

Cross Country Coaching Manual

Life Ready Through Sport





The LA84 Foundation (formerly known as the Amateur Athletic Foundation of Los Angeles) is the private, nonprofit institution created by the Los Angeles Olympic Organizing Committee to manage Southern California's share of the surplus from the 1984 Los Angeles Olympic Games. The LA84 Foundation promotes youth sports opportunities in Southern California and a better understanding of the role sport and its impact on people's lives. Since inception, the Foundation has invested more than \$164 million in youth sports programming by awarding grants to youth sports organizations, initiating sports and coaching education programs and operating the world's premier sports library.

The goal of the LA84 Foundation is to be an innovator in youth sports and coaching, and to increase opportunities for achieving athletic excellence at every level. The Foundation grants financial assistance to organizations providing youth sports opportunities, initiates and operates its own youth sports programs including Run For Fun, Summer Swim, Learn & Play Olympic Sports, and offers free coaching education workshops through the LA84 Foundation Coaching Program. This program provides men and women youth coaches with basic instruction in the philosophy and psychology of coaching young athletes. Information is also provided in the art of teaching, nutrition, general managerial skills necessary for coaching, and specific coaching techniques for particular sports.

For more information, call (323) 730-4600 or visit the LA84 Foundation Web site at www.LA84Foundation.org.

LA84 Foundation Cross Country Coaching Manual

Edited By

Edward Derse

Jacqueline Hansen, LA84 Foundation Officer, Coaching Education Program

Skip Stolley

Contributing Writers

Michele Bucchichio, San Gabriel High School, San Gabriel, CA

Ellen Coleman, R.D.

Ken Cronquist, Whittier Christian High School, Whittier, CA

Ed Derse, Los Angeles, CA

Bill Duley, Agoura High School, Agoura, CA

Joe Kelly, Peninsula High School, Palos Verdes, CA

Dennis McClananhan, Mt. Carmel High School, San Diego, CA

Tim O'Rourke, Arroyo High School, El Monte, CA

Ken Reeves, Nordhoff High School, Ojai, CA

Skip Stolley, Los Angeles, CA

George Varvas, Woodbridge High School, Irvine, CA

Design

James Robie Design Associates

Photography

Kirby Lee

Robert Miller

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LA84 Foundation

2141 West Adams Boulevard

Los Angeles, CA 90018

(323) 730-4618

www.aafila.org

“Then he turned into a tangle of trees and bushes where I couldn’t see him anymore, and I couldn’t see anybody, and I knew what the loneliness of the long-distance runner running across country felt like, realizing that as far as I was concerned this feeling was the only honesty and realness there was in the world and I knowing it would be no different ever, no matter what I felt at odd times, and no matter what anybody else tried to tell me.”

Alan Sillitoe, *The Loneliness of the Long Distance Runner*

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Chapter

A Philosophy for Coaching High School Athletes

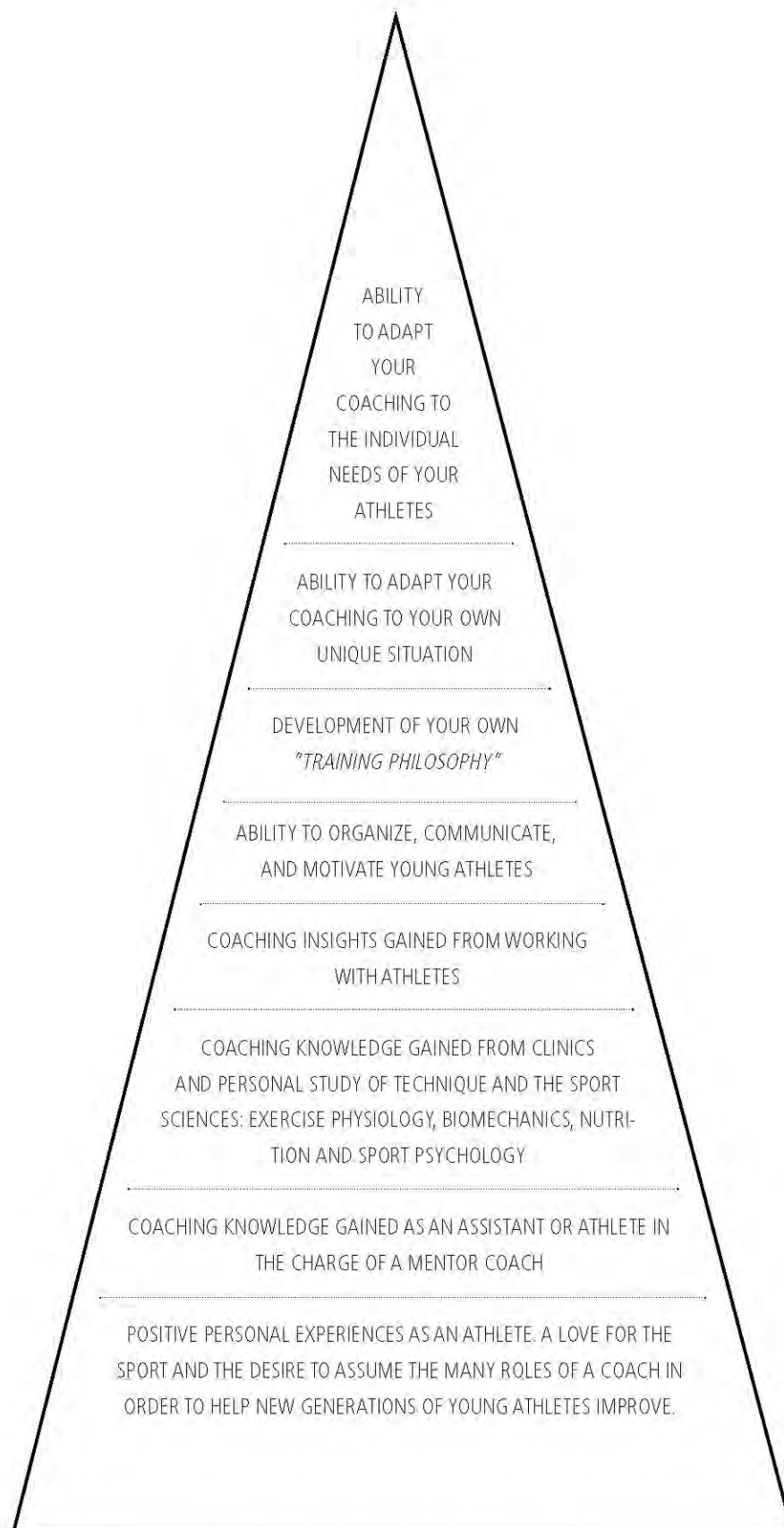
High school coaching may be the most special and important profession anyone can choose. This is not because sports are important, but, rather, because the young men and women who participate in high school sports are so valuable. As a coach, you have an opportunity to foster both their emotional and physical development. The path to coaching success begins with defining a philosophy to guide your efforts.

A Philosophy for Coaching Cross Country

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The Evolution of a Master Coach

The High School Coach, Someone Special

ATHLETES MEET SPORTS AT THE COACH

It is the *coach* who frames the sport experience for the athlete. A study of 10,000 high school athletes released in 1990 concluded that the quality of coaching has the greatest influence on whether participation in high school sports becomes a positive experience for the young athlete.

The collage of Cross Country events offers opportunities for athletic success to a wider variety of personalities, body types and natural athletic talent than any other sport. Combined with its dual offering of individual and team competition, no other sport can provide so much for so many. There are opportunities to develop physically, emotionally, and socially. There are opportunities to discover hidden talents, learn about oneself, and develop a new sense of competence and self-worth. There are opportunities to be part of a team while competing as an individual. There are lessons about life and reality. There is the motivation to pursue goals and objectives that most teenagers dismiss as being impossible. All these possibilities are woven into the unique fabric of sport. The responsibility of making them an intimate part of every young athlete's Cross Country experience rests squarely on the shoulders of the coach.

THE ROLE OF THE COACH

What exactly is the high school coach's role: recruiter, expert teacher, trainer, strategist, personnel manager, administrator, promoter, communications expert, diplomat, spokesperson, psychologist, impartial judge, disciplinarian, caring friend, counselor, parent substitute? To be a high school coach is to assume all of these diverse roles. For the coach, the greatest reward should not be the outcome of winning, but rather the process of training and competition that positively affects the personal development of young athletes. Great coaches use sport as a vehicle to enrich the lives and the futures of their athletes.

IT MATTERS WHETHER YOU WIN OR LOSE

While society often perceives winning as the most prized outcome of sport, *a single focus on winning by the coach can subordinate every other worthy outcome of an athlete's participation in sports.* There is nothing wrong with wanting to win, and given the choice, coaches would be nearly unanimous in choosing winning over the alternative. But there is a difference between being focused and being obsessed. Winning is just not the only important outcome of sport.

A Philosophy for Coaching Cross Country

Factors that Determine Who Wins and Who Loses

Coaches should recognize that two factors primarily determine whether an athlete or team wins a given competition:

1. How well the athlete and/or team performs in a particular competition.

Every individual and team is capable of a certain level of performance. How well the athletes exploit that capability in competition is the chief factor in winning. Anything less than one's best can open the door to defeat.

2. Scheduling.

As obvious as it may seem, the next greatest contributor to winning is competing against individuals or teams with less talent. Inferior competitors can, and sometimes do, upset superior ones, but the powerful role that scheduling plays in winning and losing cannot be disputed.

Once the schedule is set and the opponent is known, the most significant factor becomes "performance." When athletes or teams perform to the best of their capability against weaker opponents, victory usually results. This is not certain, for winning is often elusive. It is the uncertainty and mystery of the outcome that gives sport much of its intrigue and magic. Winning is a challenge.

At best, however, only 50 percent of the participants can be winners in any sport competition. In a sport like Cross Country, only one team among several and only one individual among many achieve victory. So, does everyone else then become losers? Is there no opportunity for achievement, fulfillment and fun without winning? Is winning really the ultimate goal of sport, or is there a more important objective and a more attainable goal?

WINNING VS. SUCCESS

The opportunity for success is available to everyone if it is defined as performing to one's capability, rather than focusing solely on the outcome of a given competition.

Teaching athletes to focus on success, rather than winning, nurtures the factors that ultimately lead to winning.

Success = Ability + Preparation + Effort + Will

Ability. Everyone has ability, but it isn't distributed equally or predictably. This applies to coaches as well as athletes.

Often ability is a gift of birth, but that doesn't guarantee any success. The challenge isn't to have ability, but to develop and use the ability we are given.

Preparation. We gain greater use of our abilities by investing in preparation. Only through the persistent and consistent process of preparation can raw talent be transformed into greater capability. In Cross Country, we call this preparation "training." Through proper training, athletes become faster, stronger, more skilled, knowledgeable, confident and mentally tough. But although developing greater capability is important, it is still no guarantee of success.

Effort. Developed ability realizes its value when expressed through the challenge of competition. That expression is accomplished when physical and mental effort summon every ounce of one's capability. Still, athletes often find themselves nearing the finish of their race exhausted, having given all they think possible, but needing to find even more. In sport we call this... crunch time!

Will. Crunch time is real, both in sport and life. It is that moment when you think you have given all you have, only to find out even more is required. Many athletic contests are won or lost at this moment. Some athletes are able to draw on an inner strength to summon greater effort than they know themselves to have. This is the use of one's will, the power to go back to one's personal reservoir again and again as needed.

When athletes and teams train hard to develop their ability, give their best effort in competition, and show the will to push themselves beyond self-imposed limits, they are successful.

Too often, coaches and athletes miss experiencing the pride and satisfaction of success because they are too focused on winning. More often, coaches and athletes fail to win because they first fail to become successes.

A Philosophy for Coaching Cross Country

BUILDING SUCCESS

Unlike winning, success can be experienced by every athlete every day. It doesn't come easily or immediately, however. Success requires that athletes be coached to develop some specific, personal attitudes. Six such attitudes have been identified by Robert Goodwin, Cross Country Coach at St. Lawrence University:

1. The desire to strive for excellence.
2. The realization that nothing of value can be achieved without hard work and dedication.
3. The desire to display self-confidence.
4. The desire to show one's ability in competition.
5. The desire to cooperate as part of a team.
6. The desire to have fun.

THE DESIRE TO HAVE FUN

The desire to have fun deserves special attention. Sports should be fun for both athletes and coaches. **The opportunity to have fun is consistently identified by students as the #1 incentive to participate in high school sports.** But the fun we refer to is not the "fool around" fun we see in our locker rooms, on the bus, or at team parties. It is the pride, satisfaction, and fulfillment a youngster experiences from improving his or her strength, speed, and skill after hours of training and practice. It is the thrill and exhilaration of setting a new personal best in competition. This is the fun that all athletes and coaches seek. It is the fun of feeling good about oneself.

When athletes experience this kind of fun, they become consumed with the desire to feel more...preferably as soon as possible. Developing this desire to have fun may be the most important attitude coaches can teach. When athletes are filled with the desire to have fun, they are likely to...

- Strive with all their hearts for excellence.
- Dedicate themselves to persistent and consistent hard training.
- Show the self-confidence to make the tough decisions and sacrifices it takes to train and compete at their best.
- Be anxious to show their ability in competition, free of fear or self-doubt.

- Gain personal strength from respecting, helping, and caring about their teammates.

So, What About Winning?

Where, then, should winning fit into your coaching philosophy? As noted earlier, nearly every coach would prefer to win every contest. Realistically, however, it is important for coaches to admit that it does not matter much whether or not our athletes win all those races. What *does* matter is that we win the battle to enhance the lives of our athletes through the experience of participating in Cross Country. For coaches, this is the most important win of all. This is the true measure of coaching success.

SHAPING YOUR ENVIRONMENT

Most of us believe that sports teach participants high ideals and admirable personal qualities such as pride, courage, confidence, and respect. Unfortunately, this is not always true. None of these ideals and attributes are inherent in sport. It is the coach who frames the experience of participating in sports within the environment he creates for his or her program. For every athlete who has experienced pride through sport, others have experienced relentless criticism and ridicule from their coaches. For every athlete who has gained courage from competition, others have been gripped by the fear of intense scrutiny and high expectations by their coaches. All too often, athletes develop attitudes of disrespect, hate, and vengeance for their opponents, officials, teammates, and coaches.

Sport is fertile ground for learning. Coaches, both good and bad, are effective teachers. Lessons learned are learned well. Consciously or unconsciously, the coach designs and controls his or her sport environment. Every coach is encouraged to invest significant time and effort in engineering an environment that nurtures pride, confidence, courage, respect, responsibility, trust, caring, leadership, and other attributes the coach believes to be important. These must be reflected and constantly reinforced in the attitude, words, actions, and behavior of the coach.

A Philosophy for Coaching Cross Country

SOME THOUGHTS ON BEING A GREAT COMMUNICATOR

Without question, the key to being a successful coach is the ability to communicate effectively. Communication is a two-way process between the sender and receiver. It takes on many forms, some overt and others subtle. Coaches communicate with their athletes by what they *say*, what they *write*, what they *do*, and how they *behave*. To communicate effectively, coaches must also receive communication from their athletes. In a word, *listen*.

Guidelines to Improve Your Communication Skills

- Understand that the burden of responsibility for any communication belongs to the *sender*, not the receiver.

If it is important enough for you to say or write to your athletes, it must be repeated, reinforced, and reviewed to be sure the message is understood. Communication must be an ongoing process, especially with high school athletes.

- Communicate with those “under” you as you would with those “above” you.

Some coaches are unaware that often they communicate with younger and/or lesser athletes in a condescending or demeaning fashion. Ask yourself if your choice of words, tone, and style of delivery reflects the attitude and respect you would like to receive in communication from your athletic director and principal.

- Communicate with your athletes regularly, consistently, and thoroughly.

Make communication easier by having at least one team meeting a week so your athletes come to anticipate and expect certain messages. Avoid just “talking at” your athletes. Ask for their questions and input.

- Instruct Constructively.

Too often, athletes are only told what they are doing wrong. It is more important, and far more effective, to tell them how to do it right by:

- Reinforcing the positive.
- Praising what your athletes do right, preparing them to be receptive to your next instruction.

- Explaining the mistake and how to correct it. Be specific and keep it short. Athletes can only process a limited amount of information at one time. Be patient and careful not to show any frustration.
- Reinforcing the positive. Sandwich further instruction between two positive comments to take the sting out of continued correction.

UNDERSTANDING MOTIVATION

Motivation is something that arises from inside an individual. Motivation cannot be given to someone; it has to be fed, nurtured, and tapped. The word *motivation* is derived from the word *motive*, which is the desire to fulfill a need. The primary need we all have is the need to feel worthy. Our sense of self-worth is enhanced most by feelings of competence, accomplishment, and acceptance. Simply put, we feel better about ourselves when we feel we are good at something. We will work hard to improve in areas where we believe we have the potential for success. The more effort we put into the process of improving, the more our feelings of increased competence enhance our feeling of self-worth. Accomplishments and recognition along the way reinforce our worthiness. We also measure our self-worth by the acceptance we get from others, especially the sense of “belonging” to a group of our peers.

The need to feel worthy is the single most powerful element of motivation. It should be easy to see why sports are a perfect vehicle for boosting an individual’s sense of self-esteem. However, since few can be champions, there is a danger of athletes equating self-worth with the ability to win in competition. The message for the coach is this: While you cannot make every one of your athletes feel gifted, you can make them all feel more competent. While you cannot make every one of your athletes feel a sense of great accomplishment, you can see that each feels some sense of real achievement. What you *can* guarantee is that every one of your athletes feels important and accepted. Don’t make them earn your acceptance. Accept them unconditionally. Let them know it is OK to make a mistake. If you allow athletes the security of having your time, energy, interest, belief, and trust, you will be amazed at the great things they will dare to do.

ADVICE TO HELP YOU SURVIVE AND PROSPER IN COACHING

- **Put your family first.** Coaching is so time-intensive that the only way you can be assured of having time with your family is to make time *for them* before you make time for anyone else.

A Philosophy for Coaching Cross Country

- **Expect success.** Visualize what you want to accomplish. Winners know what will happen...losers fear what might happen.
- **Take the lead.** Showcase the Cross Country program in your school and community. Fight for equitable funding. Take a cue from football and basketball and give Cross Country a chance to be a spectator sport by presenting your home meets as entertainment.
- **Project yourself.** Put your “stamp” on each of your athletes, assistant coaches, and on every phase of your program.
- **Surround yourself with good people.** You cannot coach a large group of athletes by yourself. To succeed in Cross Country, you must recruit and train assistant coaches who will adopt your philosophy, share your commitment, and join your quest for success. An assistant coach with a bad attitude can sabotage your entire program.
- **Know who your friends are.** Anyone in a leadership role is subject to the positive or negative influence of others. Identify those who can positively influence, your coaching career and make them your friends.
- **Cultivate an advocate.** Know that you have at least one influential and valued friend that you can trust and depend on in any situation.
- **Be true to your values.** It can be easy to compromise yourself in the quest to win. Say what you believe. Do what you say. Nothing is harder to earn and easier to lose than a good reputation.

— Adapted from Dr. Rick McQuire’s contribution to the
AAF Track & Field Coaching Manual

High School Sports as an Extended Classroom

Our schools have interscholastic sports programs because they provide students with unique learning experiences that are not offered in other parts of the school curriculum. Through participation in interscholastic sports, athletes improve strength, speed and endurance, and acquire the complex skills and poise needed to perform at their best in athletic competition.

Few educators have the opportunity to affect the lives of their students more than a coach. The best coaches use their practices and competitions as *extended classrooms*, and strive to inspire athletes to reach for their best both athletically and academically. High school students are young adults who look to their coaches for leadership, knowledge, instruction, and direction. Many lessons can be taught and learned through participation in competitive interscholastic sports, such as how to set goals, how to compete, how to take risks, how to deal with success and failure, and how to maintain emotional self-control. Important values and attitudes such as sacrifice, dedication, accountability, and self-confidence can be learned along with such virtues as good sportsmanship, teamwork, camaraderie, respect for opponents, mental toughness, and persistence in the face of adversity. Those experiences and character traits will lead young athletes toward successful, fulfilling lives long after their high school athletic careers are over.

The benefits that can be derived from participating in sports do not result from participation alone, however. *Research indicates it is the quality of adult leadership that determines whether youngsters have a good or bad experience in competitive sports.*

An effective high school coach will be an inspirational leader, a knowledgeable teacher, and an appropriate role model. More than just a teacher of skills and strategies, the high school coach is a significant adult force in the life of a student-athlete. You will have a great impact on the psychological growth and personal development of the athletes you coach. What you say to your athletes, and how you go about saying it, will have a great impact on your athletes' experiences in sport.

Developing a Coaching Philosophy

DETERMINING YOUR COACHING OBJECTIVES

The two most important considerations in developing a personal coaching philosophy are your coaching *objectives* and your coaching *style*. Your coaching objectives could include improving your win/loss record, winning your league title, placing among the top five teams at the CIF championships, showing significant individual and team improvement, making your program fun for your athletes, or teaching your athletes to compete well.

A Philosophy for Coaching Cross Country

High school coaches often believe their first responsibility is to produce winning teams. However, winning should not be the single measure of success for you or your athletes. An overemphasis on winning can cause negative responses in young athletes, such as anxiety, fear of failure, reduced self-esteem, and a loss of motivation. This is not to say that winning is not an important objective. Winning is important! But for high school sports to bring out the best in young athletes, *coaches must keep winning in proper perspective.*

Your coaching success should be defined and measured in a variety of ways other than your state ranking, win/loss record, or place in your league meet. The number of athletes you attract to your program, your athletes' enthusiasm for Cross Country, the improvement your team shows through the course of the season, and the amount of parental/community/school interest and support you generate for your program are equally important measures of success. Winning the majority of your meets does not necessarily mean you are a good leader and role model for your athletes. As a coach, your actions speak louder than your words, especially during competition. You must teach respect for the rules, your opponents, and the judgment and integrity of officials by the example of your behavior.

DEVELOPING AN EFFECTIVE COACHING STYLE

This brings us to the second part of your coaching philosophy: coaching style. Your coaching style reflects how you choose to lead and interact with your student-athletes. It affects how you motivate and discipline, and what role, if any, you permit your athletes to have in making decisions that affect them. There are authoritarian, cooperative, and passive coaching styles. Your style of coaching must fit your personality, but every coaching style is a somewhat different combination of these three approaches.

We encourage you to take some time to examine your coaching philosophy and consider the coaching style you wish to use to achieve your objectives. Here are some suggestions:

- Remember that your *athletes* should be the center of attention. Sports were not created to glorify coaches.
- The simple objective of coaching is to help athletes shorten the trial-and-error process of learning, and ease the trial-and-terror experiences of competing.

- When coaching, focus on the skills needed, a method to teach and demonstrate them, and drills to practice and master them.
- Integrity, credibility, and technical knowledge are the most important qualities of a good coach – in that order.
- Every athlete deserves to be addressed by first name and treated with dignity.
- Your coaching style must not isolate you from your athletes. You must have a forum for open communication or you will never be in touch with your athletes. Be willing to listen to them, hear criticism, and respond by acting rather than reacting.
- You cannot talk about winning without talking about losing. Is placing second or third, or not placing but recording a personal best, considered a failure? How do you want your athletes to finish races they lose? How do you want your team to behave after a tough loss? How do you expect your athletes to bounce back after performing poorly?
- Regardless of your coaching style, you need to command your athletes' attention and respect. And you need to communicate and motivate, and praise and discipline effectively in your role as a high school coach.

T L C : TEACH•LEARN•COMPETE

As a high school coach, every decision you make should be in the best interests of your athletes' physical, psychological, and social development. The philosophy advocated by the AAF is "TLC": teaching, learning, and competing.

Teaching represents what a coach provides student-athletes by way of instruction. The lessons a coach must teach include technical skills, positive attitudes about competition, the process of training, and effective tactics and strategies. A coach must also teach athletes emotional self-discipline, responsibility, self-esteem, and how to maintain poise by focusing on the things they can control. No less important are social values such as appropriate behavior, fair play, good sportsmanship, and the importance of working together to accomplish team goals and objectives.

A Philosophy for Coaching Cross Country

Learning is your athletes' acceptance of what you teach. Learning is greatly influenced by the atmosphere a coach creates in helping athletes reach for their best. Effective learning requires communication, motivation, feedback, cooperation, and purposeful training. A positive approach to practice and training that emphasizes skill development, fitness, teamwork, and fun will help to ensure that athletes' learning experiences are positive.

Competition is the essence of sport. Competitive skills are essential to prosper in a society where we compete for grades, spouses, jobs, and promotions to achieve success, happiness, and security. Cross Country is a sporting arena in which athletes demonstrate both their physical and competitive skills. Coaches should portray the adventure of athletic competition as an opportunity for success rather than failure.

Coaches must help athletes learn as much as possible from their competitive experiences, analyze what they do well and what they don't do well, and resume training with a new agenda and a renewed determination to improve. Coaches should emphasize that success in sports should be measured by each athlete's personal performance goals. Just because every Cross Country event has only one winner doesn't mean everyone else in that event is a loser. Competition should serve as a reference point for athletes to measure progress.

Sometimes the pressures of competition can result in athletes setting goals that are unattainable. Goals that are too high guarantee failure even when the athlete performs well. Coaches should help athletes set realistic goals.

MOTIVATING AND COMMUNICATING WITH YOUNG ATHLETES

Sport psychologists have learned that two of the most important needs of young athletes are the need to *have fun* and the need to *feel worthy*.

Certainly, it is easy to see when athletes have fun. They appear to be challenged, excited, stimulated, and focused. They express feelings of enjoyment, satisfaction, and enthusiasm.

Athletes also have a need to feel competent, worthy, and positive about themselves. Sports can be threatening to young athletes when they equate achievement with self-worth. As youngsters, we learn quickly that others judge our worth largely by our ability to achieve. To win is to be a success and to lose is to be a failure. This attitude causes tremendous anxiety in young athletes.

Social evaluation and expectations of others are also major causes of anxiety. Athletes become anxious when they are uncertain about whether or not they can meet the expectations of their coaches, parents, peers, or even themselves. The more uncertainty athletes have, and the more important they perceive the outcome to be, the greater their feelings of anxiety.

The very nature of sports involves an extensive evaluation of the skills of the participants. Any situation involving social evaluation of abilities that a youngster considers important can be threatening if he anticipates failing or receiving negative evaluations. Most youngsters place great value on athletic competence and are particularly sensitive to appraisal of their abilities by others. Mistakes and errors which are a natural part of the learning process can be misinterpreted as failure or incompetence. These competitive pressures can result in youngsters setting unrealistic standards of near-perfect execution, which virtually assures they will fail.

As a coach, you must help your athletes meet their needs to have fun by structuring their sport experience so it challenges and excites without being threatening. Motivated athletes have a strong desire to master skills and demonstrate their competence. Similarly, you can help athletes meet their need to feel worthy by creating situations where everyone can experience some degree of success. The continual process of achieving incremental goals that are challenging, yet attainable, provides motivation. When athletes experience a taste of success, it reinforces their feelings of mastery, competence, pride, and self-worth. This in turn stimulates their desire to pursue new levels of personal achievement.

HELPING ATHLETES REACH FOR THEIR BEST

The ability to teach, communicate and motivate athletes is the “art” of coaching. Teach your athletes to focus on things they can control: their own performance and readiness to compete. When athletes allow themselves to worry about their opponents, they misdirect their focus to things they cannot control and limit their ability to compete well. Athletes who tend to worry about performance must be taught to focus on “what” they want to do (skill or strategy execution), instead of “how” they are going to do. Athletes should also recognize that winning is sometimes sabotaged by external factors beyond their control, such as an oncoming cold, bad weather, or outright bad luck. Over time these things even out, and they will be the beneficiaries of such occurrences as often as they are the victims.

A Philosophy for Coaching Cross Country

Let your athletes know it is all right to make mistakes. Many young athletes fear making mistakes because they have been ridiculed or punished for making mistakes in the past. Coaches must create a supportive atmosphere in which athletes view making and correcting mistakes as a natural part of the learning process. Some athletes become so frustrated and angry at themselves when they make a mistake during competition that they lose their composure and perform far below their abilities. Teach your athletes that one of the things that separate champions from average athletes is the ability to let go of a mistake quickly and refocus on what needs to be done next.

Communicating is the most important thing you do. This fact cannot be overstated. Effective communication involves the explicit expression of instructions, expectations, goals, ideas, and feelings. Doing so enhances mutual understanding and is the first step in meeting the athlete's and coach's needs. Communication is a two-way street: both coach and athlete must listen and speak up to make it work.

As a coach, you must be credible in the eyes of your athletes in order to communicate with them. Your credibility is the perception of the trustworthiness of what you say and do. To establish and maintain it with your athletes, you must be knowledgeable about Cross Country, enthusiastic about coaching well, and consistent and positive in the way you deal with them.

A positive coaching attitude projects your desire to understand your athletes, accept them for who they are, and treat them with respect and affection. It requires refined listening, clear speaking, and the ability to give feedback and constructive criticism in a nonpersonal and instructive manner. A positive approach is characterized by the liberal use of praise, encouragement, and positive reinforcement. Constant criticism, sarcasm, or yelling at your athletes will increase their anxiety over making mistakes, decrease their senses of self-worth, and discourage them from continued participation.

Another important component of a positive approach is empathy. It is not the same as sympathy. Empathy is being aware of the feelings and emotions of your athletes. Coaches who are empathetic listen to their athletes and try to understand what is going on in their lives outside of athletics.

Praise must be sincere. When coaches are not sincere, they risk losing the respect of their athletes. It means little for athletes to hear “good job” when in fact they know they have not done a good job. If the athlete or team has not performed well, the coach should be honest and acknowledge the fact that they did not perform to their potential. However, athletes should also be complimented for things they do well. Remember to praise deserving efforts, not just final outcomes.

Attitude is the key to success. Let your athletes know that champions expect to do well. They believe they will succeed and they recognize the important role that hard work and sacrifice plays in the quest for athletic excellence. Champions focus on goals and how to achieve them. They don’t surrender their goals easily. They identify their areas of weakness and work hard to eliminate them.

Athletes should be taught that the most important kind of success resides in their personal improvement, giving their maximum effort, being willing to take risks, and striving to do their best.

If you can impress on your athletes that they are never losers when they give their best effort, you endow them with a precious gift that will see them through many of life’s most difficult endeavors.

FINAL THOUGHTS

All of the athletes you coach are unique and special. They range from 13-year-old boys and girls to 18-year-old young men and women.

They come to your program with different abilities, skill levels, and personalities. They all have different backgrounds, attitudes, expectations, and needs. One of the greatest challenges in coaching a sport like Cross Country, which involves working with a large number of athletes, is being sensitive to individual differences and striving to make each athlete feel valued and important.

A Philosophy for Coaching Cross Country

Finally, whether you are a full-time faculty member or a nonclassroom coach, try to make yourself a part of your high school community. Get to know your principal, front-office staff, and fellow coaches. Attend and ask to be part of any pep rallies or assembly programs during your season. Write to your athletes' teachers and tell them about the objectives you have for your program. Invite them to attend your meets and let them know you are concerned about your athletes' performance in the classroom as well as on the track. The coach who gets involved in school is sure to receive greater support for the Cross Country program from his or her fellow coaches, faculty, support staff, and school administration.

THE USOC COACHING CREED FOR YOUTH SPORTS

1. ESTABLISH THE WELL-BEING OF YOUR ATHLETES AS YOUR #1 GOAL.
2. USE YOUR SPORT TO TEACH YOUNG ATHLETES THAT VICTORY AND ATHLETIC ACHIEVEMENT ARE MEANINGFUL ONLY IF ACHIEVED IN A FAIR AND SPORTSMANLIKE MANNER.
3. TEACH YOUNG ATHLETES BY EXAMPLE TO RESPECT THEIR OPPONENTS, THE RULES OF THE SPORT, AND THE ROLE AND JUDGEMENT OF OFFICIALS.
4. DEVELOP THE COMPETITIVE SPIRIT OF YOUR ATHLETES BY ENCOURAGING THEM TO "PLAY TO WIN." BUT REMEMBER YOUNG ATHLETES SHOULD DERIVE PRIMARY SATISFACTION FROM THE EXPERIENCE OF PLAYING, IMPROVING, AND ATTAINING PERSONAL GOALS WHICH SHOULD NOT BE LIMITED TO WINNING.
5. BE REASONABLE WHEN SCHEDULING PRACTICES AND COMPETITIONS. YOUNG ATHLETES NEED SOME TIME TO BE ABLE TO ENJOY OTHER WORTHWHILE ACTIVITIES AND INTERESTS.
6. BE SURE YOUR EQUIPMENT AND FACILITIES MEET SAFETY STANDARDS APPROPRIATE FOR THE AGE AND ABILITY LEVEL OF YOUR ATHLETES.
7. NEVER YELL AT YOUR ATHLETES FOR LOSING OR MAKING A MISTAKE. YOUNG ATHLETES SHOULD BE ABLE TO PARTICIPATE IN SPORTS WITHOUT FEAR OF FAILURE OR RIDICULE.
8. REMEMBER THAT YOUNG ATHLETES THRIVE ON ENTHUSIASM AND ENCOURAGEMENT. BE POSITIVE AND GENEROUS WITH YOUR PRAISE.
9. AVOID OVER-PLAYING YOUR MOST TALENTED ATHLETES. ALL YOUR ATHLETES NEED PLAYING TIME, OR EXPERIENCE IN COMPETITION, TO BE ABLE TO DEVELOP.
10. ALWAYS FOLLOW A PHYSICIAN'S ADVICE WHEN DECIDING WHEN INJURED ATHLETES ARE READY TO RESUME PRACTICE AND COMPETITION.
11. GET TO KNOW YOUR ATHLETES' PARENTS AND ENCOURAGE THEM TO BECOME SUPPORTIVE VOLUNTEERS FOR YOUR PROGRAM. EDUCATE PARENTS AND VOLUNTEERS TO UNDERSTAND THAT PHYSICAL AND EMOTIONAL WELL-BEING OF YOUNG ATHLETES CAN BE THREATENED BY PROGRAMS THAT INVOLVE A HIGH LEVEL OF PSYCHOLOGICAL STRESS AND OVER-ZEALOUS PARENTAL SUPERVISION TO WIN.

*A Philosophy
for Coaching
Cross Country*

CALIFORNIA STATE DEPARTMENT OF EDUCATION

COACHES' CODE OF ETHICAL CONDUCT

- A** SHOW RESPECT FOR ATHLETES, OFFICIALS, AND OTHER COACHES.
- B** RESPECT THE INTEGRITY AND JUDGMENT OF YOUR OFFICIALS.
- C** ESTABLISH STANDARDS, AND BE A MODEL FOR FAIR PLAY, SPORTSMANSHIP, AND PROPER CONDUCT.
- D** ESTABLISH ATHLETE SAFETY AND WELFARE AS YOUR HIGHEST PRIORITY.
- E** PROVIDE PROPER SUPERVISION OF YOUR ATHLETES AT ALL TIMES.
- F** USE DISCRETION WHEN PROVIDING CONSTRUCTIVE CRITICISM, AND WHEN DISCIPLINING YOUR ATHLETES.
- G** BE CONSISTENT IN REQUIRING YOUR ATHLETES TO ADHERE TO THE RULES AND STANDARDS OF YOUR SPORT.
- H** ALWAYS INSTRUCT YOUR ATHLETES IN THE SAFE USE OF EQUIPMENT.
- I** DO NOT EXERT UNDUE INFLUENCE ON YOUR STUDENT-ATHLETES' DECISIONS ON WHICH COLLEGE OR UNIVERSITY THEY SHOULD ATTEND.
- J** AVOID INFLUENCING STUDENT-ATHLETES TO TAKE EASIER COURSE WORK IN ORDER TO BE ELIGIBLE TO PARTICIPATE IN HIGH SCHOOL ATHLETICS.
- K** DO NOT ENCOURAGE OR PERMIT YOUR ATHLETES TO USE PERFORMANCE-ENHANCING DRUGS.
- L** DO NOT RECRUIT STUDENT-ATHLETES FROM OTHER SCHOOLS.
- M** ENFORCE THE RULES OF BEHAVIOR AND PROCEDURES FOR CROWD CONTROL ESTABLISHED BY YOUR CONFERENCE AND LOCAL BOARD OF EDUCATION.



Chapter 2

Building a Cross Country Program

Building a successful Cross Country program poses some unique challenges to a high school coach. Often, there is only a single coach for both boys' and girls' teams. Squad sizes vary widely from school to school, from a dozen to more than 100 athletes. While equipment needs are few, the sport requires multiple training sites and long run loops. Long training runs make it impossible to oversee the start-to-finish performance of every athlete.

Building a Cross Country Program

Beyond the logistical requirements for building a strong Cross Country program are the commitment and dedication that success in the sport demands. High school Cross Country is a special sport. It is a team sport comprised of individual efforts. It demands tremendous commitment and the will to endure discomfort. Cross Country is a sport in which effort is rewarded in small doses. Unlike more popular spectator sports, victories are often quietly won and not widely recognized. Attaining individual success can take a long time. A good Cross Country program recognizes these truths and provides a team organization and training structure that encourages, motivates, and sustains a young athlete's participation in the sport.

The Responsibilities of a Head Coach

PRE-SEASON

- Contact prospective team members in the spring before the school year ends.
- Contact incoming freshmen through junior high coaches and flyers included in mailings from your school counselors.
- Recruit from physical education classes, the track and field team, and other sports.
- Establish your summer training schedule before the end of the school year so that athletes can coordinate family vacations and summer jobs with their training.
- Finalize your Cross Country competition schedule, including dual and invitational meets.
- Prepare and distribute your team handbook before your athletes leave for the summer.
- Determine your transportation needs. Order buses well in advance of the season.
- Have budgets and expenditures approved by your athletic director.
- Plan the details of summer fund-raisers in the spring, while you still have daily contact with your athletes.
- Submit your sixth period P.E. Cross Country roster for the next fall to school counselors.

- Check the academic eligibility of all returning team members. Athletes with academic problems should be enrolled in summer school.
- Recruit assistant coaches and volunteers if needed. New assistant coaches and volunteers must be certified in CPR/First-aid (a requirement in most school districts).
- Prepare your seasonal training plan. New off-campus training runs should be scouted and measured, and your home course should be inspected and re-measured. Complete your periodized training plan for the upcoming season.
- Order new uniforms and equipment. Inspect and inventory all items as they arrive.
- Check the eligibility of new students and transfers.
- Notify all team members of the requirements and deadlines for submitting physicals, emergency medical treatment authorization cards, and insurance documentation before official team practices begin in August.
- Schedule a pre-season team meeting with your athletes' parents to explain school rules and team policies (also a requirement in many districts).
- Issue uniforms and equipment to athletes.
- Send directions, parking instructions, a course map, and information regarding your home meets to the coaches of visiting teams.
- Inventory the contents of your training kit; replace any missing items.
- Establish an emergency medical plan for practices and home and away meets. This plan should be given to your assistant coaches, adult volunteers, and athletic director.

IN-SEASON

- As head coach, you are responsible for the oversight of daily practices. You need to prepare daily training scripts that follow your season periodization plan. These scripts should be prepared in advance and adjusted as necessary.
- Spend time organizing your home meets. Adult officials and student helpers must be recruited and briefed of their duties.
- Submit invitational meet entries on time with required entry fees.
- Confirm the transportation for all away meets the week of the meet.

Building a Cross Country Program

- Compile results, comments, and statistics after every meet. Distribute them to your athletes, and mail to parents as a team newsletter.
- Pay close attention to the academic standings and eligibility of your athletes throughout each grading period. Many good seasons have been ruined because athletes were lost to academic probation. Also, you cannot afford to risk your team's season by using an ineligible runner.
- Promote your program by maintaining a large, attractive bulletin board, with many pictures, in a prominent location. Submit school bulletin notices and results after every meet — win or lose — to your school and local newspapers. The Cross Country team should be part of your annual homecoming pep rally, and if your football and basketball teams have pep rallies when they qualify for the CIF playoffs, the Cross Country team should have one when it qualifies for the CIF finals.

POST-SEASON

- Collect and inventory uniforms and equipment. Mark damaged items for repair or replacement.
- Update individual and team statistics into a season summary booklet.
- Submit specifications and costs of new equipment for the following season.
- Hold an awards banquet to acknowledge the accomplishments and contributions of managers, volunteers, supporters, and team members.
- Send information on graduating seniors who hope to compete collegiately to college coaches.
- Develop monthly training plans for year-round runners.

The High School Coach's Legal Liability

The litigiousness of our society and the risks inherent in sports participation leave you, the coach, with more liability exposure than any other individual in your school.

Today's coaching liability lawsuits focus on these eight areas:

1. Failure to provide **adequate advance warning** of the risk of injury involved in participating in school sports activities.
2. Failure to have or to enforce **rules and procedures for safe participation**.

3. Failure to provide **proper supervision** of an activity.
4. Failure to provide and maintain a **safe playing area**.
5. Failure to use proper **coaching methods** and provide **adequate physical conditioning**.
6. Failure to provide **safe transport** to and from sites of competition.
7. Failure to provide **proper instruction** for the use of athletic equipment.
8. Failure to provide **proper medical care** to injured athletes.

For the Cross Country coach, the greatest liability issues are *off-campus running* and *transport* to off-campus training sites. It is often impossible for athletes to avoid heavily traveled roads on the way to training sites. It is even more hazardous for a pack of runners whose attention is diverted by conversation.

RECOMMENDED RULES OF THE ROAD FOR RUNNERS

- Pay attention at all times.
- Run on the sidewalk along heavily traveled roads.
- If there is no sidewalk, run *single file* on the *left side* of the road so oncoming traffic is visible.
- Cross at intersections only.
- Obey all traffic signals. Stop at red and yellow lights! Don't follow the leader. Look both ways as you enter every crossing and intersection.
- Regardless of the team rules governing off-campus running, a coach, in a motor vehicle, should supervise every off-campus team training run. School transportation usually is not available to transport runners to training sites beyond running distance from school, and the coaches' cars usually are not large enough to hold all team members. If you need students to ferry teammates off-campus, designate drivers and take as few vehicles as needed. Do not allow more than four passengers per car, and revoke the responsibility if you witness or learn of unsafe driving.

Other liability issues include the safety of your home racecourse and proper training in hot weather. Always inspect your course before the season begins, and then periodically inspect it throughout the season. Remove any dangerous debris or obstacles.

Building a Cross Country Program

In hot weather, advise your athletes of the need to drink water throughout the day prior to training and races, and to increase hydration in especially hot or humid conditions. Cancel or postpone workouts and meets on days with smog or heat conditions that pose unreasonable health hazards to young runners.

In the state of California, high school coaches have a legal obligation to report suspected pregnancies, victims of child abuse, and suicide risks to school authorities.

To protect the safety of your athletes and minimize your liability exposure, we recommend the following steps:

- Advise all team members and their parents, in writing, of the potential risk of injury inherent in sports participation and have them sign a **consent and waiver/release form**.
- Establish written **safety rules and procedures** for on-campus and off-campus training, and distribute them to all team members.
- **Enforce your safety rules** and procedures.
- Develop a **medical emergency plan** for all training sessions and meets.
- **Always provide close supervision for potentially dangerous training activities** (especially weight training and pool workouts).
- Instruct your athletes in the **proper use of all equipment**.
- **Test all equipment before issue to or use by your athletes**.
- Be aware of the **medical history of every athlete**. (Diabetes, asthma, allergy to bee stings, etc.).
- **Immediately inform your school administrators in writing** when you feel equipment or facilities are unsafe or inadequate.
- **Purchase National High School Federation Liability Insurance** (\$1 million of liability insurance coverage at an annual cost of approximately \$16 per year). Information about this coverage is available from CIF.

Organizing a Coaching Staff

Organizing your Cross Country coaching staff is relatively simple. Athletes compete at the same distance in different divisions, and training is fairly similar for most of your athletes. If you have a large squad — a goal of every Cross Country coach — you will need extra coaching help to oversee all your athletes.

Finding capable and committed assistant and volunteer coaches is always a challenge. Former runners are a good source of coaches. Among faculty, complete novices with energy and willingness to learn are far better for your program than experienced coaches whose enthusiasm has run dry.

Many schools divide coaching duties along gender lines. While having coaches of both genders is ideal for dealing with delicate adolescent issues, there is no reason to train boys and girls separately. Of course, some training should be done in specific team units, but overall, your athletes will benefit most from coaching aimed at their level of ability.

Preparing for the Cross Country Season

The strong correlation between fitness and competitive performance requires serious Cross Country athletes to train nearly year-round. In this sense, there is no real off-season, but more accurately, a recovery period after autumn competition, the winter/spring track season, and a summer pre-season. Consequently, successful coaches must begin organizing for the Cross Country season before the previous school year ends.

Recruiting and Correspondence

Late spring is the true beginning of each Cross Country season. At the end of each school year, meet with your returning team members and all the middle and long distance runners from the track team. This group will form the nucleus of your Cross Country squad. Ask for names of other students or athletes who may be interested in running Cross Country. Don't ignore sprinters and athletes from other sports. The aerobic conditioning offered by Cross Country running can lure these athletes to your program. Many superb Cross Country runners initially started out in other sports.

Building a Cross Country Program

Your first correspondence should be given to returning and prospective team members before the end of the school year. Include information detailing the summer workout schedule, training locations, summer team rules, and team trip planning. Relay any important logistical information regarding physicals, parent permission forms, insurance, and transportation.

Late spring and early summer are also the times to send recruiting letters to incoming freshmen. Whatever your recruit pitch, send each prospect more than one letter. Remember, entering high school is often quite intimidating for young freshmen. Reinforcing your interest in them with a second recruiting letter can overcome the reticence that might prevent them from trying Cross Country.

Planning the Season's Training

Success in Cross Country depends on consistent and carefully planned training. As coach, one of your primary responsibilities is planning that training. Much like a teaching plan, your training program for the entire season (including pre-season) should be mapped out during late spring or early summer. Veteran coaches, with established programs, usually need to make only small adjustments from year to year. If you are a novice coach hired at the beginning of the school year, you are at a disadvantage. Just be prepared to start early the following year.

Coordinating Summer Training

Summer training requires special arrangements. Few good coaches simply hand a list of workouts to their athletes and expect success in the fall. Instead, they run a summer program that accommodates summer schedules, weather, and access to facilities.

Summer training allows greater variation in training schedules, workouts, and training sites. Holding practices in the early evening will let your team run after the heat of the day, and permit athletes with jobs to attend practice more easily. Vary your training locations, and plan workouts in conjunction with play outings, picnics, meals, and recreation. Doing so entices all your athletes to train during the summer, and provides bonding opportunities for team members.

Weather and access to facilities are important considerations during the summer months. Summer weather poses a significant risk of heat injuries, especially for Cross Country. Schedule workouts to avoid the greatest heat of

the day. For every training route, make certain there is access to bathrooms and water. Know where pay phones are located along the route. Make maps for yourself and your athletes that show important landmarks, facilities, and shortcuts to be used in case of trouble. Since schools are usually closed during summer training sessions, get keys to the locker room if you train at school.

Summer training allows you to experiment with new training runs. Try several new routes that present different challenges to your runners. As the fall season arrives, some of these routes will become staples of your training program.

Amidst the optimism of summer training lies the need for some words of caution. The fact that school is out of session, and that Cross Country is not in season, does not exempt you from the responsibility and obligation of supervising your athletes. Coaches who do not follow their athletes by automobile are asking for trouble. This is not a matter of trusting your athletes. It is a matter of safety. Following your runners from start to finish lets you monitor the progress of each athlete, and lets you help them if there is any trouble. You can watch them in traffic, monitor pace and effort, and provide water and first aid if necessary.

Unfortunately, youth-oriented violence is a sad problem in our society. In certain locales, long distance runs through adjoining neighborhoods can be very dangerous, even life-threatening, for your athletes. When planning training, you must keep this fact in mind. If your school is located in such an area, you must make an extra effort to find safe places for your athletes to run.

Scheduling

An important part of developing a successful Cross Country program is scheduling competitions. Most competitions, and their dates, are set by your league and CIF schedules. However, any empty dates or invitational meets should be scheduled during the summer. If you are building a program, look for meets or invitationals that will allow your athletes to do well. Taking a young, inexperienced team to a high-caliber invitational might only discourage your athletes. If your team is a CIF divisional or state meet contender, you need to schedule meets where your team can compete against other strong teams.

An increasingly popular alternative to invitational meets is a Saturday dual meet against a traditional rival or neighboring school. Such meets let all your runners compete, and permit working parents to attend. You might want to establish a traveling trophy to be claimed by each year's winner.

Building a Cross Country Program

Fund-Raising

Although fund-raising takes year-round effort, use the summer to fill your program's coffers. Once the season starts, you don't need the worry of wondering if there are sufficient funds to travel to the invitational meets on your schedule. Contact your booster club or parents' group for help in organizing fund-raising activities. Since most of your athletes are not attending school in the summer, they are more likely to be available to help.

Planning Your Team Trip

It has become common practice for teams to conduct a training camp or take a team trip lasting anywhere from five days to two weeks. A team trip requires substantial logistical planning, especially for large combined teams. Start planning your team trip in early summer.

Uniform and Equipment Inventory

Cross Country doesn't require much equipment, but you still need to know what you have and what you need. Examine uniforms and team sweats to see what needs repair or replacement. Place your orders early so that everything is on hand for the start of the season.

Transportation

Figure your transportation needs for the season. How many buses or vans will you need for each meet? Give a competition schedule and transportation requests to your athletic director or the athletic secretary. If you are responsible for ordering buses, consider making early contact with the transportation company your school uses. Try to build a relationship with a specific driver.

Preparing for Home Meets

If you plan to host meets, gather the necessary supplies before the season starts. The first order of business is laying out your home course. Make sure it is really the correct length. Find out by surveying and measuring the course carefully. Painted 3 x 3-inch sheet metal squares, driven into the ground with 6-inch spike nails, will survive lawn mowers and will permanently mark turns and start/finish lines. Inventory the equipment needed to set up your course, such as flags, stakes, and chute materials. Order or make anything that you need. Fiberglass bicycle flagstaffs make great, inexpensive course flags. You can keep them in an old golf bag. Use another golf bag for chute stakes, pennants, and a small sledge hammer.

Preparing for a Home Invitational Meet

If you plan to host a large invitational meet, begin preparing during the summer. Send invitations early in spring, when other coaches are planning their competition schedules. Ask your parent boosters for their help organizing and conducting the meet. A successful invitational requires plenty of good volunteer help. There is no way you can be coach, meet director, and hot dog salesman at the same time. If you plan to use a local park, you should apply for permits well in advance of the competition. In some instances, you may have to submit a permit application up to a year in advance of the meet.

Preparing a Team Handbook

One time-honored device for organizing your Cross Country program is a team handbook. A handbook conveys the personality of your program and most of the important administrative information your athletes need. It also is a resource for your athletes, full of information, motivating images and quotes, team history, and pages for them to record workouts and thoughts about their running. The team handbook becomes the written document of your program.

Basic Contents of a Team Handbook

- A description of the sport and how a Cross Country meet is scored.
- A brief summary of your school's Cross Country history.
- A short statement of your coaching philosophy, along with your goals for the season and your pre-season assessment of the team.
- School-mandated participation requirements, such as parental permission, physical examinations, insurance coverage, and academic eligibility.
- Team rules.
- A detailed list that details the equipment to be issued by the school and what your athletes must provide themselves.
- Criteria for team awards and a varsity letter.
- Your team competition schedule.
- Office and home phone numbers of you and your assistants.

Building a Cross Country Program

Additional Handbook Information

- Varsity, Junior Varsity, and Frosh-Soph school, home course, and 5-person composite records.
- All-time home course performance list (20 performances).
- Action photos from the previous season.
- A pre-season overview of league competitors.
- Directions to away meets for parents and fans.
- Weekly training log forms for summer training and fall season.
- Race planning and critique sheets.

(For sample forms, see appendix.)

Recruiting Cross Country Runners

One great attribute of Cross Country is that many athletes can participate. Everyone can run and compete. Unlike what happens in other sports, no one sits the bench. Having a large team gives you a deeper pool of athletes from which to develop talent, enhancing your school's ability to win meets. Keep in mind that, with patience, encouragement, and consistent training, the freshman who finishes in the back of the pack often develops into an invaluable point scorer as an upperclassman. *Recruiting a large number of underclassmen is perhaps the single most important component of building a successful program.*

Before the beginning of each school year, make a final effort to publicize your program and recruit new members to the team, even if they have not run a step all summer. A crop of new athletes injects new blood into your program. Occasionally, a novice runner will contribute immediately to your team's competitive success.

Advertise your Cross Country program by placing attractive posters around the campus. Place notices in school and local newspapers. Have an invitation to new athletes prominently displayed on a Cross Country team bulletin board along with photographs and information about your team. Your athletes will enjoy and appreciate the recognition, and other students will be drawn to your program. The promise of public recognition is a strong motivator.

Design a sales pitch intriguing enough to entice new runners to join the Cross Country team. You might discuss the rewards and satisfaction of competing and training, being a “team” member, getting in shape for another sport, the fun of socializing, acquiring long-lasting friendships, or the outstanding health benefits of training. Don’t underestimate the powerful attraction of being part of a team. Many high schoolers are quietly seeking a group to which they can belong. Cross Country can provide them with that opportunity.

Plan a meeting at the end of the school year for all students interested in running Cross Country. Make sure that you put up notices in every part of the school campus. Announce your meeting in the school bulletin several days beforehand.

Your returning team members are the best recruiters for your team. They obviously enjoy running on the team or they would not stick around. They can give prospective athletes a good sense of what it is like to run Cross Country and be a member of the team. Also, ask your athletes to recall potentially talented runners from elementary or junior high school.

Encourage the younger brothers or sisters of your athletes to participate in your summer training sessions. The opportunity to join an older sibling is very attractive. Most will be able to begin light training by fourth or fifth grade. Make the running fun, and let these youngsters experience some success. Chances are they will want to be part of the program when they enter high school.

Late spring is also the best time of the year to recruit from the student body. Talk to as many individuals on campus as possible. Get names, grades, and telephone numbers of interested students. Give each student a flyer with the summer training schedule, and describe any fun trips or get-togethers.

In early summer, get a list of incoming freshmen from your counselors and send them a copy of your flyer.

Athletes competing in other sports such as basketball, soccer, swimming, or wrestling also can benefit from running Cross Country. These athletes have a lot to gain by improving their aerobic capacity, strength, and flexibility through Cross Country training. Explain this to other team coaches. Many of them will appreciate your efforts to provide them with better conditioned athletes, although you will not be very popular if you kidnap an athlete from a team in season. If an athlete is a bench-sitter or has been cut from a team, however, an opportunity to become a participating competitor might sound very appealing. An invitation from a coach often provides a boost to the youngster’s self-image.

Building a Cross Country Program

If you are not a physical education teacher, ask the P.E. staff at your school to help you recruit Cross Country runners. These teachers should know which students have running ability and overall athleticism.

Much of your success relies on your ability to recruit large numbers of students to run Cross Country. Your time will be well spent if you can turn a large group of runners into a cohesive unit that loves running, training, and competing together.

Keeping Athletes on Your Team

The effort and commitment demanded of Cross Country runners often intimidate and discourage athletes who have little long distance running experience. Workouts often are difficult, and sometimes the discomfort overshadows the fun. However, you can organize your program in ways that motivate your experienced athletes and provide novices with an enjoyable introduction to the sport.

INTRODUCE TRAINING GRADUALLY

The first rule of keeping new athletes on the team is to *bring athletes along slowly*. When they are ready for hard training, they will let you know.

Forcing novice athletes to do the same training as your top varsity runners is a sure way to shrink the size of your squad.

All too often, coaches train athletes uniformly. How many times have you seen a team strung out along some dusty road with the exhausted weaker runners straggling a mile or more behind the leaders? Such training usually only discourages your novice and less talented runners. Every runner needs to be challenged, but when training becomes a series of hot, breathless, aching, lonely workouts, few athletes will stay in the sport.

By organizing your team into training groups based on fitness and ability, you enable your athletes to train at a pace that suits them. Some athletes simply need to mature or gain fitness before they can commit themselves to the demands of hard training and racing. Give them the time needed to reach the point where they enjoy long distance running.

INCENTIVES AND REWARDS

Another way to motivate Cross Country athletes is to establish reward incentives for effort and performance. Find ways to praise and encourage every runner on your team. Many coaches reward summer training with T-shirts indicating the mileage run by the athlete (e.g., 300, 500, 1000 Miles). You might also consider a “Runner of the Week” award or give items that acknowledge exceptional effort and improvement in competition. Create awards that nurture and build upon team tradition.

TRAINING AND PLAY

An excellent method of motivating and retaining runners is to combine training with play. Summer training lends itself easily to this strategy. Combine workouts with picnics, trips to the beach, camping, movies, team dinners or other outings. Doing so attracts athletes to training, motivates them to work hard, and helps them unite as a team.

During the season, the opportunities for training/play outings are limited. Nonetheless, team parties, dinners, trips to the movies, birthday parties, and pre-competition meals combine play with the work of training.

Building a Team — Competitors and Participants

Competitive success in Cross Country depends upon your ability to develop athletes who are motivated to test their abilities in both training and competition. The desire to win, however, is not the primary reason young athletes participate in sports. National surveys have shown that the motivation to participate in high school sports varies greatly among individual athletes. One study of 10,000 high school athletes found that boys ranked the desire to win 8th among the 12 most important reasons they participate in sports, while girls ranked the desire to win last. The challenge of competition was ranked somewhere in the middle. Most important for both boys and girls was the desire to have fun.

Building a Cross Country Program

The fact is that most 13-to-14-year-old freshmen do not join the Cross Country team with an initial goal of winning league, CIF, or state titles. The vast majority of girls and boys participate because they want to be part of a team and become better, faster runners. The dilemma of coaching a team made up of athletes who want to compete seriously and others who simply want to participate is universal in high school sports. More often than not, coaches find ways to rid their teams of the latter group of athletes.

A sport requiring long-term development, like Cross Country, cannot afford to rid itself of athletes whose primary motivation is to participate. Moreover, the demanding nature of Cross Country often keeps young athletes from committing themselves to the sport until they begin to realize progress and success in training. Cross Country is a sport of effort and dedication. It is also a sport that forces athletes to overcome the physical and emotional duress that comes with running long distances. Young athletes need to be given an opportunity to accustom themselves to long distance running before being subjected to the demands of intense training and competition. In time, you will find that most of these athletes will accept the challenge of becoming competitors.

Accepting that athletes run for different reasons, you can organize your program in ways that build a competitive team, develop young runners, and ensure fun participation for all your athletes. There are various strategies that will accomplish this goal. Here is one example:

A coach at an Orange County high school developed an effective way of solving the competitor versus participant dilemma. After struggling to improve his program for several years, he realized that he needed more boys and girls to increase the talent pool on his team, elevate the team's competitive status, and garner greater school administrative support for the program. Based on the way he had been recruiting runners and coaching them, however, he didn't know where the athletes were going to come from.

Then, something happened that changed his previous thinking. A young man who had run without distinction for his team as a freshman and sophomore had transferred out of the district when the family moved into a new home. As a senior, this young man achieved great success, becoming one of the best Cross Country runners in the state. The coach was happy for the young man, but bewildered because, as an underclassman, this youngster had shown little enthusiasm for the sport. At one point during the season, the coach and the young man met at a competition, and the coach expressed his delight that the young man was running so well. Then, he asked the youngster what accounted for the change in his running fortunes. The young man told him that, although he always enjoyed running, he was unable and unwilling to make a serious competitive commitment to the sport during his first two years in high school. At that moment, the coach realized that he probably had driven many talented athletes from his program merely because they had not committed themselves fully as freshmen.

The coach decided that the Cross Country team would have two types of athletes: **competitors** and **participants**. He explained to his athletes that both types of runners were welcome and important to the success of the program, but that he would coach the competitors differently...not with less time or enthusiasm...but differently. He explained that everyone would enter the program as participants. Those who wanted to be competitors would have to show it in their training and races. In other words, it was to be a conscious decision by the athlete.

After two years of using this approach and actively recruiting “participants,” this coach had Cross Country teams of more than 70 boys and 80 girls, the largest teams at the school. They won the frosh-soph and JV league titles in the first year of the new system, both varsity divisions in the second year, and have been CIF divisional title contenders every year since. Increased participation has enabled Cross Country to gain greater financial support from the school and successfully raise funds from outside sources.

Building a Cross Country Program

Although the competitor/participant approach has enabled this school to field a preeminent winning Cross Country program, the coach feels it also has decreased the stress of competing and training that many of his runners felt in the past. The distinction between competitors and participants is informal and individual. The coach does not divide the athletes into two team groups. Without words, the team knows who are the competitors and who are the participants, and both groups are supportive of each other. As a result of the system, the coach reports that each season he is surprised by upperclassmen who, never having distinguished themselves, suddenly are motivated to become varsity scorers. “In the past,” he says, “those runners would have been long gone from our program.”

Building a Cross Country Tradition at Your School

Successful sports programs have strong traditions. Usually, we think of a “winning tradition,” but winning is only part of the formula. In fact, winning is most often the *result* of strong tradition. Many Cross Country programs have traditions that span years and decades regardless of win-loss records.

COACH

As **coach**, you are the keeper and transmitter of tradition. Your **commitment** creates the environment from which tradition emerges.

The simplest tradition focuses on winning. Of course, not every school has the ability to build powerhouse winning teams. Nonetheless, every program can have traditions that sustain an atmosphere of success. Encourage your athletes to create a team and/or school identity. Nurture the unique personality of each year's group of athletes.

There are innumerable ways in which coaches build team identity. Feedback, recognition, reputation, reward, distinction, commitment, consistency, fairness, equality, and common sacrifice are among the most important concepts that govern any cohesive group. The responsibility and art of coaching is to interpret these qualities into distinct actions and policies for your team.

TEAM

The foundation of tradition is the athletes' sense of belonging to a team. Dedication to common effort and goals is the basis of team cohesion and identification. While Cross Country scoring is a composite of individual performances, training and competition are processes of team effort.

Building team feeling starts with the coach. Communicating your commitment to the success of every athlete is the first, and most important, step in forming team identity.

Treating your athletes equally is another requirement of team building. While that doesn't mean that every athlete must be *treated* identically, it does mean that every athlete must be *valued* equally regardless of talent. Head coaches who devote almost all their energy and attention to the top varsity runners communicate a subtle message of value to the rest of the squad. That message will be reflected in a weak sense of team unity.

You can help create strong team identity by encouraging, and sometimes demanding that every athlete have stock in the performance of teammates. Don't let your top varsity runners ignore the efforts of the junior varsity and freshman runners. Cheering fellow athletes during their races is part of being a member of a team. Mix training groups during easy runs, team warmups, and stretching. Your athletes should spend some time together during daily training and competition. Teammates need to know each other to have any sense of common identity.

Team identity and tradition also are reinforced by weekly team meetings. Acknowledging effort and achievement before the team promotes common support and cohesion. Approval from peers bonds team members together. Nicknames, T-shirts, pins, buttons, patches, candy, etc., are all small tokens that recognize effort and accomplishment on behalf of the team.

Encouraging off-campus interaction is another way to promote team spirit among your athletes. Provide social opportunities that bring teammates together. Often, athletes of vastly different running abilities may find a bond of different origin that only serves to cement their relationship as teammates.

Building a Cross Country Program

COMPETITION

Competition defines tradition. The strengths and weaknesses of your program are revealed most clearly in competition. It's relatively easy to build tradition if you win a lot of meets. To that extent, your recruiting and technical coaching ability contribute to your program's tradition. But programs with strong tradition and identity thrive in competition regardless if they win or lose.

HISTORY

Part of tradition is history. Although the historical memory of most high schoolers is about 15 minutes, you need to impart a sense of continuity within your program. If you are fortunate to have a rich history of Cross Country success, use it to motivate your athletes. Past examples and exploits provide real stories to inspire your athletes.

If you have a program without much history, challenge your athletes with the task of establishing a legacy for future teams. Team history can be made of more than competitive victories. Stories of individuals, remarkable efforts, legendary workouts, adventures, and mishaps are fodder for future team tales and tradition.

RECOGNITION

Tradition is also about the recognition of past achievements, current efforts, and future goals. A program with strong tradition recognizes great past performances, recognizes today's athletes, and looks forward to future achievements.

Prominently display your team and course records, league and CIF performances, photos, and any articles about current or former athletes on a team bulletin board. When your athletes do well in competition, make sure that everyone in your school community knows about it. Use a team bulletin board, team newsletters, school bulletins, the student newspaper, local newspapers, and school public address announcements to acknowledge your team's efforts. Make sure that any trophies or awards are publically displayed. Keep all-time performance lists, and give them to your athletes. Give special recognition to athletes who make the list.

Get to know the newspaper reporters that cover the local high school sports beat. If you live in a small television market, you may even be able to garner some television exposure for your team.

Keeping a Winning Tradition

Competitive success over a long period of time depends on many factors, many of which a coach cannot control. Changing school population, demographics, and mere luck are things that you cannot spend too much time worrying about. Just keep doing all the things that built your program.

While you should have a basic philosophy of training, you must adapt it to each new group of runners. Make each team unique and set goals appropriate to the talents of the athletes. Not every group can match the accomplishments of past teams. Realistic goals and a winning tradition will lead you to success.

Beware of becoming an elitist coach, one who only tends to the attention grabbing varsity. The best coaches stay on top by continually building from the bottom. Make room on your team for novice runners who want to try the sport. On a highly competitive team, these athletes are often overlooked or folded into the training of the best runners. Remember, this group will likely fill your future varsity rosters.

Here are some things to help your program maintain its winning ways:

- With a successful and visible program, convince the counselors to promote your sport when they are scheduling people into classes.
- Rely on the leadership of the upperclassmen as models of discipline and commitment for the rest of the team.
- Have a single consistent set of rules for the entire squad.
- Make phone contact and visit P.E. classes constantly.
- Put pictures of the varsity groups on a publically visible team bulletin board.
- Publish top 10 performance lists and honor anyone making the list.
- Keep records of particular workouts.
- Plan special trips to compete outside your area. Overnight trips are fun for your athletes, and motivate them to work hard in order to make the traveling squad.
- Develop contacts with local newspapers in order to get publicity for your team.

Building a Cross Country Program

Using Other Sports to Promote Cross Country

Too many coaches view their programs as competing against other school sports for funding and recognition. While this is true to some extent, it is not a productive strategy for building your program.

Don't compete with other sports; use them instead.

Football is a sport molded for spectators. Consequently, it has become very popular, and often grabs the greatest share of resources and attention. Use the strength of football to promote your team. Have your meet results announced at all home games. Have your Cross Country team introduced at halftime at an important game. If your school plays afternoon games, you might be able to conduct a varsity race that will finish on the track, during halftime.

Get to know the school's football coaches and attend their games. Remember, you are peers, and showing your respect for them will likely earn respect for you and your program. It's a good idea to attend football booster club meetings. It shows your program's support of the school while making your program visible. Get the Cross Country team picture placed in the football game program.

Other sports can help you elicit funding and administrative support for your program. Never forget that the value of each student is equal no matter what sport they participate in. When your program has participation numbers that equal and exceed those of other sports, you are in position to argue for the support Cross Country merits.

Fund-Raising and Financial Management

FUND-RAISING

Today's high school coach must be able to raise funds and manage expenses in order to build and maintain a successful Cross Country program. In an era of declining state, district, and school support for high school athletic programs, it often falls upon your shoulders to raise money for new uniforms, equipment, and entry fees.

Financial management begins with **planning**, and the first step in that process is identifying your program's needs and determining what meeting those needs will cost.

Make a list of needs and wishes for your program regardless of cost. Divide those needs into three categories: immediate, short-range, and long-range. Then, estimate the cost of each need, whether it be an overnight trip to the Stanford Invitational or special T-shirts for your team.

Next, discuss the needs of your Cross Country program with your athletic director. Ideally, your program will receive some funding from the school's athletic budget. If school funding is not available, the responsibility for funding falls upon your shoulders.

In any case, ask your A.D. for your school's fund-raising guidelines. Each school, district, and state has rules and regulations that govern school trust accounts and booster clubs. You can avoid potential problems by being aware of these regulations, most of which concern proper authorization and paperwork.

Don't use your own money to pay for the needs of your Cross Country program expecting to be reimbursed later with income from fund-raising. Many fund-raisers are unsuccessful, and often raise far less money than anticipated.

Ideas for Fund-Raising Activities

Activities...

- "Jog-A-Thons" (Patrons pledge a \$ amount per mile.)
- Pizza Night (Restaurant gives you a % of what they sell.)
- Block Party
- School Dance
- Local Road Race
- Donation Jars at Local Businesses
- Summer Fun Run Series at Your School
- 24-Hour Relay
- Bingo Night
- Pancake Breakfast
- Matching-Fund Drives with Local Service Clubs
- "Las Vegas Night" with Your Boosters Club
- Auctions
- Food Concessions at School Football Games
- Attend a Game Show Taping (They will pay a fee for groups.)

Building a Cross Country Program

Product Sales...

- Candy
- Supermarket Scrip
- Pizza Certificates
- Craft Items
- T-Shirts
- Advertising on Your Team T-Shirts
- Baked Goods
- School Calendars Listing Sport Schedules
- Mistletoe/Christmas Decorations
- Forest Service Firewood
- Coupon Books
- Entertainment Passes
- School Spirit Items

Illegal Fund-Raising Activities in California Schools:

- Raffles (misdemeanor)
- Games of chance
- Amusement rides including animal rides (safety issue)
- Games using darts or arrows (safety issue)
- Objects thrown at a live target (safety issue)
- Use of water tanks into which a person is “dunked” (safety issue)
- Destruction of old cars or objects with sledge hammers, etc. (safety issue)
- Sale of used jewelry (health issue)
- Rummage sales (health issue)
- Activities using trampolines or mini-trampolines (safety issue)

NOTE: The California Association of School Business Officials (CASBO) produces a manual with information regarding the use of money in California school systems. Section 2, page 19 lists illegal fund-raising activities.

Here are some considerations when selecting fund-raising activities to help you to pay for your immediate and short-term needs:

- Is it legal? Does it fit within your school’s fund-raising guidelines?
- What kind of fund-raiser will be most attractive to your student body and community?
- Will your team support the fund-raising activity enthusiastically?

- Will it be supported by your parents and/or boosters club?
- Is it likely to provide you with the required funds? Is there likely to be any money remaining to pay for your long-range needs?
- If your team is going to sell a product, what is the profit margin? Are there hidden costs, such as promotion, shipping, art, printing, etc.? Do you have to pay for the product in advance? Can you pay only for what you sell? Can you be billed after the fund-raiser is over?
- How much time will the fund-raiser require? Can it be done in one day, or will it require several weeks? Is the effort worth the amount you might raise? Could you raise the same or larger amount of money with another endeavor requiring less time?
- Are other groups or athletic teams conducting the same type of fund-raiser? Are you offering something interesting to the campus and community?
- When is the best time for the fund-raiser — pre-season, in-season, or during summer? When will your athletes and their parents be most helpful?
- Can you solicit incentives for your top sellers or workers from local businesses, such as free pizzas or movie passes?

The final thing you must consider is records keeping of costs and income. Whenever possible, have someone other than you, such as the school finance secretary or booster club president, handle income and record keeping. Determining how money will be received and deposited, and how bills will be paid, is one of the most important parts of planning your fund-raising.

When starting your fund-raiser, you must be the best salesperson on your team! You must convince your team to support the activity and work hard to ensure its success. Let the team help select and plan the activity. Discuss and organize the fund-raiser with your team in a classroom or at your home, rather than outside at practice. Create many small jobs and assign them to your athletes as a team project. Motivate by offering incentives, posting records, and making daily announcements acknowledging your top workers and most successful sellers.

Remember the success of a fund-raiser always depends on *your* planning, *your* enthusiasm, and *your* motivation.

Building a Cross Country Program

MANAGING YOUR BUDGET

Stretching your Cross Country budget and minimizing the amount of fundraising you have to do are the hallmarks of good financial management.

A Cross Country program has three primary expenses: (1) **equipment**, (2) **transportation**, and (3) **entry fees**. How you budget and pay for these items depends on your individual school. Most schools place transportation and entry fees in budget categories separate from equipment.

Equipment

Equipment for Cross Country usually consists of uniforms: singlets, shorts, and warm-up suits. For openers, consider whether the uniforms you intend to purchase will be available for future reordering. Select a uniform manufacturer with a consistent design and color selection if you want to be able to replace and add to your basic uniform inventory over several years.

Buying from the same manufacturer will let you start a replace-and-repair program for team uniforms, rather than having to purchase new designs or slightly different colors every year. It will also save art design and screen charges. Those charges can range from \$30 to \$150 with every order. Be sure to find out the **Pantone Matching System numbers** for your school colors. Some athletic directors will not pay for school uniforms that are not produced in your exact school colors.

Be sure to have every uniform piece screened with numbers. Numbered uniforms allow you to keep an accurate record of the equipment you issue to each athlete. Numbers also make it easy for your runners to identify their uniforms, especially warmups, from a pile of team uniforms. A small number, placed inconspicuously, works fine with shorts and singlets.

If you use the same uniforms for Cross Country and track and field, an initial order might be as large as 150 sets. Even if you don't use the same uniforms, you may earn cost discounts by combining Cross Country and track and field orders.

Inspect uniforms at the end of each season to see what needs replacing or repairing. Keep a uniform inventory list so you always know the number of uniforms in each size and style. Many schools have a uniform repair budget that can save the expense of replacing a damaged piece of apparel. When issuing uniforms at the start of the season, let your athletes know that they will have to pay for each piece of lost or damaged school-issued equipment.

Transportation

If the responsibility of ordering transportation to away meets falls upon your shoulders, there are several ways to stretch the budget. First, scheduling meets close to home minimizes transportation costs while making it easier for fans, friends, and parents to come to the meet. If you have access to school or district vans, use them if you can't fill an entire bus. Overnight trips are usually only scheduled for varsity squads, which can use school or district vans rather than more expensive commercial buses.

Entry Fees

Every Cross Country coach must plan for invitational meet entry fees. Most meet directors levy severe fee penalties for entry fees received past the deadline. If your school business office cannot cut a check in time to meet an entry deadline, send your own check, and get reimbursed, rather than pay a late fee. (Not paying your entry fee on time is also the best way not to be invited back to an invitational the next year.) If you do not have enough runners to enter a full team in a given division, ask whether it will cost less to enter your runners individually.

Organizing Parents for Support

Every high school sports program needs support that goes beyond the team budget. Fortunately, coaches are blessed with a built-in support group: the parents of athletes. Involve parents in your Cross Country program. Both you and the sport need them. You can organize a parents' group either formally, as a team booster club, or informally, as a loosely constructed group of interested parents. However, before you try to organize parents, you need to figure how they can help you best. Here are several activities that need parent volunteers:

- Fund-raising
- Helping with home meets
- Organizing the team awards banquet
- Providing transportation to meets, training, and activities
- Planning and chaperoning a summer team trip
- Hosting team meals before important meets
- Recruiting volunteers for meets
- Hosting invitationals and/or league final meets

Building a Cross Country Program

Once you have defined your program's needs, organizing parent help will be much simpler. Look for outgoing people who are eager to help. Parental loyalty will usually bring committed volunteers your way if you open the door first.

If you decide to organize a formal booster club, check first with your athletic director to see if there are any restrictions and guidelines. Then, form an organizing committee to develop formal by-laws of the group. After by-laws have been established, elect officers. Remember, however, that as the head coach, you need to be aware of all activities and remain in control of your team at all times.

A word about fund-raising. If your team's parents do most of the planning, preparation, and work, you should expect that they will want some control of how the money is spent.

Regardless of whether you organize parent support formally or informally, there are a number of things that you can do to encourage parents' involvement with your team.

One easy way to garner support is through a newsletter for parents. This gives you direct communication with parents without having the message filtered or forgotten by your athletes. A newsletter can relay information about meets, trips, college visits and recruiting, team gatherings, and other school activities. Such a newsletter can help organize a booster club.

Early in the season, ask for a volunteer to host a team parents' meeting. If no one's home is available, hold the meeting at school. This is a good time to introduce yourself to parents, explain your program and coaching philosophy, define seasonal goals for the team and individuals, set out team rules and expectations, and discuss fund-raising. More importantly, though, a parents' meeting is an opportunity for you to learn more about the athletes you coach while gathering support for the team. Encourage parents to ask questions.

One good way to build parent support is to have interested parents form a caravan to weekend invitational meets. Parents can arrange to leave school together at a predetermined time, perhaps meeting for breakfast or coffee beforehand. Of course, fans arriving *en masse* wearing school colors, hats, shirts, or jackets always inspires the team.

Team meals are opportunities to involve parents. Instead of heading off to the nearest pizza parlor, see if you can enlist a group of several families to host a pasta dinner. A combined team-parent gathering lets parents and athletes get to know one another.

Last, enlist parents to help you put on the team awards night. Even if your school has a spring sports banquet, you might put together a team-only gathering where you can acknowledge the contributions of each athlete individually.

Some coaches avoid soliciting help because they fear parents will disrupt their programs. Many coaches have horror stories to that effect. If organized properly with a clear set of expectations and rules, however, parents can be a tremendous asset to your program. It is your responsibility as coach to provide the guidance and leadership that best elicits the strong support most parents are willing to offer.

Planning and Organizing a Team Trip

Taking an athletic team on an overnight trip can be one of the most enjoyable events of the season or it can become a frustrating nightmare. Like most things, planning and organization determine the quality of the experience.

Team trips or camps are most enjoyable when you prepare in advance for both expected and unexpected situations. It is always a good idea to have a written set of procedures for any contingency. Checklists of “What to Do” or “What to Bring” help prevent you from overlooking details that might be forgotten in a busy moment or emergency.

When considering an overnight trip to a competition or organizing a running camp, ask yourself the following questions. What is the purpose of the trip? Does it help fulfill my coaching objectives for the season? How does the trip help meet the team and individual goals? Does this trip serve the overall purpose of the program?

Building a Cross Country Program

Some athletes become quite distressed if their daily routines are disrupted before competition. If a team's first overnight trip precedes a major championship, such as the State meet, the combination of competition stress and the disruptions of traveling might be very unsettling to some athletes. For that reason, you may want to organize a team trip in early or mid-season to accustom your athletes to overnight travel before competition. That way, your athletes can establish schedules and habits that help them get the rest and relaxation they need to compete well. Hotel beds, roommates, all night cable television, and the absence of parents may be completely new experiences for some of your athletes. The novelty of team travel often distracts athletes from the primary purpose of competition. A team trip helps athletes see travel as part of being a competitive athlete.

Overnight trips and camps also allow you to see your athletes outside of training and competition. How does each individual socialize with the team group? How do different groups and classes interact? A team trip can tell you much about the personality of your team. With this knowledge, such a trip provides you with an excellent opportunity to unite your team.

BEFORE TRAVELING

Questions to Ask

Ask yourself the following questions to help you develop a planning checklist for an overnight trip or team camp:

- What are the dates of travel?
- What times are we leaving and returning?
- From where are we leaving and returning?
- What kind of transportation will we use? If taking a bus, have we accounted for a bus driver and his or her accommodations?
- Do drivers/parents/spectators have maps to the meet?
- Has printed information, containing important telephone numbers, been distributed to parents?
- Do we have the Medical Release Form for each athlete?

- Do we know the location of emergency medical facilities in the area to which we are traveling?
- Do we have team rosters, checks, reservations, room assignments, time schedules, meal money, and credit cards?
- Have we packed an extra uniform?
- Have we developed a complete itinerary for the entire trip? (Always allow 30 minutes extra in travel time.)
- Is there adequate supervision for the number of athletes?
- Are there restaurants that can accommodate a group the size of our team? Have we made reservations?
- Where will we hold team meetings?
- What special responsibilities will be delegated to assistants?

Items to Plan

If you are planning a several day trip, such as a running camp, the questions above still apply, but also include the following items in your planning and organization:

- Camp dates and campsite reservation
- A budget that encompasses all expenses
- Food
- Transportation
- Insurance
- Campsite fee
- Support staff
- First Aid supplies
- Premiums (give-aways: T-shirt, equipment bag, socks, water bottle, Camper-of-the-Day award, etc.)
- Camping gear (if appropriate): tents, lanterns, flashlights, gas/propane stoves, kitchen supplies, cooking utensils coolers, folding tables, saw, hatchet, axe, wedge

Building a Cross Country Program

- Camp Layout: tent areas for boys/girls, cooking area, recreation area
- Work details: water; firewood; kitchen clean-up; camp clean-up
- A daily schedule that lists each day's activities
- A "What to Bring" checklist for your athletes, including training gear, personal supplies, general wear, camping gear.

Meetings to Hold

- Familiarize campers with the travel area and features such as normal day and night temperatures, locations of restrooms and showers, running routes and surfaces.
- Hold an orientation meeting the first day of camp communicating camp rules, schedules, workout times and procedures, meal times and duties, free time, team meetings, and expected camp behavior.
- Plan recreation apart from training.
- Consider including a "classroom" component with your camp by holding seminars and discussions on training, nutrition, racing strategy, sports psychology, or other interesting topics.

Alternatives to Team Trips

Not all teams can take a pre-season team training trip. The costs of such a trip are often more than many schools and athletes can afford. Other times, lack of transportation or adult supervision may make a team trip impossible. Nonetheless, there are several ways to combine intense training with recreation and opportunities for your athletes to bond as a team.

If a pre-season team trip isn't feasible, try taking your team on a number of day trips. The beach, local mountains, a lake, and state or county parks make good locations for both training and recreation. Combine serious training with games or a picnic. If transportation is an insurmountable problem, try local parks.

Summer practices afford you the opportunity to combine running training with other sports or games. Let your athletes warm-up or cool-down by playing other games like volleyball or soccer. You might think of creating training games that involve continuous running and teamwork such as a group treasure hunt.

Work with your local merchants and parks department to get reduced rates or free tickets to sports events, amusement parks, and movies. It allows your team to spend time together outside of practice, even though you may not be able to take a team trip.

Evaluating Your Cross Country Program

As a guide for evaluating your program throughout the season, we recommend you consider the following 15 questions:

1. What are our goals?
2. Are we improving and making progress?
3. Are we organized? Are our training sessions well-planned?
4. Is our training productive?
5. Is our program fun?
6. Do we look and act like a team?
8. Are our coaches always appropriate role models?
9. Are we in touch with our athletes? Do we listen?
10. Do we treat all our athletes respectfully, calling them by first names?
11. Are we fair, firm, and consistent in dealing with our athletes?
12. Are we teaching our athletes to be self-disciplined and responsible?
13. Are we protecting the safety and well-being of our athletes?
 - good equipment and facilities
 - safe training practices
 - proper supervision
 - prepared for emergencies

Building a Cross Country Program

14. Are we promoting Cross Country at our school?
15. Do our home meets make Cross Country a spectator sport?
 - efficiently managed
 - well-officiated
 - quick-paced
 - informative PA announcing
16. Do we work as hard as other coaches at school?



Chapter

Principles of Distance Running

To train athletes, you must have some understanding of the scientific principles that govern the physical and mental response to training.

Intelligently and systematically applying a basic knowledge of biomechanics, physiology, and energy production to the training of your athletes creates good Cross Country runners. Only in this way does success become a matter of planning, not happenstance.

Principles of Distance Running

The Biomechanics of Long Distance Running

A running stride has three phases: 1) **drive**, 2) **recovery**, and 3) **footstrike**. The drive pushes the body forward off the supporting foot. The recovery phase occurs when both feet are in the air. The footstrike begins as the lead foot touches the ground, causing a momentary braking or slowing. As the body's center of mass passes over the front of the foot, the drive phase of the next stride begins.

Running speed is a function of two things: **stride length** and **stride frequency**. Stride length is determined by leg length, leg strength, and running mechanics. Stride frequency (the time required to complete a running stride) is a function of leg length, genetic factors, and training. Increasing stride length by overstriding reduces speed, however, because it increases the braking effect of the footstrike. Conversely, overly short strides or understriding may increase frequency but still reduce speed because of the decrease in stride length. The most effective way to increase running speed is to increase stride length while maintaining frequency and efficient running mechanics. Other variables being equal, a 1-inch increase in stride length results in a gain of 4 feet over 100 meters!

TEACHING DISTANCE RUNNING MECHANICS

The body moves as a system of levers. Each of these levers (the head, torso, arms, and legs) obeys the laws of physics and motion. The three primary components of running mechanics are posture, arm-action, and footstrike.

Running Posture

Distance runners should run tall with the upper body erect and the weight centered over the hips. You do not need to coach forward lean. Forward lean is a function of acceleration. The body leans forward as it accelerates, and straightens as acceleration slows. In distance races, acceleration occurs during the the first several strides. After that, the position of the torso should be erect, directly above the hips. When running, the leg swings forward-and-back like a double pendulum. The sweep of that pendulum action is the length of the stride, and is largely determined by leg length and the height to which the knee swings forward. Leaning forward lowers the center of mass, decreasing the length of the stride.

What to Teach

Athletes should run erect with the torso directly above the hips, head up, chin slightly tucked, chest out, and shoulders back.

Arm Action

The arms help the athlete move in the direction he or she wants to go. Swinging the arms straight forward and back or across the midline of the body causes the shoulders to rotate, restricting the free swing of the legs at the hip joints. Shrugging the shoulders during the arm swing also creates shoulder rotation. To **keep the shoulders square** while running, the arms should swing forward with the hands moving from a point just behind the hips, slightly across the chest, and nearly up to shoulder level. The forearm and hand should move forward and back as one piece. Flexing the wrists turns the elbows out, reducing the leverage of the arm swing. The hands should stay relaxed and cupped because clenching the hands into fists causes the body to tense.

The arms control running. A runner's pace is set by the cadence of the arm swing. But distance runners cannot run with vigorous arm action without paying a high energy cost; so, conserving energy must be a primary objective of the arm swing.

What to Teach

The arms should swing forward and back, until the finishing sprint, with a constant **arm angle of slightly less than 90 degrees**. Running with the hands held **palms down** locks in the proper arm angle. The forearm and hand should always move in one piece without any break in the wrist. The hands should be cupped and relaxed.

Footstrike

Shoes significantly alter our natural footstrikes. Most of us would not land on our heels, slapping our forefeet to the ground, if running barefoot. Today's super-cushioned shoes allow runners to make those kinds of mechanical mistakes. A heel-first footstrike extends the foot in front of the center of mass, creating a braking action at each touchdown. This is called **overstriding**. Force can only be applied efficiently at certain angles. Landing in midstance position, with the weight toward the ball of the foot, puts the foot beneath the hips with the leg slightly bent, ready to bear weight. This position allows rapid forward weight transfer as the leg straightens into the next stride with a full extension off the ball of the foot.

Principles of Distance Running

Accelerating off the pace requires different mechanics than accelerating from a start. Many distance runners try to run faster in the closing stages of a race by taking longer strides. This results in overstriding and a loss of speed. The key to accelerating off the pace is creating short, quick levers by closing the arm angles, increasing arm cadence, and shortening the stride. Running with the hands turned **thumbs up** recruits more arm and shoulder muscles to swing the arm rapidly.

What to Teach

The foot **should strike flat**, in a mid-stance position, with the heel making contact, but the **weight forward** towards the ball of the foot.

Breathing

When running, the rate of respiration increases to meet the body's demand for oxygen. Oxygen intake is enhanced by taking deeper breaths.

What to Teach

Keep the thoracic cavity expanded by running erect with the chest out and shoulders back. Relax, take deep abdominal breaths, and breathe through both the nose and mouth.

Putting It All Together

Many young runners do not have a good feel for how their bodies move (kinesthetic sense). Even those who do often lose that sense once they become fatigued. Practicing proper running technique must be an ongoing process if you want your athletes to acquire efficient, rhythmic, symmetrical running mechanics. You must develop a critical eye for proper mechanics, correct errors, and praise progress.

Helpful Coaching Cues...

For Correct Posture

- Sit up
- Run tall
- Head up, chin slightly tucked
- Chest out, shoulders back

For Correct Arm Action

- Let the shoulders hang loose and relaxed
- Let the arms swing from the shoulders as one piece
- Hands cupped and relaxed
- Hands down, palms down

For Correct Footstrike

- Flat landing, weight forward
- Stay off the heels

To Relax

- Run smooth and loose
- Loose hands, loose jaw
- Get comfortable

To Accelerate and Sprint

- Quick arms, short strides
- Hands up, thumbs up
- Drive off the balls of the feet

The Physiology of Cross Country Running

To understand the basis of Cross Country training, you must be familiar with the physiology of long distance running. Without delving into the complex biology of the cardiovascular and muscular-skeletal system, every coach should have a fundamental knowledge of human energy systems and how they are affected by training and competition.

ENERGY PRODUCTION AND LONG DISTANCE RUNNING

To live, the human body needs energy. The more active a person is, the more energy required. Energy fuels the body, and allows you to perform the wide range of your daily activities.

All human energy is produced through the breakdown of a chemical compound called **ATP**, *adenosine triphosphate*. Like gasoline, it is broken apart or “burned” to produce energy. At any given time, you have about 3 ounces of ATP spread throughout your body. That amount lets you engage in vigorous activity for only a very short time. For example, existing ATP is exhausted after roughly 6 seconds of an all-out sprint.

Physical activity that lasts longer than 6 seconds requires the body to produce additional energy by converting the raw fuel of carbohydrates, proteins, and fats from food into ATP. This energy production is characterized by whether or not oxygen is used to make ATP. Energy can be produced through **aerobic** processes, that is, with oxygen. Or, it can be produced through **anaerobic** processes, meaning without oxygen.

Principles of Distance Running

Whether energy is produced aerobically or anaerobically depends mostly on the nature of the physical activity involved. As already mentioned, intense energy needed for a very short period of time is supplied from the breakdown of stored ATP. It is an immediate energy source.

Once ATP stores are exhausted, though, energy must come from another source. If the activity is intense and of short duration, energy is produced anaerobically. But while anaerobic processes supply energy quickly, they can only do so for a short while. You see, anaerobic processes create **lactate**, or lactic acid, that causes muscles to burn, cramp, or seize, if the activity is carried on long enough. It's the body's way of signaling that it cannot create energy at the rate it's being used. The muscle burn at the end of a 400-meter sprint is an example. When lactate starts to accumulate, your muscles soon stop working.

To sustain activity over a long period of time, your body must be able produce ATP through aerobic means. A balance between the demands of the activity and aerobic energy production is called a **steady state**. In this steady state, lactic acid does not accumulate in the muscles, and you are able to continue activity for a long time. Since long distance and Cross Country running require running for extended periods of time, you must be able to produce energy aerobically.

VO₂ MAX AND LACTATE THRESHOLD

Since success in long distance and Cross Country running is primarily a function of the ability to produce energy aerobically, you need to understand how the body governs aerobic performance. There are two primary limits on aerobic performance: **VO₂ max** and the **lactate threshold**.

Your **VO₂ max** is the measure of the maximum amount of oxygen that you can utilize for aerobic energy production over a given period of time. The VO₂ max is also relative to body weight, so it is typically expressed in terms of...*milliliters of oxygen per kilogram of bodyweight per minute.*

In real terms, VO₂ max tells you how much oxygen you can use each minute. More importantly, it is a *measure of basic aerobic fitness*. It describes your potential aerobic capacity, the higher the better.

Aerobic capacity, however, is not the only factor limiting aerobic performance. Although VO_2 max describes your potential capacity, it does not describe how efficiently your body uses oxygen. The measure that describes your aerobic efficiency, or ability to perform, is your **lactate threshold**. The lactate threshold is defined as the point at which you can no longer meet the energy demands of exercise without lactic acid accumulating in the blood and muscles.

Typically, the lactate threshold is expressed as a percentage of VO_2 max. An average sedentary person generally has a lactate threshold of around 50% of VO_2 max. World-class endurance athletes often have lactate thresholds of between 80-90% of VO_2 max. So, both VO_2 max and lactate threshold *together* describe the ability to perform aerobically. High VO_2 max is not enough. An athlete with a high lactate threshold can often outperform a rival having a higher VO_2 max.

(Note: Unfortunately, measuring VO_2 max and lactate levels requires a laboratory, so it's unlikely that you're going to be able to get an exact figure for each of your athletes. However, research shows clearly that each measure can be improved through specific training. So even though you might not have exact numbers for your athletes, you will know the type of training they need to improve.)

Universal Principles of Training

In addition to a basic knowledge of running biomechanics and energy systems, a coach must understand and apply the fundamental principles that govern any type of physical training. These empirical principles derive from the body's response to training, stress, and skill acquisition. Not adhering to these basic tenets will lead to poor performance and expose your athletes to a substantial risk of injury. The following principles must be followed in any well-constructed Cross Country training program:

OVERLOAD

The most important principle of training for athletics is that of **overload**. The aim of training is to enhance athletic performance by increasing the capacity for work. To achieve this goal, your training program must cause your athletes to adapt to higher levels of physical and mental performance. Overloading is the essential mechanism, or tool, in creating this adaptation.

Principles of Distance Running

Any new type of training subjects the body to greater or different stress than it is accustomed to. When the load is greater than the normal level of exertion, it becomes a *stressor* and stimulates an adaptation process within the organism (the athlete). This process is explained in Hans Selye's concept of the **general adaptation syndrome**, which states that all organisms respond uniformly to stress. When confronted with a stressor, an organism will initially respond with alarm. As the stress continues, the organism will then resist in various ways. If the resistance is positive, the organism is said to have adapted. If, however, the resistance to the stress is negative, or the stress is unchecked, the organism will degrade into a state of exhaustion.

Selye's Theory of General Adaptation

Stress

Stage 1: Alarm

Stage 2: Resistance

Stage 3: Positive Adaptation or Negative Exhaustion

The general adaptation process causes the body to react to stress in a predictable manner. This predictability allows you to plan training that produces positive adaptation. Conversely, this process also explains the negative results that athletes experience when overload or stress is managed improperly.

A period of 21-28 days occurs before the effect of training takes place. In other words, the benefit of a given workout will be reaped three to four weeks later, not the next day.

PROGRESSION AND VARIABILITY

The logical consequence of adaptation to overload is **progression**. As an athlete adapts to a given training load, an increase in load then becomes necessary to fuel the process of adaptation to a better level of performance. In other words, as fitness increases, progressive increases in training load are required to stress the body into a higher level of adaptation.

To plan progression, however, you must have an accurate assessment of each athlete's capacity for training. Athletes should be tested periodically in terms of the physical requirements and skills demanded by Cross Country. Tests commonly measure such things as VO_2 max, lactate threshold, muscular strength, muscular endurance, and flexibility. This information becomes the foundation upon which you will manage the progressive overload of training. If you don't have such knowledge, training becomes haphazard, and often results in the frustration or injury of the athlete.

The progressive overload of training is measured in four ways: mode, frequency, intensity, and duration. **Mode** is the type of training (i.e., running, stretching, or weightlifting). **Frequency** is the number of training units in a given time frame (i.e., weight training three times per week). **Intensity** is a measure of the degree of exertion in training (ie. 6x800m @ 80% of VO_2 max). In running, training intensity is commonly measured by time per distance. **Duration** is the length of time or number of repetitions of a particular training mode (i.e., 45-minute steady-state run). Manipulating these four parameters comprises the essence of your role in directing your athletes' training.

A corollary to the principle of progression is **variability**. Varying the type of training spurs adaptation. Any single type of training yields good improvement for a period of roughly four weeks. Beyond that amount of time, results diminish. Remember that one of the measures of overload is training mode; varying the type of training helps fulfill the basic need for overload.

SPECIFICITY

Our bodies adapt to exercise or physical stress in direct response to the nature of the demands imposed. This phenomenon, known as the **Specific Adaptation to Imposed Demands (SAID)**, means that training needs to address the specific requirements of a sport. You must train the skill or system that you intend to employ in competition. Distance runners must train to raise aerobic thresholds; jumpers must train for rhythm and explosiveness; 100-meter runners must train for speed. Moreover, *athletes need to train physically and mentally for competition*, not merely conditioning. Some amount of training needs to mimic the specific nature of the competitive event.

Principles

of Distance

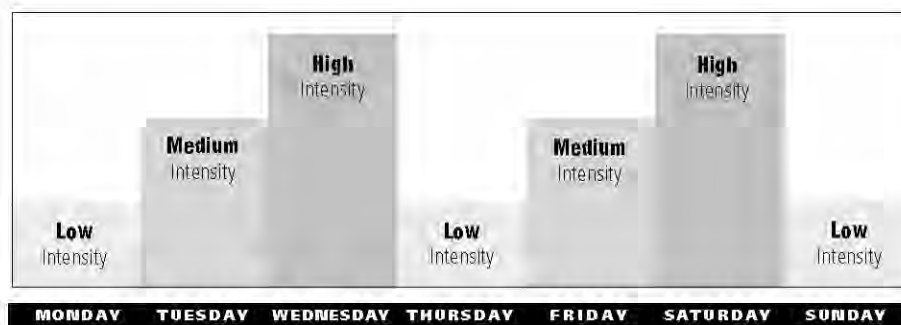
Running

RECOVERY AND RESTORATION

All gains in training are realized during periods of recovery. This fundamental fact of athletics is often ignored, and cannot be stated too strongly. Recovery and restoration of the body are integral and active elements of training, not the absence of it. For the body to adapt positively to the progressive overload of training, it must be able to recover adequately from the applied stress. A belief in “no pain, no gain” all too often runs the very thin line between optimum training and overtraining. The volume of training is far less important than the intelligent manipulation of training intensity. Training without proper rest yields poor results and, often, injury.

Too frequently, coaches do not understand the physical toll of hard training. Generally, adequate recovery from a strenuous workout requires at least 48 hours. In any given week, no more than two or three intense training days, including competitions, are recommended. Moreover, days of total or active rest are needed to dispel the accumulated fatigue of exercise. Without such recovery, chronic overtraining with significant risk of injury becomes likely. Some coaches view rest as wasted time in which they might be able to squeeze more training. This often happens near the end of a season when the opposite should be true. Not too long ago, a certain coach was overheard saying that since his team had qualified for the CIF championships, they really needed to train hard and get in shape. The amount of rest should be greatest during the championship phase of the season.

Vary training intensity from day to day using a hard day/easy day approach. Since most hard sessions require 48 hours' recovery, avoid consecutive days of hard effort training.



INDIVIDUALITY

Every athlete experiences training differently. Recognizing individual differences and adjusting expectations is extremely important when designing and conducting training. Size, age, strength, and even emotional maturity determine the type and amount of training under which any athlete will thrive. High school coaches often will find that some of their most talented athletes have a limited capacity for hard training, while less talented athletes can endure much more. While your training program needs an overall design, volume and intensity must be adjusted to the individual.

Principles of Long Distance and Cross Country Training

AEROBIC CONDITIONING

The fundamental purpose of Cross Country training is to enhance the capacity to utilize oxygen. Since 75-90% of the energy used to run distance races is produced aerobically, it is very hard for athletes to succeed in Cross Country without a solid base of aerobic fitness. A period of long, continuous distance training must be part of your training plan if your runners are to do well and remain injury free. As aerobic fitness grows, an athlete is able to expend more energy during a race, and thereby, run faster.

The commonly accepted measure of aerobic fitness is the VO_2 max, the limit of the body's ability to consume oxygen. The higher your VO_2 max, the more fit you are. However, basic human physiology and your genetic makeup set an absolute limit to your VO_2 max; it cannot increase indefinitely. Most athletes will reach their VO_2 max limits within one year of consistent aerobic training.

The goal of aerobic training is to increase VO_2 max, or aerobic performance capacity. In terms of training, this goal is best accomplished through prolonged low-intensity aerobic exercise. For Cross Country and long distance running, this usually takes the form of steady-pace runs, or what some call long, continuous distance.

Principles of Distance Running

LACTATE THRESHOLD TRAINING

While VO_2 max is the the measure of aerobic capacity, *the ability to perform aerobically is limited by the lactate threshold*. The lactate threshold is the level of exertion at which the body becomes incapable of producing energy aerobically and lactate (or lactic acid) begins accumulating in the blood-stream and muscles. Raising the lactate threshold, as a percentage of VO_2 max, is the key to improving aerobic performance.

Why is the lactate threshold level so important for aerobic performance? Well, as mentioned earlier, the average sedentary person has a lactate threshold of approximately 50% of VO_2 max, and world-class endurance athletes have lactate thresholds of 80-90% of their VO_2 maxes. So, if you have two athletes with similar talent and VO_2 maximums, the athlete having the higher lactate threshold will do better in Cross Country competition .

While improving VO_2 max means increasing the amount of oxygen an athlete is able to use during exercise, *raising the lactate threshold is a result of training the body to use oxygen more efficiently*. As a result, the athlete can produce more energy without accumulating lactic acid. The threshold increases because the body responds to hard training by decreasing the amount of lactic acid produced and enhancing its ability to buffer and absorb lactic acid while exercising.

Many types of Cross Country training are used to increase lactate threshold. In general, such training forces the athlete to run at or above the lactate threshold level for various amounts of time. Specifically, Tempo-Pace Runs, Repetition Training, Interval Training, and Surging Training are methods of increasing lactate threshold.

SPEED DEVELOPMENT

The ability to run extremely fast is not a primary concern of long distance and Cross Country running. The energy systems and training required by sprinting conflict with the demands of distance running. That is not to say, however, that speed is unimportant for distance runners. All things being equal, the fastest runner wins.

Cross Country runners do need to develop speed. However, they must learn to run fast like distance runners, not like sprinters. In other words, they must develop speed within the context of aerobic training. Learning to be fast at the end of 5000 meters is much different than becoming a 100-meter sprinter.

Cross Country training most typically uses three methods to build speed: 1) **Speed Play (Fartlek) Training**, 2) **Running Form Drills**, and 3) **Speed Buildups, or Strides**.

RUNNING MECHANICS

Good running mechanics allow an athlete to apply force efficiently and maximize aerobic capacity. Poor mechanics inhibit the ability to train and compete well. Remember, distance running combines aerobic physiology with the biomechanics of human movement. A biomechanically inefficient habit can multiply itself hundreds or thousands of times over the course of a Cross Country race. Poor mechanics also can lead to overstress injuries like shin splints or stress fractures.

Cross Country training generally employs **Running Form Drills**, **Speed Buildups**, and **Strength Training** to develop good long distance running technique. Continually monitor your athletes' running mechanics, making adjustments when necessary.

SPECIFIC STRENGTH

All athletes should undertake sport specific strength training. Weight training, calisthenics, and plyometric training are methods that should be used by distance runners. While Cross Country athletes do not need to engage in the type of explosive power training done by throwers, jumpers, and sprinters, they do need to develop strength to enhance their running and avoid the injuries that can result from muscle imbalance and weakness.

MENTAL TOUGHENING

Cross Country runners must accustom themselves to the physical discomfort that is part of the sport. Running near or above lactate threshold is difficult. Unlike what happens in other sports, where physical distress only lasts for short moments or indicates injury, Cross Country runners experience discomfort during most of training or racing. It is a basic fact of the sport. To compete successfully, distance athletes must develop the psychological and physical skills and tactics to cope with the pain. Relaxation, stretching, breathing patterns, associative monitoring, and goal reinforcement are among the methods that Cross Country athletes use to run past discomfort.

Principles of Distance Running

COMPETITION

Cross Country is a competitive sport, not just a fitness activity. You must encourage and train your athletes to race. Your program certainly can make room for participants, but in the end, your success will be measured to some degree by your athletes' desire to test themselves in competition. Athletes do not have to be victors in order to be great competitors, but they must be willing to reach beyond their known limits. Inspiring your athletes to meet the challenge of competition is one of the best gifts you can bestow as a coach.

Planned Performance Training for Cross Country

The systematic application of biomechanical, physiological, and psychological principles to the training and development of your Cross Country athletes is called **planned performance training**. The goals of planned performance training are maximum improvement and attainment of peak performance at a planned point within the competitive season.

These goals are accomplished by applying the universal principles of training to the specific demands of Cross Country running. Addressing the sport-specific needs of aerobic conditioning, threshold training, speed development, specific strength, running mechanics, and mental toughening in light of the principles of overload, specificity, variability, recovery, and individuality creates a matrix from which you, the coach, construct the training that results in improved performances and predictable competitive success for your athletes.

With proper training, an athlete realistically can expect to improve performance 1-3% per year. The maturation that an athlete undergoes over the course of high school may well yield far greater improvement, but 1-3% is a fair expectation. This figure assumes the athlete trains consistently and remains free of injury.

Example: 10:00 for 3200m $10:00 = 600$ seconds

1% improvement = 6 seconds

3% improvement = 18 seconds

No training plan is complete without accurate and detailed records. Records of workouts, training mileage and times, and race results make up the database from which you will construct your training plan from year to year.

Periodization of Training

The tool with which you construct successful training and competition out of the matrix of training principles and demands is called periodization. It is the key to planned performance training. **Periodization** is the process of dividing an athlete's athletic career, training year, and competitive season into units of time devoted to different methods and objectives of training.

Periodizing training for high school athletes is tremendously challenging. The wide range of physical and emotional maturity, body types, basic strength, aerobic fitness, overall athletic talent, and gender differences make such planning complicated. Nonetheless, adhering to basic principles with a special eye to the individuality of young athletes is your best formula for success. Always train your athletes gently at first. A strict “no pain, no gain” approach will only discourage and injure your athletes. Train to remedy weaknesses early in the season. Train to exploit strengths later in the season.

AN OVERVIEW OF THE PERIODIZED CAREER

CYCLE	EXAMPLE
Career	<i>Long Distance Runner</i>
Segment	<i>High School, University, Open</i>
Training Year	<i>Freshman, Sophomore, Junior, Senior</i>
Macrocycle	<i>Cross Country, Track</i>
Period	<i>Preparatory, Competitive, Transitional</i>
Phase	<i>Early Competitive, General Competitive, Peak Competitive</i>
Microcycle	<i>Week 1, Week 2, Week 3, Week 4,</i>
Training Session	<i>Monday</i>
Training Unit	<i>Repeats</i>

Principles of Distance Running

Periodization involves varying not only the type of training, but also the intensity and volume of the training load. Intensity is defined as the strength or concentration of work per unit of time (i.e., velocity, heart rate, height, or distance). Volume is the quantity of training done during a given period of time (i.e., meters, miles, repetitions). The careful manipulation of intensity, volume, and recovery is the essence of planned performance training.

FACTORS IN PERIODIZING AN ATHLETE'S TRAINING

Length of Season

- Does the athlete train for long distance running throughout the year?
- Does the athlete compete in multiple sports or events?
- How many months can or will the athlete devote to distance training?

Performance Level

- National caliber? State meet qualifier? Section finalist? League finalist? Varsity? Novice?

Physical Maturity

- A 14-year-old freshman runner is usually very different physically than an 18-year-old varsity runner.

Experience

- How many years has the athlete been running and racing?

Aerobic Fitness

General Athletic Ability

- Muscular strength, running background, height and weight, physical weaknesses.

Emotional and Intellectual Maturity

Individual and Team Goals

- Does the athlete plan to run past high school? Past the school year or season? What does the athlete want to accomplish?

Number of Athletes You Coach

- Do you coach boys and girls? Is the squad large or small?

Training Locations, Facilities, and Conditions

- Can you train on both hills and flats?
- Do you have access to weight training? Is heat or smog a problem?
- How much individualized training can you provide for your athletes?

THE LANGUAGE OF PERIODIZATION

Many coaches find themselves confused by the language of periodization. Part of this confusion results from the fact that every coach periodizes training uniquely and often uses terms differently from others. The following is a short glossary of the terms that describe the periodization of training.

Training Year — The period of time over the course of a calendar year during which the athlete trains.

Cycle — A time period in which specific workouts with specific purposes are planned. There are several types of cycles.

Macrocycle — A macrocycle describes an extended body of training focused on a particular sport or event. For example, the training of a year-round distance runner would cover two, and possibly three, macrocycles: one for Cross Country, one for track season, and perhaps one for indoor track season. Sometimes, coaches will refer to a training year as one macrocycle.

Period — As the term implies, a period is the basis of the periodization process. Generally, a macrocycle is divided into three training periods: **preparation**, **competition**, and **transition** (or recovery). *Preparation* involves what is typically described as pre-season. *Competition* describes the unit of time covering actual meets and races. *Transition* is the recovery time connecting one macrocycle to another.

Phase — A training phase is a unit within a training period that emphasizes a specific type of training. The concept of a training phase is based on the fact that any single type of training yields consistent improvement over roughly three to four weeks. A phase usually varies from two to five weeks, with four weeks or one month being most common. A training phase is often referred to as a mesocycle.

Much as a macrocycle is comprised of distinct training periods, each training period is comprised of different training phases. For example, within the competitive period of the season there may be early competitive, general competitive, and peak competitive phases. During each of these phases, a specific type of training is stressed.

Principles of Distance Running

Examples of Cross Country training phases:

- *General Preparation* — This phase usually consists of gradually increasing in long, steady distance mileage to improve VO_2 max and cardiovascular fitness.
- *Specific Preparation* — This phase introduces hill and tempo runs along with steady distance to improve aerobic efficiency.
- *Early Competitive* — During this phase, mileage is reduced and the intensity of workouts increases. Lactate threshold training, in the form of tempo runs, hills, repetitions, and intervals, becomes more important. Competition begins.
- *Competitive* — Performance in dual meets and invitational races, along with increased training intensity, is emphasized.
- *Peak Competitive* — The phase for which peak performance is planned.
- *Transition (or Recovery)* — A transition phase is one of total and active rest, allowing physical and mental recovery before the start of a new training cycle.

Microcycle — A microcycle is a small unit of time (3-14 days long, but usually one week) that incorporates the training elements or workouts that address the objectives of the training phase.

Session — A training session is each day's workout. Sometimes, of course, athletes do two daily training sessions.

Unit — A training unit is a single component of a training session, such as stretching, weightlifting, or running.

HOW TO CONSTRUCT A PERIODIZED TRAINING PLAN

Whatever vocabulary you choose when periodizing your team's training, understand that any program must make athletes fit to train, train to race, and compete successfully.

Step 1

You first need to determine the total length of time covered by training and competition. This is your season, or **macrocycle**.

CROSS COUNTRY MACROCYCLE

An Overview of the Entire Year (with XC in rectangle)

JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APRIL	MAY
Preparation			Competition			Trans	Preparation		Competition		
general 7 wk specific 6 wk			early 6 wk general 4 wk specific 2 wk			2 wk	general 6 wk specific 6 wk		early 4 wk general 4 wk specific 2 wk		

Preparation Period: (13 weeks) June 5-September 3

General Preparation Phase: (7 weeks) June 5 - July 23

Specific Preparation Phase: (6 weeks) July 24 - September 3

Competition Period: (12 weeks) September 4-November 27

Early Competition Phase: (6 weeks) September 4 - October 15

General Competition Phase: (4 weeks) October 16 - November 13

Specific Competition Phase: (2 weeks) November 14 - November 27

Transition Period: (2 weeks) November 27-December 11

Recovery Phase: (2 weeks) November 27 - December 11

Principles of Distance Running

Step 2

Determine the target race for each individual and your team. It is the competition in which you plan for peak (best) performance. The talent, fitness, and competitive strength of your team and individual athletes will determine target races.

You may find that you have a talented varsity squad that will be contending for a state title. In that case, the training program must account for those runners whose seasons will end several weeks earlier. They should peak at the appropriate time.

On the other hand, you may have an average team with no hope of advancing beyond the league meet, but have one runner who is extremely talented. Here, you must construct that one athlete's training so that his or her best performance comes during the championship season.

YEARLY PERIODIZATION FOR CROSS COUNTRY RUNNERS OF VARYING ABILITY

Novice Runners

JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APRIL	MAY
Preparation			Competition		Trans	Preparation			Competition		
general 8 wk specific 6 wk			early 4 wk general 3 wk		2 wk	general 6 wk specific 5 wk			early 4 wk general 4 wk specific 2 wk		

Intermediate Runners

JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APRIL	MAY
Preparation			Competition		Tran	Preparation			Competition		
general 7 wk specific 6 wk			early 6 wk general 4 wk specific 2 wk		2 wk	general 6 wk specific 6 wk			early 4 wk general 4 wk specific 2 wk		

Advanced Runners

JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APRIL	MAY
Preparation			Competition		Trans	Preparation			Competition		
general 8 wk specific 6 wk			early 5 wk general 4 wk specific 2 wk		2 wk	general 6 wk specific 6 wk			early 4 wk general 4 wk specific 2 wk		

Step 3

Divide the total amount of time (the macrocycle) into a **preparation period** and a **competition period**. Ideally, the preparation period should be longer than the competition period. Individual circumstances will determine the length of each. The preparation period typically covers summer training and the first weeks of the school year. The competition period covers the Cross Country racing season. If you are creating a year-round training plan, include a transition period of about 4 weeks after the last competition or target race.

PERIODIZATION OF TRAINING OBJECTIVES

JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
PREPARATION PERIOD			COMPETITION PERIOD			TRANSITION
General Preparation Phase	Specific Preparation Phase		Pre-Competition Phase	General Competition Phase	Specific Competition Phase	Recovery Phase
Raise fitness level	Develop specific fitness		Increase competition intensity	Refine specific skills	Peak performance	Active rest
Define previous problems	Correct previous problems		Improve meet performance	Prepare for peak		
Endurance, strength, flexibility	Increase training intensity		Evaluate & improve technique	Intensity up, quantity down		

Step 4

Next, divide the preparation period into two training phases: general preparation and specific preparation.

The preparation period is much like the foundation of a building. The deeper and stronger the foundation, the taller and larger the building. Good preparation sets the stage for a successful competitive season. Without it, an athlete is susceptible to injury once intense training and racing begin. Moreover, a solid training foundation allows an athlete to sustain peak competitive performance over a longer amount of time. With poor preparation, an athlete will often peak early in the season, and have diminishing results thereafter.

In a 2-4 week training phase, primary emphasis should be given to one type of training, secondary emphasis to another, and less emphasis (maintenance) to a third. Within any training plan, do not schedule more than three hard training days per week, including competitions. The other days should consist of easy training or recovery.

PERIODIZATION OF TRAINING METHODS

Period	Preparation		Competition		
MONTH	June/July	August	September	October	November
PHASE	General Preparation	Specific Preparation	Pre-Competition	General Competition	Specific Competition
PRIMARY EMPHASIS	Easy Pace Runs	Steady Pace Runs	Long Reps @ RP Hill Circuits Hill Loops @ GP	Surging Runs Tempo Intervals GPreps/Hill Circuits	Speed Play (Fartlek) Tempo Intervals Speed Reps @ Track
SECONDARY EMPHASIS	Steady Pace Runs Strength Training	Hill Loops	Steady Pace Runs Reps @ Hill Loops	Steady Pace Runs	Easy Pace Runs
MAINTENANCE		Easy Pace Runs Strength (3x wk)	Easy Pace Runs Strength (2x wk)	Easy Pace Runs Strength (1x wk)	

Principles of Distance Running

The **general preparation phase** will last 6-8 weeks depending on when training starts. (Remember, the length of this period is determined mostly by the amount of time between the start of training and the target competition.)

The goal of general preparation training is to build the overall fitness of your athletes. General preparation develops the basic fitness that allows your athletes to train and race hard. Primary emphasis should be given to workouts that improve aerobic endurance (VO_2 max). Secondary emphasis should be given to strength and flexibility training. Specific weaknesses and problems should be addressed during this phase.

General preparation will consist mostly of long easy training runs. Training distances or time will vary according to the condition of individual athletes. Runs of 2-8 miles or 20-60 minutes are typical. (Do not expect novice runners to keep pace with your varsity squad.) Increase the volume of training gradually; raise mileage about 10% every three weeks. Running training should be done 3-5 times per week with an additional day of cross training activity. Also introduce running form drills and strength training 2-3 times per week.

The goal of the **specific preparation phase** is to develop the physical skills and fitness demanded by Cross Country competition. This phase will cover 4-6 weeks. Training intensity will increase while the volume of training is maintained. Primary emphasis is given to workouts that improve aerobic efficiency and raise the lactate threshold. Steady-state runs, long tempo runs, and long repetitions become the staples of training during this phase. Secondary emphasis should be placed upon the development of efficient running mechanics. Running form drills and 100-200-meter stride repeats address this need. Maintain aerobic fitness with regular easy-pace runs. Strength training should be continued through the specific preparation phase.

Step 5

Divide the competition period into three phases: **early, or precompetition; general competition, and peak, or specific, competition.**

The **early, or pre-competition**, phase will cover nearly half, 4-6 weeks, of the competition period. (Don't worry about the terminology; many coaches like to use pre-competition as a matter of convenience.) Training focuses on the preparation of athletes for competition by increasing the intensity of workouts. Maximizing aerobic fitness and efficiency are the goals of training.

Emphasize tempo intervals, repetitions, and steady-pace runs during this phase. Hill runs and fartlek should be integrated into the training plan. Training intensity will continue to increase while volume drops slightly. Hard training continues through early competitions, although extra rest must be included to accommodate a league schedule that pits your team against tough opponents. Continue running form drills and strength training twice per week.

General competition is a period of about four weeks, and covers the bulk of your racing season. By now, your athletes should be quite fit. The focus of training should be to prepare athletes for hard weekly competition and peak performance at the end of the season. Your athletes should be perfecting their racing skills during this time. The formula of your pack running and team racing strategies should be defined before your most important meets. For many of your athletes, the end of general competition marks the end of their season. Make sure that you plan training so that their best performances coincide with the true ending of their season's competition.

General competition training is the most intense of the season, and you should compensate by dropping volume. Intervals and speed repetitions are emphasized. Tempo runs continue, but are less important. Remember, hard training requires adequate rest if your team is to race well each week. Each race is part of training. Work on specific race tactics and strategies, as well as course idiosyncrasies.

The **peak competition** phase is the period of time when your athletes should achieve their best performances of the season. Depending on the talent of your team, those performances should occur somewhere between league finals and the state meet. The goal of this phase, which lasts 3-4 weeks, is racing in optimum physical and mental condition.

Training during this phase should be relatively light. Recovery prepares your athletes to race their best. You want your runners to feel fresh for every competition. Training intensity and volume drop considerably. Hard hills, plyometrics, and weight training should be stopped two weeks before the target competition. Tempo and fartlek runs combined with short steady-pace runs comprise the bulk of training.

Principles of Distance Running

Step 6

After you have divided your season into phases, divide each phase into **microcycles**. These cycles can last from 3-14 days, but it is easiest to create microcycles lasting 1 week. Each microcycle should include the types of workouts that meet the purpose of the training phase. For example, during the specific preparation phase, you might want your team to do 2 easy distance runs, 2 steady-state runs, 1 tempo run, drills, and strength training. Your challenge is to put those workouts into the frame of your training week and racing schedule.

Scheduling workouts requires you to keep in mind both the type of training your team needs and the fitness of individual athletes. Start by determining the number of workouts for each type of training that will be done during the phase and microcycle. Then, for each day in the training week, schedule a type of workout. In this way, you will build a monthly schedule that includes the appropriate training.

Step 7

The next step is scheduling actual workouts for each training **session**.

Usually, there is one training session per day, although two sessions sometimes are done during the summer and early season. Compose each session by listing all the units of training you will use. Don't forget to schedule warm-up, drills, running, cool-down, flexibility training, and strength training for each session.

MONTHLY WORKOUT SHEET

Month October/November

Period Competition

Phase Gen/Peak Competition

INT	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	10/18	19	20	21	22	23	24
H	CSD	FARTLEK	STEADY PACE	HILLS	CSD	RECOVERY	MT SAC
(M)	LONG		MEDIUM		MEDIUM	RUN	+
E	STRIDES		STRIDES		STRIDES	STRIDES	
	25	26	27	28	29	30	31
(H)	CSD	TEMPO	STEADY PACE	FARTLEK	RECOVERY	TRI-MEET	ACTIVE
M	MEDIUM		MEDIUM		RUN	##	REST
E	STRIDES		STRIDES		STRIDES		
	11/1	2	3	4	5	6	7
H	CSD	HILLS	STEADY PACE	TEMPO	RECOVERY	LEAGUE	ACTIVE
(M)	MEDIUM		SHORT		RUN	FINALS	REST
E	STRIDES		STRIDES		STRIDES	**	
	8	9	11	11	12	13	14
H	CSD	FARTLEK	STEADY PACE	TEMPO	CSD	RECOVERY	SECTION
(M)	LONG		MEDIUM		SHORT	RUN	PRELIMS
E	STRIDES		STRIDES		STRIDES	STRIDES	**
	15	16	18	18	19	20	21
H	CSD	FARTLEK	STEADY PACE	TEMPO	CSD	RECOVERY	SECTION
M	MEDIUM		SHORT		SHORT	RUN	FINALS
(E)	STRIDES		STRIDES		STRIDES	STRIDES	**
H							
M							
E							

WEEKLY WORKOUT INTENSITY	TYPES OF WORKOUT SESSIONS THIS PHASE	COMMENTS
H = Hard M = Medium E = Easy	Fartlek Steady-pace run Continuous slow distance	1 Weights - Exercises 2 sets - 10 reps, stop 2 weeks prior to finals
KEY ## = Routine Meet + = Challenge Meet ** = Target Meet	Interval Surging Hills	2 Drills - Every stride day 3 Fartlek - workout includes surging
	Drills Strides Pool training	4 Hills - includes downhill
	Weights Drills	5 Tempo - Finish with 4x200m to loosen legs

Principles of Distance Running

Step 8

The last step in periodizing your team's training is developing the specific workouts for each training session. Each session is comprised of several **training units** (i.e., warm-up, drills, running, cool-down, flexibility, and strength training).

The composition of each unit depends on your coaching instincts and the fitness of your athletes. Here is where the science of coaching merges with the art of coaching. Only you can create the workouts that are best for your team. Beyond talent and fitness, team size, facilities, training access, and weather will affect the exact composition of each workout. You must adapt distances and repetitions to the needs of your athletes, daily circumstances, and the evolving demands of the season.

SAMPLE TRAINING SCRIPT				Date 10 / 26 / 92	
Group 4 Boys Varsity			Group 4 Girls Varsity		
WARM UP	2 Laps - Stretching	DRILLS	No	WARM UP	2 Laps - Stretching DRILLS No
WORKOUT	1.5 Easy Run			WORKOUT	1.5 Easy Run
	10 Min Tempo	90 sec Rec.			10 Min Tempo
	5 Min Tempo	Between			6 Min Tempo 90 sec Rec.
	5 Min Tempo	Efforts			6 Min Tempo
	5 Min Tempo				
	Jog Back to School				Same cool-down as Boys Varsity
	4x200 Strideouts				
	Stretching				
COOL-DOWN		TOTAL:	8	COOL-DOWN	TOTAL: 7
Group 2 Boy's JV			Group 5 Girl's JV		
WARM UP	2 Laps - Stretching	DRILLS	No	WARM UP	2 Laps - Stretching DRILLS No
WORKOUT	1.5 Easy Run			WORKOUT	1.5 Easy Run
	10 Min Tempo	90 sec Rec.			6 Min Tempo 90 sec Rec.
	6 Min Tempo				6 Min Tempo
	6 Min Tempo				6 Min Tempo
	6 Min Tempo				
	Jog Back to School				Same cool-down as Boys JV
	4x200 Strideouts				
	Stretching				
COOL-DOWN		TOTAL:	7	COOL-DOWN	TOTAL: 6.5
Group 3 Boys Frosh			Group 6 Girls Frosh		
WARM UP	2 Laps - Stretching	DRILLS	No	WARM UP	2 Laps - Stretching DRILLS No
WORKOUT	1.5 Easy Run			WORKOUT	1.5 Easy Run
	5 Min Tempo	90 sec Rec.			10 Min Tempo 90 sec Rec.
	5 Min Tempo				6 Min Tempo
	5 Min Tempo				6 Min Tempo
					Above
	Above				
COOL-DOWN		TOTAL:	6.5	COOL-DOWN	TOTAL: 6

Principles

of Distance

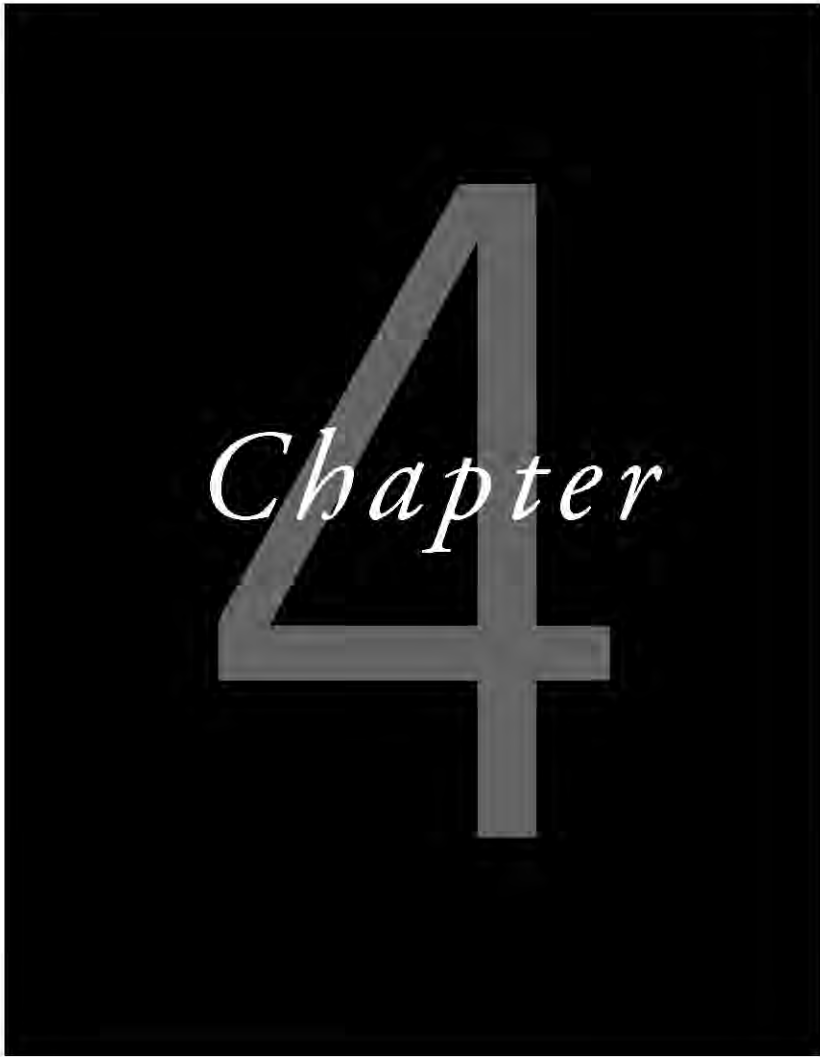
Running

Training for Teams that Race Twice Per Week

The competition schedules of high school Cross Country teams pose an extra challenge to a coach who is trying to create a periodized training plan.

Competing twice per week makes it very difficult to schedule every type of workout you want your team to do. Keep in mind the following considerations if your team must race twice per week during the competition period.

- **Races are workouts.** Never forget that *competition is the most intense and specific form of training*. It combines all the demands of Cross Country into single sessions. Always plan your remaining workouts around races.
- **Purposefully use some races as training.** Experiment with team racing strategies. You may choose to have your team run a fast first mile or initiate long surges at predetermined points in the race. If you have an easy meet, you might have your varsity run together until the last mile. Early season races are good opportunities to combine training with competition.
- **Give training priority to long runs,** especially during the early part of the season. Long, continuous runs are vital to the long-term success of your team. While racing provides hard-pace and threshold training, you need to schedule long distance training first. Once you have put both racing and long runs into your training plan, you can add the rest of the workouts your team needs.
- Racing twice per week makes it more likely that your runners will become mentally and emotionally tired. The intensity of racing is draining, and twice per week is especially so. **Include optional training days and complete rest days** for your team. A major part of all competition is mental. Athletes who feel fresh and eager will race their best.
- **Hold some athletes out of less important competitions.** There is no rule that says everyone must run every race on the schedule. If you have a very strong squad, you may want to hold several athletes out of a competition and let them train or rest instead.
- You may want to **lighten your early season schedule by trimming nonleague duals or bypassing invitationals.** This depends on the fitness of your team and how you choose to incorporate racing into your overall training plan.



4

Chapter

Methods of Cross Country Training

Once you have an understanding of the principles that govern effective Cross Country training, you need to employ methods that enable your athletes to run their best races. The training program you devise for your team will be a recipe that combines distance running, mobility and flexibility training, strength training, plyometrics, and cross-training. This chapter discusses those methods and tells you how to use them.

Methods of Cross Country Training

Methods of Distance Running Training

There are many different types of distance running training, each varying in purpose, format, intensity, and duration. The specific demands of Cross Country and the fitness of your athletes should determine your team's running training. Regardless of the methods you use, the keys to an effective training program are detailed planning, judicious use of rest and recovery, and careful manipulation of training intensity and volume.

STEADY-PACE TRAINING (CONTINUOUS SLOW DISTANCE)

Steady-pace training is relatively slow, continuous long-distance running, where the aerobic system remains in a steady state with energy demands. Long steady runs should be done at a pace that can be maintained comfortably for 40-60 minutes. Exercise scientists estimate that the ideal intensity of a steady-pace run is 5-10% below the anaerobic threshold (approximately 1-1/2 minutes per mile slower than 3-mile race pace). A very good approximation of this intensity is the **talk test**. Athletes should run at a pace that lets them hold a conversation. Unstable breathing (ventilation) indicates that the pace is too fast, approaching the anaerobic threshold.

Steady-pace training develops aerobic and cardiovascular capacity (VO_2 max), improves muscle capillarity, and enhances the efficiency of energy production. Coaches often refer to long steady runs as the *base* or *foundation* training that precedes more intense threshold training.

TEMPO-PACE RUNNING (THRESHOLD TRAINING)

Tempo-pace running is designed to maximize aerobic capacity and increase aerobic efficiency. Regular threshold training enables your runners to increase pace without suffering from lactic acid accumulation. Athletes should do these runs at a pace that can be maintained for 15-35 minutes. Tempo runs should be done at a pace that puts the athlete at, or slightly above, the anaerobic or lactate threshold.

Threshold training can be *continuous* or *segmented*. Continuous training, usually called **tempo runs**, is typically done for 20-40 minutes at a pace 30-40 seconds per mile slower than 3-mile-race pace. Warm-up and warm-down running should precede and follow the tempo run.

Segmented threshold training also is referred to as **tempo reps**, or *tempo intervals*. This training consists of a series of shorter runs lasting anywhere from 90 seconds to 8 minutes or 600-2000 meters with short rest intervals of 1 minute or less. A tempo rep workout will usually take 30-40 minutes, rest included.

REPETITION TRAINING

The purpose of repetition training is to increase aerobic efficiency thereby raising the lactate threshold in relation to VO_2 max. Such training allows a runner to train at VO_2 max, above the threshold level, for periods longer than can be sustained in a race. Repetitions also help the young athlete develop pace and rhythm.

Repetitions should be from 1-6 minutes long or distances of 400-1600 meters. Pace will vary according to distance. Repetitions that total more than 5000 meters should be done at current race pace. Repetitions that total less than race distance can be done slightly faster than race pace. The rest period should provide slightly less than complete recovery. A 1:2 run-to-recovery ratio is a common rest parameter. The workout should total 20 to 25 minutes of running, sans recovery.

INTERVALS (HIGH LACTATE TRAINING)

Interval training is a frequently misunderstood concept. Most coaches use the terms *interval* and *repetition* interchangeably; but, in fact, they are very different types of training. A repetition is a single unit of running. *An interval is the recovery period that follows individual bouts of running.* In repetition training, the objective is to run specific distances at race pace with a relatively complete recovery. With interval training, the goal is to run specific distances with incomplete recovery so that the athlete trains with elevated blood lactate.

Interval training enhances a runner's ability to tolerate and produce lactic acid. While interval training does help raise the lactate threshold somewhat, it is primarily anaerobic. High-lactate training is most specific to middle distance runners. However, Cross Country races require a lot of anaerobic energy. Approximately 20-25% of the energy used during a 3-mile Cross Country race comes from anaerobic sources.

Methods of Cross Country Training

Moreover, Cross Country runners must employ and respond to tactics that put them above the lactate threshold for portions of the race. For example, strong teams usually run a fast first mile in order to establish good race position, a strategy that often creates a lactic state early in the race. The ability to tolerate this state, hold pace, and recover is one demand of Cross Country racing. In this way, high school Cross Country is much like middle distance racing.

The duration of each run in an interval session is typically 15-90 seconds or 100-600 meters. The recovery ratio should be between 1:1 and 2:1, run to recovery. Interval training should be done faster than race pace. The intention of these workouts is to produce lactic acid by forcing your athletes to run the last portion of each repetition anaerobically.

Interval training is intense, demanding, and painful. Do not schedule more than one such session during any single week of training. Some athletes might require 2-3 days of easy workouts to recover fully from a hard interval session.

SPEED PLAY (FARTLEK TRAINING)

Speed play is the literal translation of the Swedish word *fartlek*. It combines fast and slow running within a continuous run. Bouts of fast running are followed by easy recovery running. Ideally, speed play is done over varied terrain, including hills. The length of speed bursts and recovery is unstructured so that the athlete gains a genuine feeling of playing with speed.

Since the aim of fartlek training is to develop speed in the context of long distance running, the overall pace should be relatively easy. Only the speed bursts should be done with any intensity. However, speed play is not easy training. Speed bouts should be from 60-400 meters long (or 5-70 seconds). The entire run will last 20-45 minutes. The number of speed bouts depends on their length and the total length of the run. Remember, athletes should recover between each sprint; it's not intended to be high-lactate training.

High school athletes tend to need some structure to reap the benefits of fartlek and surging workouts. You might use predetermined markers or time intervals to indicate speed units.

SURGING TRAINING

Surging training is continuous running similar in design to speed play. But while speed play alternates sprinting and jogging, surging is steady-pace training punctuated with periods of faster running at, or slightly above, threshold pace. (The speed of each surge should be far below sprint speed.) Combining steady-pace training and tempo reps, the purpose of surging training is to enhance the runner's ability to initiate and respond to pace changes and to recover at steady-pace running speeds.

A surge in the midst of a steady-pace run is typically a pace increase of 30-60 seconds per mile, depending on the length of the surge. Surges can be anywhere from 30-90 seconds, or roughly 200-600 meters long, with the total run lasting 20-45 minutes.

For high school runners, you can divide the run into segments of 5-10 minutes, perhaps using a pyramid format. Doing so allows your team groups to run together throughout the workout. A single continuous surging run will quickly separate individual runners. Work on pack running skills by dividing the run into units that allow groups to run together.

Surges can be predetermined by markers or time. Some coaches like to use a whistle. You must keep your team in sight so that you can closely monitor your team during a hard session.

SPEED TRAINING

Since the energy demands of Cross Country running are predominantly aerobic, sprinting will account for very little of your team's training time. Nonetheless, speed is a component of all running, and an athlete's ability to sprint well at the end of a race often determines the outcome of team and individual competition. Speed training helps develop sprinting ability, good running mechanics, and physical strength.

Keep in mind, however, that distance runners are not sprinters. They need to learn to run fast with distance running mechanics. The fatigue of a 5000-meter race rarely allows a runner to sprint like a 100-meter runner. Efficient mechanics and an emphasis on stride frequency are the best ways to improve a distance runner's sprint speed.

Methods of Cross Country Training

The preferred method of developing speed for Cross Country runners is to include some speed training within the body of the workout 2 or 3 times per week. Adding speed buildups or strides before or after continuous runs is one such method. Entire workouts devoted to sprinting are not recommended for Cross Country runners.

HILL TRAINING

Hill training is not exactly a method of training. More precisely, hills are a specific feature of Cross Country running and racing. As such, the unique characteristics of running hills call for training that specifically addresses the demands they present.

Hills, steep and gradual, long and short, are a standard feature of most Cross Country courses, unless you live in Kansas. Hills are so challenging because they substantially alter an athlete's energy demands and running stride. Research reveals that it takes 36% more energy to run with identical pace up a moderate hill than on a flat surface. Conversely, running downhill requires 24% less energy than running on a flat.

In order to compete successfully, Cross Country teams must be able to run hills well. The mechanics and strength required to run hills is hard to develop by training on flat surfaces alone. If at all possible, you should incorporate hill training into your periodized training plan. If training on hills is impossible, construct workouts that confront the problems hills present.

Uphill and downhill running require greater strength and power than flat running. Uphill running demands good leg muscle power in addition to aerobic and anaerobic fitness. Downhill running requires substantial eccentric muscle strength, or the ability to absorb the added force of gravity while running.

The biomechanics of hill running differ from normal running, as well. Normal stride pattern, body posture, arm action, and footstrike change. Training on hills is specific to these altered mechanics.

Uphill Training

- Uphills done early in the workout tend to develop power.
- Uphills done at the middle of the workout tend to increase strength.
- Uphills done at the end of a workout improve the finishing kick.

- Good running mechanics are vital to uphill running. Poor posture greatly inhibits the ability to keep pace up hills.
- On every run, include at least one hill that forces runners to adjust (shift gears).
- Include hill workouts throughout the training year. Research shows that it can take 6 to 9 months to optimize hill running power and economy.
- Keep a detailed record of the time or distance spent hill training. Include the hill portions of regular training runs.
- Be conservative when starting hill training. It adds intensity to the training load.

Downhill Training

- Downhill training is often underemphasized. Many Cross Country races are won by the athlete who can run downhills with optimum mechanics and confidence.
- Downhill running is a form of speed training that develops eccentric leg strength and fast running mechanics.
- Downhill running adds intensity to your training plan. Adjust accordingly.
- Good flexibility is needed for the range of motion demanded by running downhill. Make sure your athletes warm up and stretch properly.
- Sound running form and mechanics are essential to maximize speed and minimize braking. Train on gradual slopes and control speed until athletes develop good mechanics.
- Downhill training is quite physically demanding. Do not include more than one session per week in your training plan. Gradual hills will accomplish your goals. Don't train on steep downhills.
- Place downhill training toward the start or middle of a session. Running downhills late in a session, when athletes are already fatigued, risks injury.
- Hill workouts are usually placed within the context of another type of training. You might choose a steady-pace run that is fairly hilly or opt for a hilly tempo run as threshold training. Most common is hill repetition training, where you can more easily monitor pace and distance.

Methods of Cross Country Training

If you plan to run train uphill and downhill on the same day, have your squad run downhill first to avoid injury. Also run complete uphill/downhill circuits that are race-specific.

Caution: Be wary of having your team do downhill training in soft sand. The unstable surface, altered body posture, and eccentric muscle stress can strain underdeveloped muscles in the legs, hips, and groin.

Using Heart Rate to Guide Cross Country Training

Over the last several years, monitoring exercise heart rate has become a scientific means of guiding the training of endurance athletes. The correlation between heart rate and aerobic function allows coaches and athletes to obtain objective measures of aerobic fitness, determine recovery intervals during workouts, and avoid overtraining.

The basis of heart rate-based training is the direct relationship between heart rate and the oxygen demands of exercise. As energy demands increase, the heart rate rises in order to pump more oxygen to the working muscles. Therefore, it is possible to use heart rate as a measure of aerobic performance in the training of Cross Country runners.

Applying heart rate to training is not quite as simple as many coaches assume, however. Most heart rate formulas are based upon maximum heart rate. But as discussed in the last chapter, aerobic performance is a function of both aerobic capacity (VO_2 max) and the lactate (or anaerobic) threshold, both of which differ for everyone. When you also consider that individual heart rates vary widely, (the *American Heart Association* considers a resting heart rate anywhere between 50 and 100 beats per minute {b.p.m.} normal), any formula specifying exact numbers cannot be accurately applied to many of your runners.

The most common heart rate-training formula states that an athlete should develop basic aerobic fitness and increase VO_2 max by exercising for 30-45 minutes at 60-70% of maximum heart rate (220-age). Consequently, many coaches have their athletes doing long continuous runs within this heart rate range. Unfortunately, the shotgun approach taken by this formula is aimed directly at the average athlete. Although this method might work for some of your athletes, it is probably not accurate for most of your athletes, especially your most and least fit runners.

There are several flaws in the above formula. First, it fails to account for individual variation in maximum heart rates. (The *standard deviation* is ± 10 b.p.m.) Second, it incorrectly assumes a correlation between maximum heart rate and VO_2 max. Third, and most important, it completely ignores the lactate threshold. Exercising at 60-70% of max heart rate can be impossible for an unfit runner whose lactate threshold is 50% of VO_2 max. Likewise, your best athletes might find that aerobic running according to this formula is far too easy.

To use heart rate monitoring effectively in training, it must be *individualized* for each athlete. To do this, you need to know two important heart rate measures: the **lactate threshold** and the **% VO_2 max** — represented by the lactate threshold heart rate.

HEART RATE MEASURES

Before presenting the ways to calculate these parameters, let's define the different heart rate measures.

Resting, or Base, Heart Rate

The resting heart rate is a person's pulse when there is little or no stress on the cardiovascular system. The best time to measure base heart rate is immediately upon awakening in the morning. For the most accurate figure, take the average of 3 or 4 days.

Maximum Heart Rate

The standard formula for maximum heart rate is 220 minus the person's age. This figure varies by individual, with a standard deviation of 10 beats per minute.

Heart Rate Reserve, or Working Heart Rate

The heart rate reserve is the working range between your maximum heart rate and resting heart rate.

Lactate Threshold Heart Rate

The lactate threshold heart rate measures the point at which aerobic energy production cannot meet exercise demands and lactate begins accumulating in the blood and muscles. This measure ranges tremendously between individuals according to genetics and fitness. For Cross Country training, it is the most important heart rate measure.

Methods of Cross Country Training

LACTATE THRESHOLD HEART RATE AND CROSS COUNTRY TRAINING

A primary goal of Cross Country running training is to enhance two aspects of aerobic energy production: maximum aerobic capacity and the lactate threshold level. Research shows that “the best training stimulus [for aerobic endurance] is obtained at an intensity at which the complete oxygen-transporting system is activated to the maximum, while lactate accumulation is not yet reached.” Conversely, we also know that raising aerobic efficiency requires athletes to run at an intensity at or beyond the lactate threshold level. Either way, if you plan to use heart rate for Cross Country training, you have to know each athlete’s lactate threshold heart rate. It’s the only way to know if the athlete is getting the intended training effect.

Knowing an athlete’s threshold heart rate can tell you a lot about his or her aerobic fitness. As mentioned in the previous chapter, an average person’s lactate threshold is roughly 50% of his or her VO_2 max, while elite endurance athletes have lactate thresholds of 80-90% of their VO_2 maxes. Obviously, one training goal for your runners should be to raise the percentage of VO_2 max represented by their lactate thresholds. Once you know the lactate threshold heart rate, it is easy to figure.

CALCULATING LACTATE THRESHOLD HR AND % VO_2 MAX

Threshold Heart Rate

There are several ways to measure the lactate threshold heart rate, such as a blood-lactate/treadmill test or a Conconi test. But the most practical, and quite effective, test is the **talk test** (also called the Bowerman test after legendary Oregon coach Bill Bowerman).

The talk test is quite simple. Send your athletes out on a continuous run. Have them start very slowly so that they can converse easily with each other. Gradually, increase the pace of the run. When an athlete begins to have trouble carrying on a conversation, stop that athlete to take his or her pulse rate. This lack of breath, referred to as **unstable ventilation**, signals that the athlete is no longer able to meet the energy demands of the run aerobically — hence, the anaerobic, or **lactate, threshold**.

Once the pulse has been taken, repeat the process twice more, which gives you three rates. The average of the three will give you the lactate threshold heart rate. Of course, the talk test has a subjective element to it. But, when an athlete is gasping for breath while trying to talk, you reasonably can conclude that he or she has reached the threshold heart rate.

%VO₂ Max Represented by Threshold HR

Once you have determined the lactate threshold heart rate for each athlete, there is a simple formula to determine the percentage of VO₂ max it represents. Without delving into the algebra involved, the figure expresses the threshold heart rate in terms of the heart rate reserve, which is directly correlated with VO₂ max. Calculate lactate threshold percentage of VO₂ max by plugging heart rate figures into the following equation:

$$\%VO_2 \text{ max} = \frac{\text{Lactate Threshold HR} - \text{Resting HR}}{\text{HR Reserve (i.e., Working HR)}} \times 100$$

THRESHOLD HR, VO₂ MAX, AND TRAINING

The best way to illustrate the importance of determining individual heart rates and percentages for your athletes is to illustrate by example.

Assume you have two 16-year-olds on your team, Tony and Tom. Tony has been running for three years, but Tom is new to the team. Tony has a resting heart rate of 50. Tom's is 60. After conducting a talk test you discover that Tony's lactate threshold heart rate is 162, while Tom's is only 136.

Plugging heart rates into the above formula, you find that Tony's threshold rate is 73% of his VO₂ max. Tom's, on the other hand, is about average for a sedentary person at 53%.

$$\text{Tony: } 73\% = 162 - 50 / 154 \times 100$$

$$\text{Tom: } 53\% = 136 - 60 / 144 \times 100$$

From the data, it's clear that Tony is much more fit than Tom.

But that's nothing that a couple of workouts won't tell you anyway. More importantly, the data shows the inadequacy of a simple formula based solely on maximum heart rate or heart rate reserve.

If you conduct endurance training according to the formula that says athletes should train at 60-70% of maximum heart rate, the effect on each athlete will be very different. Both, theoretically, have maximum heart rates of 204 b.p.m. Calculating 60% and 70% of that number gives you 122 and 143 b.p.m., respectively.

Methods of Cross Country Training

Now, if you are a coach who uses the 60-70% of max heart rate method, what happens? On the basis of maximum heart rates, you tell your team to keep their heart rates at about 140 b.p.m. during a 5-mile run. If Tony runs at that pace, he will come nowhere close to his lactate threshold. In other words, he is not training at an intensity that will increase his aerobic capacity. He will be jogging. If Tom trains at 70% of his maximum heart rate, though, he will exceed his lactate threshold, making for a painful, short-lived run where he will be unable to sustain the target heart rate for very long. He is likely to be exhausted and disappointed.

The effect? Neither athlete will have done the specific training that was planned. Tony went for an easy jog. Tom went for a tempo/threshold run that probably resembled surging training more than steady-pace training.

USING HEART RATES TO TRAIN EFFECTIVELY

The above example was not intended to debunk heart rate-based training. Its purpose was to show that such training must be formulated in reference to each individual athlete's lactate threshold heart rate. With this in mind, here are some suggestions for using heart rates to monitor your training.

The target heart rate for each of the three basic types of aerobic running will vary as a percentage of the lactate threshold heart rate.

Steady-Pace training should be done at a pace that elevates the heart rate to within 10% of the lactate threshold heart rate without exceeding it.

Tempo-Pace running should be done at a pace that puts the heart rate at, or within 10% above, the lactate threshold heart rate.

Tempo-Repetition runs should be done at a pace that raises the heart rate 10-15% above the lactate threshold heart rate. When determining heart rates for tempo/thresholds runs, the 10-15% figure does not work well for athletes whose lactate thresholds are a high percentage of their VO_2 maxes. An alternative method is to calculate the difference between max heart rate and lactate threshold heart rate, and divide by 4. For tempo-pace runs, the athlete should add that number to the threshold rate to get the desired heart rate. For tempo reps, multiply the number by 1.5 and add to the threshold rate for the desired heart rate range.

For **repetition training** and **interval training**, heart rate is used as a measure of recovery. Since both types of workouts are designed to force the runner beyond the lactate threshold, heart rate is used to indicate when the athlete has recovered properly before beginning the next repetition.

The goal of **repetition training** is to allow the runner to train at VO_2 max. Since each rep takes the athlete past the threshold, recovery must be sufficient to return the heart rate below the threshold. Allow athletes a recovery period that returns the heart rate to 10% below the threshold heart rate.

From this formula, you can see where the typical recovery rate of 120-130 b.p.m. originates. However, if you have a very fit runner, that rate could be far too low.

Interval training seeks to put the athlete in a constant anaerobic state. That means that the runner's heart rate should always remain above the lactate threshold rate. Each repetition should begin once the athlete's heart rate drops to lactate threshold level.

HEART RATE, OVERTRAINING, AND ILLNESS

One of the primary benefits of heart rate-based training is that it helps athletes and coaches avoid overtraining during workouts. Though, occasionally, you want a hard effort from your athletes, optimum long distance training is a delicate balance between hard work and recovery. Many good races are lost during workouts where teammates battle each other.

On steady-pace runs, make certain that your athletes stay in the suggested range below the lactate threshold. By monitoring heart rate, you can prevent eager, but less fit runners from working too hard. Making athletes stay within the proper heart rate range will keep aerobic runs from becoming threshold runs.

Keeping a record of daily heart rates is a good way to spot overtraining and oncoming illness. Usually, athletes' heart rates vary little from day to day. If an athlete's heart rate is elevated, it may be a sign of illness or infection. If the heart rate remains more than 5% higher than normal for several days without illness, it might be a sign that the athlete is overtraining and not recovering sufficiently between workouts.

Methods of Cross Country Training

Often, an athlete will want to *gut out* a workout when feeling poorly. By monitoring heart rate, you can prevent this, and in turn, possibly prevent a longer period of illness. Better to lose an athlete for three days than for two weeks. Also, heart rate is a good indicator of when an athlete is ready for hard training after an illness.

MONITORING HEART RATE

There are several ways to monitor heart rate. The simplest and cheapest method is to take the pulse rate at the wrist or carotid artery of the neck. (We recommend taking the pulse at the wrist, since there is a reflex that tends to slow heart rate when pressure is applied to the carotid artery.) If your program has the resources, you might consider buying heart rate monitors, although it's quite expensive to outfit an entire team.

To get the heart rate, place the middle two fingers of one hand on the inside of the wrist. Avoid using the thumb and index finger because they emit a rebound pulse which will give the athlete an inaccurate rate. After locating the pulse, have the athlete count the number of beats for some fraction of a minute; ten or fifteen seconds works well. Keep in mind that a short pulse count period is less accurate than a longer one. To figure heart rate, multiple the interval pulse rate by the number that gives beats per minute.

Regardless of whether you use heart rate in training, it is a good idea to have your athletes keep a record of their resting heart rates. Have them take a 60-second pulse after they awaken each morning, and write it in their training logs. The heart rate is a good source of information if you suspect that an athlete may be getting sick or training too hard.

If you use heart rate to monitor daily training, accurate heart rates are mandatory. Of course, your athletes should record resting heart rates daily. When taking training pulse rates, teach your athletes to calculate heart rate by multiplying a 10-second pulse count by 6. This allows them to monitor heart rate easily without a major disruption of training.

Over time, your athletes will develop a good sense of heart rate on the basis of their **perceived effort**. Most will learn to take heart rates if they feel that they are working too hard or not recovering sufficiently between repetitions.

PROBLEMS WITH HEART RATE-BASED TRAINING FOR CROSS COUNTRY

While heart rate-based training adds some objective measurement of effort and intensity to each athlete's training, it has its limits.

- First, athletes tend to run in response to their **perceived effort**; it's hard to convince athletes to run on the basis of heart rate alone. Competitive young athletes are not easy to restrain.
- Second, measuring the lactate threshold rate by the talk test is somewhat subjective. Some athletes will slow at the first deep breath; others will argue that they can hold a conversation despite the deep gasps for breath that punctuate every word. You must develop a relationship with your athletes that ensures you are getting accurate information.
- Third, while heart rate-based training is excellent for fitness training, Cross Country is a competitive sport presenting demands that go well beyond aerobic fitness. In fact, almost all of a Cross Country race is run slightly at or above threshold level. Many moments in the race, such as a fast start, hills, and surges, raise the heart rate very high. Cross Country races are not steady-pace or steady-tempo runs. There is no way for an athlete to race by heart rate alone.
- Last, too much reliance on heart rate ignores the psychological aspects of Cross Country running and competition. As a coach, you are also developing competitors. Athletes who rely too much on heart rate often fail to respond properly to race challenges because they are preoccupied with their heart rates. Races are not won by fitness alone. Desire, will, and tenacity are equally important. **Athletes need to train to race** if they hope to be competitors.

Mobility and Flexibility (Warm-up, Cool-down, and Stretching)

Mobility and flexibility are often-neglected components of training. Many athletes and some coaches think of warm-up, cool-down and stretching as mere sideshows to running training. Such an attitude is a prescription for injury and poor performance. All good training programs incorporate mobility and flexibility training into the structure of each training session.

Methods of

Cross Country

Training

Warm-up, cool-down, and stretching serve as the introduction and conclusion to each day's workout. Warm-up and mobility training *prepare* an athlete for the stress imposed by training. Cool-down and flexibility *initiate recovery* from each day's workout, and improve the elastic properties and balance of muscle groups. Both processes are essential for optimum performance.

ORGANIZING A TEAM WARM-UP

Ingrain into the minds of your athletes that a complete workout includes warm-up running, stretching, drills, sprint buildups, the primary training unit, and a cool-down. The secondary training units optimize performance and reduce the risk of injury.

High school athletes often are not disciplined about the secondary elements of training. You cannot expect them to warm up properly, stretch thoroughly, and especially, cool-down without supervision. You or your assistants or team captains must be responsible for the oversight of all training. With limited training time, you cannot afford to spend more than 30 minutes preparing for the main workout. Only direct supervision will assure that warm-up and stretching will be a well-executed, quick-paced prelude to the focus of the training session.

Besides, your team needs to do things together every day to build team morale. The warm-up and stretching are the only times when all of your athletes can be together during a training session before they separate into team groups.

WARM-UP AND MOBILITY

The purpose of the warm-up is to prepare athletes physically and mentally for training and competition. There are two main components to the warm-up: **easy running** (or some gentle aerobic activity) and **mobility exercises** (loosening and stretching).

A running warm-up should begin with 10-15 minutes of easy jogging with increasing tempo that includes surges of slightly faster running. Athletes quickly become bored doing the same workout every day, so vary the warm-up run for each training session.

The objective of the run is to *awaken* the aerobic energy system, raise core body temperatures, and loosen the muscles in preparation for stretching. The warm-up run should be sufficiently vigorous that your athletes perspire freely when finished. A warm-up or sweat suit will accelerate the process of warming up and prevent your athletes from cooling too much while stretching.

Running Warm-Up Examples

- 2000 meters, surging 200 meters after 800 and 1800 meters.
- 2400 meters, surging last 100 meters of each 400 meters.
- 12 minutes easy jogging with 30-second surges every 3 minutes.

MOBILITY EXERCISES

Mobility exercises prepare athletes for hard training by limbering the muscles throughout the entire range of motion. Usually, mobility training employs static and mobile stretching following a running warm-up. **Mobile stretching** develops range of motion by combining stretching with movement: leg swings, knee circles, and arm circles (butterfly arms). Keep in mind, however, that *mobile stretching should not use forceful movement to stretch the muscles*. Rather, movement should be slow and gentle, not ballistic.

Mobile stretches are quite useful for Cross Country training. A short mobility regimen preceding long runs serves as a good prestretch. Later, a thorough program of flexibility training should follow the run.

FLEXIBILITY TRAINING

Flexibility training is designed to maximize range of motion, increase muscle elasticity, achieve functional muscle balance, speed recovery, and, most important, prevent injury. Flexibility training is not simply a prelude to a hard workout; it is an important component of an athlete's physiological development. Many great athletes have lost seasons and careers by neglecting flexibility.

The placement of flexibility training within a Cross Country workout varies. As a rule, train for mobility before the main workout, and for flexibility after. However, hard repetition and interval training often demand that you complete a thorough stretching regimen first. Even so, some flexibility work should also follow these hard sessions.

Methods of Cross Country Training

Athletes should begin stretching only after they are warmed-up. Include exercises that enhance balance, flexibility, and mobility. **Balance** is the equal function of opposing muscle groups (e.g., the quadriceps and hamstring muscles of the thigh). **Flexibility** refers to muscle elasticity. **Mobility** refers to range of motion.

Convince your team that stretching will make them better athletes. This is not always an easy task when working with distance runners. Explain that stretching helps the muscle lengthen fully and contract more efficiently, thus making them stronger. A loose muscle relaxes more between contractions than a tight one, allowing faster and more powerful contractions. Long muscles enable the body's levers to move through a wide range of motion.

To develop muscle balance, include exercises that stretch major muscle groups both front and back of the limbs and torso. Flexibility is developed best through slow, controlled stretching, often called **static stretching**.

A muscle should be stretched to slight tension, held for a predetermined count, and then released slowly. Sustain each stretch for 10-30 seconds, letting the muscle relax under the applied tension. Each repeat of the stretch should allow a slightly greater range of movement than the previous one. Athletes should breathe deeply throughout each exercise, trying to exhale slowly while stretching the muscle.

Large muscle groups should be stretched before smaller muscles. Always stretch opposing muscle groups to ensure balanced flexibility. Take special care when stretching injured muscles. Newly formed scar tissue does not stretch like muscle and may be torn if overstretched. Stretch slowly and gently. Chronic strains result from poor elasticity in the injured tissue.

Ideally, *flexibility training should follow the warm-down from the running workout*. Elevated muscle temperature permits the muscles to be stretched beyond the normal range of motion without straining the tissue. Permanent gains in flexibility will result from consistent post-run stretching.

COOL-DOWN

Every training session should be concluded with a 5-10 minute cool-down of slow jogging and walking. The purpose of the cool-down is to return heart rate, respiration rate and temperature to normal gradually. A thorough cool-down also disperses most of the lactic acid that accumulates in the muscles during a hard workout. Not cooling down properly after intense exercise leads to stiff and painfully sore muscles the next day. Rapid body temperature cooling and pooled muscle lactate will only make the following day's workout more difficult and less productive.

WARM-UP SCRIPT

1 RUNNING WARM UP

2 FLEXIBILITY STRETCHES

Sitting on the ground, legs extended with shoes off

- Toe Pointers (*Figure 1*)
- Butterfly Arms-to-Toes (*Figure 2*)
- Reach Over-Toes/Insteps/Oursides of Feet (*Figure 3*)
- Pull Forehead-to-Knees (*Figure 4*)
- Yoga Sit (*Figure 5*)
- V-Stretch (*Figure 6*)
- Hurdler's Stretch/Lay Back (*Figure 7*)
- Sit-on-Heels/Hip Bridge/Lay Back (*Figure 8*)
- Figure "4" (*Figure 9*)
- Sciatic Stretch (*Figure 10*)
- Abdominal Stretch (*Figure 11*)
- Hip Flexor (*Figure 12*)

3 MOBILITY STRETCHES

Standing, holding onto a stationary object

Swinging the outside leg up toward hip level

- Forward-and-Back Swings (*Figure 13*)
- "C" Swings (*Figure 15*)
- Side Swings (*Figure 14*)

4 RHYTHM DRILLS

- Easy Swing Skipping
- Fast Swing Skipping
- High Skipping (*Figure 17*)
- Skipping Kicks (*Figure 18*)
- Skipping w/ Quick Footstrike
- Jogging Butt Kicks
- High Knees (*Figure 16*)
- Fast Hands/Quick Feet

Methods of Cross Country Training

FLEXIBILITY STRETCHES

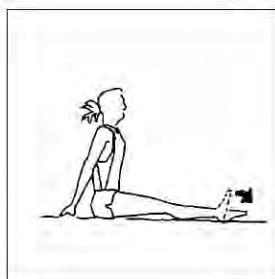


Fig. 4-1. Toe Pointers

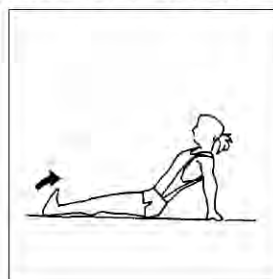


Fig. 4-2. Butterfly Arms-to-Toes



Fig. 4-3. Reach Over

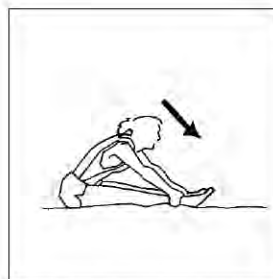


Fig. 4-4. Pull Forehead-to-Knees



Fig. 4-5. Yoga Sit



Fig. 4-6. V-Stretch

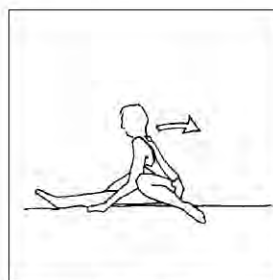


Fig. 4-7. Hurdler's Stretch/Lay Back

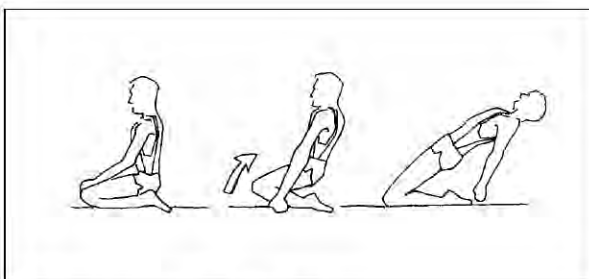


Fig. 4-8. Sit-on-Heels/Hip Bridge/Lay Back

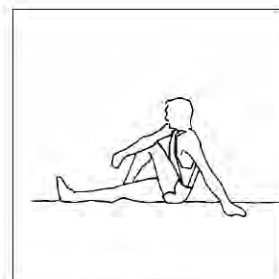


Fig. 4-9. Figure "4"

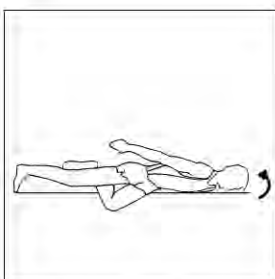


Fig. 4-10. Sciatic Stretch

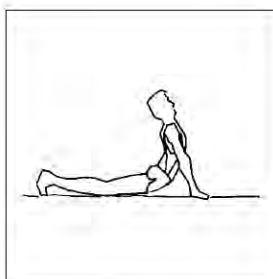


Fig. 4-11. Abdominal Stretch

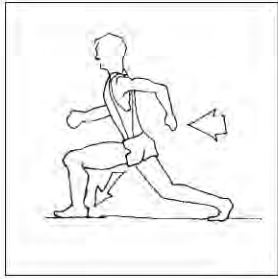
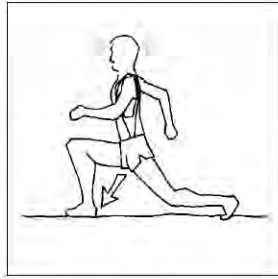


Fig. 4-12. Hip Flexor



MOBILITY STRETCHES

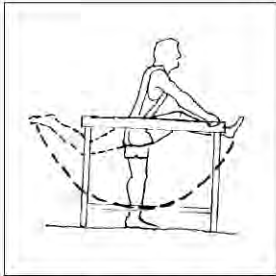


Fig. 4-13. Forward-and-Back Swings



Fig. 4-14. Side Swings

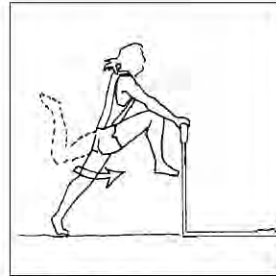


Fig. 4-15. "C" Swings

SIMPLE RHYTHM DRILLS

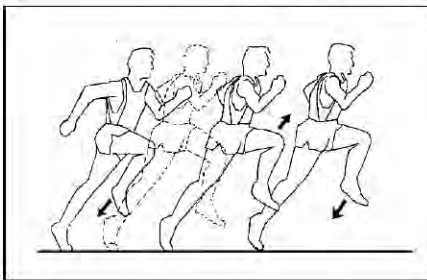


Fig. 4-16. High Knees

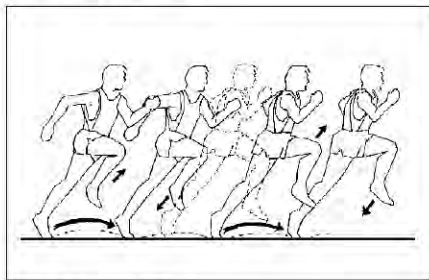


Fig. 4-17. High Skipping



Fig. 4-18. Skipping Kicks

Methods of Cross Country Training

Strength Training

WHY STRENGTH TRAIN?

Many coaches do not think that strength training is important for Cross Country runners. After all, they reason, the muscle gains and power produced by weight training are not specific to the aerobic demands of long distance running. Who has ever seen a bulky elite distance runner?

But strength and weight training *are* important for endurance athletes. The basic elements of speed, mobility, and endurance are all functions of muscular strength. According to the President's Council on Physical Fitness and Sports, "Improvements in absolute muscular endurance, motor ability elements, and athletic abilities are associated with the individual's muscular strength. Thus, strength development may be considered not only a physical fitness need but fundamental to the total physical being."

Strength training for Cross Country typically has two purposes: one, **improving the overall strength** of the athlete; and two, **developing muscle balance and preventing injury**. Although most coaches understand the value of such conditioning, many still do not fully understand the process by which strength and weight training contribute specifically to Cross Country performance.

WEIGHT TRAINING AND MUSCLE DEVELOPMENT

At first glance, weight training seems to contradict the requirements of long distance training. Weight training enlarges muscle cells, increasing size and strength. However, the number of mitochondria does not increase.

Mitochondria are the tiny structures inside cells that are responsible for aerobic metabolism, the process by which oxygen and food fuels are converted into energy (ATP). Since Cross Country relies primarily on aerobic energy and the maximization of mitochondrial density, weight training would seem to conflict with the principles of long-distance training.

However, the process by which weight training contributes to Cross Country performance is more complex than its effect on mitochondria. Let's look at how weight training actually affects the muscles and other soft tissues.

- First, *weight training is better than endurance training for strengthening the connective tissues of the muscles, fascia, tendons, and ligaments.* Weight training spurs the production of collagen, a substance that composes much of connective tissue. Increased muscle collagen lessens the risk of muscle, tendon, and ligament strains.
- Second, athletic performance is often limited by muscle weakness and imbalance. Repetitive movements tend to create unbalanced strength. When opposing muscles have large strength inequities, the weaker muscle is prone to injury. Such muscle imbalance is a common cause of running injuries. For example, runners commonly have much greater quadriceps than hamstring strength. Not surprisingly, hamstring strains and knee problems are among the most frequent running injuries. *Weight training is an excellent method of addressing muscle imbalances.* Neglected muscles can be targeted directly. The isolation of specific muscles strengthens weak areas and decreases the risk of injury.
- Third, Cross Country running requires a significant degree of anaerobic energy. In fact, 25-30% of the energy used in a Cross Country race is anaerobic. The finishing sprint, which often determines team victory or defeat, as well as the many hills, obstacles, and terrain changes of Cross Country courses, all demand anaerobic energy.

Anaerobic energy is directly related to muscle strength. When a muscle is forced to work harder than its anaerobic threshold, lactic acid accumulates and performance suffers. Obviously, a muscle with greater strength can respond better to race challenges without creating excess lactic acid.

Strength training improves the athlete's ability to produce anaerobic energy and run fast. Although weight training primarily affects fast twitch muscle fiber, Types 2A and 2B (Cross Country running relies mostly on slow twitch fiber, Type 1), an athlete uses fast twitch fibers at the end of a race or during hills and surges on the course.

WEIGHT TRAINING AND AEROBIC PERFORMANCE

Despite the conflict between muscle building and aerobic metabolism, weight training actually *does* enhance aerobic performance. But, first, you need to understand how muscle actually works during aerobic activity.

Methods of Cross Country Training

Muscle fiber contracts in response to the nature of the activity. If the activity demands explosive strength, almost all of the muscle fiber contracts immediately. When the activity is of low intensity, only a portion of the total muscle fiber contracts.

Most aerobic exercise is of low to moderate intensity, and the muscles have an interesting way of working during low-intensity aerobic exercise. They contract in **cycles**.

Here is how it works. When someone is running long distance, only a portion of the leg muscle fibers contract at any one time. Those muscles continue contracting until they tire and can no longer produce energy aerobically. Then, other muscle fibers take over while the first set of muscle fibers rests. And as those fibers tire, others step in. There is a continual cycling of muscle recruitment.

How, then, does increased muscle strength help aerobic performance?

As a muscle's strength increases, it does not have to work as hard at any given activity. In terms of running, an athlete would be able to run at normal pace with less effort. Conversely, greater muscle strength means that total capacity increases. So, a strength-trained athlete running at 70% of capacity will run faster than before strength training, even without increasing aerobic fitness. Since the muscles can exert more force with equal effort, performance improves.

Myths About Weight Training for Endurance Athletes

The powerlifting and bodybuilding-oriented weight training that characterizes most high school strength programs leaves many Cross Country coaches thinking that strength equals size. After all, football players are strong and big. And since extra weight doesn't help aerobic performance, weight training doesn't help Cross Country runners. Right? Wrong.

With Cross Country runners, the aim of weightlifting is not to develop large muscle mass and great amounts of absolute strength. Rather, the goal is to maximize strength in proportion to body weight. Gymnasts and wrestlers, for example, have great strength-to-body weight ratios. That's the type of strength that Cross Country runners need. Most good distance runners are, in fact, quite strong and muscular. They aren't big, but they're strong. Most of us just are deceived by the thin upper bodies of distance runners.

Muscular strength is a function of two things: size and neuromuscular efficiency (the ability of the muscle to contract forcefully). Weight training will increase muscular size and reduce mitochondrial density, but only to a point. Properly designed weight programs will limit muscle mass growth (hypertrophy) while improving neuromuscular function. Olympic weightlifters and wrestlers have known this for years, since they must compete in body weight categories.

Moreover, two other factors will limit the amount of muscle mass your athletes will add. First, *the intense aerobic activity of Cross Country running will counter the hypertrophic effect of weightlifting.* Aerobic exercise shrinks the size of muscle fibers (myofibrils), and makes some fast twitch fibers (type 2A) take on the characteristics of slow twitch fibers (type 1). As a result, it is very difficult to build tremendous muscle mass while you are consistently engaged in intense aerobic activity. That is why bodybuilders who are trying to reduce weight do very low intensity aerobic work.

Second, and most important of all, *most distance runners are unlikely to develop bulky muscles because of their genetics.* That is why they are distance runners to begin with. Ectomorphic body composition and the predominance of slow twitch muscle fiber makes for good distance runners. It also makes it hard for such individuals to add great amounts of muscle to their frames. While some runners, especially in high school, might add a lot of muscle, it is unlikely that the benefits of weight training will be outweighed by unwanted muscle bulk.

Another common misperception is that distance runners should continue to train for endurance in the weight room, thinking that such training will develop muscular endurance and strength together. This approach is simply wrong. The only goal of weight training should be greater strength. It is nearly impossible to develop endurance by weight training.

Think about it. The specific muscular endurance of Cross Country running is developed through the *thousands* of footstrikes in any single workout. Developing real strength and endurance in the weight room would require hundreds, if not thousands, of repetitions. Weight training increases muscular strength and size, specifically fast twitch muscle fiber. Muscular endurance comes as the result of the specific aerobic training of that newly developed muscle fiber.

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PRINCIPLES OF WEIGHT TRAINING FOR CROSS COUNTRY

The Universal principles of training discussed in the previous chapter must guide every strength training program. **Progressive overload**, or resistance, is the cornerstone of weight training. Gradual increases in the amount of weight stress the body to adapt with greater strength. In general, progressive increases are the measure of increased strength.

Weight training must be *specific* to the demands of Cross Country. It should aim to increase the overall strength of your athletes.

Remember that all gains are made during periods of *recovery*. Without adequate rest between workouts, the strength of your athletes will actually decrease. The process of super-compensation that produces increased strength occurs while the athlete is recovering, not while the athlete is training.

The neuromuscular system makes its greatest changes in response to an unaccustomed stimulus, or *shock*. This requires weight training to incorporate a relatively large amount of *variability*. Research has shown that planned variations in the volume, intensity, and mode of weight training produce the greatest gains in strength.

At no time is there a greater range in the *individual* physical characteristics of similarly aged individuals than during high school. Strength training programs must adapt to the different capacities of individual athletes. Sometimes the difference between your most and least mature athletes will literally be the difference between adult and child. Failing to construct your strength training program accordingly will lead to the frustration and/or injury of your athletes. Don't make the mistake of assuming that your best runners are the strongest. Often, they are quite weak even though talented.

In addition to the general principles of training that govern strength training, there are principles specific to weight training.

- Muscular endurance should be developed primarily by running. The weight room is for strength and power training.
- Proper posture, biomechanics and technique enhance weightlifting performance and prevent injury.
- When you introduce weight training, emphasizing repetition of movement creates rhythm and develops better technique. After technique and rhythm are mastered, varying exercises keeps your athletes psychologically fresh.

- An athlete has a finite amount of energy each day. The key to successful strength training for Cross Country athletes is carefully integrating it into the overall training program. Strength and power training are important because they increase the basic physical capacity of the athlete. However, Cross Country athletes are not weightlifters; they are runners. Keep in mind that weight training, plyometrics, running, studying, and work cannot all be done intensely every day. Be very aware of your athletes' total workload.

SAFETY IN THE WEIGHT ROOM

If not properly supervised, the weight room can become a very dangerous place for young athletes.

As a coach, you have four primary responsibilities:

- The *first* is to ascertain the adequate physical condition of the athlete.
- The *second* is to maintain good condition of the equipment.
- The *third* is to ensure proper lifting and exercise technique.
- The *fourth* is to guarantee that the lifter gets proper assistance or spotting.

Physical Condition of the Athlete

Before starting a student on weight training, evaluate his or her physical condition. High school athletes present extreme differences in physical development, including gender differences. Evaluative physical tests and a careful developmental strength program are prerequisites for a safe and effective weight training program. Such testing should be done prior to beginning weight training, and also periodically throughout the training cycle. Weight training does incur some degree of physical risk.

Condition of the Equipment

Ill-maintained or damaged equipment poses a risk of severe injury. Check cables on machines for wear. Check the condition of seat backs; stability of benches; condition of power racks, bars and dumbbells; positions of free weight storage racks, and the fit of the bar collars. Provide a clean, stable lifting surface. Serious injury can occur when an athlete slips on the lifting surface. Make sure that proper shoes and lifting belts are used.

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Proper Weightlifting Technique

Proper technique produces the best results and reduces the risk of injury. Even with weight machines, athletes risk injury if improper technique is used. When handling free weights, consistent use of sound technique is essential.

Proper Assistance or Spotting

Spotting is usually used in free weight exercises such as squatting and bench pressing. You must have spotters for any exercises where an athlete can be injured because they lose control of the weight.

In the **bench press**, at least one person stands behind the athlete to make sure that the lift is completed safely. If the attempted repetition fails, the spotter should help guide the bar back to the bench using a solid grip. Don't allow the lifter to struggle if the bar starts tilting to one side; this can cause rotator cuff or pectoral tears. Don't allow the lifter to arch his or her back; this can cause lower back injury. For heavy lifts, a double spot with spotters at each end of the bar is recommended.

Squats are done safest inside a squat rack having pins that catch the bar in case of a failed lift. When lifting outside the rack, spotters are needed.

On light to medium lifts, one spotter is needed. The spotter stands directly behind the lifter, ready to help in case of trouble. The spotter stands with knees slightly flexed, and arms near the lifter's torso. If the lifter fails to rise, the spotter steps in, hooks both arms around the torso, and pulls up. This stabilizes and helps complete the lift. One style of spotting involves reaching around the torso and placing the palms of the hand on the lifter's pectorals. Another is to place both hands around the side of the torso, just above the weight belt, and lift upward. We recommend the first method, which is the strongest and most efficient, although the second should be used with female athletes.

Use **bar collars** to keep weights from sliding off the bar. They should fit snugly when tightened. Also, always check the weight on the bar. It is easy to forget to put on or remove a weight from one side of the bar. The resulting imbalance can cause serious injury.

Medical Clearance: All your athletes should be examined and cleared by a doctor before undertaking a weight training program. Those with high blood pressure, congenital back problems (bulged discs, loose ligaments), knee problems, etc., should not be allowed to lift until those problems have been remedied.

The Strength and Weight Training Program

The following section offers a strength training program designed for Cross Country athletes. The program has two levels, each intended for athletes of various maturity and strength training background.

Your program also will be defined by the limitations of your school facilities and team characteristics.

- Equipment
- Weight training knowledge
- Available time
- Number of athletes
- Staff available for supervision
- Maturity of athletes

CONSTRUCTING A STRENGTH TRAINING PROGRAM FOR YOUR TEAM

There are a number of ways to integrate strength training into your Cross Country program. Most coaches develop a short weight training circuit that their athletes follow throughout the season. Such a regimen is easy to teach, takes little time, and can be done by a large number of athletes. To be optimally effective, however, weightlifting, like running training, needs to be periodized over the course of the training macrocycle.

There are two points to keep in mind when creating weight training for Cross Country runners. First, while strength training is quite important to the long-term development of your athletes, it is *less important than running training*. Your team definitely needs strength training to remedy weaknesses and prevent injury. But, fundamentally, your athletes are long distance runners, not bodybuilders.

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Second, *strength training for Cross Country runners is often remedial*. The wide range of physical maturity among high school athletes, gender differences, and the thin ectomorphic bodies of most Cross Country runners, make a uniform strength program nearly impossible. As a coach, your first task is to develop the basic physical strength of your athletes. Some athletes need an introductory strength routine using weightless exercises. Once basic strength develops, strength training can be geared toward optimizing performance.

PERIODIZED STRENGTH TRAINING

As mentioned above, most coaches create a simple weight circuit that varies little, if at all, during the season. While this is certainly much better than no strength training, the principles of progressive overload and variability dictate that training needs to change every 4-6 weeks. Additionally, the conflicting effects of aerobic running and weightlifting require that you periodize strength training in order to get maximum benefit.

The program is designed to be done two or three times per week. Pre-season training should include three sessions weekly. During the competitive season, athletes should cut back to one or two sessions.

The Cross Country strength program described here has two levels: one for physically weak or young athletes with no strength training experience and a second for stronger athletes. Ideally, you will combine exercises from both levels with plyometric exercises for a complete strength building program.

LEVEL I

The Level I routine is a basic strength training circuit intended for athletes without weight training experience and those who are physically weak or immature. This routine is also recommended as a transition from off-season to pre-season training for advanced athletes.

The Level I routine begins with 4-5 minutes of easy continuous running followed by 10 minutes of stretching. The circuit should take 20-40 minutes. Be aware that the numbers of sets and repetitions vary substantially. The key point to remember is that *the amount of work and its intensity must increase gradually*.

The Level I Circuit

Push-ups (Up to 5 sets of 2-12 reps with 30-60 seconds' rest.)

Pull-ups (Up to 5 sets of 2-10 reps with 60-90 seconds' rest. Weaker athletes may be assisted by partners until they gain sufficient strength.)

Lunges, side and forward. (Up to 4 sets of 20, alternating legs.)

Box step-ups, holding dumbbells in each hand (Up to 5 sets of 10-12 reps. Boxes or benches should be between 6-18 inches high; the weight should range from 5-20 lbs. depending on the athlete's strength.)

Abdominal crunches (Up to 100 in sets of 10-20.) When conditioning the stomach muscles, an athlete does not need to rise more than 30 degrees from the ground. Beyond that point, the psoas muscles do the majority of the work, placing substantial stress on the lower spine and risking injury.

Standing long jumps onto sand, grass, or wrestling mats (Up to 5 sets of 3 jumps with both feet together.)

Medicine ball tosses. If you don't have medicine balls, use homemade weighted balls of 3 to 8 pounds. Old volleyballs filled with sand work quite well. Choose 2 or 3 of the following exercises:

- *overhead toss* (2-4 sets of 10)
- *forward toss* (2-4 sets of 10)
- *side toss* (2-4 sets of 10, each side)
- *triceps toss* (2-4 sets of 5)
- *two-handed basketball pass* (2-4 sets of 10)
- *straight-armed forward toss* from kneeling position to partner (2-4 sets of 10)

You might finish the program with 5 minutes of easy **jump rope** work.

Jumping rope is an excellent way of developing rhythm and movement skills and ankle strength. The emphasis should be on coordination.

Sample Level I Workout (2-3 sessions per week)

Day 1 — Jog 4 mins. Stretch 10 mins. Push-ups, Lunges, Medicine ball, Curls, Sit-up Crunches, Jump rope

Day 2 — Jog 4 mins. Stretch 10 mins. Pull-ups, Step-ups, Machine Bench Press or Medicine Ball, Sit-up Crunches, Jump rope

Day 3 — Alternate between Day 1 and Day 2 routines.

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This program can be done during a RE. class or as part of Cross Country practice. If done during practice, the strength training circuit should follow the main body of the workout.

LEVEL II

Weight training should start during the summer pre-season. Just as you establish aerobic fitness over the summer, it is also time to build a strength base. Two to three sessions per week are recommended. If your athletes weight train twice per week, have them do a weightless strength circuit that includes calisthenics and plyometric exercise on a third day.

Schedule three strength sessions per week during the preparation period and the pre-competitive phase of the competition period. After a 2-3 week introduction to weightlifting technique, the focus will shift to strength building. In the beginning, your athletes will have sore muscles. Don't worry, it's all right for Cross Country runners to feel sore from weightlifting. While you must take care to avoid injury, soreness is part of training.

During the *introductory phase*, have athletes do 2-3 sets of 10-15 repetitions using light weights for each exercise. High repetitions and light weight let athletes learn proper technique without struggling against the load.

For the remainder of the *preparation period and the precompetition phase*, focus on building muscle and strength. Divide the time into two 4-6 week phases. In a 6-week phase, for example, schedule four weeks at 6-8 repetitions of 60% to 80% of max for all core lifts. For the next two weeks, have athletes do 4-6 repetitions of 75% to 85%. After completing a lifting cycle, test for new 1-repetition maximums.

Once general competition begins, reduce weight training to twice per week. During this phase, focus on strength maintenance rather than strength gains as running training becomes more intense. The muscle your athletes have gained during summer is now made aerobically efficient by intense running training.

As the season moves into peak or specific competition reduce strength training to once per week. Research shows that one good session per week is adequate to maintain strength for a long period of time. Emphasize rest and recovery. Stop all weightlifting 10-14 days before the target competition.

Sets and Repetitions

Despite what some coaches believe, doing 10-15 repetitions of an exercise with light weight does not build endurance. Some coaches like to create a fast moving circuit that keeps athletes working aerobically. This shortchanges both elements of the workout. You compromise strength gains by using insufficient weight and improper rest. And you really don't get a good endurance workout. Athletes really can't train for strength and aerobic endurance simultaneously. The weight room is for the building of basic strength and power. Athletes are much better off training for aerobic endurance by running or other cross-training.

Muscle is developed best by 6-8 repetitions of 60-80% of the 1 repetition maximum. Maximum strength is developed best by 4-6 repetitions of 75-85% of the max.

LEVEL II CROSS COUNTRY ROUTINE

The Level II weightlifting routine is appropriate for Cross Country runners with good basic strength or weight training experience. The program consists of 6 exercises composing a basic whole-body routine that can be done in less than 30 minutes using free weights.

- Back Squat
- Overhead Press
- Power Clean
- Bench Press
- Sit-Up Crunches
- Hamstring Curls

You can teach the above lifts to your athletes as follows:

Primary Lifts

Back Squats. Assume a "high bar" posture with the bar resting on the trapezius muscles about 2 inches below the base of the neck and your hands spaced evenly on the bar several inches outside your shoulders. Lift the bar off the supporting pins of the squat rack and step into starting position.

Foot placement can be adjusted according to your flexibility. A base of 4-6 inches wider than the shoulders usually yields the best results. Place your feet with the toes pointing out 20-45 degrees. Make sure that your heels stay in contact with the ground at all times.

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The key to the squat is keeping your torso tight with a straight back and lowering the bar under control. Pushing your chest and stomach out compresses the lower back, and is referred to as *keeping the torso tight*. Doing so helps protect you from lower back injury. You should focus on using your gluteal and hamstring muscles to control the pace of descent. A complete squat is attained when the upper thigh, the line from knee to hip, is parallel to the ground. Don't force a full squat if you have poor flexibility or poor balance. By the same token, don't lift more weight until you learn proper technique.

A properly performed squat feels almost as if you are about to sit in a chair: your knees don't move forward beyond your toes, and your heels never leave the ground. *If your heels come off the ground, you are doing the squat incorrectly and endangering your knees.*

Your eyes should look straight ahead during the entire lift. (Many athletes tend to look at the floor, which causes them to lean too far forward.) Also, make sure that both feet are spaced evenly and in line with your body. Some beginners tend to place one foot forward.

When returning the bar to the rack, don't rush back or catch your hands on the supports. Fatigue can make this a dangerous moment.

Note: Some athletes may need to do squats *without weight* until they develop the flexibility and balance to handle an extra load. They may only be able to do a 1/2 or 3/4 squat in the beginning. However, don't increase the load at the expense of good technique. It will only lead to muscle imbalances and injury.

Overhead Press. This lift, also called the *military press*, develops the arms, shoulders, and upper chest muscles. Use a weight machine or free weight squat rack. Lift the weight so that it rests on your upper chest, with your hands placed slightly outside the shoulders. Once the bar is balanced, press the bar directly overhead until your arms are fully extended. Lower the bar back to the chest and repeat. Make sure that you stand erect and don't arch your back during the press. Your eyes should look forward.

Power Clean. The power clean is an explosive total-body exercise. It requires coordination and good technique, and is an excellent strength building exercise.

The power clean is divided into 3 active phases and 2 recovery phases.

Phase I is the starting position. First, stand with your feet flat, slightly less than shoulder width apart, and the bar over your shoes. Grip the bar with your hands evenly spaced at 1-2 inches outside your legs. Rotate your wrists inward and lock both elbows, pointing to the sides. Your back should be straight, with your torso arched slightly and the shoulders back.

Pushing your chest and stomach out compresses your lower back. *Keeping the torso tight* helps protect the lower back from injury. Your chest should be a few inches in front of the bar so that the back is at about a 45-degree angle to the floor. At this point, your hips should be a little bit higher than the knees, with your eyes focused straight ahead, not up.

Phase II is the pull to the knees. This is where most athletes make technique mistakes. The weight should be moved by using the large muscle groups of the legs, *not* the arms. The bar is lifted by straightening the legs and lifting the hips. Make sure you keep the chest over the bar. The initial drive to clear the knees will create a shift of the center of gravity from above the front of the foot to the center of the foot. Curling the wrists inward keeps the bar as close as possible to your shins and lower thighs. At no point during this phase should the elbows bend. The arms hang straight, with the torso as *tight* and straight as possible.

Phase III is the acceleration. Now, drive your hips forward forcefully, and raise your torso up and back. This movement allows the large muscle groups to act powerfully upon the bar, creating great acceleration. As the hips drive forward, the weight shifts to the balls of the feet and you should try to get as tall as possible. (Note: A quick way to spot a major error is to see if the athlete stays flat-footed. The athlete should actually rise onto the balls of the feet.) If the lift is properly executed, the bar will make contact with your mid thigh. As the bar travels upward, the trapezius muscles contract in a shrugging motion. Raising the elbows as close to shoulder level as possible creates the final pull on the bar. It is important to keep the elbows pointed away from the body and not pull backward.

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Phase IV is the recovery. When the bar reaches its highest point, a slight flexing of the hips and knees will act as a shock absorber. Trap the elbows by moving your elbows from the side to the front of your body. The upper arms must be held parallel to the ground. Most beginners catch the bar with the elbows close to the torso. The final resting place for the bar is along the clavicles, with pressure from the high elbow position keeping it in place.

It is a *very dangerous mistake* to bend backward to catch the bar. The bar should be caught with the torso erect, not leaning. Another error is jumping or throwing your body unevenly in order to complete the lift. The feet may move a few inches to either side but not forward or backward. It's best if your feet stay in place.

During *Phase V*, the weight returns to the starting position. Here, cleans become a problem in weight rooms without bumper plates or padded surfaces. The bar can be lowered safely to the floor if done in stages. First, drop the bar from the rack position on the chest to the hips. Then slowly lower the bar past the thighs until it reaches the floor. Your back must remain straight, with legs flexed, to decrease pressure on the lower back.

The rhythm of the lift is very important. Movement is slow to fast. If you rip the weight off the floor as fast as possible, lower back problems usually result from the premature use of the arms and shoulders. There should never be a struggle for control at the end of the lift. Reduce the amount of weight if this happens.

Flexibility of the ankles, hips, shoulders, and wrists is a major factor affecting technical proficiency. If you are not flexible, a remedial stretching routine must be undertaken. Until you improve flexibility, only light weights should be lifted.

Back Press. Also referred to as *Good Mornings*, this lift strengthens the thighs, buttocks, hamstrings, stomach, and lower back. Place a bar on the shoulders as in the squat, spreading the feet slightly more than a shoulder width apart. *Keep the back straight and the head up* while bending forward at the waist. To minimize the shearing forces on the lumbar spine, maintain a moderate bend in your knees. Lower until the back is parallel to the floor, hold for a count of two, and then slowly raise back to the starting point. It may take a while to get the bar in a comfortably balanced position.

When doing this lift, it is essential that the athlete keep the back straight and the knees bent. Otherwise, very serious back injury can result.

Sit-Up Crunches. Abdominal conditioning is a very important element of strength training, and also one of the most neglected. We recommend sit-up crunches. When doing a crunch, only raise the shoulders about 30 degrees off the floor. Beyond that point, most of the work is done by the psoas muscles, putting unhealthy stress on your lower back.

Hamstring Curls. Runners need to maintain a balance between quadriceps and hamstring strength, since running tends to overdevelop quad strength. Most weight rooms have machines that isolate the hamstrings. If not, you can use elastic tubing.

Supplemental Lifts

During the summer pre-season, or if weight training replaces running on any given day, the following exercises can be added for a more comprehensive workout. Secondary or supplemental lifts should be done after the core lifts. These exercises enhance general strength, develop muscle balance, and strengthen weak areas. As a general rule, you do slightly more repetitions in a single set; 10-15 repetitions are recommended.

Bent Over Rows. Bend over and grab the bar with a grip slightly wider than the shoulders. Keep the back parallel to the floor, head up, and legs straight. Pull the bar up to the bottom of the chest. Bent rows strengthen the back and shoulder muscles.

Curls. Using an underhand grip (palms up), stand with the hands at arms' length against the thighs. Slowly curl the bar up to the chest while keeping the back straight. Lower the weight until the arms are fully extended again. If necessary, standing against a wall helps eliminate the tendency to throw the hips forward and arch the back while lifting the weight.

Triceps Press. Stand, holding the bar with the hands about 8 inches apart, palms facing the thighs. Press the weight overhead until the arms are fully extended with the elbows near the ears. Holding the upper arms still, lower the weight as far as possible behind the head. Press the weight to the overhead position, keeping the back straight, head up, and upper arms motionless.

Lateral Raises. Hold a dumbbell in each hand at the sides of the body, palms facing slightly forward. Keeping a slight bend in your elbows, raise your arms away from your sides until they're just below shoulder level.

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Bench Press. To perform the lift, lie on your back with your feet spaced about one foot on each side of the bench. Keep the feet on the ground, with the heels touching. Your head should rest on the bench, with the nose/eyes directly below the bar. Grip the bar slightly wider than the shoulders. Most bars will have knurled markings to ensure a symmetrical grip on the bar.

After a couple deep breaths, inhale and take the bar from the bench supports. (Sometimes a spotter helps to pick up the bar, depending on the weight and bench construction.) Stabilize the extended weight before attempting the lift.

When you are ready, begin the eccentric, or descending, phase of the lift. Lower the weight slowly until it touches the bottom of your pectoral muscles. The motion should be controlled, and the weight should not bounce off your chest.

The next step is the push from the chest (concentric, or ascending, phase). Drive the bar up in a slight arch toward the upper chest. This keeps the elbows in line with the direction of force on the bar. When the repetition is complete (arms extended and the bar stabilized), attempt the next repetition. During the drive off the chest, your buttocks should stay on the bench. If you need to raise them to finish the lift, lower the weight and emphasize proper technique.

Sample Level II Weight Program

Program Squats — 3 sets x 8 reps

Leg Curls — 3 sets x 12 reps

Overhead Press — 3 sets x 8 reps

Power Cleans — 3 sets x 6 reps

Back Press — 2 sets x 10 reps (light weight)

Sit-Up Crunches — 2 sets x 30 reps

Pull-Ups — 2 sets of max reps

Medicine Ball Tosses — 2 sets

Plyometric Training

Plyometric training is a form of exercise that utilizes the body's stretch reflex and eccentric muscle contractions to enhance speed and power. Though explosive power contributes relatively little to aerobic performance, plyometric training helps develop general athletic ability, ballistic skills, kinesthetic awareness, rhythm, and coordination. High school runners, especially, can benefit from the development of overall athleticism provided by plyometric exercise. Cross Country runners need to have the ability to respond quickly and powerfully to the demands of racing, such as mass starts, mid-race surges, hills, and finishing sprints.

Plyometrics for Cross Country, though, differ markedly from the speed and power orientation of most plyometric work. Rather, distance athletes should focus almost exclusively on exercises emphasizing rhythm and coordination. For young and physically immature athletes, rhythm plyos serves as a form of physical education, developing movement skills and running mechanics.

THE PHYSIOLOGY OF PLYOMETRIC TRAINING

The effectiveness of plyometric exercise derives from conditioning the neurological mechanisms and elastic properties of the muscle.

Deep within all muscle tissue is a structure called the **muscle spindle**, which contains special fibers called **intrafusal fibers**. These intrafusal fibers are wrapped with nerve cells that tell the central nervous system when a muscle is being stretched rapidly. In response, the nervous system triggers a muscle reflex to protect the muscle from injury. This reflex is called the **myotatic, or stretch, reflex**.

Plyometric training uses the stretch reflex to improve strength, power, and rhythm. By pre-stretching a muscle quickly, one can generate greater power than without the pre-stretch. Plyometric training uses gravity and body weight to load elastic tension within the muscles. This generates powerful eccentric contractions that allow an athlete to use more of his or her total muscle capacity. Plyometric training is quite specific to running, even distance running. Since

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each footfall touches the ground for only a fraction of a second, a runner must generate force within a very short time frame. Plyometric training specifically trains the muscle to generate strength as quickly and as efficiently as possible.

GUIDELINES FOR PLYOMETRIC TRAINING

- Keep in mind that plyometric training is less specific to the demands of Cross Country than running, and should be used as a supplement to the main body of training.
- The overload presented by the combination of gravity and body weight requires good basic strength to prevent injury. Two rules of thumb apply. First, your athletes should **always start with the easiest and least complicated plyometric exercises**. Low intensity and limited repetitions are suggested for beginners and young athletes. You must also take into account an athlete's body weight. The same exercise will create more physical stress upon a heavier athlete. During adolescence, strength in relation to body weight is often poorest among heavier individuals. Second, **if an athlete is able to perform the exercise with correct technique, he or she probably has adequate strength**. If the athlete is unable to execute the task properly, or if execution breaks down after a few repetitions, have the athlete build basic strength before doing plyometric drills.
- The ballistic nature of **plyometric exercise poses a risk of injury**. Plyometrics can be tremendously beneficial, but must be used cautiously. A **conservative approach** to plyometric training minimizes the risk of injury for high school athletes. Adolescents are usually still growing, have softer bone structure, and have not developed the absolute strength needed for advanced plyometric work. The age, strength, body weight, and maturity of each athlete should be taken into consideration when constructing plyometric training.
- **Proper technique is crucial** to maximize benefit and reduce injury risk. Good technique indicates a proper degree of stress. Reduced height or distance, poor range of movement, poor body posture, and loss of coordination are signs that the exercise should be stopped.
- **Always** conduct plyometric drills on a soft level surface, such as grass or padded mats. Concrete, asphalt, or the running track are poor surfaces for training.

- Plyometric drills should be done in shoes with good support and cushioning. Gravity and speed provide the needed resistance.
- Never add extra weight, such as weight vests or ankle weights.

TYPES OF PLYOMETRIC EXERCISES

Plyometric exercises can be classified into three categories: *rhythm, power, and speed*. The classification depends on the objective of the exercise and the nature of the overload. Rhythm plyometrics develop coordinated movement skills and basic ballistic strength. Power plyos combine maximum strength and speed into explosive action. Speed plyometrics shorten the time in which an action must be performed.

Rhythm Plyometric Exercises

- Rhythm Skipping
- High Knee Running
- Swing Skipping
- Butt Kicks
- Ankle Bounces
- Cariocas
- Rhythm Bounds
- Foot Stomps (Roach Stompers)
- Skipping Kicks
- Rhythm Bounds

Skipping. Skipping helps develop good running mechanics. Skips are a total-body exercise that build both lower and upper body strength. They are the basic plyometric exercise. Do 2-3 sets of 30-50 meters.

Swing Skipping. Swing skipping is a variation of rhythm skipping. Instead of running posture, the arms swing loosely with each skip. The exercise combines relaxation with rhythm. Do 2-3 sets of 30-50 meters.

High Knee Running. This drill develops good running form and hip flexor strength by stressing high knee lift. Good running posture and mechanics are essential when doing the drill. Forward speed should be slow and controlled. Do 2 sets of 20 meters.

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Butt Kicks. This exercise strengthens hamstring muscles, and develops quickness and coordination of the stride recovery. Maintain tall running posture, and attempt to kick the heels to the buttocks while running slowly forward. Good arm action and controlled speed are important. Do 2-3 sets of 20 meters.

Ankle Bounces. This drill strengthens the muscles, tendons, and ligaments of the ankles, which must cope with the various terrain challenges of Cross Country courses. The exercise can be done in place or moving forward slowly. Jumping rope is an alternative exercise. Do 2-3 sets of 20-30 reps.

Skippping Kicks. Skippping kicks require the coordination of multiple quick movements. While skipping on one foot, pull the other toward the buttocks and then kick it forward as the knee drives to waist level. The extended foot then pulls back to the ground, initiating a new skip. Do 2-3 sets of 20 meters.

Cariocas. This exercise requires relaxed coordination and rhythm in a complex movement. The athlete runs sideways with the trailing leg alternately stepping in front and behind the leading leg. Do 2 sets of 30-50 meters in each direction.

Rhythm Bounds. These bounds develop leg power at low intensity. They are a good introduction to power plyos. Bounds are an exaggerated running motion where the athlete tries to *hang* in the air during each stride. Do 2-5 sets of 30-50 meters.

Foot Stomps. This exercise builds dynamic strength in the calves and ankles, and creates awareness of the push-off phase of the running stride. The athlete executes a short skip focusing on vigorously driving the heel to the ground. Do 2-3 sets of 20 meters.

Power Plyometric Exercises

Before starting power plyos, first make sure your athletes can do each exercise as a rhythm drill. Emphasize good technique. Improper technique is a sign that the athlete is not ready for that power plyometric exercise.

- Power Skipping
- Power Bounds
- Double Leg Hops
- Single Leg Hops

Power Skipping. This type of skipping emphasizes vigorous arm action and drive from the ground. The athlete should try to attain the greatest height possible. Do 2-4 sets of 10-15 skips, or 20-50 meters.

Power Bounds. The basic motion is similar to rhythm bounds except that the lead knee drives vigorously to waist level. The athlete tries to achieve both height and distance. Do 2 sets of 8-12 bounds, or 30-50 meters.

Double Leg Hops. Double leg hops develop lower body power. Consecutive hops should be done without pausing. Novices and weaker athletes should use a small hop between each full hop. The athlete should aim for maximum distance and height with each jump while moving continuously. Do 2-3 sets of 6-8 repetitions.

Single Leg Hops. Single leg hops involve the same muscle groups of the lower legs as double hops, but focus on balance and power. This is a demanding drill that should be done cautiously. Like double leg hops, a small intermediate hop between full hops is a good way to introduce the exercise. Do 2-3 sets of 6-8 reps for each leg.

Speed Plyometric Exercises

Speed plyos use velocity to force the neuromuscular system to develop speed and quickness. For Cross Country, include them as drills preceding running training.

- Speed Skips
- Fast High Knees
- Butt Kicks
- Fast Hands/Quick Feet
- Speed Hops

Speed Skips. These skips stress fast execution, not distance. The athlete should appear to be doing a quick shuffling step. Do 2-3 sets of 10-15 meters.

Fast High Knees. Like normal high knee drills, the arms and knees drive vigorously, but emphasize fast leg turnover. The range of motion will be $\frac{1}{3}$ to $\frac{1}{2}$ of normal. Do 2-3 sets of 10-15 meters.

Butt Kicks. The athlete tries to kick the butt as fast as possible while running slowly forward. As with high knees, the range of motion shortens. Do 2-3 sets of 10-15 meters.

Fast Hands/Quick Feet. The aim is to move both the hands and feet as quickly as possible within a short range of motion. Do 2-3 sets of 5-10 seconds, or 10-15 meters.

Speed Hops. The athlete performs a double leg hop in place, driving the arms and knees up very fast. Upon landing, the next hop should be done as quickly as possible. Do 2 sets of 10-12 repetitions.

PERIODIZATION OF PLYOMETRIC TRAINING

Period	Preparation	Late Preparation	General Competition	Peak Competition
PHASE	General Skills Development	General Power Development	Specific Power & Speed Development	Optimum Performance & Recovery
EMPHASIS	General plyometric strength & skill development for athletes Gradual build to moderate volume Low intensity Increasing volume and intensity Primarily rhythm drills Performed after main body of training	Rhythm Drills 50% Power Drills 40% Speed Drills 10% Moderate volume & intensity	Rhythm Drills 50% Power Drills 20% Speed Drills 30% Moderate volume & intensity	Peak competition requires appropriate recovery period Plyometric training reduced to once per week with light activity on other days Low volume Moderate intensity Emphasis on rhythm & speed drills

USING PLYOMETRICS IN CROSS COUNTRY TRAINING

Unlike Track and Field, you don't need to schedule specific workouts emphasizing plyometric training. For Cross Country runners, plyometric drills can be incorporated as part of the warm up preceding the main body of training. These drills emphasize a full and smooth range of motion more than eccentric overload, and use the pre-stretch of the muscle to facilitate rapid movement, mechanical efficiency, and coordination.

As with other types of training, plyometric exercise needs to be periodized over the course of the season. Volume and intensity will vary over the course of the season. In general, the *volume* of plyometric exercises for Cross Country runners will be low to moderate. The *intensity* also will be low to moderate.

Begin each season with a gentle introduction to plyometric training using simple rhythm drills. As your athletes become accustomed to the exercises and fitness grows, gradually increase volume and intensity.

Once athletes have learned basic rhythm skills, slowly introduce power exercises. Distance runners will employ a small volume of power drills combined with rhythm exercises.

As the general competition phase of the season begins, plyometric work stresses rhythm and speed development. Once the peak competition phase starts, reduce plyometric training to one light session per week, though your athletes can continue to include plyometric drills in the warm up. Stop any strenuous plyometric training 7-10 days before the target competition.

Cross-Training for Cross Country

Cross-training is "any fitness program that incorporates a variety of activities in a systematic way to promote balanced fitness." In reference to the sport of Cross Country, cross-training is generally considered to be any activity that develops various aspects of aerobic fitness and muscle strength without imposing the musculoskeletal stress of long distance running. Cross-training also is used to help athletes maintain fitness while rehabilitating an injury.

Methods of Cross Country Training

Long distance running has a fairly high incidence of injuries. While few are severe, these injuries result mostly from the repetitive motion of long distance running. Bone, soft tissue, and joints become damaged from repetitive trauma caused by poor mechanics, strength imbalances, and overtraining. Cross training helps distance runners reduce their risk of injury by replacing running miles with other activities that avoid the pounding of running. Cross-training can ultimately improve running performance by allowing athletes to train consistently free of injury.

Cross-training can be designed to meet the tastes and needs of an individual athlete. A flexible workout schedule that includes cross-training can provide a physical and mental break from intense running, helping prevent competitive *burnout*. Sometimes, cross-training might even help keep an athlete on your team. Triathletes, swimmers, and cyclists might find Cross Country more attractive if they have the option of cross-training.

Cross-training is an excellent means for an athlete to maintain basic fitness while recovering from injury. Repetitive stress injuries, like stress fractures, may not allow an athlete to run, but may permit swimming or cycling. Certain cross-training activities, like pool running or skating, also allow gentle strengthening of injured muscles or tendons. One observed effect of cross-training is that it speeds the return to running fitness once an injury heals.

However, *cross-training is not a substitute for running training.* Too many coaches believe that cross-training can replace running. This is not true. The principle of specificity demands that the great majority of cross-country training be some type of distance running.

The value of cross-training for healthy athletes is that it allows them to train aerobically without the gravity-related stress of running. Since most distance runners achieve near maximum aerobic fitness, however, cross-training will have mostly a maintenance effect. Cross-training is a form of active recovery.

For novice and unfit runners, cross-training allows increased aerobic training volume without risking stress injuries. This especially applies to female adolescents, who, in general, have rather high injury rates from long distance running. You may choose to have your female athletes do a fair amount of aerobic (VO_2 max) conditioning as cross-training and save running for more intense tempo and repetition workouts.

Cross-training, like other methods, needs to be integrated into your overall training plan. Cross-training is a good way to build aerobic fitness during the *early preparation period*. You might want to include some cross-training in place of a second daily run or have your athletes segue immediately from a moderate continuous run into some other aerobic activity.

During *specific preparation and early competition*, cross-training helps maintain aerobic fitness while stepping up the intensity of running workouts. As *peak competition* approaches, cross-training provides continued aerobic training while you reduce running volume to let your athletes recover and sharpen for the most important meets of the season.

Last, cross-training is perfect activity for the *recovery period* following the competition period of Cross Country or Track and Field. It keeps your athletes fit and active while they rest from the physical and mental demands of the season.

TYPES OF CROSS-TRAINING

The following activities are suggestions for cross-training. Use them mostly on **active rest** days during the competitive season and as extra workouts during summer training.

Pool Running

Pool running is perhaps the most Cross Country-specific type of cross-training. The resistance of water (12 times that of air) and buoyancy let the athlete exercise aerobically without experiencing the jarring effect of running on hard ground. Pool running also lets you closely monitor workouts for a large number of athletes. Besides, it's a very popular workout during the summer!

A cautionary note: You must ensure the safety of your athletes during water workouts. Always closely supervise pool workouts, and if possible, have a life-guard on duty. Not all your athletes will be strong swimmers.

Pool running should be done in water deep enough to keep runners from touching bottom.

Simply using proper running mechanics will allow many athletes to keep their heads above water and raise the heart rate, but using some sort of flotation device enables the athlete to focus on running form. There are several products made especially for pool running, such as the Wet Vest™ and Aqua Jogger™. The device should fit snugly to avoid chafing. (Always read the manufacturer's instructions carefully before use.)

Methods of Cross Country Training

When running in the pool, athletes should try to run as if on land, using good running mechanics. They should maintain erect posture and avoid leaning forward into a swimming position. One common mistake is flaring the elbows outward, turning the hands into paddles. Arm action should be the same as normal running, with arms bent at 90 degrees. The sensation is that of the elbows pushing back against the water.

Water resistance will slow movement. However, don't let your athletes sacrifice mechanics for quicker movement. Runners should not try to move across the pool. Running in place is fine, although some forward movement will occur.

Alternatives to running motion are the *Cross Country skier* and the *piston* motions. In the *Cross Country skier*, the arms and legs swing fully extended. This method offers greater resistance than running. The *piston* shortens the body levers and uses a fast running movement. This motion decreases resistance. Of course, depending on your objectives or the health of an athlete, you can vary the three forms within a workout.

Cycling

Like pool running, cycling is a good alternative to running because the body weight support of the bicycle relieves stress on the legs. An athlete can use a stationary bike, road or mountain bike, or a wind/roller trainer. Research shows that cycling can be a very effective substitute for running. Injured runners can exercise against low resistance if pain is present with resistance.

A drawback of cycling is that it does not allow the leg to extend fully at the hip or knee. Make sure to include other exercises that use these motions. Adjusting the seat height puts the athlete in a balanced position and allows the legs to extend more fully.

Walking

Brisk walking helps get an injured athlete back on his or her feet as part of the return to running.

Cross Country Skiing

Cross Country skiing is possibly the ideal aerobic total-body training. Unfortunately, the climate of Southern California doesn't make it possible. However, Nordic-Trak™ type exercise machines provide many of the same benefits without the worry of frostbite!

Skating

In-line skating quickly is becoming one of the most popular aerobic recreation activities in this country. Athletes should be proficient skaters, though, if they plan to use skating as cross-training. In all cases, skaters should wear protective wrist, elbow, and knee pads along with a bicycle helmet.

Slideboard Skating

Slideboards provide a low impact aerobic strength workout. Portable slideboards are relatively inexpensive and store easily.

Stair Climbing

Step machines and stairs can give an athlete a good cardiovascular workout, aerobic and anaerobic. The low impact of climbing (not descending, however) is good for injured athletes. Make sure that the athlete moves through the greatest possible range of motion while climbing. Have them keep an erect body posture with moving arms.

Swimming

While swimming is an excellent aerobic activity, it has two drawbacks. *One*, the leg muscles don't get a running specific workout. *Two*, most Cross Country runners are not good swimmers because of their low body fat and relatively weak upper body strength. This certainly is not always the case, but usually, swimmers get tired far too quickly for them to get much aerobic benefit. For them, swimming often becomes an anaerobic strength workout.

Methods of Cross Country Training

PLANNING CROSS-TRAINING WORKOUTS

The specificity of running makes it difficult to translate Cross Country workouts into cross-training. Cross-training and running training, however, share a common language: **the heart rate**. Much like as it is with running, you can use the heart rate to guide workouts. Since we know that certain heart rate levels develop different aerobic and anaerobic capacities, you can create cross-training workouts that target specific objectives.

Keep in mind, though, that there is not a direct correlation between running heart rate and pool running or cycling heart rates. Hydrostatic pressure and the support of a bicycle change the anaerobic heart rate threshold, so the following formulas are informed estimates, not scientific absolutes.

Cross-Training Aerobic Endurance Workout

Warmup: 10-15 minutes easy

Workout: 45 to 75 minutes at 60-70% of Heart Rate Reserve*

Cool-Down: 10-15 minutes easy

Cross-Training Threshold (tempo) Workout

Warmup: 10-15 minutes easy

Workout: 20-40 minutes at 80-85% of Heart Rate Reserve*

Cool-Down: 10-15 minutes easy

Cross-Training Repetition Workout

Warmup: 10-15 minutes easy

Workout: 4-6 repetitions of 5-8 minutes at 85-90% of Heart Rate Reserve* with 3-4 minutes' rest or to 60% of Heart Rate Reserve*

Cool-Down: 10-15 minutes easy

** Heart Rate Reserve is equal to max heart rate minus resting heart rate.
Refer to Heart Rate section in Chapter Four.*



Chapter

The Art of Coaching High School Cross Country

At its best, coaching is an art. It combines your personal philosophy of sport, the science of exercise physiology, the logistics of complex organization, racing strategies and tactics, and an understanding of the human soul. The ultimate expression of this art is the commitment and effort your athletes display in competition. The true measure of your coaching artistry is your ability to instill a love of competition in your athletes.

The Art of Coaching High School Cross Country

A Philosophy for Coaching Cross Country

It is nearly impossible to coach any sport without a philosophy that defines both the training and competition skills you must teach. Your coaching philosophy will determine what methods of training you use, why you use them, when you use certain methods in your training plan, and how that training will lead to improved racing performances. Every coach should articulate a coaching philosophy for the sport. If you don't have one written on paper, you don't have one. The following is an example of a coaching philosophy for Cross Country:

- **There is no magic training mileage that guarantees success.**

Improving performances in Cross Country running can be reduced to the ability to sustain a faster pace throughout a race. Enhancing submaximal aerobic endurance by running large numbers of long, slow miles does not fulfill the demands of a sport where athletes must run beyond their anaerobic thresholds.

- **Coaches should train their runners for *racing*, not *mileage* or *speed*.**

Training to race means more than developing aerobic and anaerobic fitness. It also means training to develop racing skills, such as the ability to start fast, surge, sprint finish, run in a crowd, stay out of boxes, negotiate hills, and hold off challengers.

- **In Cross Country, it is far easier to *stay up* than *catch up*.**

Cross Country training must enhance an athlete's ability to run with the leaders of a race.

- **Rest and recovery are essential aspects of Cross Country training.**

All gains from training are realized during periods of recovery. Easy days and rest days *must* be part of the training schedule. Overtraining is endemic to the sport. Far too many good races are left in training, and burn-out is common. Cross Country runners always make the greatest progress by training and racing free of injury and chronic fatigue.

- Distance running is a movement skill, not just aerobic exercise.

Good distance running mechanics are not a matter of simple adaptation; they must be taught. Small mechanical inefficiencies have a significant negative impact on performance when Cross Country races involve thousands of running strides.

- Cross Country runners do not *peak* with speed work.

Training to increase speed must be an ongoing process of refining running mechanics and neuromuscular adaptation that accompanies training throughout the summer and season. Introducing speed training for the first time at the end of the season often just results in injury.

- Cross Country runners need to be able to run fast, but *like distance runners*, not sprinters.

One of the most common mistakes coaches make in training distance runners is encouraging them to run like sprinters when training for speed. There is no time in a Cross Country race where an athlete will run like a sprinter. Distance runners need to learn to run fast with distance running mechanics — upright posture, a mid-stance footstrike, and a short, quick, arm swing. Those are speed mechanics that a Cross Country runner can apply after having run 75-95% of a 3-mile race.

- The most important time you spend as a coach is not the time you spend with your athletes during training. It is the time you spend *planning* what to do with your athletes!
- Cross Country is a numbers game. One or two great runners without backup will not make for a successful team. You must recruit and inspire many athletes. Never cut an athlete. Never give up on an athlete.
- Each season is unique. You must adapt, not necessarily your basic philosophy, but your goals and approach.
- You need to understand both the *science* of training and the *art* of coaching young people.
- The Cross Country season never ends for athletes who adopt distance running as part of their lifestyle.

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Coaching a Combined Boys' and Girls' Program

Today, many schools have combined girls' and boys' Cross Country programs for boys and girls. Although this alters the traditional gender separation of teams, coaching a co-ed program can be to your benefit.

Perhaps the greatest advantage of combined teams is that the increased size of the Cross Country program gives you a stronger position to lobby for school and community support. It's not just a matter of having large numbers; it's a matter of having large numbers of boys *and* girls on your team.

A larger squad usually means more paid coaches. Having an assistant or two improves administration, organization, recruiting, and avoids training oversights. With multiple coaches, the quality of your program and the interaction with your athletes should improve.

Combined programs also create a synergy that helps both the boys' and girls' squads fulfill their potential. Large teams often have great team spirit and identification that spur athletes to excel. The presence of girls can motivate the training efforts of your boys, and your best girls will benefit from having male teammates as training partners.

A combined team also helps your recruiting efforts. Co-ed teams are a comfortable arena for girls and boys to interact in. Athletes are less likely to think they are missing social opportunities by committing to the sport. Moreover, a combined team gives you a larger pool of athlete recruiters. You may find athletes in numbers you never expected.

If there is any added challenge to coaching a combined team, it is the problem of romantic relationships. It's naive to think these relationships won't develop between team members; they will. Your role as coach is to clearly define the boundaries and rules governing team behavior. Let your athletes know from the start that *boyfriends and girlfriends become athletes* once they show up for practice. Don't allow physical contact during practices and meets. It only distracts you, your team, and most of all, the athletes involved. Every one of your athletes needs to be able to focus on what he or she needs to do in training and competition.

Adolescent sexuality and physical maturation sometimes pose sensitive problems for athletes and coaches. It's often difficult for young athletes to share their problems with a coach of a different gender. Athletes in combined programs deserve to have at least one coach of their own gender. When possible, try to have a coaching staff that includes women and men.

If you can't have a mixed gender coaching staff, you need to be especially considerate of the problems faced by young athletes of the opposite sex. Seek the help and support of school counselors or parents if you feel unable to cope adequately with a given circumstance.

Despite the gender integration of a combined program, each team still should have specific training and racing goals. Individual team groups need to spend some time together to refine their racing strategies and tactics and to develop group cohesion. The abilities of different groups often will differ. You must consider that when planning training and competition.

Organizing Large Numbers of Runners

One of the great characteristics of Cross Country is that it accommodates as many athletes as can run. **Unlike what happens in other sports that limit the number of athletes on the playing field, every Cross Country runner is part of the entire competition and has the chance to contribute to the outcome of the team competition.**

While large teams breed success, the feeling of *belonging* is usually the greatest attraction to your athletes. You must remember that each athlete needs and deserves attention and encouragement every day. Physical and verbal contact is the best way for you to acknowledge your athletes. Make a routine that lets you touch and speak to all your athletes. Shaking hands with a few words of communication means a lot to your athletes. Your team warm-up and stretching sessions are the best times for you to reach athletes individually.

Beyond individual attention, large teams present organization problems. There are four keys to organizing a large program: accurate record keeping, training groups, individual training logs, and adult help.

RECORD KEEPING

The term *organized paperwork* may be an oxymoron, but it is crucial if you hope to run a Cross Country program efficiently.

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Keep an accurate record of the address, phone number, parents' names, grade, uniform and locker numbers, birthdate, and training group for every athlete on your team.

Carry a list with the name of every athlete, listed by training group, to every practice and competition. This will let you take roll and make sure that athletes are properly entered in races.

By classifying each athlete according to a training group, you only need to record the workouts for each group rather than record individual workouts. You can always refer to your group-classified daily training log. If you want, record individual comments or changes on your daily training roster.

TRAINING GROUPS

Assign each runner to a training group based upon ability and fitness. This ensures that the athlete is training with others of similar ability, and allows you to construct workouts that generally address the needs of each athlete. This method is a middle ground between individual workouts and a broad brush approach to training. When coaching large numbers of runners, it is the only realistic approach.

Dividing groups according to ability and fitness means training girls and boys together. This way you can reduce the number of training groups and make the best use of your assistant coaches.

Training groups also let athletes know what is expected of them each day. Training groups often develop an identity within the overall team identity; an athlete always has a place to belong.

Nonetheless, training groups should be fluid with athletes moving up or down as fitness or injury dictates. Sometimes, you may want to motivate a younger runner by moving the athlete to a stronger group for a workout. Likewise, you may want to let one of your better runners rest by moving that athlete to an easier group. Of course, promotion to a stronger group usually encourages an athlete to train harder. Promotion is a mark of your recognition.

With several training groups, you can tailor training to the approximate ability of each athlete. Multiple training groups allow you to meet the needs of different periodization schedules and performance goals.

INDIVIDUAL TRAINING LOGS

All athletes should keep daily training logs that provide you and the athlete with an individual record of the season. It's the only way you can get a complete picture of every athlete's progress.

The log can take different forms, but it's easiest for you if athletes keep folders with weekly training sheets. You should review each athlete's log weekly. Doing so keeps you abreast of each athlete's condition, and may indicate any problems that have not yet become serious. The training log also lets each athlete know that you are paying attention to his or her well-being and progress. A simple notation or comment goes a long way.

Training Log Contents

- Guideposts — A set of positive affirmations, epigrams, and team slogans to motivate and inspire your athletes.
- Calendar and meet schedule
- Training schedule listing workouts
- Weekly training log sheets. Each log form should have space to record workouts (distance and times), comments (perceived effort), waking heart rate, body weight (be careful), hours of sleep, and space for you and the athlete to write comments.
- Race planning and critique sheets

(See appendix for sample log forms.)

ADULT HELP

There is no way you can properly coach 30 runners or more without adult help. You need adult help to coach this many runners. Ideally, you will have at least one paid assistant coach. We all know, however, that this is often not the case. If not, you need to find volunteer help.

Additional coaches are most needed for repetition and interval workouts. If you can only get help one or two days a week, get them to help on these days. The best source for extra help is another faculty member. If no faculty member can help, ask a parent or a local college student who might be able to receive course credit for coaching.

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The most important reason for you to have extra adult help, though, is to let you reach more athletes. An extra set of adult eyes and ears helps training go as planned and keeps you in touch with your athletes.

Adapting Training to Location

Most coaches need to adapt their team's training to fit the location of their schools. Few teams have the luxury of perfect running areas and state of the art facilities. Nonetheless, your training program still needs to address the demands of different race courses.

The two most common problems are lack of easy access to long run loops and hills. Depending on location, Southern California presents another environmental challenge: smog.

If lack of grass or dirt running trails (or in some instances, a dangerous locale) limits the number of long runs in your training schedule, use cross-training as your primary aerobic training.

On other days, adjust the intensity of running workouts to mimic specific racing conditions. Athletes who live close to good running areas might do their continuous runs in the morning before school.

If there are no hills near your school, plyometric training and weight training can help develop the specific strength hills demand. Try having your athletes do rhythm bounds over distances of 80-150 meters. The muscular fatigue will be similar to that created by hills. You might even try combining plyometric exercises and repetition workouts. Have your athletes do a running repetition immediately following a set of bounds. After recovery, repeat the combination.

You also can compensate for lack of hills by scheduling invitational meets that have hilly courses. Sooner or later, your team will have to race on hills, so you must include them somehow.

Last, you can simulate the effect of hills with intense interval training. The accumulation of blood lactate will be similar, and athletes will develop lactate tolerance as they would by doing hill repeats.

If weather and smog affect your training, try altering workout times. Heat and smog levels are usually lowest early in the morning or later in the evening.

"So You Didn't Run All Summer..."

Every coach is faced with the problem of coaching runners who appear suddenly at the beginning of each school year not having trained during the summer. While you don't want to turn away eager participants, how do you include newcomers without disrupting the rest of the team's training? You don't want to discourage novices by letting your varsity run them ragged. That will only chase them from your program. On the other hand, you can't afford to lose the work that the rest of your team has already done.

The obvious answer is to bring new athletes along slowly. Different training groups will solve the problem to some extent. Nonetheless, throwing new runners into your normal training routine is likely to be too much for them. Remember that the best way to keep athletes on your team is to make training fun.

Here is a sample training schedule for novice runners. All runs should be done in the company of at least one other runner for safety and enjoyment.

Monday Jog/Walk 10 minutes out and then turn around. Run as much as possible. When walking walk as fast as possible. Stragglers should turn around as the leaders return.

Tuesday Repeat Monday's workout on a different course.

Wednesday If you notice that there are small groups developing, have these groups run together. Again, repeat the 10-minute out-and-back formula.

Thursday Using the same 20-minute run, have athletes run as far as possible without stopping, even if they get a bit tired.

Friday If there is a varsity meet the next day, have the newcomers participate in the team warm-up. This will make the new runners feel like part of the team.

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Saturday If there is a meet, have new athletes participate in the team warm-up and warm-down. Have them help with the administration of the meet. If it is a training day, have them do a 20-minute run on a different course.

Sunday Active or total rest.

It is important that you make new runners feel like part of the team from the beginning. Make sure they participate in all team activities like warm-up, warm-down, and stretching. On easy-run days, have some of your veteran runners run with newcomers. Just make sure they keep a pace that permits conversation. Resist the temptation to move a talented newcomer into a veteran training group. Talent doesn't mean fitness, and you need time to evaluate the fitness of a new athlete.

In the second week, increase the amount of work slightly. If some new runners are able, you might move them into your lower training groups. However, resist the urge to bring the athletes along too quickly.

After two weeks, any runners capable of running 30 minutes nonstop can be allowed to race. If possible, put the athletes into races that matches their fitness. Have them start moderately and don't let them pass any veteran runners for the first two miles.

By the third and fourth weeks, most newcomers should be integrated into a normal training group. Now you can introduce them to more intense hill and repetition training. Keep training volume low for athletes without a summer training base. On easy days, you might mix training groups to let novices run with veterans.

Setting Goals

"The will to win is not nearly as important as the will to prepare to win."

—George S. Patton

Preparation is the key to Cross Country success. There are three crucial steps to success:

1. You must define what you want to achieve.
2. You must determine the sacrifices required.
3. You must decide whether you are willing to make those sacrifices.

The first step to success requires you to help your athletes *set personal and team goals*. This is a task more difficult than you might think. Many high school athletes resist taking this very important first step because setting personal goals always raises the awful spectre of failure. Without goals, an athlete does not risk failure. Your job is to help your athletes set goals which will maximize their successes and that minimize their failures. An athlete who struggles hard to achieve goals is never a failure.

THE COACH'S GOALS

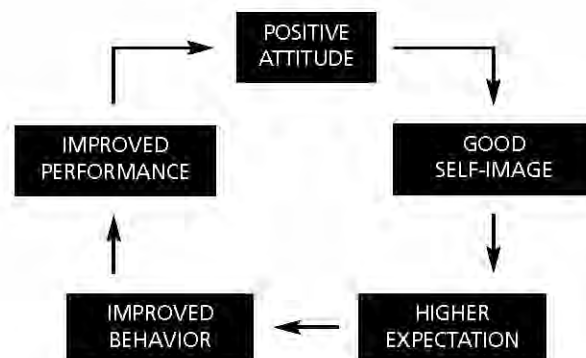
Before the end of the school year, take time to set some *individual and team goals* for the coming Cross Country season based on the performances of your returning athletes. Also, set goals for yourself. How do you hope to improve as a coach? What can you do better? These goals will motivate you and your team over summer training, and serve as a beacon throughout the season.

A goal carries no real commitment until it is written on paper. So, write down your goals, distribute them to your athletes, post them in the locker room, and challenge your athletes to post them where they will be seen every day . . . perhaps on the inside of locker doors or on their bedroom walls at home.

The route to your season's goals should be paved with numerous short-term goals. Make them realistic and attainable. Let your team experience the momentum of success.

THE CYCLE OF SUCCESS

Goals should help build positive attitude and self-image. One successful approach to sports psychology is based on the **success cycle** illustrated below.



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The cycle shows the relationship between attitude, self-image, and performance. If your runners have positive attitudes, they are likely to have good self-images, which leads to higher expectations and improved behaviors (like eating well and getting enough sleep). Consequently, performance improves, and attitude and self-image are further enhanced to continue the cycle.

The effect of negative attitude is ruinous, and leads to negative self-image, lower expectations, destructive behavior, and poor performance.

The success cycle works when athletes focus on things they can control. When they concern themselves with those things out of their control, like an opponent's performance or the disparaging words of others, they open the door to failure. The best athletes do not worry about things they cannot control. Among the things athletes can control, however, are their training efforts, eating and sleep habits, mental preparation, poise, focus, race strategy, and, most of all, attitude.

RUNNERS' GOALS

Give your runners a goal for every workout. Don't always make these time goals. For example, if your team is doing repeats on a hilly loop, set a goal of attacking the downhills and flats after cresting hills. If the team is doing a long, steady pace run, challenge your athletes to keep the pack (or several predetermined packs) together within arm's length of one another. When running hill circuits, you might set a goal encouraging good hill-running mechanics.

Give your team specific goals for each race:

- How do you want them to race their opponents?
- How should they attack the course?
- Where should your team be at the first turn...after the first hill... at the 2-mile mark?

Specific goals will direct your runners' focus away from the anxiety of *how* they are doing to *what* they are supposed to do. Time objectives generally make lousy goals. Race times are influenced by factors beyond a runner's control. The quality of competition, opponents' tactics, weather and course conditions, and course accuracy all affect final times. Too many high school runners are more concerned with time goals or running a certain pace than with competing well.

Instead, set goals that center around the process of competition. When your runners focus on the things they should do, rather than how they are doing, they are more likely to succeed. Fast race times are merely a product of doing the right things consistently over time. Teach your athletes that Cross Country racing is about head-to-head competition. Getting five runners into the chute first is more important than the time on some digital stopwatch. Let them know that the best way to run fast is to prepare to compete well in every race, regardless of the opponent.

Your team will also benefit from **intermediate fitness goals**. Sometimes competitive victories are not realistic goals. Either your team or individual runners may not have the ability to win races. You can, however, set other goals for your athletes. Some coaches have landmark workouts that they repeat a number of times throughout the season. Such workouts let athletes measure their improvement from one part of the season to another. Even if an athlete is not at the front of any race, simple improvements in fitness are worthy goals.

UNREALIZED GOALS

Many competitive, goal-driven athletes have great difficulty forgiving themselves for disappointing performances. Teach your runners to use such experiences as education and motivation for the future. Let them be disappointed, but not discouraged. One characteristic of all successful athletes is that they do not dwell on setbacks, and always look at their next competition as a new opportunity to succeed.

“We have been wounded, but we have not fallen. We will bleed a little, then rise to fight you again.” — Winston Churchill

Scheduling for Success

Every year, your team changes. With those changes, you must set different goals, and those goals should determine your racing schedule. Once you have established preliminary goals for the coming season, you need to determine the races that will help your team achieve those goals.

Begin by listing the races your team must run: league dual meets and finals. Then, according to team goals, list the appropriate championship competitions in which your team will compete.

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Before planning additional meets, consider your periodized training schedule. How will other races fit into your training plan? Will these races let your team train and rest sufficiently? Only after you have completed your training schedule, should you add more races to your competition schedule.

First, examine the relative strength of other teams in your league. If league foes are relatively weak, you might choose to add a tough weekend invitational race. If your league foes are strong, choose an easier weekend race or stay home to rest or train. A good rule of thumb says *don't run more than one tough meet each week*. Sometimes, that means giving up a traditional invitational meet.

Pay close attention to the competitive strength of your league competitors. It's easy to get caught running three or four hard races within a little more than a week. Do that, and your season might effectively be finished before league finals.

You also need to consider the strength of your own squad. Don't throw a young, inexperienced team to the sharks in a very competitive invitational. You may discourage your athletes for the rest of the year. Pick invitationals that let your runners compete with the rest of the field. Build their confidence.

On the other hand, if you have a particularly strong squad, you need to pick races that will test their mettle before they reach the championship phase of the season. Sometimes a challenging early season race can turn a sleeper team into a true championship contender. If you hope to do well in post-league competition, look for meets that will present the same kinds of challenges that will be presented later in the season. Find courses that have similar hills or course conditions. Run races that are held at the same time as section or league finals. Run meets with large fields. Run against premium competition. The principle of specificity applies to scheduling, too.

Cross Country Competition

TEACHING COMPETITION

Over the last several years, the word **competition** has acquired a negative connotation. The overbearing *Little League parent* and a societal preoccupation with *winning at all costs* have given competition a bad name. But, like it or not, we live in a very competitive world. We compete for grades, admission to colleges, jobs, spouses, career advancement, and even places on the freeway. Competition is not the problem. Misunderstanding the proper role and boundaries of competition in our lives is what gives it a bad name.

Competition can produce tremendous achievement and the realization of individual and group potential. Through competition, athletes are able to extend the limits of their abilities to find new strengths. Competition allows young people to go beyond what they think possible.

Competing well is a skill, a skill that can be taught. We often hear how one athlete or another is a *born competitor*. While it's true that certain people are naturally more competitive than others, it does not mean that competitive skills cannot be learned. In a world that competes for so much, teaching these skills to your athletes is one of the greatest lessons you can impart.

True competitiveness is the desire to challenge and prove oneself in contest with others. Some athletes come by this easily, others do not. Probably the single greatest obstacle to competing well is the fear of failure, the fear of being judged, of not living up to expectation. That obstacle can be overwhelming. It has thwarted many very talented athletes.

You can teach athletes to compete well by helping them set realistic goals, become eager to test their personal boundaries, eliminate the fear of failure and competition anxiety, and encourage the desire to excel. *The path to these objectives is to concentrate on the process of competition, not the outcome.*

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Setting realistic goals is the first step in teaching athletes to compete well. Many athletes have unattainable goals, or goals that are set too far in the future. Most athletes would like to be champions, but the reality is that only a very few can win races. You need to steer athletes to goals that they can attain. This is not to say that you should discourage dreams of greatness or that someday, a mediocre freshman runner might not be an Olympian. But, attainable daily, weekly, and season goals provide the greatest chance for success and spur the competitive urge.

Eliminating the fear of failure is a more difficult proposition. You are a coach, not a psychologist, but sometimes, you can be just as effective. Constant praise of hard effort and small accomplishments lets athletes know that your support is not based on their ability to win. When athletes feel secure, when they know you are there, they will feel safe to risk failure. Odd as it may sound, you must encourage athletes to risk failing. It's the only way they can exceed their expectations. Ultimately, the true competitor will not see failure, but only the opportunity to succeed.

Instilling **the will to excel**, no matter how excellence is defined, is a matter of organization, motivation, and commitment. The tradition you establish for your program sets the stage for achievement. Your encouragement, support, and expectations motivate athletes to win. The commitment and will of individual athletes make them champions.

Team Racing and Pack Running

Cross Country is a team sport based on individual performances. Winning Cross Country meets takes team effort. The goal of every race should be to have the smallest possible gap from the first to seventh runner without sacrificing the performance of any one runner. The strategy employed by successful teams to win races is called **pack running**.

TEAM RACING

Five Good Runners to Win

In Cross Country, each team's score is the sum of its **top 5 places**, and the team having the **lowest score wins**.

The following is a hypothetical result of a dual meet, where a runner from Team B wins the race, but five runners from Team A win the meet:

	INDIVIDUAL PLACES	TEAM SCORE
TEAM A:	2-4-5-7-9	= 27
TEAM B:	1-3-6-8-10	= 28

Teams with one or two outstanding individuals will be beaten by teams who can put 4 or 5 finishers in the chute ahead of their #3 runner. In the following example, Team B places 1-2 but still loses to Team A:

TEAM A:	3-4-5-6-9	= 27
TEAM B:	1-2-7-8-10	= 28

Anytime one of a team's top 5 runners passes a competitor, he or she creates a 2-point swing in the team scoring. In the example above, if Team B's #3 runner passes Team A's #4 runner at the finish, he/she moves up a place and lowers Team B's score by one point while increasing Team A's score by one point, as follows:

TEAM A:	3-4-5-7-9	= 28
TEAM B:	1-2-6-8-10	= 27

Pushers and Tie-Breakers

Although the places of the #6 and #7 runners do not count in their own team's score, they can affect their opponents' team scores. A team's #6 and #7 runners *push* an opposing team's scores if they place ahead of any of the opponent's top 5 finishers. When this happens, they are called *pushers*. In the example above, if Team A's #6 runner passes Team B's #5 runner at the finish, the scoring becomes:

TEAM A:	3-4-5-7-9 (10)	= 28
TEAM B:	1-2-6-8-11	= 28

Team score ties are broken by awarding the victory to the team having the higher placing **#6 runner**. In the case above, Team A's #6 runner is not only a *pusher*, he/she is a *tie-breaker* and wins the meet for Team A.

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Pack running, pushers, and tie-breakers also apply to the outcome of multi-team meets. Following are the actual results of the top 10 teams from a 30-team, 3-Mile Boy's High School State Meet (not California):

TEAM	SCORE	INDIVIDUAL PLACES	1-5 TIME GAP	COMPOSITE
1. Team A	122	7-13-19-37-46 (60) (85)	:26	74:45
2. Team B	139	5-17-23-42-52 (61) (74)	:38	75:20
3. Team C	139	9-12-29-41-48 (129) (145)	:33	75:01
4. Team D	141	1-15-24-43-58 (86) (123)	:41	75:03
5. Team E	210	6-31-35-51-87 (121) (128)	:49	76:19
6. Team F	258	14-22-53-75-94 (124) (125)	:33	76:02
7. Team G	258	16-40-45-49-108 (135) (187)	:50	76:15
8. Team H	260	28-32-36-50-114 (154) (170)	:48	76:28
9. Team I	293	25-27-62-64-115 (142) (158)	:37	76:26
10. Team J	293	18-38-39-76-122 (160) (171)	:41	76:22

You should note that:

- The team with the individual winner placed 4th.
- With one exception, teams placed according to the finish order of their 5th runners.
- Teams D, H, I and J could have placed 2-4 positions higher if their #5 runners had been able to finish within a couple places of their #4 runners.
- The #6 runners broke ties for the 2nd, 6th and 9th team places.
- The top 10 teams all had a 1st-5th time gap of :50 seconds or less.
- There were 135 finishers between 15:00 and 16:00.

PACK RUNNING

Pack running is a Cross Country racing strategy where a team purposely runs together in a **pack** for as long as possible in an attempt to finish with the lowest possible team score. Pack running relies on encouragement and pressure from teammates to make the entire group run faster. (Anyone who has ever run a relay understands the effect of having three other runners depending on you to have a good race. Every runner also knows that it is easier to run with someone than to run by themselves.)

Pack runners must maintain contact with each other by running within 10 meters or less of each other. The confidence, encouragement, and comfort of running in a team pack helps runners race faster. Competitors also are discouraged when they see their opponents grouped ahead, especially at the middle and later stages of a race. This is true even if the gap is small and everyone is running at approximately the same pace.

The impact of successful pack running on team scoring grows in proportion to the size of the race. A 1st-5th time gap of 60 seconds in a dual meet may only be several places. In a CIF or state championship race, however, there can be a hundred or more finishers within the same 60-second time span.

In the early stages of a race, staying together in a pack usually ensures that no member of the team starts too fast or too slow. If a runner begins to fall off the pace, a teammate's encouragement can help get him or her through a crisis point in the race.

In reality, few teams have five or more runners who can run together after the first mile of a race. If you have an outstanding runner, he or she quickly may be far ahead, with the remainder of your team grouped behind. Many teams purposely divide into lead and following packs at a designated point. In fairness to individual runners, you should also designate some course landmark, or point in the race, where pack running ends and the race for individual places begins. This is especially important if you have two or more runners who have a chance to win the race.

Rules of the Pack

- No visitors are welcome! Run as close together as possible, especially through the first mile of the race, and don't be afraid to tell opposing runners to stay out of your pack!

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- In a race, never consciously hold back or slow down so that a teammate can stay with you.
- When leading, never allow teammates to drop back without encouraging them to *stay up*.
- When following, never pass teammates without encouraging them to *go with you*.

HOW TO BUILD YOUR PACK

A team's top runner opens the door to victory; the next 4-6 runners slam the door shut on opponents.

You must make your athletes understand that *being able to run together at the front of the race is crucial to the team's success*. It must be a goal of every training session from warm-up to cool-down.

Typically, a team breaks into groups of similar ability once the actual workout begins. Coaches should designate training groups in advance so every team member can practice running in a pack with others of similar fitness and ability. Staying together...with every runner *within an arm's reach* of another...should be a goal of every training group. *The importance of running at arm's length cannot be overemphasized. In a race, an opponent separating two of your runners can be a physical barrier that breaks the invisible threads holding your pack together, even though your runners may be just a few meters apart.*

TRAINING TO RACE AS A PACK

As a coach, you must create opportunities for your team to run as a pack. Start with your warm-up, cool-down, and recovery runs. These should be easy and enjoyable conversation-pace runs that allow everyone to run together and feel part of a team. (On recovery runs, you must instruct your lead runners to set a pace slow enough so that it's a recovery run for everyone!)

When doing any kind of segmented training (repetitions, intervals, hill circuits, etc.), weaker runners can do portions of the workout with the lead pack. For example, if the session for your A group is 6 times an 800-meter hill loop with a 400-meter jog interval, your B group might do reps #1-3-5 with group A with an 800-meter jog interval during reps #2-4; or they could do reps #1-2 and #5-6 with a 1000-meter jog interval during reps #3-4.

Keeping five or more of your runners together in a pack is difficult during long, steady-pace or tempo-pace training runs. On an out-and-back course, you can challenge lesser runners to stay with the lead pack until the turnaround point. With encouragement from teammates, these runners often surprise themselves with how long they can stay up with the pack. This leads them to realize that with continued effort they can permanently join the lead group.

When dividing team members into groups for a long run, enforce the rules of the pack and encourage some runners to accept the challenge of joining a faster group.

Keeping a pack together during surging or fartlek training can be next to impossible. Groups must stay together during the fast bursts! It accomplishes nothing to disperse and then regroup during the slow recovery periods. If your pack can stay together throughout this kind of training, they can stay together throughout any race.

Always look for incentives to get trailing runners to move up to the pack. Some coaches award special shirts or shorts for members of the lead pack to wear in training. Some coaches embroider a nickname for their pack (i.e., Chute-Stuffers) on the back of varsity meet jerseys. Others allow the lead pack to paint their athletic lockers in school colors. Be creative.

PACK RACING STRATEGY

It is much more difficult to run in a pack during a race than in training. And the bigger the meet, the greater the challenge. Having a team race plan is essential for both dual meets and invitationals.

The Start

The best laid pack-running strategies can be thwarted at the very start of a race. Some teams disperse as soon as the gun fires, with their runners scrambling for race position in all directions. This is especially common in larger meets.

Begin with a plan that positions your team at the start. In a dual meet, where all members of both teams start abreast on the starting line, you might place your top 7 runners on the starting line as shown on the top of the next page.

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Positioning:



7 5 2 1 3 4 6

Instructions:

2 keys on 1's right shoulder
3 keys on 1's left shoulder
4 keys on 3's right shoulder
5 keys on 2's left shoulder
6 keys on 4's right shoulder
7 keys on 5's left shoulder

In all cases, it is always **1's responsibility** to lead the pack to the front of the race. The objective is to reach the point where the course narrows in roughly this configuration:



2 1 3
5 4
7 6

In larger meets, much less room is available for maneuvering on the course. When teams start from an assigned starting box, you might place your runners as follows, assuming the first turn on the course is to the LEFT:

5-Runner Front

Positioning:



1 2 3 4 5
6 7

Instructions:

2 keys on 1's right shoulder
3 keys on 2's right shoulder
4 keys on 3's right shoulder
5 keys on 4's right shoulder
6 keys on 5's left shoulder
7 keys on 6's left shoulder

The objective is to reach the first left turn in roughly this configuration:



4-Runner Front

Positioning:



Instructions:

- 2 keys on 1's right shoulder
- 3 keys on 2's right shoulder
- 4 keys on 3's right shoulder
- 5 keys on 4's left shoulder
- 6 keys on 5's left shoulder
- 7 keys on 6's left shoulder

3-Runner Front

Positioning:



Instructions

- 2 keys on 1's right shoulder
- 3 keys on 2's right shoulder
- 4 keys on 3's left shoulder
- 5 keys on 4's left shoulder
- 6 keys on 5's left shoulder
- 7 keys on 6's right shoulder

If the first turn on the course is to the *right*, reverse your starting line positions and instruction keys.

The First Hill

After the start, the next challenge to keeping your team together often will be the first hill. Train to keep your pack together on hills while maintaining desired pace, proper mechanics, and proper implementing tactics.

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The Team Race Plan

- How you are going to place your team on the starting line?
- Where do you want your pack to be when the field reaches the first turn or when the course begins to narrow?
- How long do you want the pack to stay intact before breaking into lead pack and following groups?
- At what point does your pack-running strategy end and the race for individual places begin?

Racing Strategy and Tactics

A strategy is a plan of action. Your team race strategy is the plan by which you hope to accomplish team goals. Tactics are the methods your team uses to realize the race plan. Beyond the grand strategy of pack running, you need to create a specific strategy for each race, and determine what tactics you will employ to execute that strategy.

STRATEGY

You must employ many different strategies to win races. The talent of your team, opponents' talent, course layout and conditions, and weather all will determine the plan for any given race. As described above, you may choose to run as a pack for as long as possible, although many coaches consider pack running a given element. A true strategy is a plan for the entire race, not just a portion of it. For example, your strategy might be to have your team run the 1-1/2 miles hard, and then initiate a long surging finish with 600 meters to go. In an easier meet, you might set forth a plan to keep your top 3 runners together even if your best runner has to slow somewhat to do so. If you are outclassed, your team strategy might be to have your top 5 finish within a certain time period.

The strategy for each race is a product of the following factors:

- Season goals
- Course layout and racing conditions
- Training periodization and racing schedule
- Strength of opponents
- Team strengths and weaknesses
- Team experience

TACTICS

Tactics are the tools your team uses to realize its race plan and win races. You can specify team tactics, and individuals can employ their own to gain advantage of opponents. To use tactics successfully, though, your team must practice the various skills that will give your team powerful racing weapons.

Surging

A surge is a planned and substantial pace increase at a predetermined point in a race. The intent of surging is to break away from the rest of the field by creating a gap that the other runners are unwilling or unable to close. Once the gap has been established, the surging runner(s) can settle back into normal pace. The great African distance runners have perfected surging, often throwing in multiple surges over the course of a long race.

Surging is effective because it disrupts the natural rhythm of competitors. Not expecting a sudden pace increase, opponents are forced out of their comfort zones, which forces unprepared runners to cope with added duress. Because of the extra stress, however, surging requires special training.

Aside from specific surging workouts, you can teach your runners always to respond to sustained pace changes. On long runs, you might secretly assign certain runners to initiate surges at different points during the run. Only the surging runner will actually know the intensity and duration of the surge. None of the runners will know how many surges there will be, so they must respond to every surge.

Fast Starts

The best teams start fast. Starting fast establishes race position, defines a pack, and immediately tests the mettle of the competition. Fit runners use fast starts to separate those who cannot sustain above-threshold running. Their greater fitness lets them recover quicker when the pace eventually slows after the fast start.

Fast starts also are a way to prepare for hilly courses. Hilly courses may force your team to suffer from too much blood lactate early in the race. Fast starts mimic such conditions.

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Use long runs and tempo runs to prepare for fast starts. Set a faster than normal early pace, and then let your team settle into its normal rhythm. In repetition workouts, you might have your team do its first reps faster than the rest so that they must run through a lactic state before reaching steady pace.

The Strong Finish

Everyone sprints to the finish line, but a strong finish is an extended drive to the finish that can cover anywhere from 400-1000 meters. To train for strong finishes, mirror the training you do for fast starts. Get your team into the habit of finishing steady-pace and tempo runs with hard finishes. (This doesn't include recovery runs.)

Hill Cresting

Most runners slow considerably after reaching the top of a hill. Simply maintaining effort over the top of a hill can yield amazing results. Your runners will recover a bit on the downhill anyway, so a slight acceleration upon reaching the top can put a lot of distance on the field. Teach this tactic by always having your runners maintain effort as they crest hills in practice. Make it a team hallmark.

Turn Surges

Runners can use tight turns to their advantage if they accelerate a few steps into each turn. Much like indoor track, the runner will not lose momentum while negotiating the turn. It is an aggressive racing maneuver that keeps the athlete from settling into a comfortable pace.

Blind Spots

Savvy runners learn how to use their home courses to advantage. When rounding a clump of trees or bushes, an athlete should use the blind spot to gain distance by accelerating for a few steps past the turn. The tactic sometimes opens a gap that a rival is unwilling to close. The small physical separation can create a large psychological advantage.

Race Day Preparation

A lot has been written about how to get a team ready for race day. Not much has been written on what to do *on* race day. All the good training your team does can be wiped away by not preparing properly come the day of the race.

Every single athlete on your team must know the true purpose of a meet: to race and compete. Racing should be fun, but meet days are not play days. Leave the footballs and the Frisbees™ behind.

The first step is to arrive at the meet site early. If you coach long enough, you will learn that buses break down, traffic backs up, or the bus driver gets lost. Proper planning will prevent problems most of the time, but you should always include a time buffer in your trip plans. Arrive well before the first race.

Your team should **arrive 90 minutes before the first race** of the meet. This is plenty of time for your athletes to relax, use the restroom, and hydrate properly before their races. It also allows your team to inspect the course before the race. The course inspection always should be part of your pre-meet routine. Your team should use this time to refine race strategies and tactics. A race-course jog or walk-through protects your team from any unpleasant surprises during the race. Athletes must be prepared to do the course walk through by themselves while you handle last minute details.

Each team group should **begin warming up about 45 minutes before race time**. Have your runners take care of restroom pit stops, water, and uniform changes (except perhaps the singlet) before they begin the warm-up. If some runners want extra warm-up time, let them start a few minutes earlier.

Have each group meet at a predetermined time and place. Once the team group starts the warm-up, they should stay together until the race. Members only! This is the start of your pack running strategy. As the season develops, you won't need to direct the warm-up; your veteran runners and team captains should assume that role. Athletes need to learn to take responsibility for their own efforts. After all, you cannot be on the course with them. Moreover, your athletes will probably relax more without you hovering over them. This is the time for them to unite, create their *game faces*, and focus on the race.

THE RACE WARM-UP

There are several warm-up routines that will get your team ready to race. Many coaches break the warm-up period into three 15-minute phases (20 minutes for invitational meets):

- 15 minutes of running to raise body temperature and awaken the aerobic system
- 15 minutes of static and mobile stretching

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- 10 minutes of race specific running that includes strides, surges, and hills on the course. Finish with 5 minutes of mental relaxation, and attend to last minute details before moving to the starting line 5 minutes before the race.

After the Race

As your runners finish a race, meet them at the end of the chute to collect place cards or tags. Keep your team in the area until the last runner of the group finishes. They are a team, and the last finisher is as important as the first. Next, have them rehydrate (drink water). If anyone needs medical attention, see to that first. Have them use the restroom if necessary.

About 10 minutes after the race, have your runners do a short cool-down jog (8-10 minutes). If other races are being run, send them out along the course to cheer their teammates. Finish with a short stretching session.

For the last race, all other team members should be on the course to encourage their teammates. After the race, the entire team should cool-down together. While the length of the cool-down is not important, the time spent together as a team is. This is the time for you to praise the efforts and accomplishments of the day.

During a team stretch, or on the bus ride home, you can give your assessment of the meet. Keep the negative comments brief, and focus on what team groups need to do. Avoid mentioning individual faults or disappointments. Rather, accentuate individual and team accomplishments, with emphasis on the team's efforts. Use the session to direct your team's focus to the next meet. If there are any big problems, try taking the night to reflect first. Many problems lose their edge with a good night's sleep.



Chapter

Managing Cross Country Injuries and Athlete Health

As a high school coach, you are responsible for the physical and emotional well-being of your athletes. You must be involved in the care and prevention of athletes' injuries, recognize and manage common ailments, and provide emergency treatment when required. You also must be constantly on the lookout for behaviors indicating any of the many serious health problems teenagers face, including substance abuse, teenage pregnancy, and eating disorders.

Managing

Cross Country

Injuries and

Athlete Health

Handling a Medical Emergency

You should instantly be able to answer *yes* to the following 10 questions. If you cannot, you are inadequately prepared for a medical emergency that might occur during training or competition.

1. Do you have medical consent cards, documenting parental permission for emergency treatment, readily available for *every* athlete on your team?
2. Do you keep the medical consent cards filed in your first-aid kit? Is your first-aid kit always on hand at practices and meets?
3. Do you know the contents and proper use of your team's first-aid kit? Do you have everything you need?
4. Are you aware of all preexisting medical/physical problems, such as diabetes, epilepsy, contact lenses, and bee sting allergies, among your athletes?
5. Do you know the location of the nearest telephone from which to summon emergency medical assistance? If the phone is in a locked room, do you have a key or know where to get one quickly? If there is a switchboard phone, do you know how to get an outside line?
6. If the nearest phone is a pay phone, do you have quarters taped to the inside of your first-aid kit so there is always change available?
7. If you are not in a 911 response area, do you know the phone number for the nearest paramedics?
8. Do you know where paramedics are located in relationship to your Cross Country course? What is their anticipated response time?
9. If paramedics are needed, is there emergency access to your course? Are there gates that will need to be unlocked? Do you have keys for those gates? Do you know where to get a key quickly?
10. Do you know the location of the hospital nearest your course? Will an ambulance take an injured athlete to that hospital?

Common Running Injuries

SIDE STITCHES

Side stitches are muscle spasms caused by the conflicting movement of internal organs and the diaphragm while running. If the diaphragm moves up as the organs move down, pain and spasm can result from the strain placed on the intercostal (rib) muscles. Two-thirds of all stitches occur on the right side of the abdomen because of the heavy weight of the liver. The resulting pain is usually felt just below the ribs.

Side stitches are linked to breathing patterns. Most runners coordinate stride and breathing patterns, always exhaling on the same left or right footstrike. If the runner exhales while landing on the right foot, the friction between the diaphragm and liver can cause a side stitch. Changing the breathing pattern can alleviate these cramps. Athletes should not eat for at least two to three hours before running. The weight of a full stomach increases the likelihood of a side stitch. Other factors causing stitches are a lack of fitness, starting too fast, running downhill or on hard surfaces, and cold weather.

Sometimes exhaling forcefully relieves the diaphragm spasm. Belly or diaphragmatic breathing (rather than chest breathing) pushes organs downward to alleviate or prevent side stitches. Research also indicates that runners with strong abdominal muscles have less incidence of side stitches.

SHIN SPLINTS

Shin splints is a generic term for pain to the front of the lower leg. The pain is generally attributed to inflammation of the tendon of the tibialis posterior muscle or the soft tissue between the tibia and fibula. Muscles of the foot and ankle may also be involved.

Shin splints can result from poor running posture, muscle imbalances, fallen arches, lower leg muscle fatigue, or overuse stress. Shin splints often appear during the early season, when athletes are in poor condition, and also result from running on hard surfaces.

Managing Cross Country Injuries and Athlete Health

Deviations from normal posture can predispose a runner to shin splints. From behind, the Achilles tendon should run directly up the calf. The ankles should not bend to either the inside or outside. When viewing the leg from the front, the knee cap should be centered over the knee. Internal rotation of the knee cap indicates foot pronation. To determine if the ankle muscles are balanced, project an imaginary line from the shin bone to the second toe. Lateral weakness is indicated if the line travels to the outside. Medial weakness is likely if the line travels to the inside. To test for muscle weakness in the anterior lower leg, have the athlete resist against attempts to push against ankle flexion. If the muscles are unable to resist, the athlete might be prone to shin splints.

Strengthening the muscles of the ankles and lower leg will help prevent shin splints. Include exercises where athletes walk on their toes, heels, and both the insides and outsides of their feet. Other exercises include picking grass with the toes, pulling a weighted towel toward the foot with the toes, and flexions using elastic tubing.

Many shin splints result from poor shoe arch support. You may want to try special shoe inserts such as those made by Spenco, or tape the arches and lower leg with a simple overlapping basket weave. Recommended therapy includes 10 minutes of ice massage or warm-moist heat prior to the start of a workout, and 15 minutes of icing afterward. Severe cases may require icing several times each day.

ACHILLES TENDONITIS

Achilles tendonitis is an inflammation causing painful swelling or thickening of the Achilles tendon or its surrounding sheath. The Achilles tendon attaches the calf muscles (gastrocnemius and soleus) to the heel bone (calcaneus), and is surrounded by a lubricating sheath that allows the tendon to slide back and forth.

Tendonitis can start as mild tenderness and progress to a painful state that inhibits movement. At its most severe, there is painful and sometimes audible **crepitus**. Crepitus is caused by the friction of the tendon against the sheath. To an injured athlete, it often feels like two pieces of sandpaper rubbing together. Oversecretion of synovial fluid and infiltration of fibrin cause sticky adhesions between the tendon and its sheath. The adhesions restrict the ability of the tendon to slide properly and even can cause pain while resting.

Runners with inflexible calf muscles or unstable feet place abnormal stress on their Achilles tendons. These problems can be aggravated by overstretching the tendon, increased speed work, running hills, or wearing shoes without heels (spikes). Daily stretching exercises can prevent most Achilles injuries.

Tendonitis usually is not serious unless untreated or ignored until it becomes chronic. If treated within a week after onset, there is a 95% chance of full recovery within two weeks.

A foam or felt heel lift can take stress off the tendon and relieve inflammation. Training should be restricted to level surfaces and all speed work eliminated. Gradually increase stretching both before and after workouts. Hill training and fast tempo running can be reincorporated into training when the pain subsides.

PLANTAR FASCITIS

The plantar fascia is a wide sheet of connective tissue that runs from the bottom of the heel bone (calcaneus) to the ball of the foot. It supports the longitudinal arch when running on the toes and also when the foot flattens upon landing. Extreme forefoot and heel strikers both put excess strain upon the plantar fascia. This typically causes gradual onset of pain. Acute onset might indicate a partial tear or rupture of the plantar fascia.

Plantar fascitis can be detected by palpating the entire fascia from the heel to the ball of the foot. If there is pain, a plantar fascial tear or fascitis likely exists. If the pain is near the heel, a bone spur also may be causing pain.

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Rest and good running shoes are the best ways to heal plantar fasciitis. Alternative training methods such as cycling or pool workouts will rest the foot. The arch can also be taped to reduce pain while running. Other methods of treatment include icing, analgesics, anti-inflammatories, deep massage, or a heel cup. In persistent cases, send the athlete to a physician or physical therapist.

BLISTERS

Blisters are caused by excess friction between running shoes and the foot. The best guarantee against blisters is a pair of shoes that fit properly. Beginning runners sometimes get blisters because their shoes are too large. Price-shocked parents often buy off-size shoes hoping that their young runners will grow into the shoes by the end of the school year. New running shoes do not need to be broken-in. Rather, they need to be kept from being broken down by use as everyday streetwear. Training shoes should be used for running only.

Prevent blisters by keeping the shoes as clean and dry as possible. When shoes get wet, make sure they dry thoroughly before they are used again. We recommend that athletes wear socks, though some runners prefer to do otherwise. Runners should wear clean, dry socks that fit snugly. Running without socks increases the chance of blisters, especially if the shoes get wet.

When treating a blister, never intentionally remove the skin. You might want to remove the fluid by perforating the skin with a sterile needle, and then pressing the skin back to the foot with a Band-Aid. Treat large and open blisters by soaking the foot in a cool solution of Epsom salts to reduce the inflammation and sensitivity of the new skin. Prevent infection and promote healing by applying an antibiotic ointment such as Neosporin™ before covering the blister with a bandage or sterile dressing.

CHONDROMALACIA

Chondromalacia patellae, often called runner's knee, is a painful erosion of the cartilage between the knee joint and the patella that can be caused by misalignment of the lower leg, improper running technique, running on uneven surfaces, structural defects, or weak quadriceps. The erosion results when the kneecap does not track properly as it slides over the joint.

Symptoms include aching pain in and around the kneecap, usually following a long continuous run. Running hills or stairs can have the same effect. Chondromalacia sufferers usually cannot pinpoint the exact location of the discomfort. A squatting movement often elicits chondromalacia pain. Treatment includes resting the leg, applying ice, and strengthening the vastus medialis (inside thigh muscle). Isometric or resistance exercises, using less than 30 degrees of knee flexion, often are effective in relieving symptoms. Knee straps or tape wrapped below the knee cap also can help alleviate the pain and discomfort by improving the kneecap's alignment.

STRESS FRACTURES

Stress fractures occur when the load placed on the bone is greater than the supporting muscles and tissues can absorb. Especially in female athletes, stress fractures sometimes signal an underlying nutritional or hormonal problem. However, most stress fractures result from overtraining, running on hard surfaces, and worn-out shoes.

Stress fracture pain commonly begins as an annoying irritation and gradually builds to deep, persistent pain and sharp point tenderness as running continues. Pain usually disappears at rest. X-rays often fail to detect stress fractures, since it takes 8-14 days before bone calcification makes the fracture detectable. Stress fractures may require 6-8 weeks of rest before the bone heals completely.

STRAINS

Strains occur within a muscle-tendon unit, and are caused by traumatic overextension or continued overuse. Pain may be accompanied by generalized or point specific pain and swelling. Strains can be slow to heal, and may become chronic if weakness or inflexibility is not corrected. Possible causes of strains include weak opposing muscle groups, poor flexibility, inadequate warm-up, fatigue, or a sudden, violent contraction.

First-degree strains, known as **muscle pulls**, involve a slight stretching of the muscle tissue. Symptoms are spasm of the injured muscle, pain upon contraction or stretching, and moderate pain to the touch. Recovery can range from 2-3 days to 2 weeks.

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With a *second-degree strain*, the muscle stretches and there is some tearing of muscle fibers. Immediate pain and loss of function, along with a popping or snapping sound, usually occur. These torn fibers can cause a palpable gap in the muscle, a lump, swelling, and discoloration from hemorrhage within the muscle. Recovery time for a moderate strain is 3-4 weeks.

In a *third-degree*, or severe, strain, the muscle fibers are torn or even completely ruptured. Symptoms include extreme pain and muscle spasm, a palpable defect (indentation), swelling, discoloration, and partial or total loss of function. Severe strains require immediate medical treatment. Ice should immediately be applied to the injured area followed by several days of ice massage treatments. Only allow unresisted range-of-motion exercises until the internal bleeding stops. An elastic wrap, putting pressure on the injury, should be worn during this time. When the bleeding stops, administer contrast treatments such as ultrasound and ice. A severe strain is usually a season-ending injury.

SPRAINS

Sprains are injuries to ligaments, the tough bands of soft tissue that connect bones to each other. A sprain is an overstretching of a ligament over its normal range of motion. A *first-degree sprain* is a mild stretching of the joint ligaments. As these are usually caused by a misstep, the athlete may be unaware of the injury until well after the incident, when slight swelling and pain appear. Although the runner may not lose any range of motion, it is best to give the ankle extra support and possibly rest for a day or two. Treat the injury by elevating, icing, and compressing the afflicted joint. If there is no improvement after 48 hours, seek medical treatment.

Second-degree sprains involve partial tearing of the ligament. There is swelling and, sometimes, bruising. It may take 4-6 weeks of rest, rehabilitation and medication before an athlete can return to racing. A splint or taping that limits movement can keep the injured area from being reinjured while still allowing muscle activity.

Third-degree, or severe, sprains often require surgery to repair a rupture of the ligament. Rehabilitation takes several weeks, and sometimes, months. Sprains needing surgery usually end an athlete's season. After a severe sprain, only a physician should approve an athlete's return to training and competition. Any return to activity should be preceded by an exercise regimen that strengthens the muscles on each side of the injured joint. The athlete should pass a *functional evaluation* that includes running a figure-8, a zig-zag pattern, and coming to a complete two-footed stop without favoring the injured joint. Also reinforce and protect the joint with tape. However, do not substitute taping for rehabilitation exercises.

Returning an Athlete to Running

The decision to return an athlete to training requires the input of several sources: the physician, therapist or trainer, coach, and athlete. As a coach, you must understand that you should always defer to the prescriptions of health care professionals and the athletes themselves. Recommencing activity usually depends on the severity of the injury and the athlete's progress in rehabilitation. As a rule, the longer an athlete misses training, the longer it takes to regain his or her previous level of fitness. Biomechanical problems that cause injury should be corrected before running is resumed. This may mean new shoes, orthotics, or changing running surfaces. Adjust training intensity, volume, and frequency to avoid reinjury. Muscle soreness is common after a long layoff from running, but look for signs, such as swelling, that may indicate the athlete is overtraining. Warm-up and cool-down are doubly important. Continue physical therapy as needed, and ice the afflicted area after each training session.

How to Ice an Injury

Ice is one of an athlete's best friends; it is especially effective treatment for most of the injuries that Cross Country runners experience. Ice alleviates muscle strain spasm, prevents hemorrhaging, and reduces swelling of many injuries.

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Using ice improperly, however, actually can aggravate an injury or cause frostbite. Applying ice for too long can cause increased swelling and bleeding. Also, cold increases the permeability of the lymphatic vessels that carry excess tissue fluids back into the cardiovascular system. With icing, though, the lymphatic vessels tend to drain into the surrounding muscle tissue. If an area is iced too long, greater swelling and pain may result because the lymphatic vessels will not be able to carry excess fluid away from the injured area.

Apply ice to an injury for 10 minutes — followed by a 30-minute break — followed by another 10 minutes of icing. This procedure can be repeated as often as possible for the first 24-48 hours following an injury, then 3-5 times a day until the injury is healed.

Alternatives to Running While Injured

When an athlete is injured, you want to maintain fitness, if possible, and keep him or her involved in the daily life of your team.

Maintaining fitness means that you must find cross-training activities that will rehabilitate, not aggravate, the athlete's injury. If the athlete requires a physician's care, you might want to recommend a medical doctor or orthopedist specializing in sports medicine. These doctors understand the need to keep an athlete as active as possible while recovering from injury. Regular M.D.s, unfamiliar with sports-related injuries, may prescribe complete rest when it may not be necessary. Regardless, always follow the physician's advice. Do not return an athlete to activity until so instructed by the physician.

You can ease the psychological stress of injury by keeping the athlete involved in your program. Athletes often enter a state of denial regarding their injuries, and may experience some symptoms of withdrawal from the routine of training. These symptoms can include depression, guilt, irritability, restlessness, anxiety, frustration, sudden fatigue, and isolation. Your actions can help the athlete understand and come to terms with these feelings.

Feeling useful is especially important to injured athletes. Have injured runners lead stretching, time workouts, or assume administrative tasks that allow them to feel they are still making a positive contribution to the team despite being unable to run. Acknowledge and praise their efforts to heal themselves, such as following the doctor's advice, doing physical therapy and rehab exercises, and maintaining their training weight. Some injuries can be healed without interrupting training. When running is out of the question, however, cross-training exercises help maintain fitness. Choose an activity that is safe, protects the injured area, and most closely simulates the athlete's regular training.

Running in the Heat

Running Cross Country in Southern California requires coping with the heat. The MT. SAC Invitational, the largest high school meet in Southern California, was canceled for the first time in 1991, when several athletes were hospitalized due to heat-related stress.

During competition, distance runners normally have a core body temperature of 102-104 degrees Fahrenheit. Cell death takes place when the body temperature exceeds 108 degrees F. Without special precautions, athletes run the risk of overheating when the ambient temperature rises.

The most common heat problems are heat cramps, heat exhaustion and heat stroke.

Heat cramps are muscle spasms that result from prolonged heavy sweating and inadequate fluid replacement. *Treat cramps by moving the athlete into a cool, shaded place to rest. Then, replace water and electrolytes.*

Heat exhaustion can be caused by too much running in the heat or the cumulative effects of inadequate hydration. Symptoms of heat exhaustion are profuse sweating, headache, tingling sensations in the extremities, foggy, a lack of coordination, trembling, paleness, and breathing difficulties accompanied by extreme fatigue and collapse. *Treat heat exhaustion by moving the athlete to a cool, shaded place, elevate the feet, place cold towels or ice on the neck, head, and abdomen, and administer fluids as tolerated. Refer to a doctor for examination.*

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Heat stroke is the most serious heat injury. Sweat losses are so great that the body can no longer cool itself. *This is a medical emergency!* requiring immediate medical attention. Heat stroke can lead to death or serious complications. *Symptoms of heat stroke are lack of perspiration, hot, dry skin, delirium, seizures, vomiting, cyanosis, and unconsciousness.* Cool the athlete immediately, placing ice packs near the location of major surface blood vessels, like the neck. The athlete should be transported immediately to a medical facility for examination and treatment.

You can help your athletes adapt to the stress of heat through proper training. Heat-conditioned athletes have lower heart rates and body temperatures, perspire earlier during exercise, sweat more, and burn less energy per mile than nonacclimatized athletes. Start out by training in moderate weather conditions. (You might train during summer evenings, for example.) As fitness grows, gradually increase the amount of training done in heat or high humidity —

8-12 days of hot weather running should produce the desired adaptations. Start slowly with short, easy workouts, and gradually progress from there.

When runners are training and competing hard in hot weather, water loss can exceed intake. If an athlete fails to maintain adequate body fluid levels, dehydration takes place. As the body loses fluid, the sweat rate slows in order to conserve remaining water. The body then begins to overheat, resulting in poor performance or, worse, serious heat trauma.

A runner may not begin to feel thirsty until fluids equaling 0.5% of body weight are lost. Some athletes do not become thirsty until losing 2% of body weight (more than 1-1/2 quarts of fluid for a 130-pound runner). At this point, general discomfort and loss of appetite occur. A 4% loss (5.2 pounds for the 130-pound runner) will result in impaired performance. The skin will become flushed, and the athlete may become apathetic. If dehydration continues, serious medical complications will occur.

AVOIDING HEAT-RELATED TRAUMA

- Research shows that distance runners need to drink fluids frequently throughout each day to maximize training and racing performance.
- Hot, dry conditions greatly accelerate a runner's loss of body fluids. This is called "dehydration."

- Dehydration decreases blood volume, impairing the ability of the cardiovascular system to deliver oxygen to muscles. Just a 2% decrease in performance represents more than 24 seconds in a 20-minute Cross Country race.
- Recent studies show that drinking before racing *does not* cause abdominal cramping and that *dehydration* causes most gastrointestinal problems while running.
- Thirst is not a valid indicator of dehydration. By the time a runner is thirsty, it is usually too late to replace the volume of fluid needed for maximum performance.

Drinking Guidelines

- Drinking adequate amounts of water before races needs to be part of your team's pre-race strategy.
- Every athlete should have his or her own **16-32 oz. water bottle** and bring it filled to every workout and race.
- Recent studies show distance runners need to drink 16-32 oz. of fluids (preferably water) between lunch and an hour before the afternoon's training...or between waking up and an hour before a Saturday morning race. *One gulp is roughly an ounce.*
- In hot, dry conditions, runners should drink 6-8 oz. of water just before going to the starting line. Research shows that 93% of that water is absorbed into the bloodstream during the race, not emptied into the bladder.

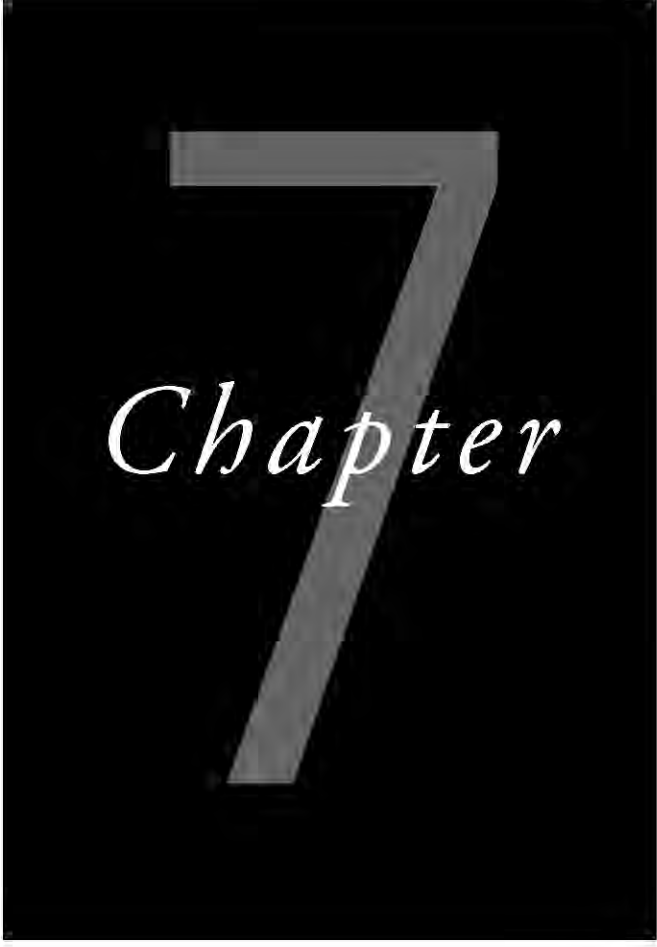
Sleep and Running Performance

While it's true that high school runners can survive on 6 hours of sleep a night, they may not be able to perform optimally with even as much as 8 hours of sleep. Many world class runners sleep up to 10 hours every night. Studies have shown that the levels of metabolic enzymes in skeletal muscle are significantly lowered with a lack of sleep, thus affecting the ability of muscles to contract and relax. Running economy suffers because a runner has to work harder than normal to maintain equal training effort.

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Lack of sleep also keeps the central nervous system from functioning properly. Sleep breaks down and cleans out certain chemicals that impair the function of the central nervous system. Without sleep, feelings of fatigue, irritability, depression or nervousness result. Lack of sleep also weakens the body's immune system, increasing the chance of illness. Fatigue, lack of concentration, and persistent minor illnesses are clues that an athlete is not getting enough daily sleep.

Establishing a sleep routine with a regular bedtime and waking hours helps establish the body's natural rhythm. Just getting to bed a few hours later than normal can change your body rhythm enough to affect the normal amount of deep sleep. If an athlete needs to catch up on sleep, it is better to go to bed early and keep the same wake-up time.

A large, stylized number '7' in a light gray color is centered on a solid black square background. The word 'Chapter' is written in a white, italicized serif font, positioned horizontally across the middle of the '7'.

Chapter 7

Eating for Health & Performance

Good nutrition is an important component of any successful training program. Food is the fuel of athletic performance. Though you cannot control the food your athletes eat, you can guide them toward healthy eating. To do so, you must be acquainted with the basics of proper nutrition. This chapter is a primer to help you address some of the nutritional demands and concerns faced by your athletes.

Eating for Health & Performance

Though success in sports is determined primarily by athletic ability and proper training, nutrition affects the athlete in many ways. Nutrition is important for normal growth and development and for maintaining good health. A healthy athlete feels better, trains harder, recovers more quickly, and is less susceptible to illness.

As a coach, you can have a positive influence on your athletes' attitudes about nutrition as well as their eating habits. Young athletes, in particular, respect, admire and seek advice from their coaches. The following sports nutrition information will help you guide your athletes toward better eating, and ultimately, better health and performance.

The Athlete's Diet

Coaches often want to know exactly what constitutes a "balanced diet." A balanced diet provides all the necessary nutrients and calories the body needs to function properly. These nutrients are carbohydrates, fats, proteins, vitamins, minerals and water. Just as there are many training strategies that achieve victory, there are a number of dietary patterns that provide good nutrition.

The Dietary Guidelines for Americans are national guidelines for healthy eating. Most nutritionists agree that the nutritional guidelines developed to promote health also establish a good foundation for athletes who desire peak performance.

THE FOOD GUIDE PYRAMID

The Food Guide Pyramid (Fig. 7-1) serves as educational tool to put the dietary guidelines into practice. The pyramid shows the foods that should be included in a healthful diet, and in what amounts. Athletes should be eating heartily from the grain, vegetable and fruit groups since these groups have the highest recommended number of servings and are nutrient-rich sources of carbohydrate. Table 1 indicates what counts as a serving from each group.

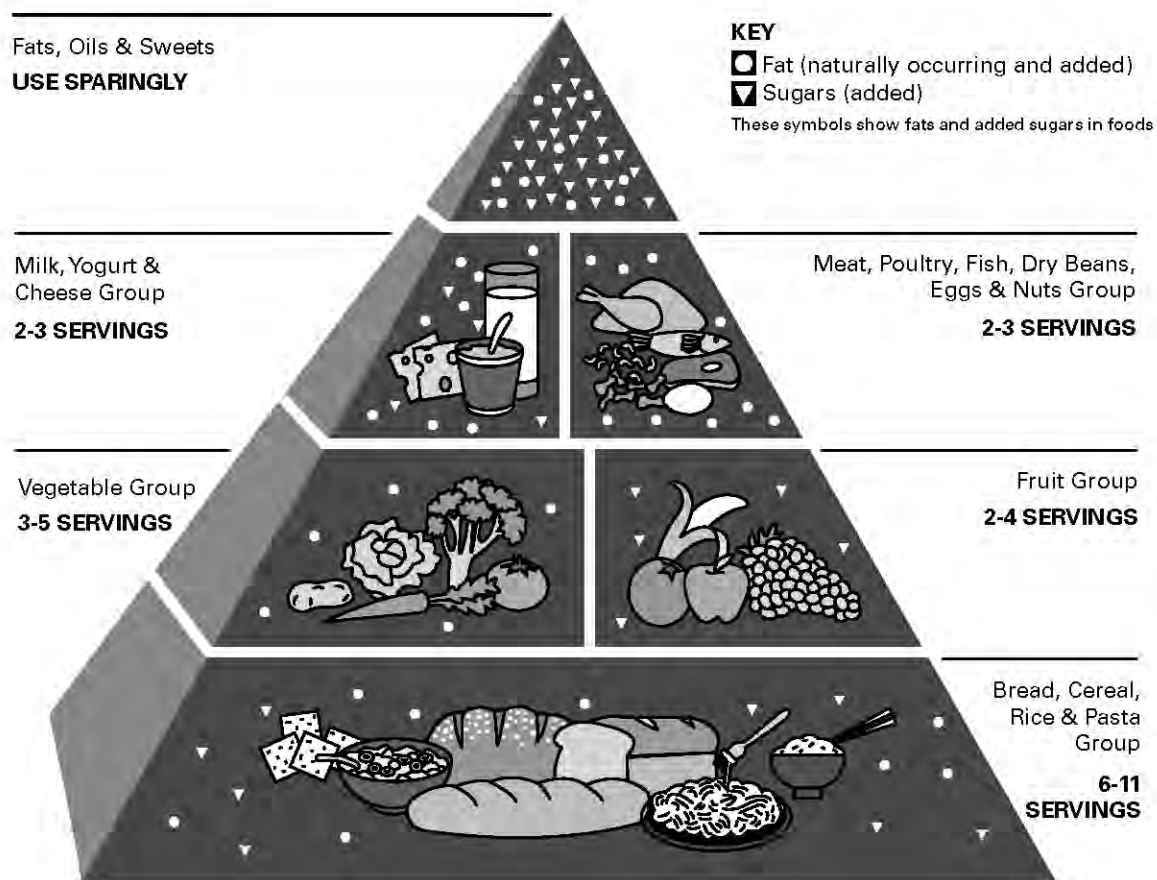


Fig. 7-2: The Food Guide Pyramid

Eating for

Health &

Performance

The number of calories that the Food Guide Pyramid provides will vary, depending on the selection of foods within the groups and the number of servings eaten. The minimum number of servings from the Food Guide Pyramid (with a limited use of fats and sweets) provides about 1,600 calories. Consuming the maximum number of servings (with a limited use of fats and sweets) provides about 2,800 calories.

Food Item(s)	Daily Servings	Count as 1 Serving
BREAD, CEREAL, RICE, PASTA	6-11	• 1 slice of bread • 1/2 bun, bagel, or muffin • 1 ounce dry cereal • 1/2 cup cooked cereal, rice, or pasta
VEGETABLES	3-5	• 1 cup raw leafy vegetables • 1/2 cup all other vegetables • 1/2 cup cooked beans or peas
FRUIT	2-4	• 1 medium apple, orange, peach, plum, nectarine, or banana • 1/2 cup small or diced fruit • 3/4 cup juice
MILK, YOGURT, CHEESE	2-3	• 1 cup milk or yogurt • 1 1/2 ounce cheese
MEAT, POULTRY, FISH, DRIED BEANS & PEAS, LENTILS	2-3	• 3 ounce cooked lean beef or chicken

Table 1 Serving Sizes

CALORIE REQUIREMENTS FOR ATHLETES

Calorie requirements vary greatly from person to person and are influenced by the level of physical activity, body size and age. Therefore, it is impossible to establish a universal daily caloric requirement for athletes. Weight loss, weight maintenance, or weight gain is a matter of energy balance. An athlete's body weight will stay the same when calorie intake equals calorie expenditure. To lose weight, energy expenditure must be greater than energy intake. To gain weight, energy intake must be greater than energy expenditure. If an athlete is maintaining his or her ideal competitive weight, adequate calories are being consumed.

A number of factors influence the body weight of adolescent athletes. Many young female athletes are concerned about their appearance and eat less than they should to appear thin. However, restricting calories can have a negative impact on performance and health. As calorie consumption decreases, so does nutrient intake. The minimum requirement for high school athletes should be roughly 2,000 to 2,200 calories per day. Athletes eating less than 1,800 calories a day probably don't consume adequate amounts of vitamins, minerals and protein. This can cause depleted fuel stores, muscle wasting, weakness, fatigue, stress fractures and impaired performance.

Some athletes have a hard time increasing their calorie intake because the volume of a larger meal causes them discomfort, especially if they are training soon after eating. Athletes juggling a heavy academic schedule with training and part-time job may have difficulty finding the time to eat. These athletes can benefit from eating several small meals and snacks throughout the day.

Eating for Health & Performance

CARBOHYDRATES

Carbohydrates, such as sugar and starch, are the most readily available source of food energy. During digestion and metabolism, all carbohydrates are eventually broken down to the simple sugar glucose for use as the body's principal energy source. Glucose is stored in the muscles and liver as a substance called glycogen. A high-carbohydrate diet is necessary to maintain muscle glycogen – the primary fuel for most sports. When athletes don't eat enough carbohydrate, their glycogen stores quickly become depleted, resulting in fatigue or staleness.

Though the body uses both the sugars and starches for energy, a high-performance diet emphasizes nutrient-dense carbohydrates. Nutrient-dense carbohydrates such as whole grain breads and cereals, rice, beans, pasta, vegetables and fruit supply other nutrients such as vitamins, minerals, protein and fiber. Sweet foods that are high in sugar (candy bars, donuts and cookies) supply carbohydrate, but they also contain a high amount of fat and only insignificant amounts of vitamins and minerals.

Fruit contains the sweetest of all simple sugars – fructose. Since fruit is mostly water, its sugar and calorie content are relatively low. Like starchy foods, most fruits are rich in nutrients and virtually fat free.

As with calories, carbohydrate needs vary among athletes, depending on the intensity and duration of training and body size. Volleyball players require about 6 to 8 grams of carbohydrate per kilogram of body weight daily. To determine how much an individual athlete needs, divide his or her weight by 2.2 to get the weight in kilograms. Then multiply the number by 6 to 8.

For example:

- 130 pounds divided by 2.2 = 59 kilograms
- 59 kilograms times 6 = 354 grams of carbohydrate

The carbohydrate content of different foods can be determined by reading food labels. As a general guide, starchy foods and fruits provide the highest amount of carbohydrate (15 grams) per serving. Table 2 gives some examples of high carbohydrate foods.

Carbohydrate Food	Serving Size	Grams of Carbohydrate
Raisins	½ cup	57
Banana	1 whole	27
Apple	1 whole	21
Orange	1 whole	15
Orange Juice	½ cup	12
Grapes	½ cup	8
Cantaloupe	½ cup	7
Watermelon	½ cup	6
Corn	½ cup	17
Potatoes	½ cup	16
Green Peas	½ cup	11
Carrots	½ cup	8
English Muffin	1 whole	26
White Rice	½ cup	17
Tortilla Shell	1 whole	1
Pasta	½ cup	15
Kidney Beans	½ cup	13
Wheat Bread	1 piece	13
Pancake	1 whole	9
Breakfast Cereals	½ cup	8-13
Crackers	1 whole	2-8
Plain Popcorn	½ cup	2
Flavored Yogurt	1 cup	42
Plain Yogurt	1 cup	16
Skim Milk	1 cup	12
Granola Bar	1 whole	67
Gumdrops	1 ounce	25
Regular Soft Drinks	1 cup	25
Jelly	1 tablespoon	13
Fig Bar	1 whole	11
Exceed Hi-Carb	1 cup	59
Gatorlode	1 cup	47
Nutrament	1 cup	30
Exceed	1 cup	17
Gatorade	1 cup	15

Table 2 Carbohydrates

Eating for Health & Performance

PROTEIN

Protein is a major structural component of all body tissues and is required for muscle growth and repair. Protein is not a significant energy source during rest or exercise. Although athletes have slightly higher protein requirements than non-athletes, athletes usually consume enough protein unless they aren't eating enough calories. Protein requirements increase when calorie intake is inadequate because the protein is used for energy rather than for muscle growth and repair.

Current research on protein requirements suggests that athletes need about 1.2 to 1.7 grams of protein per kilogram of body weight daily. For a 154-pound (70 kilogram) athlete, this represents 84 to 119 grams of protein a day. This amount is adequate for athletes who are involved in both endurance and explosive events. Table 3 gives some examples of high protein foods.

Protein Food	Serving Size	Grams of Protein
Lean Beef	3 ounces	24
Chicken Breast	3 ounces	24
Pork Chop	3 ounces	22
Fish	3 ounces	21
Roasted Peanuts	1/2 cup	18
Macaroni & Cheese	1/2 cup	9
Whole Milk	1 cup	8
Skim Milk	1 cup	8
Yogurt	1 cup	8
Cheddar Cheese	1 ounce	7
Cooked Navy Beans	1/2 cup	7
Egg	1 whole	6
Luncheon Meat	1 ounce	5
Peanut Butter	1 tablespoon	4
Bran Flakes	1 cup	4
Green Peas	1/2 cup	4
Baked Potato	1 whole	3
Wheat Bread	1 slice	3
Broccoli	1/2 cup	2
Banana	1 whole	1
Orange	1 whole	1

Table 3 Protein

The proteins in both animal and plant foods are composed of structural units called amino acids. Of the more than 20 amino acids that have been identified, nine must be provided by our diet and are called essential amino acids. Meat, fish, dairy products, eggs and poultry contain all nine essential amino acids and are called complete proteins. Vegetable proteins, such as beans and grains, are called incomplete proteins because they do not supply all of the essential amino acids.

The body can make complete proteins if a variety of plant foods – beans, grains, vegetables, fruits, nuts, and seeds – and sufficient calories are eaten during the day. Since the body utilizes amino acids from foods eaten at different meals, vegetarians don't need to combine specific foods within a meal to achieve complete proteins.

FAT

Fats, or lipids, are the most concentrated source of food energy. One gram of fat supplies about nine calories, compared to the four calories per gram supplied by carbohydrate and protein. Fats are the body's only source of the essential fatty acids linoleic and linolenic acid that are required for growth, healthy skin and healthy hair. Fat insulates and protects the body's organs against trauma and exposure to cold. Fats are also involved in the absorption and transport of the fat soluble-vitamins.

All athletes need a certain amount of fat in their diets and on their bodies. The challenge is eating a diet that provides the right amount. Most U.S. health agencies recommend consuming no more than 30 percent of calories from fat. Too much fat contributes excess calories in the diet, which can lead to weight gain. High fat diets can also increase the risk of heart disease and certain cancers. Also, athletes who eat too much fat often don't eat enough carbohydrate, which is detrimental to good health and optimum performance.

To lower fat intake, athletes should choose lean meat, fish, poultry, and low-fat dairy products. Fats and oils should be used sparingly. Fried foods and high fat snacks should be limited.

Eating for Health & Performance

VITAMINS

Vitamins are metabolic regulators that help govern the processes of energy production, growth, maintenance and repair. Vitamins do not provide energy, although vitamins are important for the release of energy from carbohydrates, fats and proteins.

Vitamins are divided into two groups: water-soluble and fat-soluble.

Fat-soluble vitamins include A, D, E and K. They are stored in body fat, principally in the liver. Taking a greater amount of vitamins A and D than the body needs over a period of time can produce serious toxic effects.

Vitamins C and the B complex are soluble in water and must be replaced on a regular basis. When athletes consume more water-soluble vitamins than needed, the excess is eliminated in the urine. Though this increases the vitamin content of the urine, it doesn't help performance.

Athletes should try to consume the amount of a nutrient recommended by the Recommended Dietary Allowance (RDA) or Adequate Intake (AI). The RDA and AI are the amount of a nutrient that meets the estimated nutrient needs of most people. To avoid toxicity, athletes should not exceed the Tolerable Upper Intake Level (UL) for a nutrient.

Generally, athletes who consume more than 1,800 calories a day get enough vitamins from their food. However, a vitamin/mineral supplement supplying 100 percent of the RDA or AI may be appropriate for athletes with extremely low calorie intakes or for those who avoid foods groups.

MINERALS

Minerals serve a variety of important functions in the body. Some minerals, such as calcium and phosphorus, are used to build bones and teeth. Others are important components of hormones, such as iodine in thyroxin. Iron is crucial in the formation of hemoglobin, the oxygen carrier within red blood cells.

Minerals also contribute to a number of the body's regulatory functions. These include regulation of muscle contraction, conduction of nerve impulses, clotting of blood, and regulation of normal heart rhythm.

Minerals are classified into two groups based on the body's need. Major minerals, such as calcium, are needed in amounts greater than 100 milligrams per day. Minor minerals or trace elements, such as iron, are required in amounts less than 100 milligrams per day. Calcium and iron deserve special attention because of their importance in an athlete's diet.

Iron is crucial for athletes because it assists in oxygen transport in the blood and utilization by the muscles. A lack of iron hurts performance by decreasing the capacity of the muscle to use oxygen. Young female athletes in particular are at risk of iron deficiency due to increased iron losses through menstruation and typically low iron intake. It is recommended that coaches see that their female athletes have hemoglobin levels checked at least once a year.

If one of your athletes appears to be iron deficient, you should consult your team physician for diagnosis and treatment. Supplemental iron may be prescribed for individuals whose lab tests indicate iron deficiency. However, a routine use of iron supplements by all athletes is not recommended.

The RDA for iron is 18 milligrams for women and 8 milligrams for men. Animal iron sources are better absorbed than vegetable iron sources. Vitamin C-rich foods (orange juice) enhance iron absorption. Iron-enriched or fortified cereal/grain products provide additional iron. Beans, peas, split peas and some dark green leafy vegetables are good vegetable iron sources. Table 4 lists good sources of iron and the milligrams of iron each provides.

An adequate calcium intake is important not only to prevent osteoporosis (bone deterioration) but because calcium also helps to maintain bone density and prevent stress fractures. An athlete's calcium needs are greatest during adolescence, when the bones are growing. Young women athletes who develop amenorrhea (absence of menses) have increased bone loss. This is a serious health risk, since once bone mass is lost, it may never be fully replaced.

Eating for Health & Performance

Iron Food	Serving Size	Milligrams of Iron
Pork Liver	3 ounces	17.7
Chicken Liver	3 ounces	8.4
Oysters	3 ounces	6.9
Beef Liver	3 ounces	6.6
Dried Apricots	1/2 cup	5.5
Turkey	3 ounces	5.1
Prune Juice	1/2 cup	4.9
Dried Dates	1/2 cup	4.8
Pork Chop	3 ounces	4.5
Beef	3 ounces	4.2
Dried Prunes	1/2 cup	3.9
Kidney Beans	1/2 cup	3.0
Baked Beans w/Pork & Molasses	1/2 cup	3.0
Hamburger	3 ounces	3.0
Soy Beans	1/2 cup	2.7
Raisins	1/2 cup	2.5
Lima Beans	1/2 cup	2.5
Dried Figs	1/2 cup	2.2
Spinach	1 cup	2.0
Mustard Greens	1/2 cup	1.8
Peas	1/2 cup	1.4
Eggs	1 large	1.2
Sardines packed in oil	1 ounce	1.0

Table 4 Iron

The AI values for calcium are 1,300 milligrams for youths and adolescents ages 9 to 18. If an athlete does not consume four servings of calcium rich foods such as milk, cheese, yogurt, or green leafy vegetables each day, a calcium supplement may be necessary. One glass of milk contains 300 milligrams of calcium. Table 5 lists good sources of calcium and the milligrams of calcium each provides.

Calcium Food Sources	Serving Size	Milligrams of Calcium
Plain Yogurt	1 cup	415
Skim Milk	1 cup	296
Whole Milk	1 cup	288
Cottage Cheese	1 cup	282
Swiss Cheese	1 ounce	248
Mozzarella Cheese	1 ounce	207
Cheddar Cheese	1 ounce	204
Ice Cream	1 cup	175
Oysters	1 cup	343
Salmon w/ Bones	1 ounce	86
Sardines w/ Bones	1 ounce	74
Turnip Greens	½ cup	184
Mustard Greens	½ cup	183
Collard Greens	½ cup	152
Spinach	½ cup	83
Broccoli	½ cup	67
White Beans	½ cup	50
Cabbage	½ cup	49
Kidney Beans	½ cup	48
Lima Beans	½ cup	38
Carrots	½ cup	37
Prunes	8 large	90
Orange	1 medium	62
Tangerine	1 large	40
Almonds	½ cup	152
Walnuts	½ cup	60
Peanuts	½ cup	54
Pecans	½ cup	43

Table 5 Calcium

Eating for Health & Performance

WATER

Water is the most essential of all nutrients for athletes. At rest, athletes need at least two quarts of fluid daily. An adequate supply of water is necessary for control of body temperature during exercise, for energy production, and for elimination of waste products from metabolism. Dehydration – the loss of body water – impairs exercise performance and increases the risk of heat injury.

Consuming adequate fluid before, during and after exercise is vital for safeguarding health and optimizing athletic performance. Athletes should drink 14 to 22 ounces of fluid two to three hours before exercise. During exercise, athletes should drink 6 to 12 ounces of fluid every 15 to 20 minutes. Fluid intake should closely match the fluid loss from sweating to avoid the detrimental effects of dehydration. After exercise, athletes should drink at least 16 to 24 ounces of fluid to replace every pound of body weight lost during exercise.

Thirst is not an adequate guide to fluid replacement. Most athletes replace only 50 percent of their fluid losses during exercise. Encourage athletes to replace fluids by drinking according to a time schedule rather than in response to thirst.

Sports drinks containing carbohydrate and sodium are recommended during intense exercise lasting longer than an hour. The carbohydrate helps to delay fatigue, improve fluid absorption, and replace glycogen following exercise. The sodium helps to stimulate thirst, increase voluntary fluid intake, and enhance fluid retention.

Pre-Competition Meals

The primary purpose of the pre-competition meal is to provide energy and fluid for the athlete during the meet. Carbohydrate-rich foods provide the quickest and most efficient source of energy, and unlike fatty foods, are rapidly digested. Since many athletes experience abdominal discomfort if they have food in their stomachs during competition, the timing of the meal is important. To avoid potential gut distress, the calorie content of the meal should be reduced the closer to exercise the meal is consumed. A small meal of 300 to 400 calories is appropriate an hour before exercise, whereas a larger meal can be consumed four hours before exercise.

The athlete's foods and fluids should be well tolerated, familiar (tested in training), and palatable. Athletes may have to do some planning to ensure they have access to familiar foods before competition. They may need to bring their lunch/snacks in a small cooler rather than choosing from the school cafeteria's entrees or a restaurant menu. Encourage them to bring any foods that they believe will help them win.

Experimenting with a variety of pre-exercise meals in training helps athletes determine what foods they're most likely to handle before competition. Athletes should never try an untested food or fluid before competition. The result may be severe indigestion and impaired performance.

Fueling During Competition

During cross country meets, athletes require fluids and carbohydrates throughout the day. Some athletes may be reluctant to eat and drink because they have to compete again. However, failing to refuel and replace fluid losses can cause their performance to deteriorate, particularly toward the end of the day. Bringing along a cooler packed with familiar high-carbohydrate, low-fat meals and snacks keeps athletes from then being dependent on the high-fat fare typical of concession stands.

Since everything an athlete eats before a game may be considered a pre-event meal, it's important to consider the amount of time between competitions. If there is less than an hour between events, athletes can consume liquid meals, sports drinks, carbohydrate gels, fruit juices, and water. When there is an hour or two between events, athletes can consume easily digestible carbohydrate-rich foods such as fruit, grain products (fig bars, bagels, graham crackers), low-fat yogurt, and sports bars in addition to drinking fluids. When events are separated by three hours or more, the athlete can consume high-carbohydrate meals along with drinking fluids.

Eating for Health & Performance

Achieving Ideal Competitive Weight

Some athletes fight to keep pounds off, others struggle to keep pounds on. Genetics, age and training all influence body weight. Food intake and lifestyle also play important roles. Athletes will perform at their best if they achieve their competitive weight (while adequately hydrated) either in the off-season or early in the season. Allowing for an increase in lean tissue and decrease in body fat during training, the athlete should try to maintain that weight throughout the season.

Young athletes with busy schedules tend to have irregular eating habits and sleeping patterns. As a result, gaining weight or keeping it on can be a problem. Athletes who have difficulty gaining weight generally aren't eating enough calories. Athletes can increase calorie intake by changing the amount and type of food eaten, and increasing the frequency of meals and snacks. To gain weight, athletes should eat five to six times a day.

To lose weight, athletes need to reduce their calorie intake. Increasing activity in addition to reducing calories helps promote weight loss. The recommended rate of weight loss is one-half pound a week, which requires a caloric deficit of 250 to 300 calories per day. Paying attention to the amount of and types of food eaten is important. Eating fewer high fat foods such as fried foods, gravies, sauces, high fat snacks and deserts can significantly reduce calorie intake.

A safe level of caloric restriction depends on the athlete's normal dietary intake. Males should not consume fewer than 2,000 calories per day. Females should not consume fewer than 1,800 calories per day. Extreme caloric restriction can disrupt physiological function, nutritional status, hormone levels, bone mineral density, psychological function and, for young athletes, growth rate.

Eating Disorders

Losing weight to achieve the “ideal” weight, percent body fat, or appearance can become an all-consuming obsession for some athletes. As a result, athletes may develop eating disorders that jeopardize both performance and health. Although recognition of these life-threatening disorders is growing, appropriate intervention and treatment lag far behind the problem.

Eating disorders such as anorexia nervosa (self-imposed starvation) and bulimia nervosa (binge/purge syndrome) are defined as severe disturbances in eating behavior. Female athletes are at greater risk for eating disorders than are female non-athletes or males. Eating disorders are more prevalent in sports where appearance is judged, in weight-classification sports, and in sports that emphasize leanness to enhance performance.

Abnormal eating patterns do not always mean the athlete has an eating disorder. There is, however, cause for concern if an athlete shows the following signs or behaviors:

- Dramatic weight loss or extreme fluctuations in weight.
- Claims to feel fat at normal or below normal weight.
- Preoccupied with food, calories and weight.
- Amenorrhea (loss of menstruation).
- Often eats secretively – avoids eating with the team.
- Often disappears after eating, especially after a large meal.
- Mood swings.
- Excessive exercise that is not part of training regimen.

Do not attempt to diagnose or treat an athlete with an eating disorder. Anorexia nervosa and bulimia nervosa are very complex problems and require treatment by medical professionals. Your role should be to help the athlete contact a medical professional that specializes in treating eating disorders. If the athlete denies having a problem but the evidence appears undeniable, consult with a physician who will assist you with the situation.

Eating for Health & Performance

Several risk factors or triggers have been identified that are associated with the development of eating disorders in athletes. Compared to other athletes, athletes with eating disorders began both sports-specific training and dieting earlier, and felt that puberty occurred too early for optimal performance. Other triggers included prolonged periods of dieting, frequent weight fluctuations, a sudden increase in training volume, and traumatic events such as injury or loss of a coach. Many athletes who began dieting to improve performance reported that their coach recommended they lose weight. The risk for eating disorders was also increased when the weight loss was unsupervised.

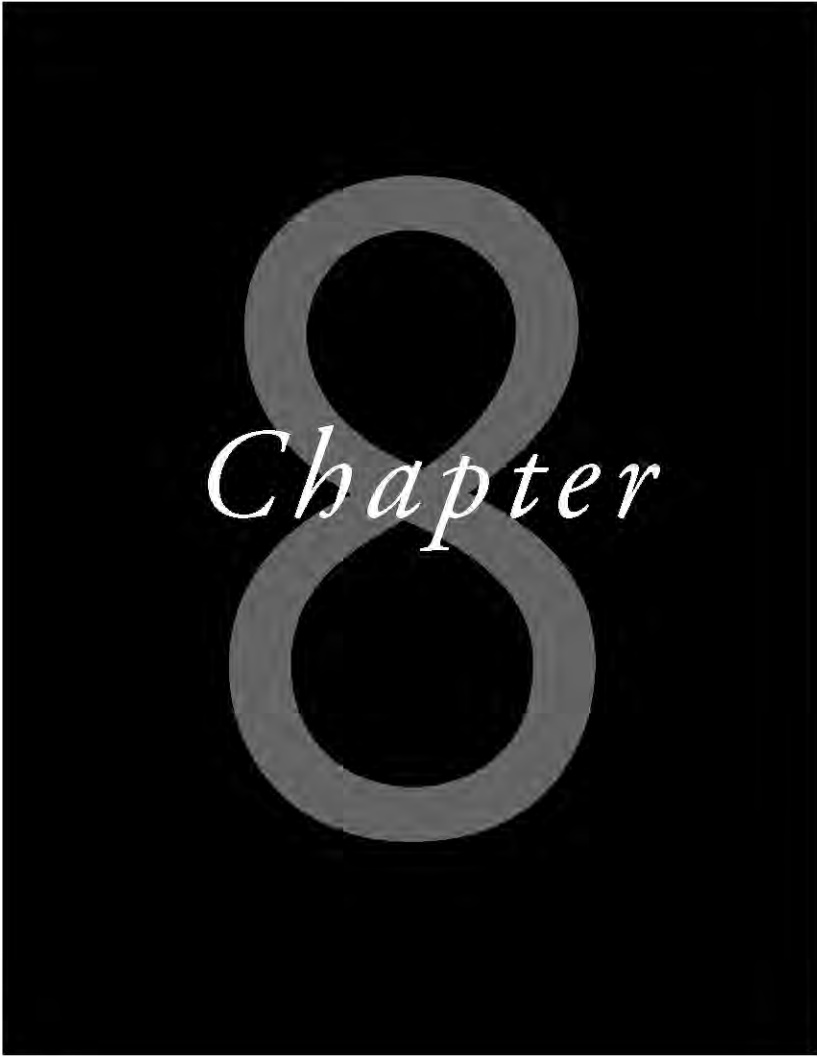
While sports do not cause eating disorders, it is possible for an eating disorder to be triggered by a comment from a person who is very important to the athlete. All members of the athletic team family – coaches, trainers, athletic administrators, and especially teammates – are significant people in an athlete's life. Consequently, these individuals have the power to be a helpful or harmful influence on susceptible adolescent athletes.

A great deal of caution must be given to the process of weigh-ins. The risk of triggering an eating disorder is increased when the numbers are used to set unrealistic weight goals for rapid weight loss, to browbeat or ridicule the athlete for gaining weight, or to impose excessive pressure on the athlete to show immediate weight loss.

Coaches and trainers must realize that their opinions and remarks about body weight can strongly influence an individual's eating behaviors. Commenting on someone's body size or need for weight loss (without offering guidance on how to do this healthfully) may trigger the development of an eating problem in vulnerable athletes.

As a coach, you can play an important supportive role in helping your athletes deal with the emotional and physical stresses of training and maintaining weight by:

- Providing your athletes with the basic nutritional information that appears in this chapter.
- Not overplaying the impact of weight on performance.
- Emphasizing that long-term, good eating habits and sensible weight control will optimize athletic performance.
- Providing appropriate advice regarding weight loss/gain, rate of weight loss/gain, and target-weight range.



Chapter

Organizing a Home Cross Country Meet

Athletes and the sport of Cross Country deserve well-organized and smoothly conducted competitions. One of your primary duties as a coach is the planning and execution of home dual and invitational meets. Races that run on schedule, appeal to spectators, and offer challenging opportunities for young runners show the sport at its best.

Organizing a

Home Cross

Country Meet

Making Cross Country a Spectator Sport

In the United States, Cross Country is not usually considered a spectator sport, but one where competitors dash off into the hills unseen until they return to the finish. Only those spectators as fit as the athletes themselves can get out around the course to see the exciting race.

In Europe, however, Cross Country is a very popular spectator sport. Only soccer and track and field draw bigger crowds. At the 1991 World Cross Country Championships in Belgium, pedestrian bridges were built so that people could move freely between the exterior and interior portions of the multi-loop course. These bridges were used by the more than 65,000 people who viewed the race from the sidelines. In contrast, at the 1992 World Championships in Boston, fewer than 4,000 spectators saw the world's best Cross Country runners compete.

One of the reasons European Cross Country is such a big spectator sport is the way races are presented. Courses are composed of several loops that pass a common viewing area. A public address system covers the entire course so spectators can hear the announcer's call of the race. Most courses also have grandstands at the best viewpoints and clearly visible information scoreboards that show leaders and times at intermediate points in the race.

This type of presentation is similar to what the sport of motocross has done in the United States. Motocross promoters have brought racing out of the remote reaches of desert foothills into large stadiums, such as the Los Angeles Coliseum and the Rose Bowl, by installing temporary dirt courses that afford the spectators comfortable seating with complete views of the race. As a result, motocross has become one of America's fastest-growing spectator sports.

Cross Country competitions need to be similarly restructured to increase exposure, popularity, and community support. At present, only two high school sports...football and basketball...are presented to the public as entertainment. (This explains their disproportionate share of facilities, funding, and institutional support at most schools.)

Here are 10 **specific recommendations** to improve the spectator appeal of Cross Country:

1. Remember that the farther away from school you run your home meets, the fewer spectators you are likely to have. If possible, **lay out an on-campus course** for your home dual meets.
2. **Make spectating a primary consideration in laying out your course.**
3. Have a **P.A. system and an announcer** to call each race. Introduce competitors by name prior to the boys' and girls' varsity races.
4. **Announce leaders, times, and team quick-scores at the 1-mile and 2-mile marks of the race. Announce the individual winners and unofficial team scores as soon as possible after the end of each race.**
5. Convince your school band and cheerleaders to perform at home meets.
6. **Hold a 1-Mile Community Fun-Run** at the conclusion of your home meets.
7. Investigate the possibility of conducting the **varsity boys' and girls' meets during halftime of a home varsity football game.**
8. **Promote home meets** with announcements in your school bulletin and articles in your school and local newspapers. Write the articles yourself, if you must, and submit them with action photos.
9. Make up sheets of **mailing labels**, addressed to your runners' parents, to facilitate sending notices of home meets and team activities.
10. Insist that Cross Country participate in fall school pep rallies and homecoming assembly programs.

Organizing a Home Cross Country Meet

Designing and Marking a Cross Country Course

A Cross Country course needs to be more than 3 miles of paths and trails. Keep these considerations in mind when designing a course:

LOCATION

The best way to expose Cross Country to your student body, faculty, and local community and get spectators to attend your home meets is to *have a course located on your school campus*. Competing before the student body and staff is likely to boost your team's efforts by giving you a "home court" advantage. Staging Cross Country meets on campus also is easier and more efficient than running off-campus. Doing so provides ready access to a sound system, bathrooms, telephones, and copy machines.

ATHLETE SAFETY

A Cross Country course should be challenging, but **must** be safe. Avoid laying out Cross Country courses in areas where drinking water, bathrooms, and public telephones are unavailable, or where emergency access is difficult. Do not use trails or paths that are narrow, rutted, littered with rocks or holes, or adjacent to hazardous obstacles such as low-hanging tree branches or barbed wire fences. Avoid narrow bridges and fence openings, steep downhills, and crossing roads or streets that are open to vehicle traffic.

SPECTATOR VIEWING

Consider spectators when designing a Cross Country course, and don't be afraid to use multiple loops, figure-8s, or outer-inner loop configurations that repeatedly bring the course back to a central viewing area.

COURSE LAYOUT AND TERRAIN

Ideally, a Cross Country course should offer a **varied terrain** that challenges the skills of each runner. It should not, however, be an obstacle course or mountain run. In an area without hills, you can include multiple turns, switchbacks, chicanes, and difficult surfaces (e.g., grass to dirt to pavement) to create deceleration and pace changes. You want to make a course interesting to runners and spectators alike. Every course should have long, wide starting areas and finishing straights.

Other Course Layout Guidelines:

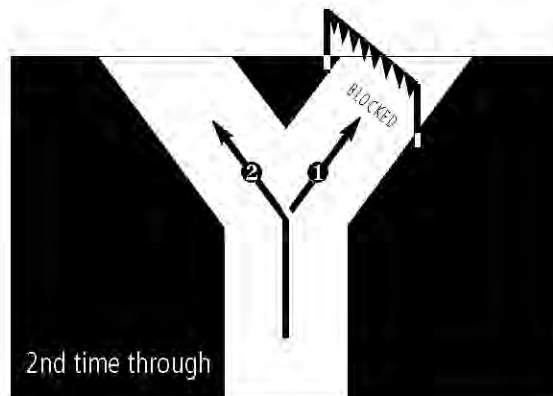
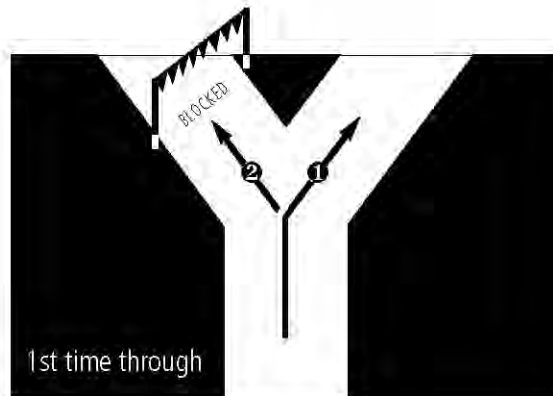
- For dual meets, the starting area should allow at least five runners from each team to align side by side on the starting line.
- At the start, the course should not narrow, turn, or ascend a hill for at least 150 yards.
- No portion of the course should be too narrow to accommodate at least two competitors running side by side.
- A long finishing straight without turns should be located near the start.
- Courses made of multiple loops, $\frac{3}{4}$ to $1\frac{1}{2}$ miles long, should offer a diversity of terrain and be constructed so that athletes will not collide at intersections. Maximize spectator viewing. Loops might circle your track, practice fields, exterior school grounds, or different areas within a park.
- For accuracy, **always measure a course with a calibrated measuring wheel**, not a bicycle odometer.
- Test a new course with some continuous practice runs before conducting an actual meet. Make any changes necessary to assure a smooth flow of the race.

COURSE MARKING

Your first responsibility when hosting a home Cross Country meet is providing a safe, accurately measured, and well-marked course. Once you've laid out and measured your course, the next step is to **mark it properly**. If you have adequate funds, buy Cross Country course marking materials, which are available from several manufacturers. These materials include 96-inch tall steel directional flag posts with colored flags, 61-inch long chute posts, colored pennants, nylon rope and even folding scoreboards on which to clip runners' name tags and compile team scores. (Old golf bags are great for storing flag posts and chute stakes, and moving them around the course.)

Many coaches are not aware that there are **National Federation of State High School Associations (NFHS) rules and requirements for marking a Cross Country course**. The basic rule is that a 12-inch square colored flag 6 feet above the ground must always be in view on the course: **Blue Flag—Straight Ahead, Yellow Flag—Right Turn, and Red Flag—Left Turn**. There can be no ground obstructions that can trip or injure athletes. Turns and intersections should be marked on the ground with a material that won't harm the eyes or skin. The **finish chute** should be a funnel at least 15 feet wide at the finish line, which narrows to 30 inches 15-25 feet past the finish line.

FLAGGING INTERSECTIONS



When an intersection is used multiple times, use stakes and pennants to block off the wrong route.

Chalking

Chalk can also be used to help mark a Cross Country course. While some courses are marked with a solid white line from start to finish, the areas most often marked are turns and intersections. The marking should begin with the existing direction of travel and clearly extend into the new direction. On a long, uninterrupted route, occasional chalk lines or arrows can assure front-runners that they are on the right path. Chalk should never replace accurate flagging. The rules state that in the case of a discrepancy over the markings on a Cross Country course, the directional flags take precedence over any other markings. (As a consequence, Inspectors should be placed at every turn and intersection on the course to direct competitors.) Some parks will not allow the use of chalk; in this case, **arrowed signs** or **cones** can be used. To mark the ground where courses use or cross pavement, use **surveyor's tape**.

Organizing a Home Dual or Triangular Meet

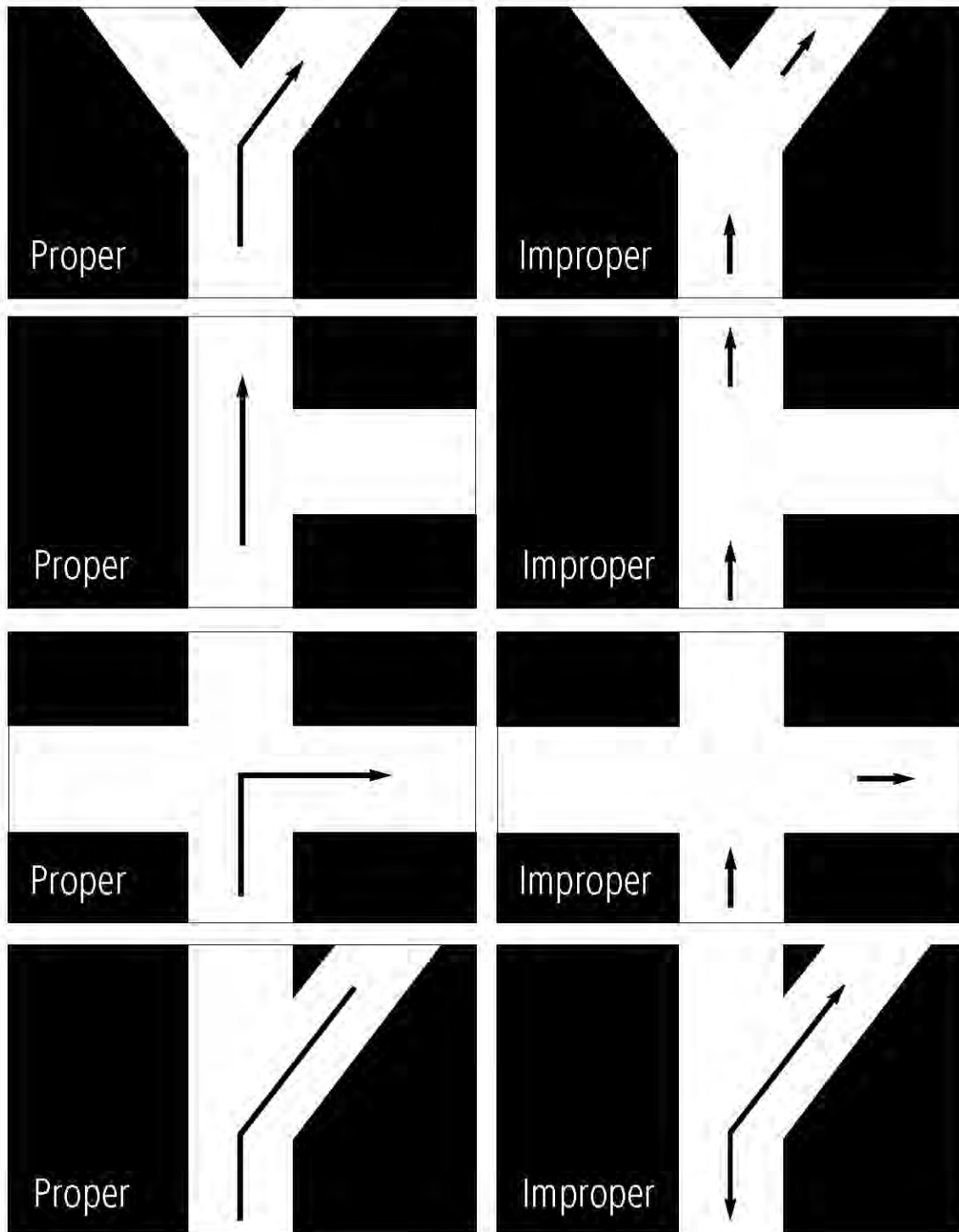
When hosting a home contest, you become the meet director. Your responsibilities are preparing and marking the course, assembling meet materials, recruiting and briefing adult officials, running the meet according to a predetermined schedule, and tabulating complete and accurate results. In addition, the meet director must provide visiting team parking, clean restrooms, water, and first-aid supplies. When the meet is over, all trash should be removed so the meet site is left without any signs that a race has taken place.

The following procedures will help you prepare for a home dual or triangular meet:

- *Send your custodians or grounds crew a memo* on a) marking the course (Do your football coaches mow and line the football field? Do your basketball coaches clean and wax the basketball court?), b) cleaning and stocking restrooms, and c) setting up the P.A. system. Follow up with personal contact. This should be done at least three or four days before your meet.
- *Give your assistant coach(es) specific responsibilities*, such as recruiting adult officials and volunteers. Remember, we devalue and trivialize sports like Cross Country and track and field when we place students in official roles such as Finish Judges and Course Inspectors. This would be unthinkable in other sports.

THE PROPER METHODS FOR CHALKING INTERSECTIONS

A properly chalked intersection will leave no doubt in a runner's mind as to which way to go.



- At least a week in advance of the meet, *send the visiting coach(es) an information sheet with directions to the meet site, parking instructions, a schedule, races, and a course description and map.*
- *Promote the meet* in your daily student bulletin and place an article in your school and local newspapers.
- The day before the meet, *prepare and organize all meet materials.*

Meet Job Descriptions

Starter: The Starter positions runners on the starting line, gives final race and finish instructions, calls runners to the set position, and fires a gun or blows a whistle to start the race. The Starter is also the **Referee** for the meet and adjudicates any reported rule violations and/or protests. These can include, but are not limited to, improper uniforms, false starts (an automatic disqualification), interference, unacceptable or unsportsmanlike conduct, and illegal aid provided during the race. As the host coach, you should think long and hard about assuming the role of Starter/Referee for your meets. A Certified Track & Field Starter is best suited to carry out this responsibility.

Timers: Timers accurately *record the time of every finisher.* You should have primary and backup Timers. They should be positioned across from the finish line opposite each other, and work independently.

If you are timing with *stopwatches*, the Timers will need to be paired with a Time Checker holding a *time check sheet* on a clipboard. This is a sheet with several columns numbered 01-59. The minutes of the finishing time (e.g., 15-16-17, etc.) are written at the top of the columns. The Timer calls off the time when a runner crosses the finish line, and the Checker checks the correct mark in the seconds column. If two or more runners finish together, the Timer calls off, “16:42 times 2” (or the number of simultaneous finishers), and the Checker puts 2 checks by the 42 in the 16-minute column. After the race, the Checker simply numbers the checks from fastest to slowest to designate the finish times for each place. (See sample time-check sheet in the Appendix.)

Print-timers record times on paper tape when the watch button is pressed as runners cross the finish line. After the race, simply number the finish times, fastest to slowest, for each place.

FINISH CHUTE OFFICIALS & WORKERS

BACKUP TIMER • **finish line**

• HEAD FINISH JUDGE **HEAD TIMER •**
 TIME CHECKER •

CHUTE STEWARD •

• CHUTE STEWARD

CHUTE MARSHAL •

• CHUTE MARSHAL

• OFFICIAL SCORER'S TABLE

• PLACE CARDS

• TAG REMOVER
• PLACE RECORDER
• LOST TAGS

HEAD TIMER Operates the official timing device and calls finish times

HEAD FINISH JUDGE Determines order of finish at finish line

CHUTE STEWARDS Place runners in their proper order of finish as they enter the neck of the chute per instructions from the HEAD FINISH JUDGE

TIME CHECKER Checks off times called on a TIME CHECK SHEET. After the race, numbers the times checked from 1st to last

PLACE CARDS Hands a NUMBERED CARD to each runner showing his or her overall finish place

TAG REMOVER Removes NAME TAG as each runner leaves the finish chute; hands the tag to the PLACE RECORDER; calls the runner's place from place card

PLACE RECORDER Records the FINISH PLACE on each runner's NAME TAG; places tag on a RESULTS SHEET

OFFICIAL SCORER RECORDS the names and team affiliations of all finishers on an OFFICIAL RESULTS SHEET. Adds the finish times for each runner from the time sheet (or time check sheet); scores the meet

Head Finish Judge: The Head Finish Judge determines competitors' order of finish at the finish line. In dual and triangular meets, this should be the Starter. The Head Finish Judge stands on one end of the finish line inside the mouth of the chute and judges the order of close finishes. His or her decision is final. The best way for Head Finish Judges to relay this information to the Chute Inspectors at the neck of the chute, is to *call singlet colors* in the correct order of finish (e.g., "Red-Blue").

Chute Stewards: Chute Stewards *place runners in the correct order* of finish via instructions from the Head Finish Judge. They also must observe and prevent position switching.

Chute Marshals: Chute Marshals are positioned about 10 yards apart along the *entire chute and keep athletes moving forward* so the chute doesn't back up toward the finish line. If a runner is too fatigued, sick or injured to move, one of the Chute Marshals should remove his or her tag, take the athlete's place in the chute, and walk the tag through to the results staff.

Results Staff: At the end of the finish chute, place three people to *remove the tags* listing each runner's name and school from the singlet, *place tags on a numbered sheet* in the correct order of finish, and *hand runners numbered place cards* to give to their coach, (3x5 note cards numbered 1-50). Place cards are a backup scoring system to the tag method.

Recorder: On a results sheet, the Recorder *records the name and school of every runner in order of finish* from the tag board and *transfers finish times* from the time check sheet or finish tape.

Scorer: The Scorer *tabulates the team scores* from the runners' order of finish on the tag board.

Course Inspectors: Course Inspectors *observe the conduct of competitors during the race, help them follow the course at confusing points, and ensure runners run around the flags placed at each turn*. Course Inspectors must report any infractions to the Referee, who makes rulings on disqualification.

Split Timers: Call off all runners' times as they pass the 1-mile and 2-mile marks on the course.

Organizing a

Home Cross

Country Meet

MEET MATERIALS CHECKLIST

- ☐ Visiting coach(es) packet(s) with information sheet, course maps, tags for each runner, and paper clips to attach tags to the upper front of the singlet
- ☐ Race schedule, course records, all-time performance lists, and composite team times for the Announcer
- ☐ Stopwatches or print-timers for Finish Timers (2)
- ☐ Time check sheets for each race, clipboards, and pencils for Time Checkers (2 sets)
- ☐ 3 x 5-inch numbered place cards for each race
- ☐ Numbered tag board for each race
- ☐ Result and scoring sheets for each race
- ☐ Water jug and ice
- ☐ First-aid kit
- ☐ Table and chairs for Recorders and Scorers
- ☐ Flag posts with colored flags
- ☐ Chute stakes and rope
- ☐ Sledge hammer for chute stakes
- ☐ Chalker or chalk shaker to mark start and finish lines and intersections

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SAMPLE LETTER ABOUT SUMMER TRAINING

Dear —

I hope this finds your early summer training going well. Here is some important information about our summer workouts, training camp, and team trip to San Francisco for the Moreau Invitational.

- Summer workouts start Monday, July 6 at the track stadium. These workouts will be every Monday and Wednesday at 5:30PM. If you don't want to take the weight training portion of the class, you can sign up for just the running portion at a cost of \$18. Signing up for the class covers the school district for liability and assists us in offering a summer program. The sign-up sheet is in the packet your parents received. **Please return it to me as soon as possible.**
- Our annual summer training camp at Mammoth Mountain will be from Monday, August 24 through Saturday, August 29. The cost is \$100. With the number of cars we have going, I expect that 33-35 athletes will be able to go this year. If you are interested in going to camp with us, contact me as soon as possible. **Any runner who thinks that he or she will make our varsity team this year should make every effort to be part of our summer training camp.**
- On October 17, we are planning to compete in the Moreau Invitational Meet located in Hayward, about 30 minutes outside San Francisco. We will fly from San Diego on Thursday and return home Sunday. We are hoping to take 40-45 team members on this exciting weekend. Athletes who don't make the trip will run in the El Camino Invitational here in San Diego. We will be using our Cross Country Invitational and Vons and Luckys scrip sales to help raise money for our air travel, busses and hotel costs. Make sure that you and your parents get involved with these fund raising projects. If you want to go to San Francisco with us, we expect you to help with our fund raising. If you don't, you won't go.
- Remember, you must have a physical exam and proof of insurance on file with me before the beginning of practice on August 24. If you don't, you cannot practice with us, so please get this taken care of early.

I hope you're having a great summer and I look forward to seeing you on Monday, July 6.

Sincerely,

Coach McClanahan

SAMPLE LETTER TO INCOMING FRESHMEN

Dear —

Congratulations on your graduation from junior high school. I want to take this opportunity to welcome you to the Nordhoff Cross Country program. Your schedule for next fall indicated you are interested in joining our Cross Country team for the fall season.

As you probably know, our Cross Country program is one of the most successful in the state. Every year, incoming freshmen from Matilija Junior High contribute to our success. Most of the members of our boys' and girls' STATE CHAMPIONSHIP TEAMS had never run prior to their freshmen year at Nordhoff. This is a sport where nobody sits on the bench. Each and every runner on our team gets to take part in all our meets leading up to the league championships.

In order to prepare for the upcoming Cross Country season, we begin our running program during the summer. While the team does not start meeting until Monday, July 20, a number of our runners are already training for the start of the season. Summer training is very relaxed and a good way to get an early start on becoming part of our team and having a successful season. Beginning July 20, our practices are held every Monday and Thursday evenings at the Nordhoff track. Practices begin at 6:00PM, and we usually take a swim afterward.

At these summer workouts, you'll receive our team handbook and information on all our summer activities (including our Raging Waters trip, Watermelon Runs and super running camp at the end of the summer. So grab a friend and join us on July 20. If you are out of town, show up any Monday or Thursday night in July.

A little running this summer will go a long way toward a successful season this fall.

I look forward to meeting you soon.

Coach Reeves

SAMPLE CONFIDENTIAL ATHLETE QUESTIONNAIRE

ATHLETE QUESTIONNAIRE

1. Why did you come out for Cross Country this year?

2. Are there any particular skills you want to improve or strengths you want to develop this season?

3. Where does Cross Country fit into your priorities this fall?

4. What do you like most about training?

5. What do you like least about training?

6. What can your coaches and teammates do to help you have the best Cross Country season possible this fall?

7. Is there anything you would like your coaches and/or teammates to avoid doing or saying to you before a race?

8. What do you like to do the day of a meet to prepare for racing?

9. Describe how you would like to receive feedback on your training and races from your coaches:

10. List 3 ways you would like to be recognized for your efforts:

1)

2)

3)

11. List 3 things you consider to be punishments in athletics:

1)

2)

3)

12. Is there anything else you want your coaches to know about you to help you reach your goals this year?

SAMPLE SUMMER PROGRAM PARENT PERMISSION SLIP

NOTICE TO PARENTS AND GUARDIANS
REGARDING SUMMER ATHLETIC TEAMS

Nordhoff High School does not sponsor summer athletic teams.

Summertime sports teams do not compete in contests under the school's supervision, nor do such teams have sanction for these activities from the Frontier League, Ojai Unified School District, or CIF-Southern Section.

Your son's or daughter's participation on summer athletic teams is strictly voluntary and a private activity on your child's part. It is not a requirement for participation on Nordhoff High School's athletic teams during the regular school year.

The school and/or coach is not responsible for the supervision, transportation, or conduct of these summer activities. The school and/or coach is also not responsible for any injury that might occur while your son or daughter is participating on a summer athletic team. The coach of this team is acting as a private individual and is not employed by the Ojai Unified School District in the capacity of a summer athletic team coach.

Transportation to and from these activities must be provided by the coach or the athlete. Each athlete must have insurance coverage.

I (parent)

have read the above information and hereby give my consent for my son's/daughter's participation on this summer athletic team.

Athlete's Name

Sport

Name of Insurance Company

SAMPLE PRE-SEASON PARENTS MEETING NOTICE

PARENTS' PRE-SEASON
CROSS COUNTRY MEETING

Dear Parents,

Our annual pre-season Cross Country meeting will be held at Nordhoff High School on **TUESDAY, SEPTEMBER 13, AT 6:30PM IN THE FACULTY CAFETERIA** next to the Counselors' offices.

The purpose of this meeting is inform you about all aspects of the Nordhoff Cross Country Program. The agenda will include an introduction to our coaches and a discussion of our coaching philosophy, team rules and student-athlete expectations, and district requirements for athletic participation. We will also discuss the various team activities we have planned for the 2002 Cross Country season and take sign-ups for several committees to organize, support, and conduct them. Our goal is to have an opportunity to get to know each other, answer all your questions, and maintain the excellent lines of communication we have established between our athletes, parents, and coaching staff.

Another purpose of the meeting is to introduce you to our team newsletter. While most of you are able to attend at least one meet during the season, its very difficult to get to all of them. Even though our local papers cover our program well, its still hard to get information on the performances of every runner, and especially about our frosh-soph and JV teams. Therefore, eight years ago we began our **Ranger Running Letter** to keep parents, alumni, running publications, and college coaches informed about our team and our athletes. Included in the bi-weekly newsletter are complete race results, comments and statistics, profiles of various team members and successful alumni, a preview of our upcoming meets, and notices of the special team activities we have planned throughout the season. The cost is \$20 a year. \$15 goes to our **Ann George Cross Country Scholarship Fund** and the remainder goes to purchase postage, computer time, paper, and mailing labels. Any leftover monies go toward funding a college coaches guide and SAT program for our college bound student-athletes. Over the past 10 years, more than 50 of our team members have competed in Cross Country and/or track at the college level. Already this season, we have received inquires from 6 colleges regarding Nordhoff runners. With increased publicity and higher SAT scores, we hope more of our runners will have the opportunity to continue their education and running at a higher level.

We appreciate the positive involvement Nordhoff parents have always contributed to our Cross Country program. We look forward to seeing you Tuesday evening and throughout the 2002 season.

Sincerely,

Coach Reeves

SAMPLE PARENTS MEETING AGENDA

2002 NORDHOFF

CROSS COUNTRY PARENTS MEETING

Tuesday, September 13, 6:30PM, Nordhoff Faculty Cafeteria

1. INTRODUCTION OF COACHES

Our coaching philosophy and outlook for the 1994 season

2. ABOUT OUR PROGRAM

- Team Handbook
- Monday-Saturday Practice Schedule
- 1994 Meet Schedule
- Team Rules and Student-Athlete Expectations
- Academic Eligibility Requirements
- Team Newsletter
- How We Handle Periods, Fatigue, Aches and Pains, and Injuries
- Diet Essentials: fluids, calcium, and iron
- Team Newsletter

3. HOW TO JOIN OUR BOOSTERS CLUB

4. HOW YOU CAN HELP US

- We host our 8th annual Ojai Invitational, September 24:
 - We need 10 people to manage the finish chute.
 - We need 2 people to sell T-shirts.
 - We need 2 people to help us set up and take down.

We need a computer wizard.

We need oranges for the 20 schools competing.

- Team Dinners:

Annual Corn Roast, Friday, September 30

Annual Mexican Potluck Dinner prior to County Championships, Thursday, October 27

Annual Spaghetti Dinner prior to CIF Prelims, Thursday, November 10

- Annual Jog-A-Thon Fund Raiser: Help with refreshments

- Football Game Snack Bar, Friday, Oct. 7 (We get the proceeds from one game each season.)

We need 13 people from 4:30-7:00PM and 7:00-10:00PM

- Our last Home Meet at Lake Casitas, Thursday, October 13

We need a head timer, 5 course monitors, 5 people for the finish chute,

2 people to help tabulate results, and oranges for 100 runners.

- Ojai Ride 'N' Run, Sunday, October 16 (We get a \$700 donation for providing volunteers)

We need 10 people for the finish chute, 5 people to compile results, 10 people for the water stations, and a computer wizard.

- Kinney Regional Cross Country Meet, Saturday, December 3

We need a transportation and hotel coordinator.

- Cross Country Banquet Committee, Thursday, December 8

SAMPLES OF ADDITIONAL PARENT PERMISSION SLIPS

These permission slips are a result of the CIF-Southern Section's request for all coaches to make student-athletes and parents aware of the variety of activities involved in high school athletics and the risks involved in participation.

I PERMIT _____

to participate in swimming activities after Nordhoff High School Cross Country practices in either a private or school district pool or at the beach. I understand that the coach will provide direct supervision, but that neither the coach or the Ojai Unified School District will be held responsible for my son or daughter. I assume full responsibility in the event of an injury or other accident involving my son/daughter during these post-practice activities.

SIGNED: _____

DATE: _____

RELATIONSHIP: _____

(Parent or Legal Guardian) _____

I am aware that some Cross Country training activities take place on public and private roads and trails. I am aware that my son/daughter should follow the legal requirements of all pedestrians while running. I understand that the coach will provide direct supervision of these training activities, but that it is not the responsibility of the coach to directly supervise every runner at all times. I am also aware that various injuries may occur as a result of running.

PARENT OR LEGAL GUARDIAN: _____

DATE: _____

ATHLETE: _____

I am aware that the Nordhoff High School Cross Country Team has Saturday meets and practices that are a requirement for participation.

PARENT OR LEGAL GUARDIAN: _____

DATE: _____

ATHLETE: _____

SAMPLES OF ADDITIONAL PARENT PERMISSION SLIPS

This completed form must be submitted prior to the issue of any Nordhoff Cross Country team equipment. The purpose of the form is to make all athletes and parents aware of the rules and requirements and expectations of team membership prior to the beginning of the season, and the grading policy for sixth Period Cross Country.

NORDHOFF HIGH SCHOOL CROSS COUNTRY

We have read the rules and requirements for participation on the 2002 Nordhoff High School Cross Country Team. We are aware of the various athletic and academic responsibilities of being a student-athlete and understand that daily practice attendance is required for all team members.

We have read and understand all the requirements for practice and meet attendance and academic eligibility throughout the season.

We have read and understand the grading policy for sixth period Cross Country class. Failure to complete the season will result in a failing grade.

As a student-athlete, I agree to meet these expectations. As a parent, I understand my son's or daughter's responsibilities and commitments upon becoming a member of the Cross Country team.

IF YOU HAVE ANY QUESTIONS, PLEASE ASK THEM BEFORE SIGNING!

STUDENT-ATHLETE:

PARENT OR LEGAL GUARDIAN:

DATE:

SAMPLE PARENTS' GUIDE TO CROSS COUNTRY

A PARENT'S GUIDE TO CROSS COUNTRY

Congratulations! Your son or daughter has joined the Mt. Carmel High School Cross Country Team.

WHAT IS CROSS COUNTRY?

Cross country is a team running sport that takes place in the fall on a measured 3-mile loop over varied surfaces and terrain. While our home course is on our school campus, many Cross Country meets are held on dirt trails, park grounds, and sometimes on golf courses.

HOW CROSS COUNTRY IS SCORED

A cross country meet is scored by each team adding up the places of its top 5 finishers. As in golf, the low score wins. For example, a team that scores 26 points places ahead of a team that scores 29 points, as follows:

	<u>MT. CARMEL</u>		<u>POWAY</u>
	1		2
	4		3
	5		7
	6		8
	10		9
SCORE	26	SCORE	29

(MT. CARMEL WINS!)

(continues...)

A team's 6th and 7th finishers can also figure in the scoring if they place ahead of other teams' top 5 finishers. When that is the case, they become "pushers" by pushing up their opponents' scores, as follows:

	<u>MT. CARMEL</u>		<u>POWAY</u>
	2		1
	3		4
	6		5
	8		7
	9 (10) (11)		12
SCORE	28	SCORE	29

(MT. CARMEL WINS!)

Only a team's 6th and 7th finishers can be pushers, regardless of how many of its runners may finish ahead of an opposing team's top 5 finishers.

LEVELS OF COMPETITION/PARTICIPATION

Mt. Carmel High School is a member of the Western League of the South County Conference. Our dual and triangular meets have 5 races in the following order (usually 20 minutes apart):

- 1—GIRLS' VARSITY
- 2—BOYS' VARSITY
- 3—GIRLS' JUNIOR VARSITY
- 4—BOYS' JUNIOR VARSITY
- 5—BOYS' FROSH-SOPH

All team members can participate in our 6-league dual and triangular meets during the season. In invitational meets, we are limited to 7-10 runners at each level depending on the meet.

WHAT IT TAKE TO BE SUCCESSFUL

More than anything else, success in Cross Country takes time...time to learn; time to train; time to sleep, rest and recover; before-school time; after-school time; weekend time; time away from family and friends; and time away from other interests. With the academic responsibilities of being a high school student, most student-athletes are busy all the time. The willingness to devote the time that success demands is called **DEDICATION**.

Being a member of the Mt. Carmel Cross Country Team carries other expectations and responsibilities. Doing what is expected of every team member is called **COMMITMENT**. Attending team practices every day is one of the commitments we expect. Your son or daughter has received a packet of information outlining our team rules and policies, and Mt. Carmel's athletic code of conduct and academic eligibility requirements. Ask your son or daughter to see this. Our goal is to development team loyalty and individual responsibility and accountability among all our team members. High school sports are a wonderful vehicle for personal growth. We hope that you as parents will appreciate this and support our goals.

Another commitment we expect is **COMMUNICATION** with our coaching staff. If a problem or illness is going to force your son or daughter to miss practice or a meet, we expect him or her to tell us about it personally and in advance. (This does not mean relaying a message through a teammate or friend.) Many such problems can be solved when athletes communicate with us.

HOW YOU CAN HELP YOUR SON OR DAUGHTER BEFORE THE SEASON STARTS

We strongly encourage our runners to be on a self-training regime during the summer. Pre-season summer training is essential to build a fitness base for intensive workouts and races during the season. We offer an inexpensive summer fitness class 2 evenings a week through the Mt. Carmel Adult School that features team runs. We also offer a 5-day altitude training camp at Mammoth Mountain during the first week of practice, which is always a very positive and valuable experience for our runners. As your aspiring young runner begins the first weeks of training, you may wonder what you should expect and how you can assist him or her as a parent in terms of recovery, eating, sleeping, and mental attitude. As a rule, we don't recommend you change any aspect of your normal routine of home responsibilities, family meal planning, bedtime, and social guidelines. A normal consequence of beginning to train is muscle soreness, which will soon go away. If your son or daughter has not participated in sports before, this may persist up to 2 weeks. They should communicate this to us so we can adjust their training. Any athlete engaged in intensive training and competition can be subject to injury. We can prevent most injuries when our runners tell us about their aches and pains before they become disabling, so we can have them treated by our athletic trainers and team physician. A nutritious, well-balanced diet is essential for an athlete. Especially on race days, fatty and fried foods, and carbonated or acidic drinks should be avoided. Small portions of easily digested foods eaten at least 3 hours before competition are best, but water intake should never be limited. Most athletes feel best when they race a little hungry. You should see your runner gradually starting to eat more carbohydrates.

HOW TO BUY RUNNING SHOES

If possible, go to a store that deals primarily with running footwear and apparel. These stores have experienced runners as sales persons who can help you choose the right shoe with the right fit for your athlete. A list of these stores is included in your son's or daughter's information packet. There is no getting around the fact that running shoes are expensive. The best way to prolong the life and function of a new pair of running shoes is to wear them for running only, not as school dress or for P.E. class. It is not necessary to purchase special running apparel. Loose fitting T-shirts and shorts are adequate for daily training, and your athlete will be issued school uniforms and warm-up suits.

CROSS COUNTRY VOCABULARY

- DUAL MEET...a meet between two teams
- TRIANGULAR MEET...a meet between three teams
- INVITATIONAL MEET...a multi-team meet
- TOP 7...the scoring members of a Cross Country team
- COURSE...the marked and measured route of the race
- STARTING BOX...designated area to which a team is assigned on the starting line
- FALSE START...leaving the starting line before the gun sounds
- FINISH CHUTE...a rope bordered funnel past the finish line that moves runners into their single file order of finish
- PACE...running speed over a particular distance
- SURGE...a tactical increase in pace during the race
- KICK...a burst of speed at the finish of the race
- PACK...a group of runners in close proximity
- PERSONAL RECORD...best-ever performance on a given course (PR)
- RACING FLATS...special, lightweight shoes designed for racing, rather than daily training
- TRAINING FLATS...running shoes designed for long wear in daily training
(called "flats" because they have no spiked bottoms)
- WARM-UP...a running and stretching routine that gradually warms up the body for intense running
- COOL-DOWN...a jogging/walking routine that allows the muscles to purge themselves of lactates and the body to gradually lower its temperature to normal
- WORKOUT...a daily training session

PREPARING TO WATCH YOUR FIRST CROSS COUNTRY MEET

When you arrive at the meet site, ask us to see a map of the course. First, locate the start and finish, then try to scout central points where you can see as much of the race with as little moving around as possible. Many schools share our red and gold uniform colors, so try to observe the differences while teams are warming up before the start. Be aware that our league meets feature 5 boys' and girls' races at various levels with 2 or 3 teams and last about 2 hours. We will have informed your son or daughter about the correct race division and time beforehand. Some of our Saturday invitationals, however, have as many as 50 teams and a schedule of races that lasts all morning and much of the afternoon.

Do not expect the attention of your son or daughter once we get to the meet. The athletes need time to warm up on the course, be briefed by their coaches, and prepare for the race with their teammates. Many parents are initially surprised at the seriousness their son or daughter shows prior to and during a race. The intensity of competition may reveal a side of your young athlete's personality you haven't seen before.

During the race, you can move from point to point along the course to cheer the runners as they pass. Be careful, however, to stay off the runners' path and out of their way. Rules also forbid running alongside a competitor to pace or encourage him or her.

At the finish of the race, the runners file through a finish chute. It's OK to greet them then, but they may have to turn a place card into their coach ASAP so scores can be tabulated. Our runners have other responsibilities after a race. We expect them to jog and cool-down as a team and actively support their teammates who have yet to race. Some runners are more spent than others after a race. Typical symptoms of their effort and fatigue are breathlessness, general weakness, rubbery legs, glassy eyes, salivating, and sometimes nausea. A mistake parents sometime make is to take their sons or daughters off by themselves to try to take care of them. **Please do not do this!** Our coaches are experienced in dealing with these symptoms, trained in first-aid, and responsible for their care. To aid recovery, water is the best thing to drink immediately after a race.

Expect the possibility of some disappointment by your athlete after the race if his or her team did not win, and/or if he or she failed to achieve all goals. Athletes may need some emotional space afterward from both you and their coaches. Later on, they will need verbal support rather than criticism.

Once an away meet is over, if your son or daughter came on our bus, please do not take him or her home with you without first checking with me. I am legally bound by state law for athletes' safe transport to and from the meet. You need to know that high school athletes are not allowed to drive themselves to a meet, and afterward, I can release them only to you.

SAMPLE LETTER OUTLINING PARTICIPATION REQUIREMENTS**REQUIREMENTS TO PARTICIPATE IN
SPORTS AT ARROYO HIGH SCHOOL**

There are 5 things you must do prior to the season to participate in a sport at Arroyo High School. All five of the following items must be completed once each school year. However, once they are completed, you may participate in as many sports as you wish without having to do them again.

1. PHYSICAL EXAMINATION

You must have a physical exam and your doctor must sign the yellow card provided by the school. You can go to your own doctor, or go to the Halifax Medical Clinic, located in the shopping center on the corner of Lower Azusa and Peck Road.

The Halifax Clinic will give Arroyo athletes a physical exam for \$10. To make an appointment, call 444-2414. After the physical, the yellow card must be turned in to the Arroyo Activities Office.

2. ASB CARD

Every Arroyo High School athlete must purchase an Associated Student Body Card for \$15 at the Activities Office. Purchasing an ASB card supports Arroyo athletics, admits you to all football and basketball games for free, and gets you discounts on things such as the yearbook and tickets to school dances.

3. INSURANCE COVERAGE

You must have insurance coverage to participate in sports at Arroyo High School. If you already have coverage under your parents' insurance, you only have to fill in the name of the company and policy number on the yellow physical card. If you don't have insurance, you can purchase it through the school. A form is available in the Activities Office that lists several coverage options. The least expensive plan costs only \$9.25 and covers you for all sports for the entire school year. To purchase a school insurance policy, you must bring payment to the Activities Office. Do not mail it to the insurance company.

4. ATHLETIC CODE OF CONDUCT

There are certain rules regarding personal conduct and behavior that all athletes at Arroyo High School must agree to follow in order to participate on a school athletic team. These rules constitute our Athletic Code. A copy is attached that you and you parents must read, sign, and return to the Activities Office.

5. EMERGENCY MEDICAL CARD

Every Arroyo athlete is required to give his or her coach an Emergency Medical Card completed with his or her parents' home and work phone numbers and important medical information.

SAMPLE LETTER TO SCHOOL FACULTY AND STAFF

To All Faculty and Staff:

Welcome back to another new school year. Attached are the alphabetical rosters for the 2002 ARROYO BOYS' AND GIRLS' CROSS COUNTRY TEAMS.

As coaches, we are very concerned that all members of the Arroyo Cross Country Team perform up to their ability in your classroom and conduct themselves properly on our campus at all times. We want to work with you to help them excel academically while enjoying the positive experiences and benefits of participating in extracurricular activities at Arroyo High School.

If you should have a problem with any of our student-athletes, or observe any improper conduct on their behalf, please contact us, and we will respond immediately. We would also appreciate hearing about our team members who excel in your classes and contribute to our school community so we can provide additional positive reinforcement of that behavior.

Also attached is our 2002 ARROYO CROSS COUNTRY SCHEDULE. We have 4 home meets this year, including our 12th annual Arroyo Invitational. We invite you to come out and see your student-athletes in action as they strive to repeat as Mission Valley League Champions and bring another CIF title to Arroyo High School this year. We would especially appreciate your help as an official or volunteer. A faculty sign-up sheet will soon be put in your mailbox.

Sincerely,

Tim O'Rourke
Head Coach
Room 8 /ext 215

Ray Lopez
Assistant Coach
Room 19 /ext 383

Alex Gonzales
Assistant Coach
Room 33 /ext 235

SAMPLE FUND RAISING LETTER

Dear Walt,

Our annual Ojai Cross Country Invitational will be Saturday, September 17, at Lake Casitas and will include 20 of the top small school teams in California. For the past two years, Rotary West has helped to sponsor our meet, and your support has helped it grow into one of the premier small school Cross Country meets in the state.

Harry Bamberger has always championed our cause at your meetings. You began your support with \$400 and last year upped it to \$500. The Nordhoff High School Boys' and Girls' Cross Country Teams would be grateful if Rotary West would once again sponsor our Ojai Invitational with a donation of \$500. Last year the ROTARY WEST OJAI INVITATIONAL received local press coverage in the *Los Angeles Times*, *Ventura County Free Press* and *California Running News*, and in the national publication, *Harrier Magazine*.

Your donation is a good investment in Ojai's youth. The Nordhoff Cross Country Team has more than 60 runners and according to *Harrier Magazine* is "possibly the top small school program in the nation." Academically, our team maintains a 3.5 combined grade point average and nine of last year's seniors went on to attend college this fall. Athletically, we have won two girls' and one boys' state championships in the past two years and have been ranked among the top 5 small school teams in the nation. Every member of our team gets to run in most of our meets, so even our slower runners have a chance to participate and be part of our team's success.

We are looking forward to hosting the ROTARY WEST OJAI CROSS COUNTRY INVITATIONAL again this fall. As always, you can count on me to speak at a Rotary West luncheon after the invitational and to bring some video of the meet and two of our top individual runners with me.

Sincerely,

Ken Reeves
Head Cross Country Coach
Nordhoff High School

SAMPLE 4X6 TEAM INFORMATION CARD

FRONT

CROSS COUNTRY INFORMATION CARD			
NAME — First:	Last:	FR	SO JR SR (circle one)
PHONE — ()			
ADDRESS — Street:		City:	Zip:
PARENTS' FIRST & LAST NAMES:			
Phone number(s) to reach them in an emergency during the day:			
Father: ()		Mother: ()	
YOUR SIZES — Shoes:	Singlet:	Shorts:	Warm-ups:
ISSUE — Singlets, #:	Shorts, #:	Sweats, #:	Meet Warm-ups, #:
ATHLETIC LOCKER NO:		COMBINATION: - -	

BACK

FALL SEMESTER CLASS SCHEDULE			
HOMEROOM	room no.	subject	Teacher
PERIOD 1	room no.	subject	Teacher
PERIOD 3A	room no.	subject	Teacher
PERIOD 3B	room no.	subject	Teacher
PERIOD 4A	room no.	subject	Teacher
PERIOD 4B	room no.	subject	Teacher
PERIOD 5	room no.	subject	Teacher
PERIOD 6	room no.	subject	Teacher
YOUR COUNSELOR:			

SAMPLE INVITATIONAL MEET INFORMATION LETTER

2002 MT. CARMEL CROSS COUNTRY

INVITATIONAL, MAY 1, 2002

Dear Coach:

Our 12th annual Mt. Carmel Cross Country Invitational will be held on SATURDAY, SEPTEMBER 17, beginning at 8:30AM. The meet will be at MORLEY FIELD in San Diego's beautiful BALBOA PARK, the annual site of the Kinney National Cross Country Championships. The Boys' Course is 3.0 miles and the Girls' Course is 2.65 miles. Approximately 85% of the race is on the national championship course.

This meet annually draws many of the top boys' and girls' Cross Country teams in California, Arizona, and Nevada. Last year's meet drew 59 schools and 1300 runners. Our 16 Race Divisions are based on school size and grade levels, as follows:

SMALL SCHOOLS DIVISION

Frosh Boys (1.85 Miles)
 Soph Boys (3.0 Miles)
 Junior Boys (3.0 Miles)
 Senior Boys (3.0 Miles)
 Frosh Girls (1.65 Miles)
 Soph Girls (2.65 Miles)
 Junior Girls (2.65 Miles)
 Senior Girls (2.65 Miles)

LARGE SCHOOLS DIVISION

Frosh Boys (1.85 Miles)
 Soph Boys (3.0 Miles)
 Junior Boys (3.0 Miles)
 Senior Boys (3.0 Miles)
 Frosh Girls (1.65 Miles)
 Soph Girls (2.65 Miles)
 Junior Girls (2.65 Miles)
 Senior Girls (2.65 Miles)

Entry fees are \$20 per school per level, or \$4 per individual for teams of less than 5. Schools entering all 16 boys' and girls' races will have a maximum entry fee of \$150.

Each race will have awards for the top 35 places. You may enter an unlimited number of runners in each race. For races with more than 100 runners, we will add 5 medals. A certificate for a pair of running shoes will also be given to each race winner.

If you would like to enter the 2002 Mt. Carmel Invitational, PLEASE RETURN THE ENCLOSED POSTCARD as soon as possible. We will close the meet at 62 schools...first come, first served. If you want the entry sent to your home, please put your home address on the postcard. There is a \$50 cancellation fee if you return the postcard but fail to enter the meet. The final meet information and time schedule will be mailed to you the end of August.

Sincereley,

Dennis McClanahan
Meet Director

SAMPLE HOME MEET INFORMATION SHEET

THORN RIDGE

CROSS COUNTRY INFORMATION

DATE OF OUR MEET:

STARTING TIME:

Dear Coach-

Our dual meet will be held at Veterans Park in South Holland, located at 160th Place and Chicago Road. Your buses should park along 160th Place. Restrooms and drinking fountains are available in the park.

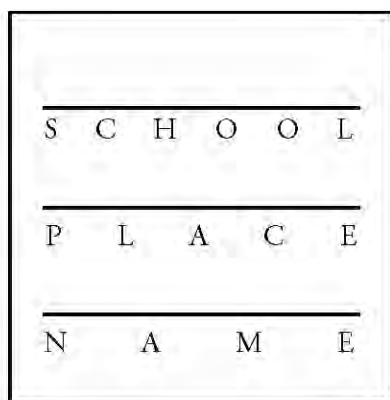
Our 2.8-mile course is 4 laps of a 1000-meter grass loop with a short hill. The entire race can be seen by spectators from the center of the park. The start and finish is a 200-meter straight diagonally across the park. (Enclosed is a map of the course.)

The course is marked with colored flags according to the following National High School Federation guidelines:

RED - Left YELLOW - Right BLUE - Straight

We will have an adult official at each turn on the course. Lap cards will be shown at the completion of each lap at the beginning of the finishing straight. 1-mile and 2-mile times will be read to all runners at points marked with 36" high sandwich boards.

The order of races will be : 1) FRESHMEN 2) VARSITY 3) FROSH-SOPH. The freshman race will be 1.86 miles with 2 loops of the park, plus the start/finish straight. We will also run a JV RACE of 2.8 miles following the frosh-soph race. We encourage you to enter any upperclassmen who do not impact your varsity scoring in the JV race to give them a chance for success at a lower level of competition. If you prefer, we can make it a non-scoring race. However, we will run a JV race whether you have entries or not.



Upon your arrival, we will give you a packet with a tag and paper clip for each of your runners and a guide to show your runners the course and park lay-out. Tags must be filled out with FIRST and LAST prior to the meet and worn clipped to the front neck portion of each runner's jersey. Places will be marked on the tags in the chute by the finish Judge. Tags will be removed at the end of the chute and placed on a numbered tag board for compiling team scores and individual results.

We have a P.A. announcer who will call each race. Please bring a spotter who can help him identify the names of your runners. The Thornridge Band will also be playing at the meet. If you would like to bring yours, we will assign one to the softball bleachers and the other to the bandshell approximately 100 meters apart.

We are looking forward to our meet and will strive to see that it is well-organized, well-officiated and a great Cross Country race for the fine runners from your school.

Skip Stolley
Thornridge Cross Country Coach

SAMPLE RACE PLANNING SHEET

(CONFIDENTIAL)

CROSS COUNTRY RACE PLANNING SHEET

NAME: _____

MEET: _____ DATE: _____

If you ran this meet last year, what was your place? _____ Your finish time? _____

Based on the competition we can expect, the difficulty of the course and
your current level of training and fitness...

What parts of the race do you plan to emphasize?

☐ Start ☐ Flats ☐ Downhills ☐ Middle Mile(s) ☐ Finish

Which teammate(s) do you plan to run with? _____

How much faster did he/she run in our last race? _____

What is your strategy for this race?

☐ Be in position near the front at the first turn or where the course starts to narrow.☐ Surge on the flats or downhills after cresting the hills.☐ Make an aggressive move on the _____ mile(s).☐ Stay with our pack.☐ Finish fast over the last _____ mile(s).☐ Other _____

List any negative thoughts or doubts you've experienced during our training recently: _____

What do you think is the reason for your negative thinking? _____

What positive thoughts or self-talk will you counter-attack with in this race? _____

What are your goals for this race? Place: _____ Time: _____

Other: _____

... ..

YES		NO	
1	2	3	4

100

100

II	III	IV	V	A	B	C	D	E
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SAMPLE SCORING ENVELOPE

SCORING ENVELOPE

ILLIANA CROSS COUNTRY CLASSIC

SCHOOL: _____

COACH: _____

DIVISION: _____

1st Finisher: _____

2nd Finisher: _____

3rd Finisher: _____

4th Finisher: _____

5th Finisher: _____

6th Finisher: _____

7th Finisher: _____

TEAM SCORE: _____

Please place all your runners' **PLACE CARDS** inside—total your Top 5 Places below—and turn in this envelope to the Scorer's Table ASAP after each race.

CROSS COUNTRY TIME CHECK SHEET

MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN
:00	:00	:00	:00	:00	:00	:00	:00
:01	:01	:01	:01	:01	:01	:01	:01
:02	:02	:02	:02	:02	:02	:02	:02
:03	:03	:03	:03	:03	:03	:03	:03
:04	:04	:04	:04	:04	:04	:04	:04
:05	:05	:05	:05	:05	:05	:05	:05
:06	:06	:06	:06	:06	:06	:06	:06
:07	:07	:07	:07	:07	:07	:07	:07
:08	:08	:08	:08	:08	:08	:08	:08
:09	:09	:09	:09	:09	:09	:09	:09
:10	:10	:10	:10	:10	:10	:10	:10
:11	:11	:11	:11	:11	:11	:11	:11
:12	:12	:12	:12	:12	:12	:12	:12
:13	:13	:13	:13	:13	:13	:13	:13
:14	:14	:14	:14	:14	:14	:14	:14
:15	:15	:15	:15	:15	:15	:15	:15
:16	:16	:16	:16	:16	:16	:16	:16
:17	:17	:17	:17	:17	:17	:17	:17
:18	:18	:18	:18	:18	:18	:18	:18
:19	:19	:19	:19	:19	:19	:19	:19
:20	:20	:20	:20	:20	:20	:20	:20
:21	:21	:21	:21	:21	:21	:21	:21
:22	:22	:22	:22	:22	:22	:22	:22
:23	:23	:23	:23	:23	:23	:23	:23
:24	:24	:24	:24	:24	:24	:24	:24
:25	:25	:25	:25	:25	:25	:25	:25
:26	:26	:26	:26	:26	:26	:26	:26
:27	:27	:27	:27	:27	:27	:27	:27
:28	:28	:28	:28	:28	:28	:28	:28
:29	:29	:29	:29	:29	:29	:29	:29
:30	:30	:30	:30	:30	:30	:30	:30
:31	:31	:31	:31	:31	:31	:31	:31
:32	:32	:32	:32	:32	:32	:32	:32
:33	:33	:33	:33	:33	:33	:33	:33
:34	:34	:34	:34	:34	:34	:34	:34
:35	:35	:35	:35	:35	:35	:35	:35
:36	:36	:36	:36	:36	:36	:36	:36
:37	:37	:37	:37	:37	:37	:37	:37
:38	:38	:38	:38	:38	:38	:38	:38
:39	:39	:39	:39	:39	:39	:39	:39
:40	:40	:40	:40	:40	:40	:40	:40
:41	:41	:41	:41	:41	:41	:41	:41
:42	:42	:42	:42	:42	:42	:42	:42
:43	:43	:43	:43	:43	:43	:43	:43
:44	:44	:44	:44	:44	:44	:44	:44
:45	:45	:45	:45	:45	:45	:45	:45
:46	:46	:46	:46	:46	:46	:46	:46
:47	:47	:47	:47	:47	:47	:47	:47
:48	:48	:48	:48	:48	:48	:48	:48
:49	:49	:49	:49	:49	:49	:49	:49
:50	:50	:50	:50	:50	:50	:50	:50
:51	:51	:51	:51	:51	:51	:51	:51
:52	:52	:52	:52	:52	:52	:52	:52
:53	:53	:53	:53	:53	:53	:53	:53
:54	:54	:54	:54	:54	:54	:54	:54
:55	:55	:55	:55	:55	:55	:55	:55
:56	:56	:56	:56	:56	:56	:56	:56
:57	:57	:57	:57	:57	:57	:57	:57
:58	:58	:58	:58	:58	:58	:58	:58
:59	:59	:59	:59	:59	:59	:59	:59

Distance

MIN	MIN	MIN	MIN	MIN
:00	:00	:00	:00	:00
:01	:01	:01	:01	:01
:02	:02	:02	:02	:02
:03	:03	:03	:03	:03
:04	:04	:04	:04	:04
:05	:05	:05	:05	:05
:06	:06	:06	:06	:06
:07	:07	:07	:07	:07
:08	:08	:08	:08	:08
:09	:09	:09	:09	:09
:10	:10	:10	:10	:10
:11	:11	:11	:11	:11
:12	:12	:12	:12	:12
:13	:13	:13	:13	:13
:14	:14	:14	:14	:14
:15	:15	:15	:15	:15
:16	:16	:16	:16	:16
:17	:17	:17	:17	:17
:18	:18	:18	:18	:18
:19	:19	:19	:19	:19
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:33	:33	:33	:33	:33
:34	:34	:34	:34	:34
:35	:35	:35	:35	:35
:36	:36	:36	:36	:36
:37	:37	:37	:37	:37
:38	:38	:38	:38	:38
:39	:39	:39	:39	:39
:40	:40	:40	:40	:40
:41	:41	:41	:41	:41
:42	:42	:42	:42	:42
:43	:43	:43	:43	:43
:44	:44	:44	:44	:44
:45	:45	:45	:45	:45
:46	:46	:46	:46	:46
:47	:47	:47	:47	:47
:48	:48	:48	:48	:48
:49	:49	:49	:49	:49
:50	:50	:50	:50	:50
:51	:51	:51	:51	:51
:52	:52	:52	:52	:52
:53	:53	:53	:53	:53
:54	:54	:54	:54	:54
:55	:55	:55	:55	:55
:56	:56	:56	:56	:56
:57	:57	:57	:57	:57
:58	:58	:58	:58	:58
:59	:59	:59	:59	:59

CROSS COUNTRY RACE TAG SHEET

Race _____

Meet _____

Place

1

2

3

4

5

6

7

8

9

Place

10

11

12

13

14

15

16

17

18

SAMPLE CROSS COUNTRY TRAINING DIARY

Week of _____ Month _____ Year _____

DAY	COMMENTS
-----	----------

Sunday the	
Monday the	
Tuesday the	
Wednesday the	
Thursday the	
Friday the	
Saturday the	

DAILY AND WEEKLY TOTALS									
	Total	Average	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Miles									
Sleep									
How You Felt									
Heart After Work									
Morning Heart									

SAMPLE 4-WEEK ATTENDANCE SHEET

[illegible]

QUICK-SCORE SHEET

Team		Team		Team		Team	
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
Total		Total		Total		Total	

Team		Team		Team		Team	
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
Total		Total		Total		Total	

Team		Team		Team		Team	
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
Total		Total		Total		Total	

Record the appropriate place number for each team finisher!

COACH'S CROSS COUNTRY TALLY SHEET

Date _____ Distance _____ Course Record _____

00	30	00	30	00	30	00	30	00	30
01	31	01	31	01	31	01	31	01	31
02	32	02	32	02	32	02	32	02	32
03	33	03	33	03	33	03	33	03	33
04	34	04	34	04	34	04	34	04	34
05	35	05	35	05	35	05	35	05	35
06	36	06	36	06	36	06	36	06	36
07	37	07	37	07	37	07	37	07	37
08	38	08	38	08	38	08	38	08	38
09	39	09	39	09	39	09	39	09	39
10	40	10	40	10	40	10	40	10	40
11	41	11	41	11	41	11	41	11	41
12	42	12	42	12	42	12	42	12	42
13	43	13	43	13	43	13	43	13	43
14	44	14	44	14	44	14	44	14	44
15	45	15	45	15	45	15	45	15	45
16	46	16	46	16	46	16	46	16	46
17	47	17	47	17	47	17	47	17	47
18	48	18	48	18	48	18	48	18	48
19	49	19	49	19	49	19	49	19	49
20	50	20	50	20	50	20	50	20	50
21	51	21	51	21	51	21	51	21	51
22	52	22	52	22	52	22	52	22	52
23	53	23	53	23	53	23	53	23	53
24	54	24	54	24	54	24	54	24	54
25	55	25	55	25	55	25	55	25	55
26	56	26	56	26	56	26	56	26	56
27	57	27	57	27	57	27	57	27	57
28	58	28	58	28	58	28	58	28	58
29	59	29	59	29	59	29	59	29	59

Team Scores

Team	Team	Team	Team
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
Total	Total	Total	Total

Place	Name	School	Time
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
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19			
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25			
26			
27			
28			
29			
30			

Things to do

- Meet info sent/received
- Directions to meet site
- Vehicle confirmations
- Motel reservations
- Dressing/shower arrangements
- Meal reservations
- Itinerary
- Class excusal forms
- Entry fee/meal \$ requisitions
- Pick-up awards

Home Meet Materials

- Visiting team packets
 - Tags/clips
 - Course maps
 - Instruction sheet
 - Scoring envelopes
 - Pencil
- Clipboards
 - Splits
 - Finish times
 - Official results
 - Place marker
 - Lost tags
- Tag rings
- Mile signs
- Flags & posts ()
- Cones ()
- Pennants
- Chute stakes ()
- Rope
- Sledge hammer
- Pencils
- Marking pens
- Starting gun & shells
- Bullhorn
- Chronomix
- Stopwatches ()
- Place cards (sets/1)
- Quick-score cards (sets)
- Arrange for trainers
- Water cooler
- Table/chairs
- Awards

Home Meet Officials & Workers

STARTER

ANNOUNCER

SPLIT CALLERS/RECORDERS

HEAD FINISH JUDGE

FINISH TIMERS

HEAD TIMER

BACK-UP TIMER

TIME CHECKER

CHUTE STEWARDS

CHUTE MARSHALS

PLACE CARDS

TAG REMOVER

PLACE RECORDER

HEAD SCORER/ OFFICIAL RESULTS

COURSE INSPECTORS:

1

2

3

4

QUICK-SCORERS:

()

()

CROSS COUNTRY RESULTS/SCORE SHEET

Meet _____ Division _____

Date _____ Sight _____ Course Record _____ Weather _____

Place	School	Name	Time
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

Place	School	Name	Time
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			

SCORE BOX

1	
2	
3	
4	
5	

SCORE BOX

1	
2	
3	
4	
5	

SCORE BOX

1	
2	
3	
4	
5	

SCORE BOX

1	
2	
3	
4	
5	

INVITATIONAL SUPPLY LIST—MEET MANAGER

Supply List

START:

- | | | |
|---------------------------------------|--|--|
| ☐ Starting Gun | ☐ Shells | ☐ Bull horn |
| ☐ School lists | ☐ Stand | ☐ Balloons |
| ☐ Starter | ☐ Clerk of the course | ☐ Starting line |

FINISH:

- | | | |
|--------------------------------------|---|---|
| ☐ Clock | ☐ Chronomix | ☐ 3 stop watches |
| ☐ Clipboard | ☐ 40 time sheets | ☐ Pens |
| ☐ Clock stand | ☐ Chairs | |

RECORDING:

- | | | |
|---|-------------------------------|--------------------------------|
| ☐ 20 race results sheets | ☐ Pens | ☐ Table |
|---|-------------------------------|--------------------------------|

AWARDS:

- | | |
|-----------------------------------|--------------------------------|
| ☐ Trophies | ☐ Table |
|-----------------------------------|--------------------------------|

TEAM SCORING:

- | | | |
|--|----------------------------------|--|
| ☐ School sheets | ☐ Pencils | ☐ Calculators |
| ☐ Felt pens | ☐ Tables | ☐ Number sheets |

RESULTS:

- | | | |
|--------------------------------------|---------------------------------------|---|
| ☐ Computer | ☐ Typewriter | ☐ Ditto machine |
| ☐ Ditto fluid | ☐ Ditto paper | ☐ 4 tables |
| ☐ Fan | ☐ Folders | ☐ Pens & pencils |
| ☐ Scotch tape | ☐ Masking tape | ☐ Chairs |

CHECK-IN:

- | | | |
|--------------------------------------|---|---------------------------------------|
| ☐ Tables | ☐ Chairs | ☐ Name tags |
| ☐ Pins | ☐ Pens | ☐ Cash box |
| ☐ Paper clips | ☐ Masking tape | ☐ Rubber bands |
| ☐ School list | ☐ Hammer & nails | |

OVERALL:

- | | | |
|---|---|---|
| ☐ Balloons | ☐ Flags | ☐ Stakes |
| ☐ Ladder | ☐ Cones | ☐ Chalk & marker |
| ☐ Water | ☐ Results poster | ☐ P.A. system |
| ☐ Hammer & nails | ☐ Stake driver | ☐ Scaffold |
| ☐ Result boxes/folders | ☐ Paper weights | ☐ Clipboard |

Invitational Personnel Needs

START: Two people to line up and start the race.

1 _____

2 _____

FINISH: Six people to time and arrange runners in the proper finish order.

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

CHUTE MARSHALS: Six people to keep athletes in order and moving through the chute.

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

SCORERS: Three people to determine team scores.

1 _____

2 _____

3 _____

RECORDING: Two people to place tags of runners in proper order on results sheets.

1 _____

2 _____

Athlete's Bag

- 1___ Shoes
- 2___ Shorts
- 3___ Singlet
- 4___ Socks
- 5___ Towel
- 6___ Healthy snack (PowerBar or fruit for after the meet)
- 7___ Extra pair of shoes laces
- 8___ Extra pair of socks
- 9___ Tongue depressor (to clean off muddy shoes)
- 10___ Water bottle or cup
- 11___ Sweats
- 12___ Required team gear
- 13___ Dry T-shirt for after the race
- 14___ Suntan lotion and ChapStick™
- 15___ Necessary First-aid equipment (Band-Aids, Vaseline, Second Skin, aspirin, tape, etc)
- 16___ Goal cards or pace charts
- 17___ Safety pins for connecting race tags or numbers
- 18___ Garbage bag or poncho for wet weather

Coach's Bag

- 1___ Extra boy's and girl's singlets
- 2___ Extra boy's and girl's shorts
- 3___ Extra pair of socks
- 4___ Pens and pencils
- 5___ Extra safety pins
- 6___ Toilet paper
- 7___ Shoe laces
- 8___ Quarters

Coach's Checklist

- 1___ Permission slips
 - 2___ First-Aid equipment
 - 3___ Water containers
 - 4___ Directions to the meet
 - 5___ Entry fee check
 - 6___ List of all team members going to the meet
 - 7___ Entry lists for the meet
 - 8___ Stopwatches
 - 9___ Race schedule (enough copies to post for the team)
 - 10___ Finish sheets for all teams entered
 - 11___ Course map
 - 12___ Clipboard
 - 13___ Shade cover
 - 14___ Other...
-