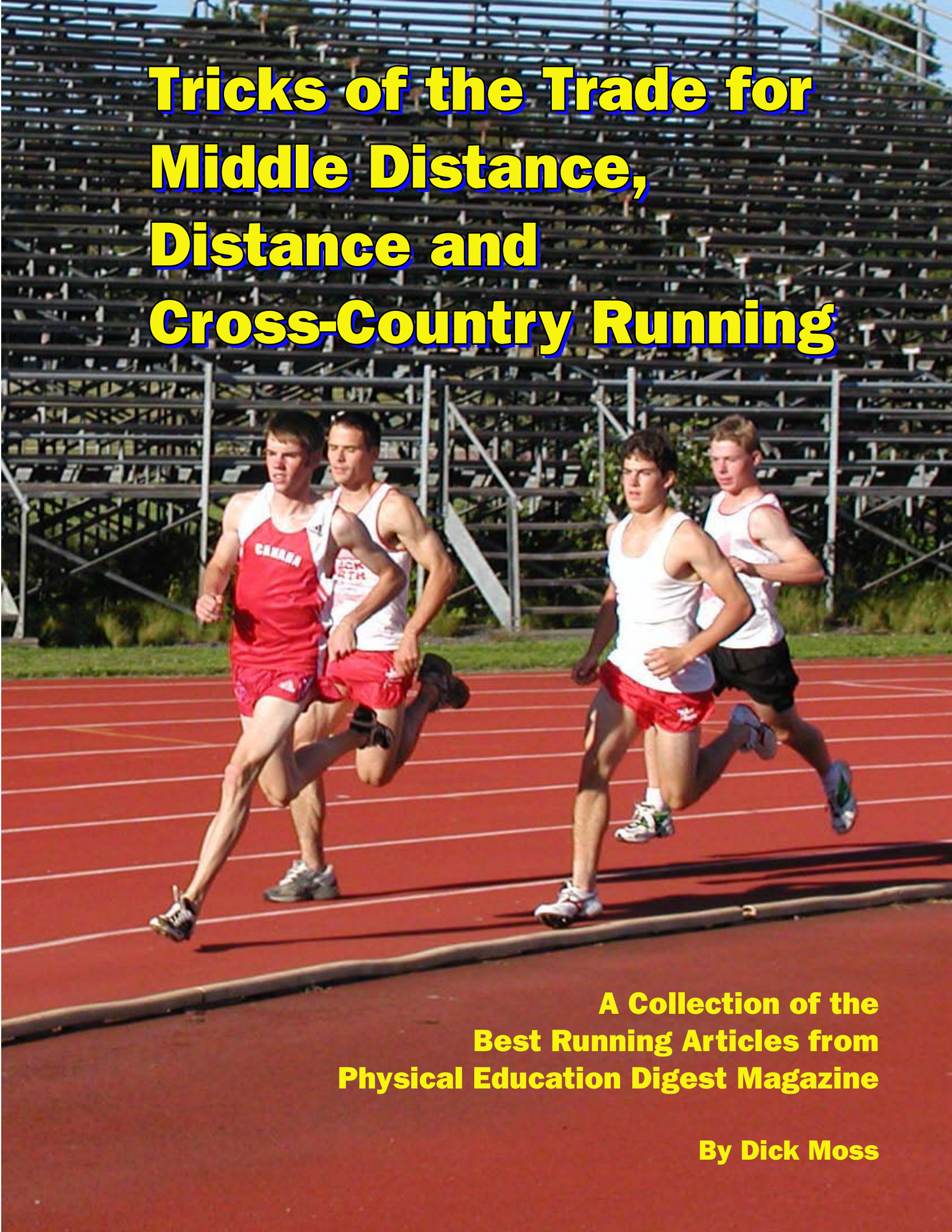
Tricks of the Trade for Middle Distance, Distance and Cross-Country Running



A Collection of the Best Running Articles from Physical Education Digest Magazine

By Dick Moss

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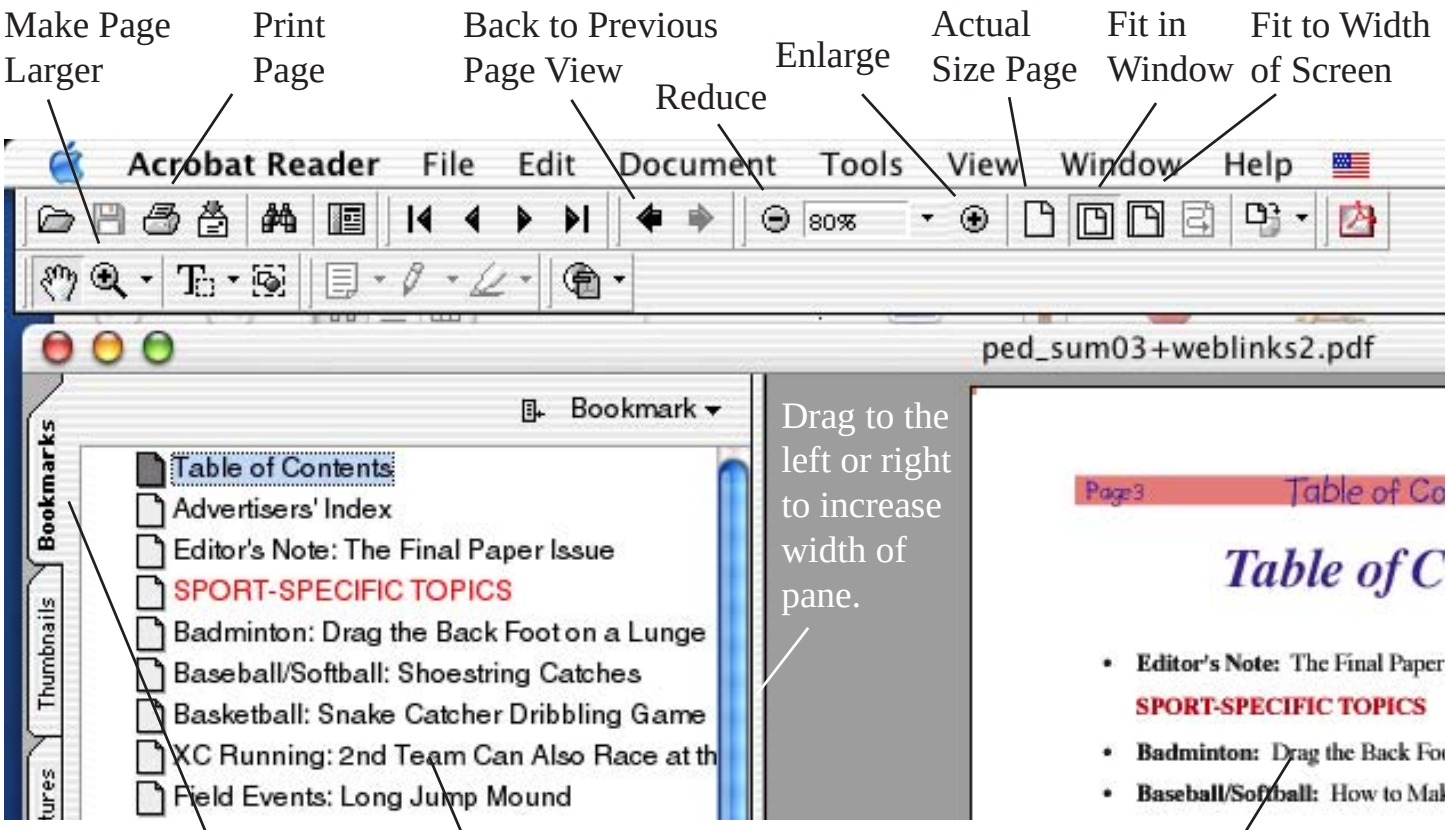

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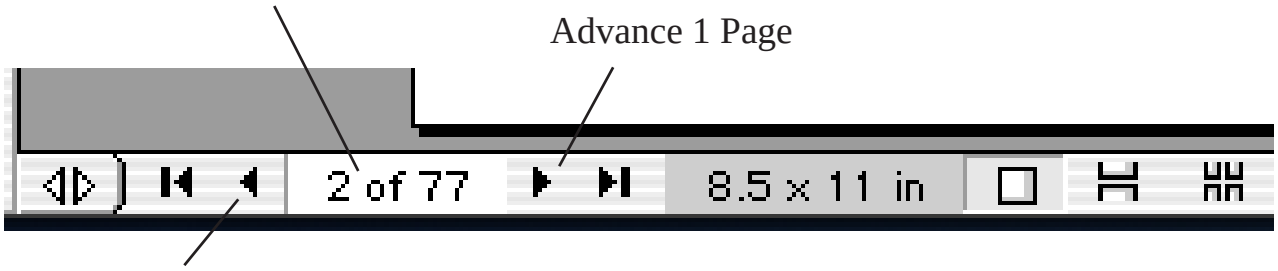

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Tricks of the Trade for Middle Distance, Distance & Cross-Country Running

By Dick Moss

(All articles are written by the author, except where indicated)

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This book is
dedicated to Bob Moss,
Father, friend and founding
partner. Thanks Pops,
you got me started
and kept me going...
In more ways than one.

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Introduction

If you're looking for a resource that will teach you everything there is to know about middle distance, distance and cross-country running…then oops! This isn't it.

This book is not a comprehensive resource. Instead,think of it as a clinic in your computer— a collection of useful tips, hints, ideas and reproducible charts that will help you solve common problems, teach coaching concepts and provide performance cues to make your athletes better runners.

It's essentially a *Best-Of* book, comprising the most useful track articles from the past 17 years of *Physical Education Digest.*

The focus is on practical, not theoretical. The ideas for these articles were gleaned from some of the best active coaches in the sport as reported in dozens of books, journals, videos and clinic reports. Some articles were contributed directly or come from coaching discussions. In almost all cases, these ideas were chosen because they made me say"Hey that's neat!" Or, " I could use that!"

Take them, use them, print out the reproducible charts and graphs. And most of all—enjoy coaching, enjoy teaching and enjoy our sport!

Yours in track,
Dick Moss, Editor, Physical Education Digest

About the Author

For the past 18 years, Dick Moss has worked as the Editor/Publisher of Physical Education Digest. He is also the head coach of Track North Athletic Club and the Laurentian University Women's Cross-Country running team, in his hometown of Sudbury, Ontario, Canada. As a middle-distance runner in the 1970's, he was an All-American at the U. Of Wisconsin and a member of the Canadian National team.

Concepts and Coaching

Avoid Early Specialization for Runners

The latest international thoughts on middle distance running indicate that young athletes (up to age 19), should train much differently from adults. Their training programs should be modified to reduce the amount of anaerobic running they perform (i.e. intense interval training). And it seems these athletes should be allowed—even encouraged—to participate in other sports, which will develop their overall conditioning, fitness and coordination, making them better athletes when they mature.

Middle distance runners will improve their potential as adult athletes if they delay intense anaerobic training until they are 17 to 19 years of age. Some guidelines for training young runners.

Why Reduce Anaerobic Running?

Why is intense anaerobic running harmful to young runners? Because it can reduce their ultimate potential as a mature athlete.

Of all types of training, the body has the hardest time recovering from heavy anaerobic work. It digs deeply into a youth's energy reserves—which may already be heavily taxed by the natual process of growth. As a result, the normal development patterns of certain organs can be upset. This can impede some runners' general development and reduce their potential as adult athletes.

Also, starting too early can result in runners reaching their training peak before they've reached their physical peak.

For example, studies have shown that after developing a strong aerobic base, it takes six to eight years of specialized training (anaerobic work) for middle distance runners to reach their training peak. Other studies have shown that middle distance runners are at their physical peak between the ages of 24 and 30 (the average age is 26).

If your runners start heavy interval-type training at the age of 12, they'll reach their training peak at the age of 18, long before they're physically at their best. In fact, at 18, they're still growing and will do so until they are about 20. As a result, their best lifetime performances will be worse than if they peaked in their mid-twenties.

This could be one reason why Junior age world record holders seldom go on to set such records as open athletes.

Supporting Studies

Several studies have been conducted which support the claims that heavy anaerobic work should be delayed.

For example, Olav Karikosk of Estonia performed a long-term study which charted the progress of many runners of apparently equal ability. They used similar training methods except for the age at which they started using heavy anaerobic running. Of the 661 of these runners who became international level athletes, most (71%) started anaerobic work at the age of 19 and played a variety of different sports in their formative years. Fewer—20%— started at age 17. Only 9% of those who started at age 15 became international level runners.

Similar results were found in a survey of past Olympic gold medallists in the middle distances. Of these medal winners, 75% had delayed intense anaerobic training until the age of 19. Only 19% began at the age of 17 and 5% at age 15.

Incidentally athletes who delayed their intense anaerobic work until they were 19 included Sebastian Coe, Alberto Juantoreno, Peter Snell, Henry Rono and Paavo Nurmi.

A Coaching Approach

So how **do** you approach the training of young middle distance athletes? Athletes of this age should concentrate on general development, including skill development, endurance training and speed work, which are well tolerated at an early age.

Anaerobic work shouldn't be totally neglected by runners in their growing years— however, it should be used sparingly.

Training for athletes under the age of 14 should be devoted primarily to fitness games and the learning of technique in a number of different events.

The following chart is a handy guideline to follow. It shows the number of practice sessions, repetition sessions (anaerobic work), and kilometres of running that could be safely performed in each phase of a young runner's development. You might notice that the total running mileage is also lower than in many conventional programs.

Judgement Call

Whether to use this system of training ultimately comes down to a judgement call by you and your athletes.Performing a large amount of anaerobic work while they are still in their growing years could give your runners better immediate results but may reduce their ultimate potential as adult athletes.

However, you also must weigh this against their personal goals: will they likely be competing past high school age, do they need this early specialized work to get a scholarship or make a team that will enable them to continue in the sport until they are in their twenties?

And, of course, there are always exceptions to any rule: Jim Ryan, who performed extensive interval training as a youth was one of them.

It's a tough question, but the general worldwide trend seems to be a lower emphasis on intense track work for athletes up to the age of 17 or 19

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1. Otto Arens (Australia), "Young runners—avoid specialization." & Olav Karikosk (Estonia), "Looking into the development of young runners." **Middle Distances:** 2nd Edition, Edited by Jess Jarver, Los Altos: Tafnews Press, 1985.

[Available from Tafnews Press, Box 296, Los Altos, California, 94023].

2. Martin Goulet (National Coach, High Performance Centre, Montreal

Canada), “Middle distance training for young athletes.” Presented to the **World Track & Field Symposium i**n conjunction with the World Junior Track & Field Championships, Sudbury Ontario, Canada, 1988.

Training Guidelines for Teen-Age Middle-Distance Runners

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AGE	EVENTS (Volumes in the preparation phase). 400/800m	800/1500	3000m+	TOTAL # OF WORKOUTS PER WEEK	# OF REPETITION (ANAEROBIC) WORKOUTS/WK.	TYPE & LENGTH OF RECOVERY
14-15 yrs. Total Running km/wk. — Max. km in a Single Run —	15-30 km 8 km	20-35 km 9 km	30-45 km 12 km	3 or 4	0 or 1	Long walk
16 yrs. Total Running km/wk. — Max. km in a Single Run —	25-30 km 9 km	35-50 km 12 km	40-60 km 16 km	4 or 5	1	Long walk
17 yrs. Total Running km/wk. — Max. km in a Single Run —	30-45 km 10 km	45-70 km 15 km	55-85 km 18 km	5 or 6	1	Long walk or jog
18-19 yrs. Total Running km/wk. — Max. km in a Single Run —	35-60 km 12 km	50-90 km 18 km	60-120 km 22 km	6 to 9	2 or 3 (occasionally)	Long or short walk or jog

(Compiled from charts by Martin Goulet, National Coach, High Performance Centre, Montreal Canada)

Multi-Tier Training for Middle and Long Distance Running

Multi-Tier Training, also called Five-Pace Training, is a highly effective system for organizing the workouts of middle distance and distance runners.

It's espoused by the British Milers Club and such coaching greats as Frank Horwill and Peter Coe, who believe that runners are best prepared by systematically including practice paces that are faster and slower than that required for their focus event. This develops superior speed and endurance, and all the physiological elements required for superior racing

An effective system for training middle distance and distance runners.

For example, a 1500m runner will train at 1500 pace on some days, but on other days, will train at 400m pace for speed, 800m pace for anaerobic conditioning, 3k pace for V02 max and 5/10k pace for anaerobic threshold.

Here's how to use multi-pace training with your own middle distance and distance runners.

Organization

I use a two-week cycle in which track workouts are held three times per week. That's six workouts in which to work on the five paces. The extra workout can be used to repeat your focus-race pace, or to do a mixed-pace workout.

The following chart outlines how you might arrange this two-week schedule. Since this athlete's main event is the 1500m, 1500 pace is performed in both weeks of the two-week cycle.

Mon	Tue	Wed	Thur	Fri	Sat	Sun
400		1500		5k		Off
800		1500		3k		Off

The days between the track workouts (Tues/Thurs/Sat) are distance runs or alternate training, with Sundays off.

What Paces to Use?

I prefer to use my athletes' target paces when prescribing the paces for each event. For example, if my athletes' goal is to run a 4:00/1500, that's the pace they'll run at on their 1500 pace days. For a 4:00 1500m, that would mean:

200m	32
400m	1:04
600m	1:36
800m	1:08
1k	2:40

You can do the same for their other events. However, you sometimes won't have a target pace or past performance with which to estimate a target time. For example, many 800m runners may never have run a 5k. In this circumstance, you can estimate paces using the *Horwill Rule* or some other estimation chart, such as the Mercier Tables.

With the Horwill Rule, (see next article) you add 4-5 seconds (even more for inexperienced runners) per 400m for each increase in event. For example to estimate the 1500m time for a 2:00/ 800m runner, you'd divide by two to get a 400m split of 60 seconds, add 5 seconds, then multiply by 3.75 to get an estimated 1500m time of 4:03.7. It's rough, but you can make adjustments as you go.

How Many & What Recovery?

The chart below shows total meters you should run at each type of workout pace. You can use any combination of distances to make up that total.

The chart also indicates the amount of recovery your runners should take at each pace.

Pace	Total	Recovery
400	800m	Jog twice distance
800	1600m	Jog same distance
1500	3000m	Jog half distance
3k	4000m	Jog 1/4 distance
5k	5000m	Jog 1/8 distance
10k	5000m	Jog 1/8 distance

For example, on 800m pace day, your athletes might run 1600m of intervals, with the same jog as the interval distance for recovery. This could be 8 x 200 with 200 jog recovery. Or 4 x 400 with 400 jog recovery. Or 2 x 400 with 400 jog recovery, plus 4 x 200 with 200 jog.

Progression

It's my philosophy that you should start with shorter intervals, and gradually increase the length of intervals until they represent about 3/4 of the racing distance. So, for an 800m runner, you could begin with 150's at 800m pace, then gradually increase the length of intervals, over a number of weeks, to 200's, then 300's, then 400's…until they eventually run 600m repetitions at race pace.

Your ability to work up to long race-pace intervals will depend on how much time you have in your preseason. Once your competitive season begins, your actual races will take the place of such workouts.

How to Combine Practices

I believe that training groups play an essential role in athlete improvement. Since we don't have large numbers on my running teams, I do my best to have runners perform workouts together, even if they are in different running events.

The following chart shows how this is organized. Workouts are arranged so that five out of the six workouts are at common paces, regardless of event. This allows 800, 1500 & 3k runners to train together on most days.

Event	Mon	Wed	Sat	Mon	Wed	Sat
800	5k	800	400	1500	800	3k
1500	5k	1500	400	1500	800	3k
3k	5k	3k	400	1500	800	3k

Other Points

- The 3k and 5k pace workouts develop similar systems—especially if you're an 800m runner. As a result, you can use one of these workouts to perform mixed-pace workouts, such as ladders, or Peter Tegen's excellent Dynamic Running Workouts (see *PE Digest*, Winter 2002).
- If you have a competition, you can use the race event as that cycle's workout at that pace. Just rearrange the other workouts to accom-modate.

For example, if your athlete is running a 1500m on a Saturday race, it becomes that cycle's 1500m workout.

- Patterning race-pace in your athletes' nervous system is extremely valuable, and allows them to run with minimal effort in their races.

However, there is a danger in over-stereotyping your athletes' nervous system to a particular steady pace—to the point where they can't kick or surge mid-race. To avoid this, use changes of pace within your workouts: for example, finish the final 50m of some 200m runs with a full-out kick. *Dynos*, which you can perform once per cycle are also valuable (see article later in this eBook).

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1. David Martin (PhD) & Peter Coe, **Better Training for Distance Runners (2nd Edition**), Human Kinetics Publishers, 1997.

[$22.95 U.S. or $33.95 Cdn. plus shipping, c/o **Human Kinetics Publishers Inc.**, In Canada: 475 Devonshire Rd, Unit 100, Windsor, Ontario N8Y 2L5, 1-800-465-7301. In the U.S.A.: Box 5076, Champaign, Illinois, 61825, 1/800-747-4457].

2. Peter Coe**, Guelph Endurance Conference**, 1999, Guelph, Ontario.

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