXAMPLE - U-12:** games 30 max. (3:1 training to game ratio), play other sports, round robin turn. Only, state championships, small-sided. **Training:** % structured – moderate - % unstructured – moderate, technical – high, tactical – moderate (1v1, 1v2, 6v6,7v7) begin assigning positions, speed & agility. **Game Environment:** 30 max. (3:1 ratio), # of players 9v9, players per team 11, game length: 2x35min. no re-entry/half, goal keeper – share time, field size 55-60X8-85, size of ball 4
- **Final goal:** what kind of soccer players do you want to produce? Imaginative, Creative, Technically "comfortable," Tactical. Age appropriate understanding, Enjoyment = longevity."

Specialization

Sports can be classified as either early or late specialization sports based on the age that an athlete can become competitive at the highest level in the sport. In this case, alpine would be classified as both an early and late specialization sport because athletes reach the elite level after puberty. However, an early introduction to the sport is critical for an athletes' development. The balance learned from skiing, edging, gliding, and

jumping is best introduced at an early age to have the greatest effect. The age for an elite female alpine athlete is 17+ and for an elite male alpine athlete it is 19+.

A broad base of motor skills is a better foundation for elite sport development in late specialization sports*. Specialization at an early age limits the children from acquiring a broad spectrum of athletic movements and skills that may limit or put a cap on their overall long term athletic potential. When players specialize too early they can create imbalances in musculature, increase the potential for burn out and cap their athletic potential by not developing a broad base of athletic movement skills.

*The most important point is that alpine skiing requires early introduction to skiing. With all sports, there are examples of athletes in our sport who have specialized early and late (after puberty) and have gone on to be World Champions. Nonetheless, recent research confirms that approximately 75% of all elite, world class athletes are late matures.

Developmental Age (or Biological age)

This refers to the maturity of an athlete's muscle and ligament growth and is not necessary a direct function of their chronological age. For example, a 16 year old male athlete may have well-developed musculature compared to a peer who has relatively little development and is still growing vertically. Often there can be a five to six year spread in physiological development for males 13-14 years old. Also, there are notably differences between genders that must be considered, women mature earlier than men.

Windows of Trainability

There are times in an athletes' development when they are physically, emotionally or mentally more inclined to have success with certain types of training. Targeting training windows to optimize training effect is a critical component of athlete development. This requires targeting periods of time in the athletes development with age or competency based training content. For example, in the area of physical training there are different times when the athlete will respond to training in suppleness, skill, stamina, strength, and speed. In sport specific training, there are times to address technical and tactical components. (See accompanying diagrams in the Training Systems presentation)

Physical, Mental, Cognitive, and Emotional Development

These are components of human development that are very individual. These individual growth and development areas must be considered to affectively build out programming for an athlete. No one develops at the same rate, in fact, one can experience rapid growth and periods of very little development.

Periodization and Planning

Periodization is the practice of appropriate time intervals for preparation, competition, rest and recovery. Athletes at different stages of their development require different training plans to optimize their development through their growth and maturation. The

science behind periodization has been used on the international stage to great success in many, many sports. Unfortunately, sometimes a sport's traditions are placed in front of the athlete's needs when planning a periodization schedule. This has an impact on maximizing the player's development. For example, on-snow training must happen at certain times to ensure good training conditions regardless of how it fits into the general periodization plan. Creating an annual development plan featuring all the relevant domains is critical to maintaining a long term perspective on an athlete's pace and progress in one's sport.

Calendar Planning for Competition

The amount of competition that is built into an athlete's plan is a critical component in that athlete's development. Competition is important to validate training and to motivate the athlete, in addition to providing experience to improve as a competitor. The challenge is to set up a calendar that provides appropriate time to train, rest and compete based on where the athlete is in their stage of development. The competition system ultimately validates an athlete achievement within a sport and is critical for advancement.

System Alignment and Integration

An athlete competing in alpine skiing is affiliated with many different groups and organizations during their development. These groups range from family, youth organization, club, school, states/division, region, national association and they all exist to provide advice and programming for athlete development. With many organizations, it is critical that each entity is integrated into a system that works together on behalf of the athlete. The health and scope of a sport is determined by its ability to provide sustained quality training and competition programs throughout the development pipeline.

Continuous Improvement

Alpine skiing is a life-long sport. An athlete can gain skills as a competitor and these skills can be used for life-long fitness and enjoyment in the sport. For the competitive athlete, Masters-level racing exists to satisfy the needs of all adult ages.

Talent Identification

Talent identification has never been a well-used method for selection in our alpine skiing culture. Alpine skiing in the U.S. has historically achieved international athletic excellence based on sheer numbers, based on objective measures for athlete selection. The number of USSA athletes that currently possess FIS racing licenses is more than any nation in the World, except Italy. In other nations early selections and system alignment have contributed to the best athlete's being exposed to the best coaches. For the future, USSA must integrate the latest results from sport science research that suggests that through a carefully designed battery of tests, athletes will learn more about their genetic gifts, as well as other physical and mental traits that will enhance their sport skill development, or may point them in a different direction. USSA must

maximize the talent and commitment that all athletes bring to the team, sport science can help significantly.

Sport Culture

The culture of a sport has a dramatic influence on its resources, expertise, and athlete motivation. In Austria, alpine skiing is the number one sport, therefore the best athletes and the most experienced coaches are motivated to participate. The University of Salzburg and the University of Innsbruck are dedicating research for development, while the government supports the alpine system with annual funding at all levels of the pipeline. In the USA, alpine has far less exposure and alpine is solely dependent on donors, sponsors and individual families for resources. Ultimately our athletic success in international competition is a function of our leadership and expertise as administrators, coaches, and officials in our privately funded sport.